

A Proposed Model of Trust Factors for E-government Adoption and Civic Engagement

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Abstract

This study aims to explore trust factors affecting the use and adoption of e-government services and its impact on civic engagement. The constructs identified in this study are related to theories of technology adoption in addition to trust constructs: trust in government, trust in technology, and trust in e-government. The study attempts to propose a model and validate it in the context of a developing country. As this study is exploratory in nature, a questionnaire survey is undertaken using a small sample of 137 participants. The findings show the validity and the reliability of the constructs which are positively correlated with each other. The findings of general Linear model analysis propose a model of trust factors that have significant relationships with the adoption of e-government services and leading to civic engagement.

1. Introduction

During the past decades, public trust in government has been declining due to administrative, political and economic causes, such as administrative corruption, inefficiency and ineffectiveness of government, political scandals, and policy failures. This has had an impact on public participation in governments which has also declined to some extent. Also, citizens have been isolated from community life and their ability to articulate demands for good government that ensures quality of life has noticeably decreased [35]. However, West [51] and Lollar [33] projected that e-government and its use help bring about positive change in citizens' beliefs about government effectiveness and re-build citizens' trust in government. The use of Information and Communication Technology (ICT) in governments has introduced new forms of interaction that could enhance different types of relationships, including a government-public relationship where information is shared and exchanged [34], [50]. Therefore, local, regional, and national governments around the world

provide access to ICT solutions to offer effective government information and services, to achieve economic and social development, and to enable social inclusion [9]. E-government projects have introduced several opportunities for online interaction, which subsequently empower citizens at various levels, such as: information accessibility, political participation, influencing government decisions, linking groups to the broader community, and making governments more accountable to their citizens [9]; [7]; [2].

There is a growing body of literature that focuses on e-government and user engagement [15], [27], [24], that has contributed greatly in developing an understanding of the impact of ICT on civic engagement [30]. Other researchers have indicated that some political behaviours have linked trust and civic engagement [38]; [43] that such linkage is complex and trust is the "magic elixir for civic engagement" [43]. However, the literature has little explanation on the relationships between building trust in e-governments, the adoption and use to e-government and civic engagement. Moreover, to the best of researcher's knowledge, studies on such relationships in developing countries, specifically the Middle East countries, are either non-existent or insufficient. Therefore, this study uses Kuwait as an example of a developing country in this context and is expected to propose a model for the adoption of e-government services through trust constructs (technology, government, and e-government), civic engagement and other related factor.

The paper is organized as follows: first, the study background is presented. Next, the academic literature on the adoption of e-government is reviewed. Then, the research model is proposed and the methodology used is described. This is followed by the presentation of the findings. Finally, the discussion and conclusions are presented.

2. Study background

Kuwait has adopted e-government since 2000 to improve government's performance and to promote

efficiency and transparency [4]. A lot of efforts are devoted for the improvement of e-government in Kuwait to present government information and services needed by the public [32]. Although many government organizations and ministries have produced government information and offered services online using ICT tools, such as websites and social media networks, the adoption of such e-government is still limited. This is confirmed by report of Transparency International [42] which ranked Kuwait 55 out of 168 countries around the world in Corruption Perceptions Index for 2015; indicating that the government in Kuwait is not revealing adequate information, practicing transparency appropriately, and or sufficiently including the public.

Several studies have discussed the e-government in Kuwait from different perspectives, such as its adoption [4]; [6]; [5]; however, little is known about trust perceptions of the public with regard to e-government which lead to civic engagement. This limitation in the literature has commended to conduct this study to minimize the gap by attempting to explore public perceptions towards trust in the adoption of e-government information and services to achieve civic engagement.

3. Literature review

The literature has discussed the important role of web technology use in governments that redefine government–public relationships where trust in government is re-built, citizens become able to express their views and become more engaged with their governments [28]; [31]; [29]. Civic engagement is considered a positive force that enhances social trust, norms, and values [23]. It could be a “bit of everything”: political participation, volunteering, community services, and social networks and interpersonal trust to associational involvement [1], [39], [10], [19]. The social capital literature found that civic engagement not only stems from trust but also can lead to greater trust [19]. Putnam confirms [38] the relationship between civic engagement and trust, however it is complex. Also, Brehm and Rahn [12] found a linkage between civic engagement and trust.

Many studies provide evidence that trust is an important factor in the acceptance and adoption of e-government services [14]. Trust has been defined as “a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another” [41, p.395]. Several researchers found that the use of e-government services is correlated with the trust in government; for example: [13]; [36]; [48]; [51]. Other researchers, conversely,

found that trust in government is not necessary for using of e-government services; for example: [25].

Scholars have also explored the relationship between citizens’ use of e-government services and their trust in technology. A study investigating the relation between trust and e-government [16] found that citizens with higher perceptions of technological and organizational trustworthiness, have higher trust in e-government. Users with positive experience of the technology and satisfactory use of the services are more likely to develop a positive attitude and thus adopt online services than those with a negative experience [45]. Internet business is linked to Internet experience that novice users are less likely to conduct business online than experienced users [22]. Also, security and reliability of e-services are the most important dimensions that, if experienced, will incline customers to report a positive experience of e-services [45]. Similarly, Dutton and Shepherd [18] found that trust in the Internet will shape the future of online services. Such trust is undermined by negative experiences that increase the risk entailed using the Internet, such as computer viruses.

Once citizens’ adoption of e-government services is achieved, it will have an impact on their engagement as it is associated with the successful e-government and its sustainability [15], [27]. Gil de Zúñiga et al. [24] found that individuals are more likely to display political behavior and engage in civic life in both online and offline conversations. Several researchers found that civic engagement is significantly related with the participation in the political process of government (e.g., [8]; [21]; [44]). Moreover, the use of available e-government information and services and interaction platforms with government allow direct contact and interaction with governments, thereby promoting transparency, participation, and collaboration [26]; [11]. However, Jaeger and Bertot [26] argued that the use of new technologies might marginalize disadvantaged people that do not have access to the Internet.

To sum up, the review of the literature identifies trust in government and technology as factors significant in the adoption of e-government. Moreover, the use of e-government positively impacts on civic engagement which has a linkage with trust.

4. Research model

Extensive literature has discussed the acceptance and adoption of e-government services using adoption theories, such as theory of reasoned action (TRA) [20], technology acceptance model (TAM) [17], theory of planned behavior (TPB) [3], and unified theory of acceptance and use of technology (UTAUT) [46]. Such

empirical studies have identified numerous factors related to e-government adoption, such as perceived usefulness, perceived ease of use, subjective norms, intention to use and attitude behavior. However, other important factors relating to trust and culture have little been considered with adoption theories, such as [40] and [47]. Thus, based on the literature review, this study will focus on trust as an important factor related to the adoption of e-government. Other factors that enhance trust in e-government services are also considered. The following factors are identified and expected to be significantly correlated with the adoption e-government services and have positive impact on civic engagement:

- Trust in e-government (TEG) is mainly related to trust in technology (TT) and government (TG). This trust leads to higher intentions to use e-government (IU) services.
- Perceived usefulness (PU) of e-government services is also important for enhancing trust in e-government and increase citizens' intention behavior.
- Once e-government services are adopted and used, this means that citizens become able to interact and engage with government, and thereby achieving civic engagement (CE).

Table 1 presents the constructs used in the study and the related statements which have been modified to reflect the context of the study.

Table1. Research constructs

Constructs	Statements	Sources
Trust in Government (TG)	I trust government agencies.	Colesca (2009)
	Government agencies keep my best interests in mind.	
	In my opinion, government agencies are trustworthy.	
	The trust in a governmental agency increase once with its reputation	
Trust in Technology (TT)	Technologies supporting the system (such as enquiring about traffic violations) are reliable all the time.	Colesca (2009)
	Technologies supporting the system are secure all the time.	
	The technology used by government agencies is trustworthy.	
	Overall, I have confidence in the technology used by government agencies to operate the e-government services.	
Trust on e-Government (TEG)	E-government services are useful for me.	Colesca (2009)
	I believe that e-government services are trustworthy.	
	I believe that e-government services will not act in a way that	

	harms me.	
	I trust e-government services.	
Civic Engagement (CE)	The use of e-government information and services makes me willing to interact with government officials.	Pavlou (2003)
	The use of e-government information and services enables me to communicate my ideas to government	
	The use of e-government information and services makes it easier for me to attend government public meeting to discuss government performance	
	The use of e-government information and services makes government officials accountable.	
Intention to Use (IU)	I am intending to use e-government information to conduct my business with government.	Kalu & Remkus (2010)
	Most probably that I will continue to use the e-government information	
	I am planning to continue to use the e-government services in the future.	
	I will use the e-government information if it is handy and available.	
Perceived Usefulness (PU)	Using e-government helps me greatly in doing my work.	Pavlou (2003)
	Using e-government enhance my performance.	
	Using e-government improves performance quality.	
	Using e-government facilitates knowledge challenges.	

This exploratory study attempts to validate the proposed model through finding out factors affecting the adoption of e-government services for civic engagement. The following hypotheses are suggested:

- H1:* There is significant relationship between trust in government and trust in e-government.
- H2:* There is significant relationship between trust in technology and trust in e-government.
- H3a:* There is significant relationship between trust in e-government and intention to use.
- H3b:* There is significant relationship between trust in e-government and civic engagement.
- H4a:* There is significant relationship between perceived usefulness and trust in e-government
- H4b:* There is significant relationship between perceived usefulness and intention to use e-government services.
- H4c:* There is significant relationship between perceived usefulness and civic engagement.

5. Methodology

This study is exploratory in nature. It seeks to identify factors that have significant relationships on the intention to use e-government. Also, it examines the interaction of these factors on the intention of use and its impact on civic engagement.

5.1. Sampling

The questionnaire was administered to individuals in Kuwait aged 18 years old and above, as they are eligible to use e-government services. Due to the explanatory nature of the current study, the researcher adopted a non-probability, convenience sampling method which targeted a small number of participants. The questionnaire was distributed online among individuals in Kuwait society using email and social media networks and 137 responses were received.

5.2. Survey instrument

The study has employed the quantitative data-collection approach using a questionnaire survey method. The survey tool was purposively designed in a clear and straightforward way, using a simple language as it targets various groups in the community with different educational, cultural, and social backgrounds. The questionnaire is divided into two main sections: the first section assembles demographic information of respondents and their internet proficiency; the second section is related to the identified research constructs where respondents should give their opinions using a Likert scale ranging from 1 “strongly disagree” to 5 “strongly agree”.

The questionnaire was first designed in English and then translated into Arabic, the spoken language in Kuwait. This gives everyone residing in Kuwait the opportunity to participate in the study. To ensure the validity and reliability of the questionnaire, a panel made up of two faculty members from the Information Studies Department and one statistician revised the survey for any errors or ambiguities. All corrections and changes suggested by the panel were taken into consideration. Moreover, a pilot study was undertaken using 50 participants to evaluate the feasibility of the questionnaire statements. The 50 questionnaire responses were statistically analysed and the suggested changes were made to ensure better clarity of statements.

6. Results

In this section, data extracted from questionnaire responses are analyzed using SPSS and the results are reported as follows.

6.1. Sample demographic characteristics

The sample was 21.2% males and 78.8% females, most respondents (76.5%) were aged 30 and above, and 48.2% had undergraduate degrees. The majority of respondents (92.7%) were Kuwaiti nationals and 67.2% had excellent Internet skills, as shown in Table 2.

Table 2. Demographic characteristics of the research sample

Demographics		Frequency	Percent
Gender	Male	29	21.2%
	Female	108	78.8%
Age	20-25	5	5.6%
	26 -30	13	14.6%
	31 -35	19	21.3%
	36 - 40	12	13.5%
	40 – above	39	43.8%
Education	High School	11	8%
	Diploma	29	21.2%
	University Degree	66	48.2%
	Graduate Degree	31	22.6%
Internet Skills	Poor	2	1.5%
	Good	43	31.4%
	Excellent	92	67.2%
Nationality	Kuwaiti	127	92.7%
	Non-Kuwaiti	10	7.3%

6.2. Validity and reliability of constructs

Since this study is exploratory, exploratory factor analysis was employed for the validity and reliability of the research construct items. Table 3 presents the result of the factor analysis for data reduction. As shown in the Table, the reliabilities of the constructs are high ($\geq 86\%$) of the Cronbach alpha coefficient, which proves high internal consistency between instruments for each construct. It is also clear that the explained variance is larger than 78%, which indicates an excellent goodness of fit of the model and valid constructs. Factor loadings, which are greater than 50%, reflect the degree of association between instruments and the construct it measures. Once each construct and its instruments are identified, we express each construct as a weight average. These averages will be used to model the relationship between Civic engagement (CE) as dependent variable, and a set of predictors including: Trust in government (TG), Trust in technology (TT), Trust in e-government (TEG), Intention to use e-government (IU), and Perceived usefulness of e-government (PU). We also consider the

interaction effects of trust in government, trust in technology, and perceived usefulness in the model.

Table 3. Exploratory factor analysis: Factor loadings, explained variance, reliability coefficient and means of research constructs

Constructs	Reliability Cronbach alpha coefficient	Explained Variance	Factor loadings	Mean
TG	91.6%	85.64%		2.46
TG1			.903	2.72
TG3			.932	2.39
TG4			.940	2.27
TT	93.3%	88.26%		3.19
TT2			.941	3.27
TT3			.969	3.20
TT4			.908	3.10
TEG	86%	78.14%		3.58
TEg1			.889	3.82
TEg2			.875	3.26
TEg4			.887	3.68
CE	94.7%	90.46%		2.30
CE1			.953	2.36
CE2			.957	2.30
CE3			.943	2.25
IU	95.4%	91.6%		3.64
IU1			.940	3.58
IU2			.966	3.64
IU3			.965	3.70
PU	91.5%	85.43%		3.17
PU1			.893	3.09
PU3			.936	3.26
PU4			.942	3.17

6.3. Research construct correlations

The correlation is a measure of association between two variables. It shows by its magnitude the strength of the relationship, whether it is strong, weak, or no association. In addition, its sign indicates the direction of the relationship, whether it is positive or negative, where $r = -1 \leq r \leq 1$. As shown in the Table 4, trust in government has strong positive and significant correlation with trust in technology ($r = 0.699, p - value, 0.000$), strong positive and significant correlation with trust in e-government ($r = 0.560, p - value = 0.000$), weak positive but significant correlation with civic engagement ($r = 0.388, p - value = 0.000$), strong positive and significant correlation with intention to use e-government services ($r = 0.522, p - value = 0.000$), and finally weak positive but significant correlation with usefulness ($r = 0.456, p - value = 0.000$). Trust in technology has strong positive and significant

correlation with trust in e-government ($r = 0.788, p - value = 0.000$), weak positive and significant correlation with civic engagement ($r = 0.388, p - value = 0.000$), strong positive and significant correlation with intention to use e-government services ($r = 0.667, p - value = 0.000$), and strong positive and significant correlation with usefulness ($r = 0.634, p - value = 0.000$). Trust in e-government has weak positive but significant correlation with civic engagement ($r = 0.425, p - value = 0.000$), strong positive and significant correlation with intention to use e-government services ($r = 0.801, p - value = 0.000$), and also a strong positive and significant correlation with usefulness ($r = 0.734, p - value = 0.000$). Civic engagement has weak positive and significant correlation with the intention to use e-government ($r = 0.423, p - value = 0.000$), and strong positive and significant correlation with usefulness ($r = 0.509, p - value = 0.000$). Finally, the intention to use e-government has strong positive and significant correlation with perceived usefulness of using e-government ($r = 0.710, p - value = 0.000$).

Table 4. Correlation between research constructs

Constructs	Statistics	TG	TT	TEG	SI	IU
TG	Pearson Correlation	1				
TT	Pearson Correlation	.699**	1			
TEG	Pearson Correlation	.560**	.788**	1		
CE	Pearson Correlation	.388**	.388**	.425**	1	
IU	Pearson Correlation	.522**	.667**	.801**	.423**	1
PU	Pearson Correlation	.456**	.634**	.734**	.509**	.710**

Note: ** $p < 0.001$

The study also investigated the effects of demographic characteristics on research constructs. Several non-parametric tests were run against gender, age group, education, Internet skills, and nationality; however, no significant relationships were found between demographics and research constructs. This could be due to the small number of the sample and significant relationships could be found when a larger sample is used in future research.

6.4. Building research model

The General Linear Model (GLM) is a univariate procedure, which provides regression analysis and

analysis of variance for one dependent variable by one or more variables, was also conducted in this exploratory study. This procedure can test the effects of variables on a single dependent variable and can investigate interactions between variables as well as the effects of individual variables, some of which may be random. We tested the effect of trust in government, trust in technology and, perceived usefulness, and their interactions on trust in e-government. Table 5 provides the measures of goodness of fit of the model using stepwise regression, and the factors standardized scores (obtained from factor analysis) to eliminate the possibility of multicollinearity between constructs. As shown in Table 5 the model is adequate (p -value= 0.000), and the coefficient of determination is 72.3%.

Table 5. Analysis of variance test. Dependent variable: Trust in E-government

Model	Sum of Squares	df.	Mean Square	F-value	P-value
Regression	98.322	3	32.774	115.689	.000 ^d
Residual	37.678	133	.283		
Total	136.000	136			

The results in Table 6 show that the only variables having direct effect on trust in e-government are trust in technology, having 53.7% direct positive and significant effect (p -value= 0.000), perceived usefulness with 37.6% direct positive and significant effect (p -value= 0.000), and their interaction effect which has a negative (-10.7%) significant effect (p -value=0.22) on trust in e-government. It is also evident that no indication of multicollinearity problems between variables, the variance inflation factor is ($VIF < 2$).

The direct effects of trust in government, trust in technology, perceived usefulness and their interactions, trust in e-government, on intention to use e-government are also investigated. The results of the analysis of variance test (ANOVA) presented in Table 7 indicate that the model is adequate (p -value =0.000) with coefficient of determination $R^2 = 67.5\%$.

Table 6. The Coefficients: Dependent Variable: Trust in E-government

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.060	.052		1.139	.257		
Trust in Technology (TT)	.537	.059	.537	9.079	.000	.596	1.677
Perceived usefulness (PU)	.376	.060	.376	6.318	.000	.588	1.700
TT X PU	-.094	.041	-.107	-2.313	.022	.974	1.027

Table 7. Analysis of variance test. Dependent variable: Intention to Use

Model	Sum of Squares	df.	Mean Square	F-value	P-value
Regression	91.827	3	45.913	139.278	.000 ^d
Residual	44.173	134	.330		
Total	136.000	136			

Table 8 reports that amongst all variables entered the in the model, only trust in government and perceived usefulness have effect on intention, 60.7% (p -value= 0.000) and 26.7% (p -value=0.000) respectively. Other variables deemed insignificant. It is obvious that no multicollinearity exists between variables, since the variance inflation factor ($VIF < 2.5$).

Direct effects of trust in government, trust in technology, usefulness and their interactions, the trust in e-government, the intention to use e-government on civic engagement are also tested. The results of the analysis of variance test (ANOVA) presented in Table 9 illustrate that the model is adequate (p -value =0.000). In addition, the model provided the coefficient of determination $R^2 = 29\%$. No indication of presence of multicollinearity between variables, the variance inflation factor ($VIF < 2$).

Table 9. Analysis of variance test. Dependent Variable: Civic Engagement

Model	Sum of Squares	df.	Mean Square	F-value	P-value
Regression	39.432	3	19.716	27.358	.000 ^d
Residual	96.568	134	.721		
Total	136.000	136			

As shown in Table 10, only two variables have direct effects on civic engagement. The perceived usefulness has 41.8% (p -value = 0.000) effect on civic engagement, and trust in e-government has 19.8% (p -value=0.017) effect on civic engagement.

Table 8. The Coefficients: Dependent Variable: Intention to Use

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
Perceived Usefulness	.607	.073	.607	8.374	.000	.461	2.169
Trust in e-government	.265	.073	.265	3.656	.000	.461	2.169

Table 10. The Coefficients: Dependent Variable: Civic Engagement

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.88	.073		.000	1.000		
Perceived Usefulness	.418	.082	.418	5.110	.000	.791	1.265
Trust in e-government	.198	.082	.198	2.418	.017	.791	1.265

Figure 1 shows the proposed model and the factors that have significant relationships with the adoption e-government services for civic engagement. The model indicates that trust in technology and perceived usefulness as well as their interactions have significant relationships with trust in e-government, supporting *H2* and *H4a*; On the other hand, trust in government did not show any relationship, rejecting *H1*. Further, trust in e-government has significant relationships with the intention to use e-government services and civic engagement, confirming *H3a* and *H3b*. Interestingly, perceived usefulness has shown significant relationships with intention to use e-government services and civic engagement, asserting *H4b*, and *H4c*.

7. Discussion and conclusions

The adoption of e-government services in different countries has been explored by many researchers. Although various studies identified factors that are critical in the acceptance and the adoption of the services, such as perceived usefulness, subjective norms, and attitude behavior; only few studies focused on trust in technology, trust in government, and trust in e-government as factors important for the up-take of online services for civic engagement. Therefore, this exploratory study is expected add to the adoption literature and explore how trust is associated with the adoption of e-government services and how this association, if found, assists in the achievement of civic engagement. Such relationships are explored through constructs identified from the literature and using a questionnaire that targeted adult individuals in the Kuwaiti society. Moreover, this study attempts to propose a model of trust factors and their relationship with the adoption and use of e-government services for civic engagement.

The results of exploratory factor analysis of the identified constructs indicate that research constructs are reliable with higher than 86% of the Cronbach alpha coefficient, suggesting high internal consistency between statements for each construct. The results also report excellent goodness of fit of research model and that constructs are valid (explained variance larger than 78%). The mean average of research constructs higher than 3.17 indicate that respondents have positive perceptions of trust in technology, trust in e-government, intention to use e-government services

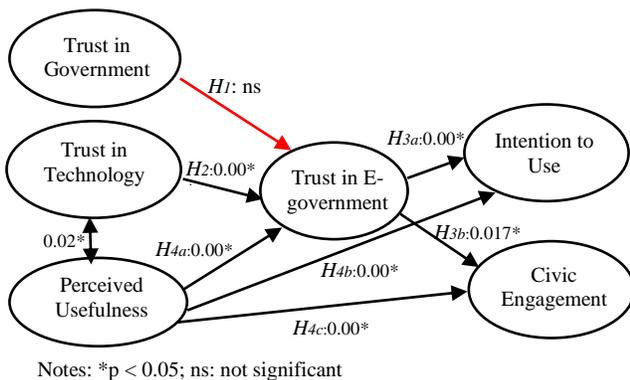


Figure 1. Proposed research model

and its usefulness. As these constructs correlate with the technology, positive perceptions could be attributed to the fact that the majority of respondents have excellent Internet skills and they are familiar with technology use and could conduct many transactions online. The negative perceptions the respondents have towards trust in government and civic engagement with mean averages 2.46 and 2.30, respectively, confirm the decline in government trust [35] and Kuwait government is not revealing adequate information to the public and not sufficiently engaging the public in the political process [42]. The findings also show significant positive correlations between all research constructs, stressing the direct relationship between trust in technology, in government and in e-government, usefulness, intention to use e-government, and civic engagement which are significant in the adoption and use of e-government services.

Interestingly, the study attempts to propose a framework and model the adoption of e-government services by testing data using GLM procedure, which provides regression analysis and analysis of variance for one dependent variable by one or more variables. The results demonstrate that trust in e-government is dependent on trust in technology and perceived usefulness, suggesting the respondent might have considered e-government services as any business transaction which can be conducted if they trust the technology and if such transactions are user-friendly and useful to them. These results are in line with many studies, for example [45], [16]. On the other hand, the interaction between trust in technology and perceived usefulness has a significant but negative effect on trust in e-government, suggesting that higher levels of perceived usefulness do not require high trust in technology.

Furthermore, only trust in government and perceived usefulness have significant relationships with respondents' intention to use e-government services. These results indicate that public intentions to deal with government is associated with their trust in government organizations and how their views are taken into consideration by government officials. Also, their intention for using e-government services can be affected by usefulness of service usage as respondents found online services helpful to them that enhance their performance and facilitate government knowledge and information challenges. Additionally, the results illustrate that usefulness of e-government services and trust in e-government have direct and positive effect on civic engagement. This advocates that e-government projects implemented in various countries are expected to offer various tools of interactions with citizens and enhance government-public relationship by sharing and exchanging information, thereby, re-building

citizens' trust and achieving civic engagement. These results are in line with [12], [19], [33], [34], [38], [50] [51].

This study is a call for government officials to devote efforts to re-build trust with the public and consider trust constructs as important factors associated with the acceptance, adoption and use of e-government services. This can be done through improving e-government services and making them useful, beneficial, easy to use to save public's time and effort. Also, e-government programs around the world are expected to share and exchange government information enabling interaction with the public and offer them the tools through which they become able to express their views and specific needs and become part of the political process. This will positively impact citizens' trust in government and consequently achieve civic engagement.

Since this study is exploratory in nature and conducted to validate the proposed model by using a sample limited to a small number of individuals in Kuwait, the results could not be generalized to all individuals in the society. The proposed model, which found to be accepted and adequate, is expected to be conducted to a larger sample size so that generalizability can be applicable to the whole society and also to other countries that share similar circumstances, such as gulf countries. Therefore, further research is required to investigate effectiveness of research constructs on the adoption and use of e-government services.

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