



The Factors of E-Government Service Quality in Kuwait During the Coronavirus Disease 2019 Pandemic

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ABSTRACT

This study aims to explain factors that have influenced the e-government service quality in Kuwait during the Coronavirus Disease 2019 (COVID-19) pandemic. Data is collected data from 392 users of the e-government services in Kuwait. The analysis has revealed that having a functional e-government portal allows citizens to complete their transactions and depend heavily on using the e-government services. Moreover, trust, ease of use, and citizen's support were also significant in terms of affecting service quality. The findings also show reliability of content and appearance of information as significant factors. COVID-19 had moderating influence on the relationship between reliability, trust, and citizens' support with e-government service quality. These results imply that citizens care about the functionality of the e-government portal and that it allows them to conduct all the transactions and processes that they need. These findings are useful for government officials to understand the most important elements for e-government service quality and thus design services.

KEYWORDS

Citizen's Support, Content and Appearance of Information, COVID-19, E-GovQual, Ease of Use, Functionality of the Interaction Environment, Kuwait, Reliability, Trust

INTRODUCTION

Electronic Government (E-Government) is a subject that has been quite relevant in recent years when covid-19 pandemic had spread and the role of ICTs became more critical in governance processes, where they can help to build an organized network for service delivery (Naz,2009) efficacy, and productivity (Archmann and Iglesias, 2010) and interactivity, openness, and transparency (Gebba and Zakaria, 2015)and therefore affect e-government service quality. In the first quarter of 2020, the loss of working hours was estimated as being equivalent to the output from approximately 130 million full-time jobs globally and this was expected to worsen during the remainder of the year (Dempster et al., 2020). Many job losses resulted from closing of borders or the imposition of travel

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restrictions, which adversely impacted many organizations too. However, many employees were able to work online from home and this situation also prompted many government services to shift online for e-services their citizens (Bick et al., 2021).

The information technology has been cored to the emergence of e-government services (Chen et al., 2006). This development has widened access to government services, making them more accessible to citizens. The adoption and implantation of electronic government service is on the rise as electronic means are increasingly utilized to provide government services to citizens (Owusu et al., 2022). In the COVID 19 Pandemic era, governments all over the globe use digital platforms to deliver clear and current information. The value of e-government has been seen particularly during the Covid-19 pandemic as a most important means of communication regarding this disease and the protective measures that governments were advocating in the interests of public health. In this context it is important to understand the factors impacting the quality of these e-services offered by the governments.

The focus of this study is therefore to identify which factors have been important in terms of their impacts on the quality of e-government services during the COVID-19 pandemic in Kuwait from citizens' perspectives. Knowing these factors can lead to a greater understanding of the use of eGovernment services by citizens and their desire to use them and will thereby contribute to a high degree of eGovernment performance and quality. The current study is expected to be of assistance to the Kuwaiti Government and others by identifying those factors which have had important impacts on the quality of e-services that are being offered to the public. The study should also be informative for the governments in planning for the future and in maintaining a high quality of their e-services. In early stages, around 40% users have thought that government efforts in promoting these services had been unsuccessful and that there was a major issue of trust in these services due to the failure of the government to promote their use by citizens. Taking these issues as a starting point as well as issues identified in previous studies such as the quality, reliability, and robustness of the e-government services, this study aims at a more precise identification of factors that impact adversely on the public perception of the quality of e-services in Kuwait, particularly during the outbreak of COVID-19. This is fairly important for the State of Kuwait since the goal and direction is to have complete digital transformation by the year 2035, as envisioned in the Kuwait Development Plan 2035.

LITERATURE REVIEW

Covid-19 has impacted the labor markets globally as well, as unemployment and under employment have been witnessed throughout the world (Koch et al., 2021a). The core issue of Covid-19 seems to be amplifying because into a typology of problems “stemming from challenges surrounding infrastructure readiness, digital readiness, changing nature of deliverables, workforce demand versus supply problems and challenges surrounding job losses”.(Chakraborty & Kar, 2021a, p. 273). The need of e-government services and its associated research is getting more importance because people are hindered to operate with their full potential.

OVERVIEW OF COVID-19 PANDEMIC

The current COVID-19 pandemic is a global health crisis that has exerted severe pressure on many healthcare systems (Filimonau, 2020). In order to limit the spread of the disease, the reaction to the outbreak of COVID-19 has included the curtailment of travel, national and regional lockdowns and the closure of businesses on an unprecedented scale globally (Karatayev, 2020). The impacts of COVID-19 has transforms to various sectors, when Governments have disseminate knowledge through media that have transformed how people have took measures to cope with the virus (Kayal et al., 2022). Utilizing infection tracking programs was one of the electronic government tools employed in the pandemic control strategy. According to the research, the main barriers to the adoption of contact-

tracing applications are fears about information security, privacy and civil rights, and the efficacy of the technology. Government mistrust and worries about state agency interference only make these impacts worse. The implementation of contact-tracing technologies has been demonstrated to be hampered from a risk perception standpoint by complacency over the risk of COVID-19 and lack of information about (or poor evaluation of) how deadly the illness may be (Ross, 2021). Furthermore, social media such as Twitter played a key role in spreading misinformation, and it was necessary for governments to find digital ways to communicate with people during the ban, whether to accomplish government services or to guide them to vaccinations, etc (Sharevski, Filipino, et al., 2022). Along with these sentimental changes, the COVID-19 has proved to be having real economic challenges for both organisations and workers individually. As “there were reports of how employee layoffs and pay-cuts were gradually becoming prominent across industries based on media reports...these challenges are basically stemming from challenges surrounding infrastructure readiness, digital readiness, changing nature of deliverables, workforce demand versus supply problems and challenges surrounding job losses” (Chakraborty & Kar, 2021b, p. 273). With these challenges there are glimpse of new opportunities as literature has shown a sharp increase in work from home opportunities, that include a substantial increase in the jobs related to the information technology (Koch et al., 2021b) and also in areas where people have other skills such as diagnoses and research, which can be utilized to create services and be delivered through various online platforms. In this opportunity and challenges mix of new normal, information authenticity has become a challenge of its own. As new perceptions and engagements are forms through information overflow regarding COVID-19, its vaccination, and other associated debates (Sharevski et al., 2022).

E-GOVERNMENT

An e-government represents those services that are provided through ICT (Fang, 2002). These services help the citizens to access information and availing of various services online (Global E-Government Survey, 2008). Governments all around the globe make significant investments in digital programs to create information societies linked and involved with individuals, yet issues like low levels of sustained involvement and engagement persist (Sharma et al., 2022). Governments should consider Digital Citizen Empowerment and transparency when developing e-services as these two factors lay the groundwork for transparent and accountable government operations. Building confidence among citizens to encourage the adoption of e-services requires the enforcement of responsibility (Sharma, et al., 2022; Sharma et al. 2021). Fang (2002) explains that e-government needs to manage a proper usage of technological innovations in order to fulfil the needs of both citizens and organizations, through an easy to access. Technology automates and speeds up services, which are previously delivered to citizens in face-to-face encounters (Sabriet al., 2012). The e-governance system reduces costs, as well as improving service delivery and offers greater fairness and transparency in interactions between governments and citizens. E-government has extended benefits of supporting good governance, cost-saving, efficiency gains, improved service delivery to businesses and customers, greater transparency, fairness and fewer opportunities for corrupt activities, greater accountability and improving the quality of decision making through wider citizens participation (Sabriet al., 2012).

E-GOVERNMENT IN KUWAIT BEFORE AND DURING COVID-19

In January 2008, the Kuwait Government online project was launched, and the Kuwait official web portal (www.e.gov.kw) was one of its first products. This official portal is one single gateway that provides a 24-hour service with information and notifications of government services to citizens, expatriates, visitors, and organizations. Notifications are made online in both Arabic and English and this provides an excellent medium of communication for Kuwait Government, which is an essentially different and vastly improved system of services and information that is available to all without any

restrictions of time or place, thus constituting a remarkable innovation in public service provision. Since the establishment of Kuwait Government Online in 2008, several ministries have created their own individual dedicated websites and online services. Nevertheless, some other ministries and departments were slow to innovate either because of inner resistance or due to delays in installing the requisite infrastructure. Furthermore, the adoption of e-government services was offered on a voluntary basis and some citizens clung to the traditional modes of obtaining information and services on a more personalized basis.

In early March 2020, the Kuwaiti Government implemented a partial lockdown and closure of all public and private businesses for a period of two weeks, except organisations who were working directly with the government affiliated with food, security, health care and infrastructure. The partial lockdown is subsequently extended to a full lockdown to curtail the spread of COVID-19. The public and private sector has been adversely impacted by the outbreak of COVID-19, especially since it provides important public services to all citizens and residents. Some of public services were already available online but others, which were still in transition towards being developed online were accelerated to ensure continuity.

CHALLENGES TO E-GOVERNMENT

There are many advantages of e-government services such as easily accessible and cost-effective portfolio of online services with the added advantage of widening participation through a more informed public (El-Haija et al., 2009) greater efficiency, ease of access, enhanced services and increased transparency, high engagement with service users (Helbig et al., 2019; Rana and Dwivedi, 2015 and Zheng et al., 2009) which can lead to an increase in citizens' feelings of satisfaction with the government services (Ebrahim and Irani, 2005; Karunasena and Deng, 2012). Thus, e-government can enhance service delivery (Ngulube, 2007) transparency (Ciborra and Navarra, 2005) and reinforce citizen trust (Eyob, 2004). However, one of the foremost challenges confronting the implementation of e-government is the reality of the digital divide. Additionally, the paucity of ICT knowledge and expertise among civil servants and citizens impedes the uptake and acceptance of innovative technology (Alshehri and Drew, 2010). A major impediment to the implementation of e-government is the lack of sufficient ICT infrastructure and related technological problems, especially in the rural regions (Chenet al., 2006).

Another issue arises from government departments being poorly aligned resulting in discontinuity of service on one hand and, in other cases, wasteful repetition of the same or similar services in different departments. This lack of alignment between departments can lead to wastage of funding and the development of independent organizational systems which prove to be difficult to regulate so that they operate in a more coordinated fashion. Similar difficulties arise within organizations where the structure may be overly top-down managed so that data flow is one way rather than promoting the participation of stakeholders at all levels. These problems of poor coordination are widely reported, particularly in Central Asian countries (Brimkulov and Baryktabasov, 2018). Various research identifies the obstacles that could impede the implementation and adoption of e-government. infrastructure, security and privacy, skills, cost, organizational issues, technology, policy and strategy (Lam, 2005; Ebrahim and Irani, 2005). In addition, the investigation and examination of the variables that affect the user's point of view must be derived. Heeks (2003) notes that the inconsistencies between design and practice are one of the key factors that can contribute to the failure of e-government implementation. Which implies that, without understanding the real consumer expectations, beliefs, intentions, and desires, introducing an immersive structure would most probably contribute to a failure. Many factors and desires of targeted users also tend to be considered, which contributes to practical failure or affects service quality.

In general, it is evident that e-government programs and processes cannot be applied using a single and universal paradigm. This is because of a number of reasons, including the global, cultural, fiscal,

infrastructural, and demographic factors that should be considered in the analysis of the adoption of users as these factors are important for the perception, acceptance, adoption and application of e-Government(Mansoori et al., 2018).

E-SERVICE QUALITY

Service quality is usually considered as the extent to which a product or service meets, or even exceeds, customers' expectations (Kaczor and Kryvinska, 2013). Thus, service quality is based on meeting certain predefined standards which result in high levels of satisfaction on the part of the customer (Zeithamlet al., 1988). Accordingly, e-service quality is also defined in terms of meeting customer expectations; the difference lies in the fact that e-services do not usually involve human interactions (Pearsonet al., 2012; Afthanorhan, 2019). Simply stated, e-service quality involves meeting the expectations of end-users.

In 1992, DeLoneandMcLeanconducted a meta-analysis of information systems and success factors over the period 1981 to 1987. The analysis led to a taxonomy of systems that had been rated as successful. The researchers arranged their taxonomy of success variables across six dimensions success: system quality, information quality, use, user satisfaction, individual impact, and organizational impact. This model ofDeLone and McLean (2003) was subsequently modified by (1) the inclusion of service quality reflecting its importance in supporting the development of a proper e-commerce system; (2) the inclusion of user intention which signifies the attitude towards technology use, and (3) the combination of individual and organizational impact in the interests of greater parsimony in view of considerable overlap of constructs. These elements exert an influence on use or intention to use and user satisfaction. The net benefits to be derived from using the system impact user satisfaction and intention to continue using the system, depending on satisfaction levels. The authors welcomed other researchers to further modify their model to continue its development. In the following sections, the constructs and measures are discussed further and developments and refinements to the model are presented, taking the model as seminal. Similarly, the technology acceptance model predicts the behavior users in terms of their acceptance or resistance of innovative technology introduced into their workplace. This model was developed by Davis in 1989 and it incorporates a number of factors that were considered as being predictors of technology acceptance (Leeet al., 2003). The model emphasizes two primary factors as important predictors; the first was "perceived usefulness" which indicated the employee's expectation that the new technology would offer many benefits and so, was worthy of being accepted and being used; the second important predictor was perceived ease-of-use, which signified the employee's perception that the new technology would be user-friendly and would not require much training or instructions (Mohd-Any et al., 2015; Yuhuiet al., 2020).In more recent research, thefactors that synthesized the literature on e-government frameworks in order to quantify the quality e-government initiative include ease of use, usefulness, user satisfaction, infrastructure, website maturity, security, user trust, transparency, empowerment, operational efficiency, service quality and information quality (Singh et al., 2020).

CONCEPTUAL MODEL AND HYPOTHESIS

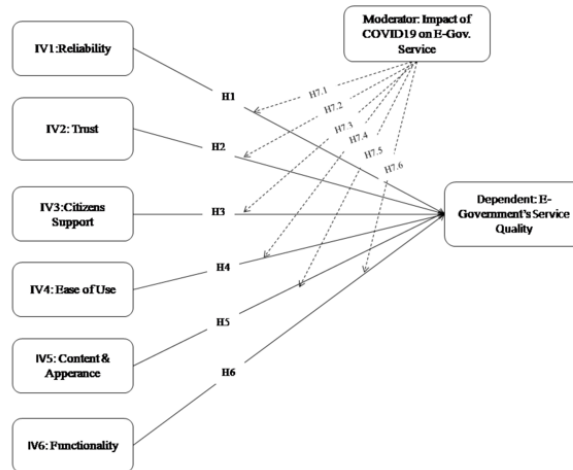
Different models evaluate the e-service quality based that varied based on variables and the relationship between dominants. Citizens' continuity of use of e-government services are studied using SERVQUAL model (Li and Shang, 2020). The SERVQUAL model incorporated a number of factors including system quality, reliability, security, information quality, service capability, interactivity and responsiveness. Each of these factors is influential for perceived service value, which acted as a mediator between the service quality factors and intentionality towards continuity of use by citizens. Although the study used one of the oldest models, SERVQUAL was still important despite the absence of certain factors such as trust, security and support which are also considered to be influential. Fan

and Yang (2015) have added a second model called the IS Success model to evaluate both online and offline government services. The findings showed that citizens who were already satisfied with offline services were open to accepting the change to online services which, in turn, enhanced their overall feelings of satisfaction with public services now being offered through e-government. Important factors included information clarity, system security and stability, interactive services and “one-stop” services, each of which was found to be influential factors affecting satisfaction levels with e-Government services. Nevertheless, offline service quality perception still had positive if not dramatic influences on public satisfaction with e-government services.

The depth and breadth of the concept is further expanded towards its acceptability with EGovQual, (Papadomichelaki and Mentzas, 2012) which incorporated factors such as ease of use, reliability, trust, content and appearance of information, citizens’ support functionality of the interacting environment, and with e-government service quality as the dependent variable (Shareef et al., 2018). The critical success factors to acceptability of e-government are perceived compatibility, perceived awareness, availability of resources, computer self-efficacy, perceived ability to use and service response (Papadomichelaki and Mentzas, 2012).

Assessing the usefulness of these various models, it was decided that the EGovQual model was most appropriate in the context of the current study mainly due to its comprehensiveness in incorporating all of the factors considered to be important predictors by most researchers. In particular, the inclusion of trust as a factor was an important influence on adopting it for the current study. Other important factors for citizens in Kuwait are included in this model; these are reliability, ease of use, content, and functionality. Figure 1 illustrates the proposed model for the present study.

Figure 1. Proposed conceptual model



The hypotheses arise from the model are:

- H1: Reliability of E-Government Service has a positive significant impact on the e-government service quality in Kuwait during the COVID-19 pandemic outbreak.
- H2: Trust in E-Government Service has a positive significant impact on the e-government service quality in Kuwait during the COVID-19 pandemic outbreak.
- H3: Citizens’ Support has a positive significant impact on the e-government service quality in Kuwait during the COVID-19 pandemic outbreak.

- H4: Ease of Use of E-Government Service has a positive significant impact on the e-government service quality in Kuwait during the COVID-19 pandemic outbreak.
- H5: Content & Appearance of Information has a positive significant impact on the e-government service quality in Kuwait during the COVID-19 pandemic outbreak.
- H6: Functionality of the interaction environment has a positive significant impact on the e-government service quality in Kuwait during the COVID-19 pandemic outbreak.
- H7: Impact of COVID-19 pandemic will moderate the relationship between EGovQual factors and the e-government service quality in Kuwait.
- H8: There are significant differences in demographics with respect to perceptions about the e-government service quality in Kuwait during COVID-19 pandemic outbreak.

RESEARCH METHODOLOGY

This study is following a deductive approach where the data is transformed into numerical values which are amenable to statistical analysis and compare the results with the previous literature (Saunders and Lewis, 2019). From the data spread point of view, cross-sectional approach is adopted which defined as snapshot of reality at a particular moment in time (Saunders and Lewis, 2019) and thus establish a regional triangulation (Creswell, 2014).

The questionnaire was consisted of closed-ended questions and the items related to the variables are measured using 5-point Likert scales, where the scales ranged from strongly disagree to strongly agree. The questionnaire also included demographic characteristics such as gender, nationality, age, education, years of experience and employment sector. These demographic characteristics provided options. The questionnaire also had introduction that has provided and aim of the research and other details related to the survey. Table 1 presents a summary of the questionnaire items used in the study.

Table 1. Questionnaire contents

Variable name	Code	No of Statements	The study
Trust in E-Government	TRU	4	(Papadomichelaki and Mentzas, 2012)
Reliability of E-Government	REL	6	
Citizens' Support of E-Government	CIT	4	
Functionality of the interaction environment	FUN	3	(Papadomichelaki and Mentzas, 2012)
Content and Appearance of information	CON	5	
Ease of use of E-Government	EOU	6	(Alomari et al., 2012)
Impact of COVID-19 Pandemic on E-Government Services use	COV	4	(Baicuet al., 2020)
E-Government Service Quality	GOV	6	(Benbasat et al., 2007)

For increasing the reliability of the instrument, initially a pilot study has been conducted for 30 respondents. There were a number of comments about the clarity of some of the statements, which were addressed in the second version of the questionnaire. The comments received from respondents helped in establishing the content validity of the research variables. Content validity is important in assessing the readability and the level of understanding of the questionnaire statements. For the collected data, reliability analysis was conducted using CronBach Alpha. A minimum acceptable value for CronBach Alpha is 0.7. All the research variables have achieved a CronBach Alpha higher than the cut-off value. Therefore, it can be concluded from the analysis of the pilot results that all the research variables are reliable. The results helped in establishing the validity of the research measures.

Also, a moderation test was conducted using SPSS. A two-step regression test was conducted, where the impacts of the independent variables on the dependent were examined in the first step, and the moderator was added to the independents' list in the second step. This test helps in determining whether adding the moderator "Impact of COVID-19 pandemic on e-government services use" will make a difference. The results show that the R-Square change is 0.05, which corresponds to 5%. In addition, the results show that the change in R-Square is significant. It can be concluded from this result that "Impact of COVID-19 pandemic on e-government services use" acts as a moderator for the pilot study results. Hence, it can be included in the research model.

It is assumed that respondents have the necessary background and experience to answer the research questions and these statements of the questionnaire are well understood by the respondents as it was clear enough to convey the meaning. The population for this research is all citizens and residents in Kuwait. The total population of Kuwait as of December 2020 was approximately 4.6 million (PACI, 2020). The minimum sample size for validity was calculated to be 387 respondents. The sample is considered sufficient as many previous studies have sampling around this number. and thus this sample strategy is justified based on the convention as the studies have been used in this research. As for example (Kayal et al., 2022) have used 315 respondents, while studying the Saudi Government utilisation of various media in dissemination knowledge during COVID-19. The study has adopted a more cautious approached and managed to have a sample larger than those normally used in the literature (Kayal et al., 2022). This strategy is also inline with historically more popular thought of having more efficient samples (Krejcie & Morgan, 1970) so that a study achieve more effective outputs through the available resources and still have more generalisable findings.

The data is collected from the respondents who used the e-government services in Kuwait, through links sent through social media applications that including WhatsApp and Facebook. The data collection is completed from 26 February until the 11th of March 2021. A total of 392 responses were collected. The margin of error is maintained at 5%, with response distribution at 50% and confidence level at 95%. A questionnaire was prepared in both English and Arabic languages and distributed to the population as a soft and anonymity is assured.

The analysis is performed to first confirm the reliability and robustness of the statements of the survey. Next a descriptive analysis is conducted, which helped in to gain a better understanding of the responses. Finally, a correlation analysis and path analysis provided at SmartPLS v. 3.3 and SPSS v. 23 were used to test the research hypotheses. SmartPLS v. 3.3 was used to examine the research model. All the hypotheses are tested using a confidence level of 95%.

RESEARCH FINDINGS

Demographics and Descriptive Analysis

Males represent 31% of the respondents while Females represent 69%. The majority of the respondents are Kuwaitis with 67% and 33% for non-Kuwaitis. By examining age distribution, the respondents that are above the age of 40 years old represent almost one-quarter of the data (22.7%) while respondents that are between 31-35 years represent 21.7% of the collected data. In addition, 36-40 years old

are represented by 17.6% and the smallest percentage are those that are 21-25 years old. Overall, it is noticed that there is a close distribution among the 5 categories of age. It is shown that the vast majority of the respondents have a university degree (73.7%). It is also interesting to note that respondents with less than 5 years are the largest category represented with 32.7%. For this research purpose, it is important to gauge the responses of those working in the public sector as they might utilize and use the e-government services more than those working in the private sector. 71% of the respondents stated that they have used the e-government services before while 29% did not use it but plan to use it in the future.

Table 2 shows the descriptive analysis to capture the main features of the data collected for the study. The Impact of COVID-19 on E-Government services had the highest mean value with 3.90 and a standard deviation of 0.790. Moreover, the second highest mean value was recorded for Trust as 3.54.

Table 2. Descriptive analysis for variables

Construct	Minimum	Maximum	Mean	Std. Deviation
Trust	1.25	5.00	3.5415	.75417
Reliability	1.00	5.00	3.1531	.90110
Citizen Support	1.00	5.00	2.7959	.94770
Functionality of the interaction environment	1.00	5.00	2.8776	.96561
Content and Appearance of Information	1.00	5.00	3.1639	.89529
Ease of Use	1.00	5.00	3.0595	.91233
Impact of COVID-19 on E-Government services	1.00	5.00	3.9050	.79061
E-Government Service Quality	1.00	5.00	3.2730	.93864

MEASUREMENT MODEL AND ITS EVALUATION

The measurement model is based on the variables in the conceptual model, where the independent variables are Trust, Reliability, Citizen Support, Ease of Use, Content and Appearance of Information, and Functionality of the interaction environment. Convergent validity is carried out, which helps in determining whether the statements of a particular variable hold similar meaning to represent the variable (Hair et al., 2021), while Composite reliability is a test that is used to examine the consistency of the statements representing a variable. For checking convergent validity and reliability, the Average Variable Extracted (AVE) and composite reliability was examined. The minimum accepted value for AVE and CR is 0.5 and 0.7 respectively (Hair et al., 2021). As indicated in the results (Table 3), all the research variables have an AVE value of 0.5 or higher and CR more than 0.7. Therefore, convergent validity reliability is established for the research variables.

Table 3. Average variance extracted and reliability results for variables

Variables	AVE	Composite Reliability	Result
Trust	0.593	0.853	Strong
Reliability	0.618	0.906	Strong
Citizens Support	0.743	0.920	Strong
Ease of Use	0.665	0.922	Strong
Content and Appearance of Information	0.713	0.881	Strong
Functionality of the interaction environment	0.689	0.898	Strong
E-Government Service Quality	0.641	0.925	Strong

Discriminant validity is another important test, which helped in confirming the uniqueness of the research variables and that association between the statements with the variables. The cross-loading test is performed to check for discriminant validity (Hair et al., 2021). Table 4 presents the cross-loading results. The association of each statement with a variable can be determined, which is done by looking at the loading values for each row, when there is a high loading value in a row, it indicates that these statements belong to the same variable in the column. In conclusion, the discriminant validity is established, as per the results in Table 4.

Table 4. Cross loadings of the statements

	Trust	Reliability	Citizens Support	Ease of Use	Functionality of the interaction environment	Content and Appearance of Information	E-Government Service Quality	Impact of COVID-19 on E-Gov Service
TRU1	0.757	0.400	0.378	0.397	0.359	0.348	0.452	0.414
TRU2	0.711	0.284	0.306	0.313	0.267	0.347	0.353	0.270
TRU3	0.847	0.454	0.413	0.503	0.426	0.534	0.541	0.435
TRU4	0.759	0.596	0.503	0.535	0.505	0.546	0.574	0.539
REL1	0.448	0.760	0.460	0.553	0.528	0.521	0.549	0.483
REL2	0.458	0.824	0.595	0.650	0.568	0.624	0.634	0.516
REL3	0.535	0.845	0.633	0.727	0.616	0.656	0.722	0.583
REL4	0.383	0.623	0.345	0.439	0.417	0.397	0.434	0.338
REL5	0.500	0.818	0.501	0.652	0.586	0.597	0.645	0.554
REL6	0.418	0.826	0.586	0.668	0.567	0.583	0.626	0.565
CIT1	0.448	0.482	0.802	0.476	0.561	0.493	0.490	0.353
CIT2	0.493	0.663	0.905	0.658	0.717	0.670	0.668	0.501
CIT3	0.385	0.509	0.855	0.577	0.611	0.597	0.525	0.299
CIT4	0.498	0.636	0.883	0.634	0.716	0.636	0.629	0.443
EOU1	0.491	0.687	0.536	0.842	0.619	0.685	0.691	0.588
EOU2	0.496	0.713	0.671	0.859	0.628	0.736	0.686	0.528
EOU3	0.474	0.650	0.579	0.885	0.616	0.708	0.668	0.548
EOU4	0.494	0.575	0.591	0.763	0.638	0.583	0.591	0.380

Table 4 continued on next page

Table 4 continued

	Trust	Reliability	Citizens Support	Ease of Use	Functionality of the interaction environment	Content and Appearance of Information	E-Government Service Quality	Impact of COVID-19 on E-Gov Service
EOU5	0.411	0.573	0.413	0.734	0.488	0.530	0.559	0.436
EOU6	0.490	0.663	0.555	0.800	0.596	0.620	0.688	0.624
CON1	0.541	0.688	0.640	0.743	0.668	0.874	0.714	0.505
CON2	0.508	0.623	0.621	0.655	0.564	0.879	0.644	0.447
CON3	0.512	0.596	0.518	0.642	0.562	0.828	0.638	0.497
CON4	0.398	0.482	0.543	0.585	0.532	0.732	0.549	0.322
FUN1	0.496	0.645	0.721	0.659	0.894	0.647	0.668	0.461
FUN2	0.365	0.436	0.559	0.484	0.771	0.463	0.472	0.360
FUN3	0.448	0.664	0.637	0.691	0.863	0.647	0.638	0.534
GOV1	0.561	0.714	0.586	0.731	0.629	0.657	0.895	0.768
GOV2	0.600	0.653	0.598	0.732	0.673	0.707	0.874	0.678
GOV3	0.504	0.653	0.682	0.663	0.606	0.672	0.754	0.494
GOV4	0.344	0.497	0.354	0.454	0.379	0.439	0.666	0.615
GOV5	0.446	0.459	0.315	0.474	0.382	0.443	0.656	0.648
GOV6	0.555	0.631	0.583	0.660	0.549	0.663	0.863	0.634
GOV7	0.536	0.698	0.627	0.696	0.706	0.686	0.859	0.633

STRUCTURAL MODEL

The Structural Model was analysed using Smartpls v. 3.3 software. Structural Equation Modelling (SEM) is a well-known statistical method that allows researchers to examine relationships simultaneously, especially, when there are many independent variables that have relationships with dependent variables and mediators or moderators (Ullman and Bentler, 2003). Bootstrapping technique with 1000 samples is used to determine the significance of the relationships. Results are seen in Table5.

Table 5. Hypotheses results

Hypothesis	relationship	Path Coefficient	StandardDeviation	T Statistics	P Values	Result
H1	Reliability -> E-Government Service Quality	0.043	0.033	1.309	0.191	Not Supported
H2	Trust -> E-Government Service Quality	0.112	0.039	2.889	0.004	Supported
H3	Citizens Support -> E-Government Service Quality	0.073	0.035	2.065	0.039	Supported
H4	Ease of Use -> E-Government Service Quality	0.124	0.050	2.458	0.014	Supported
H5	Content and Appearance of Information -> E-Government Service Quality	0.053	0.042	1.247	0.213	Not Supported
H6	Functionality of the interaction environment -> E-Government Service Quality	0.254	0.047	5.377	0.000	Supported
H7	Moderating Effect - Reliability -> E-Government Service Quality	0.102	0.035	2.908	0.004	Supported
	Moderating Effect -Trust -> E-Government Service Quality	-0.083	0.037	2.250	0.025	Supported
	Moderating Effect - Citizen Support -> E-Government Service Quality	0.066	0.032	2.033	0.042	Supported
	Moderating Effect - Ease of Use -> E-Government Service Quality	-0.106	0.055	1.924	0.055	Not Supported
	Moderating Effect - Content and Appearance of Information -> E-Government Service Quality	-0.007	0.057	0.117	0.907	Not Supported
	Moderating Effect - Functionality of the interaction environment -> E-Government Service Quality	0.064	0.036	1.808	0.071	Not Supported

This test examined the moderation effect of the Impact of COVID-19 on E-Government Services. The results (Table 5) show that there is a moderation effect for the relationship between reliability, trust, and citizen's support with E-Government Service Quality. With respect to Ease of Use of the e-government service, Content and Appearance of Information on the e-government service and Functionality of the interaction environment of the e-government, results show that the Impact of COVID-19 does not have a significant moderating effect. Therefore, Hypothesis H7 is supported for reliability, trust, and citizen's support, and it is not supported for Ease of Use of the e-government service, Content and Appearance of Information on the e-government service and Functionality of the interaction environment of the e-government.

DISCUSSION

Theoretical Implications

With respect to trust in e-government services, results have shown that it has a significant positive impact on e-government service quality. Trust is an important component in building a healthy relationship and allows citizens to have faith in e-government services. This confirms the findings of Papadomichelaki and Mentzas (2012), which showed that trust has a positive influence on e-government service quality. These findings have implications for micro theory of how trust and service quality coexists. When government services are experienced well, then such experiences enhance the very quality perception of the services that citizens receive now and in the future (Berg et al., 2020). It is

because, when people have memorable experiences can develop a confidence and trust as mental construction and expectation of receiving quality service in future too.

In addition of trust, the citizen's support is also found significant impact on government service quality. This implies that it is important to have employees of e-government present to show support when needed to citizens using the e-government services to conduct their daily transactions. This confirms the findings of Papadomichelaki and Mentzas (2012), which determined the existence of a positive and significant relationship between citizen's support and e-government service quality. This cooperation is expected to have implications for the literature, when the services are expected to be co-created and the value is realised (Hilton et al., 2012).

For ease of use, the impact is significant on e-government service quality. Ease of use was determined by various studies such as the one from Papadomichelaki and Mentzas (2012) as supporting and encouraging individuals to use the e-government services. This confirms the findings of Ritz and Waldner (2011), which showed a positive and significant relationship exists between Job Security and Public Sector Attractiveness. Ease of use is important construct that facilitate quick adoption of services (Nayanajith et al., 2019) and thus study further this adoption debate into the Government services and thus improve the originality of onward research.

Results show that Content and Appearance of Information did not have a significant influence on e-government service quality. This implies that citizens in Kuwait do not really care about how the e-government portal is structured and how the information is displayed, as long as it performs the required functionality and assists citizens in completing their transactions online. During the pandemic, it is not important for the users the appearance of information as much as the functionalities that allow them to complete their requests and this contradicts the findings of Papadomichelaki and Mentzas (2012), which determined the existence of a positive relationship between Content and Appearance of Information and e-government service quality.

For Functionality of the interaction environment, results show that it has a significant positive influence on e-government service quality. This implies that citizens care about the functionality of the e-government portal and that it allows them to conduct all the transactions and processes that they need. This confirms the findings of Papadomichelaki and Mentzas (2012), which determined the existence of a positive relationship between the Functionality of the interaction environment and e-government service quality.

The moderating effect of the impact of COVID-19 on the relationship between the independent variables and e-government service quality was examined. Results show that impact of COVID-19 moderates the relationship for reliability, trust and citizen's support and do not moderate the relationship for Ease of Use of the e-government service, Content and Appearance of Information on the e-government service and Functionality of the interaction environment of the e-government. During the COVID-19 pandemic, people are interested to conduct all their transactions online without the need for a physical visit to the ministry. When the e-government is reliable and trustworthy, people will be encouraged more during the COVID-19 to conduct their transactions, which allows them to comply with the social distancing rules. Also, providing complete support to citizens during COVID-19 and allowing them to communicate with e-government employees to enquire about the procedures and processes of the e-government helps in encouraging the citizens to use the e-government services and, in turn, positively influence the e-government service quality. On the other hand, the results show that the Impact of COVID-19 does not have a significant moderating effect on users' perceptions of Ease of Use, Content and Appearance of Information and Functionality of the interaction environment of the e-government. However, a non-significant finding would indicate that there is support for the null hypothesis but not for a theory that expected a difference (or relationship). The outbreak of COVID-19 has caused much stress to people throughout the world, resulting in mental ill-health caused by social distancing and isolation, loss of loved ones who contracted the virus and were unable to survive it. People's patterns of life, social interaction, education and recreation have also been seriously impacted. For many, their livelihoods have been interrupted causing them serious financial difficulties (Blustein

et al., 2020). Yet, the number one factor with the highest mean value was the impact of COVID 19 on E-Government services. This indicates that users acknowledge the role of COVID 19 and how it affected their way of conducting their e-government services. The results show that reliability does not have a significant influence on e-government service quality. This implies that users do not care whether the e-government portal is reliable or not in determining their perceptions towards e-government service quality. It is also noticed that functionality of the interaction environment and Citizen support were the factors that had the least mean value for almost all users of e-government services. This implies that users in Kuwait believed that other factors were much important than these two factors during the pandemic. Which calls for attention to the importance of future research to measure these hypotheses after the end of the pandemic

Results show that females had higher perceptions of the e-government service quality than males. This can imply that females use e-government services and appreciate the quality of the services offered. For nationality, there were no differences between Kuwaitis and Non-Kuwaitis. Moreover, results have shown that employees in the public sector had higher perceptions of the e-government service quality than employees in the private sector. This implies that public sector employees see that the e-government services of high quality. This might also be attributed to the fact that employees of the private sector have and use systems that are more advanced than the e-government platform provides, and they did not have high opinions about the quality of the e-government services. Results also show that respondents that are 36 years and older have higher perceptions of E-Government Service Quality than respondents that are between 21-26 years old and respondents that are between 26-30 years old. With respect to education, results show that respondents that have a diploma, a university degree or a post-graduate degree hold higher perceptions of E-Government Service Quality than those with a high school degree. Finally, results show that respondents that have at least 6 years or more of experience demonstrate higher perceptions of E-Government Service Quality than respondents with 1-5 years of experience.

In addition to the hypotheses supported, the study does not have sufficient evidence to support if reliability and content and appearance of information do have any significant impact on the e-government service quality. This seems to be the users being more substantially focused on the service itself compared to the reliability of its method and any content used for it. This also makes more sense, in the context when the not sufficient evidence found for the moderating effects of each of use, content and appearance of information and functionality of the interaction environment. It has practical implications, the service quality of e-government be more concentrated into the intangible service elements such as trust and citizens support, whereas the elements related to the apparatus will be catching up by the users at large. The findings also have implications for the background and abstract models such as the SERVQUAL model (Li and Shang, 2020). This study has supported more socially centric elements of the model and therefore, acceptance an e-government model by a bigger concern than the media for it.

PRACTICAL IMPLICATIONS

The analysis was made on the differences between those that use e-government services and how they evaluate the factors for each e-government portal. A total of 13 portals were examined, which is based on the responses collected about the e-government service that they use the most. The number one factor with the highest mean value was the impact of COVID-19 on E-Government services. This indicates that users acknowledge the role of COVID-19 and how it affected their way of conducting their e-government services.

In Kuwait, e-government services were provided by many ministries and authorities before COVID-19. However, it was not-fully utilized by the citizens. After COVID-19 and the partial and full lockdown imposed, citizens started to use the e-government services more frequently. Despite this move, some of the e-government services were not mature enough and not up to the expectations

of the citizens. There was no previous study that addressed the gap in examining the e-government service quality in Kuwait during the time of COVID-19. Therefore, this study employed the EGovQual model in order to examine the service quality of the e-government.

More importantly, the notion of Covid-19 in relation to Government services is more critical for making public service policies that are more co-created and thus be understood as of good quality through timely received information from the Government. Therefore, it is important to create futuristic and adapted EGovQual models that incorporate factors related to traumas like the Covid-19. This research provides a baseline for further developing of the policies and associated research for developing postcovid-19 e-Government policies. The hypothesis related to reliability of the system and content and appearance of information are not supported, thus implies to allocate more attention to the trust and facilitation of citizens and ease of use. These are more user centric concerns and therefore would need more in-depth engagement of the users for the e-government to achieve a service quality.

CONCLUSION

COVID-19 pandemic has created an everlasting impact all over the world on various aspects of life such as social, economic, and political. Due to the lockdown that took place in many countries around the world, people started to adapt to a new way of life. Many lives and jobs were lost during the crisis. In addition, the pandemic created unfortunately a significant financial impact on the world as whole. The pandemic is considered to be one of the worst ever that humanity has seen. In this regard, the role of Government is significant in terms of adapting their services and its quality for a better fit in the new context. In this respect, the study suggests future research opportunities. Firstly, a qualitative study can be conducted to examine the opinions of government officials and some of the citizens on their thoughts about e-government services. This will allow for acquiring very deep thoughts and ideas about the factors that influence e-government service quality, which might be more than what the EGovQual is offered. Secondly, a study can be conducted to examine and make a comparison between the various service quality models and determine the differences/similarities between the models. Thirdly, a study can be conducted to examine the differences between the various e-government portals though selecting a number of the most used e-government portals. a similar study can be conducted in different Gulf Council Cooperation (GCC) countries and then compare between the GCC countries and exchange the findings and experiences.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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