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Research Article

Investigating the Effect of Information Systems Factors on Trust in E-Government Initiative Adoption in Palestinian Public Sector

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Abstract: The study conducted a primary investigation into the relationship between information system and trust in e-government followed by a secondary one into the relationship between trust in e-government and intention to use. It followed a quantitative approach of data collection through the use of questionnaire survey. The findings revealed that information quality, system quality, service quality, perceived usefulness, perceived ease of use, and security-privacy contributed positively to trust in e-government while the latter impacted intention to use. Moreover, the study's findings supported the rationale behind the IS theories (TAM and IS Success Model) and security-privacy were proven to illustrate trust in e-government adoption initiative. The findings theoretical and practical implications and limitation and suggestions for future research were discussed towards the end of the study.

Keywords: Information systems factors, information system success model, security-privacy, technology acceptance model, trust in e-government

INTRODUCTION

The benefits of e-government applications are monumental and characterized by fast growth (Schwester, 2009). To keep abreast of this development, the governments are constantly looking for innovative ways to leverage the opportunities of information technologies in order to achieve increased efficiency and effectiveness in their administrative and business processes and in the government operations (Ojo *et al*., 2011). The success of e-government implementation hinges on the users' realization of fewer risks and more benefits that they can obtain from it (Srivastava and Teo, 2009). Therefore, e-government adoption is now considered a crucial strategic move in the public sector as it is the basis of the modernization of the government business practices (Melitski, 2003; Ayyash *et al*., 2012).

In the context of the Palestinians public sector especially government ministries, there is lack of cooperation between the ministries for e-government initiative. This lack of cooperation comes from the feel of fear and lack of trust from dealing with their information with other national ministries and institutions (Jaber, 2011). Therefore the government ministries face the challenge of provides electronic information and services security, because of lack of safety net to ensure adequate protection for users. This situation leads to reduce users trust on the ability of government to implement e-government and decrease users trust on the internet. Hence, the lake of trust may lead to the failure of e-government initiative. Even with the increasing implication to the trust issue, researchers are just initiating their investigation on the role of trust in the adoption of e-government systems (Warkentin *et al*., 2002; Carter and Bélanger, 2005; Gefen *et al*., 2005; Welch *et al*., 2005; Belanger and Hiller, 2006; Bélanger and Carter, 2008).

The present study will fill the gap in literature through its empirical examination of IS factors impacting user trust in e-government adoption in the context of Palestinian government ministries. The findings of which would expound on the impact of IS factors upon users' trust in e-government in the context of Palestinian government ministries and highlight the impact of trust in e-government upon intention to use. The importance lies in the little knowledge regarding the factors impacting IS use which eventually forms the barrier of reaping the benefits of these systems. In addition, the findings of such study can be considered as the basis of the future development of effective e-government strategies. In other words, investigating the factors impacting users' trust in e-government adoption will result in the project's success. The most important contribution of the study is the investigation of the IS factors impact on trust in e-government initiative adoption.

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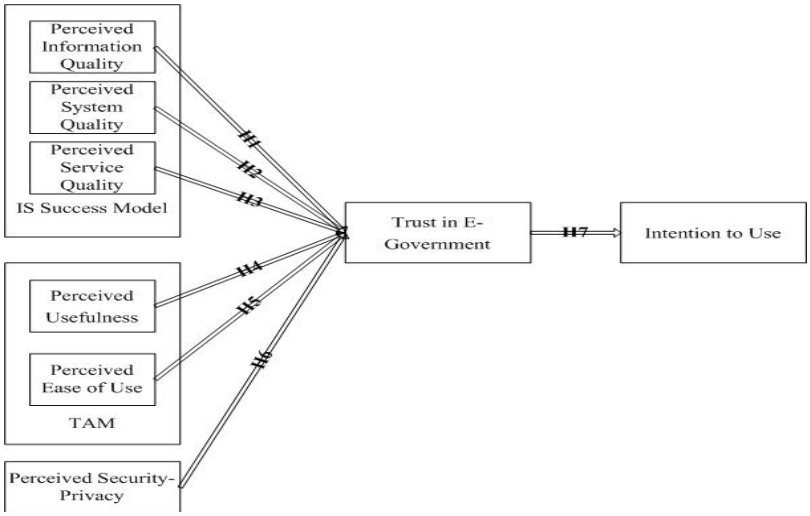

Fig. 1: A hybrid information system model for trust in e-government initiative adoption in public sector organization (Ayyash *et al*., 2012)

LITERATURE REVIEW

Literature relating to the study and the reality of IS stresses on the importance of trust in e-government adoption. Among the forefront of these issues is the lack of study focusing on IS factors impacting users' trust in e-government initiative adoption-which holds true specially in the public sector organizations-on the basis of IS success model (Delone and McLean, 2003), TAM (Davis, 1989) and security-privacy on the basis of the literature review (Ayyash *et al*., 2012). It has become clear that not many studies have highlighted IS factors affecting user's trust in e-government initiative adoption, the main question of this study would be "what are the relationships between IS factors, trust in e-government and the subsequent affect of trust in e-government on intention to use"? Specifically, the research problem is subdivided into the following research questions: What is the relationship between information quality factor and trust in e-government? What is the relationship between system quality factor and trust in e-government? What is the relationship between service quality factor and trust in e-government? What is the relationship between perceived usefulness factor and trust in e-government? What is the relationship between perceived ease of use factor and trust in e-government? What is the relationship between security-privacy factor and trust in e-government? What is the relationship between trust in e-government factor and intention to use?

As the present study's main objective is to examine the relations between information system factors, trust in e-government and intention to use. A hybrid information system model comprising of the Information System Success Model (Delone and McLean, 2003), Technology Acceptance Model (Davis, 1989) and security-privacy from literature, is developed for the purpose of studying users' trust in e-government initiative adoption in the context of public sector organization as presented in Fig. 1 (Ayyash *et al*., 2012). On the basis of this hybrid model, seven hypotheses are formulated. The present study's aim is to test the following hypotheses and to determine the extent of the relationships between the variables. In the end, we show what hypothesis have been accepted or rejected.

RESEARCH METHODOLOGY

The quantitative method of data collection is employed in the present study where data is collected, numerically coded and analytically processed following which the researcher forms statistical results. This type of method is suitable when there is generalization and application of the sample data to the population involved for the determination of patterns and trends (Lean *et al*., 2009). The survey questionnaire comprised of close-ended questions providing a uniform structure of reference for the respondents' answers.

The questionnaire is designed by using a 5-point Likert scale to collect data regarding the research constructs with the scale ranging from 1-strongly disagree to 5-strongly agree and with 3-neutral as the middle scale. For the scales' content validity, the items selected under each construct should reflect the concepts which are to be generalized. In this study, the constructs are primarily chosen from prior studies for their content validity but were adapted to the e-government sector (Ayyash *et al*., 2012).

The measures were rechecked for validity and reliability through a review of faculty members and doctoral students of University Kebangsaan, Malaysia; a practice that would assist the researcher in determining the strengths and weaknesses of the questionnaire in terms of format of questions, wording and order. Following the review, the researcher located the problems and revised the wordings of the measurement and was rewarded by the final clear, easy answering, comprehensive, professional survey questionnaire. The questionnaire was then translated into Arabic which is the local language in Palestine. The translation process was reviewed to ensure corresponding terms in Arabic and English. When the translation was completed, the researcher carried out a pilot study involving 30 employees to ensure the items' reliability and consequently, the findings of the pilot study supported the same.

Tests for reliability and validity of the measures: All the variables used in the study model were tested by previous researchers for validity and reliability. Validity is defined as the degree to which a measurement scale measures what it is intended to measure (Nunnally, 1978). The validity of the instrument can be classified into two main categories namely content validity and construct validity. Content validity concerns item sampling adequacy-that is, the extent to which a specific set of items reflects a content domain (DeVellis, 2003). Content validity is a function of how well the dimensions and elements of a concept have been delineated (Sekaran, 2000). The content validity in this study was addressed through an extensive review of literature.

However, construct validity is described as the extent to which measures represent it is assumed they measure (Bohrnstedt, 1970). In this study construct validity was determined by factor analysis approach. Factors analysis examines the interrelationships among a larger number of variables and then attempts to explain them in terms of their common underlying dimensions (Babbie, 1992). Factor analysis was carried out to measure construct validity. The factor loadings obtained from the factor analysis are utilized to reflect the correlation between each attribute and each score and the greater the factor loading, the more significant are the attributes interpretation of the factor matrix (Hair *et al*., 2006). According to Hair *et al*. (2006), for factor loadings of value +0.50 and over are highly significant, loadings of +0.40 are important while loadings of +0.30 are significant. All the items in the study registered a factor loading of over +0.40 and hence every item correlates significantly to the factor confirming that one set of items measure one single thing. The result of measurement validity is presented in Table 1.

Table 1: Table of measurement

Construct	Item	Loading	St. Error.
Information quality	Information quality1	0.727	0.907
	Information quality2	0.699	0.910
	Information quality3	0.697	0.933
	Information quality4	0.695	0.963
	Information quality5	0.659	0.976
	Information quality6	0.656	0.965
	Information quality7	0.617	1.029
	Information quality8	0.520	0.910
System quality	System quality1	0.694	0.963
	System quality2	0.686	1.003
	System quality3	0.640	0.865
	System quality4	0. 639	0.952
	System quality5	0.610	0.989
	System quality6	0.595	01.025
	System quality7	0.591	0.982
	System quality8	0.588	1.052
Service quality	Service quality1	0.700	0.935
	Service quality2	0.695	0.835
	Service quality3	0.653	0.842
	Service quality4	0.651	0.888
	Service quality5	0.577	0.896
	Service quality6	0.574	1.010
	Service quality7	0.502	0.962
	Service quality8	0.484	0.826
Perceived usefulness	Perceived usefulness1	0.747	0.819
	Perceived usefulness2	0.732	0.777
	Perceived usefulness3	0.676	0.899
	Perceived usefulness4	0.671	0.834
	Perceived usefulness5	0.671	0.843
Perceived ease of use	Perceived ease of use1	0.846	0.913
	Perceived ease of use2	0.779	0.921
	Perceived ease of us3	0.712	0.861
	Perceived ease of use4	0.649	0.859
	Perceived ease of use5	0.602	0.855
Security and Privacy	Security and Privacy1	0.780	0.861
	Security and Privacy2	0.770	0.975
	Security and Privacy3	0.758	0.924
	Security and Privacy4	0.757	0.876
	Security and Privacy5	0.738	0.850
	Security and Privacy6	0.646	0.912
Trust in e-government	Trust in e-government1	0.764	0.855
	Trust in e-government2	0.757	0.860
	Trust in e-government3	0.730	0.897
	Trust in e-government4	0.757	0.105
	Trust in e-government5	0.691	0.891
	Trust in e-government6	0.686	0.848
	Trust in e-government7	0.586	0.801
	Trust in e-government8	0.498	0.779
Intention to use	Intention to use1	0.849	0.947
	Intention to use2	0.779	0.936
	Intention to use3	0.712	1.053
	Intention to use4	0.649	1.004
	Intention to use5	0.602	1.020

As validity is related to accuracy, the reliability on the other hand, is related to consistency (Hair *et al*., 2007). The reliability of measurements tools for the present study was assessed using internal consistency method. It measure the degree to which the items in the scale measure the same underlying attribute (Pallant, 2007) and measured in term of Cronbach coefficient alpha which is the most popular test (Sekaran, 2000) and is widely accepted.

For data collected from the survey, all items in section B, C, D, E, F, G, H and I were subjected to the reliability test. The findings of the reliability test for

Table 2: The cronbach alpha value for reliability test for each section of the questionnaire

Section of questionnaire	Measurement tool	Cronbach alpha coefficient value
B	Perceived information quality (8 items)	0.815
C	Perceived system quality (8 items)	0.762
D	Perceived service quality (8 items)	0.754
E	Perceived usefulness (5 items)	0.738
F	Perceived ease of use (5 items)	0.767
G	Perceived security-privacy (6 items)	0.836
H	Trust in E-Government (8 items)	0.823
I	Intention to use (5 items)	0.773
	Overall reliability (53 items)	0.881

each section of the questionnaire are explained in the Table 2.

The Cronbach alpha for each measurement tool exceeded the acceptable and recommended values. None of the items was deleted because the alpha values showed good internal consistency.

Correlation: In order to determine the strength and direction of the independent and dependent variables' linear relationship, the Pearson correlation analysis was performed. In order to determine the strength and direction of the independent and dependent variables' linear relationship, the Pearson correlation analysis was performed. The normal value of the correlation ranges from -1.00 to 1.00 with a correlation equaling 0 presenting no relationship, 1 presenting a perfect positive correlation and -1 a perfect negative correlation (Pallant, 2001; Hair *et al*., 2006). Correlation of less than 0.20 is considered as slight relationship; 0.20-0.40 is low correlation; 0.40–0.70 is a moderate correlation and 0.70 0.90 is considered as high relationship while 0.90–1.00 is a very high correlation. High correlation between independent variables could result in multicollinearity problem. Nevertheless, high correlation between dependent and independent variable indicate a highly dependable relationship (Jaju and Crask, 1999). It is evident from Table 3 that variables such as information quality, system quality, service quality, perceived usefulness, perceived ease of use and security/privacy all have significant correlations with the dependent variable which is trust in e-government while the latter has a significant correlation with the dependent variable which is intention to use.

RESULTS

Hypotheses testing: In order to validate the hypotheses two different tests were carried out which are multiple regression and linear regression tests. The acceptance and rejection of the hypotheses is displayed in Table 4.

Information system factors (Information quality, system quality, service quality, perceived usefulness, perceived ease of use, security/privacy) and trust in e-government: The relationship between the independent variables and trust in e-government was tested by Multiple regression analysis as all of them have been considered of similar importance. Multiple regression is a statistical method that predicts the variance in one dependent variable caused by the impact of more than one independent variable (Hair *et al*., 2007; Sekaran, 2003). The hypotheses assessed in the first regression are:

H1: Information quality will positively affect users' trust in e-government initiative adoption in public sector organizations.
H2: System quality will positively affect users' trust in e-government initiative adoption in public sector organizations.
H3: System quality will positively affect users' trust in e-government initiative adoption in public sector organizations.
H4: Perceived usefulness will positively affect users' trust in e-government initiative adoption in public sector organization.
H5: Perceived ease of use will positively affect users' trust in e-government initiative adoption in public sector organization.
H6: Security and privacy will positively affect users' trust in e-government initiative adoption in public sector organization.

In the first six hypotheses, the standard mode of multiple regression was conducted where trust was entered as the dependent variable while information quality, system quality, service quality, perceived usefulness, perceived ease of use, security/privacy were

Table 3: Correlations of the major variables

Factors	1	2	3	4	5	6	7	8
1. Information quality	1							
2. System quality	0.475**	1						
3. Service quality	0.517**	0.479**	1					
4. Perceived usefulness	0.503**	0.467**	0.561**	1				
5.Perceived ease of use	0.528**	0.436**	0.567**	0.558**	1			
6. Security and privacy	0.534**	0.497**	0.582**	0.575**	0.542**	1		
7. Trust in e-government	0.578**	0.554**	0.639**	0.619**	0.630**	0.668**	1	
8. Intention to use	0.428**	0.488**	0.475**	0.488**	0.440**	0.534**	0.560**	1

* $p<0.05$, ** $p<0.001$

Table 4: Summary results of research findings related to the strength of the relationships and the acceptance or rejection of stated hypothesizes

Hypothesis	Significance	t-value	Accept or reject
H1	Yes	2.654	Accept
H2	Yes	3.506	Accept
H3	Yes	4.004	Accept
H4	Yes	3.356	Accept
H5	Yes	4.406	Accept
H6	Yes	5.456	Accept
H7	Yes	12.859	Accept

Table 5: Regression results on information system factors and trust in e-government

Model	Standardized coefficients beta
Information quality	0.112
System quality	0.140
Service quality	0.179
Perceived usefulness	0.148
Perceived ease of use	0.192
Security and privacy	0.246
R^2	63.30
Adjusted R^2	62.70
F value	102.690

Table 6: Regression results on trust in e-government and intention to use

Model	Standardized coefficients beta
Trust in e-government	0.560
R^2	31.40
Adjusted R^2	31.20
F value	165.343

entered as independent variables. The result of this analysis is presented in Table 5. It shows that information quality is significantly related to trust in e-government ($\beta = 0.112$, $t = 2.654$, $p<0.001$), system quality is linked significantly to trust in e-government ($\beta = 0.140$, $t = 3.506$, $p<0.001$), service quality is significantly related to trust in e-government ($\beta = 0.179$, $t = 4.004$, $p<0.001$), perceived usefulness significantly related to trust in e-government ($\beta = 0.148$, $t = 3.356$, $p<0.001$), perceived ease of use is significantly related to trust in e-government ($\beta = 0.192$, $t = 4.406$, $p<0.001$) and finally, security/privacy is significantly related to trust in e-government ($\beta = 0.246$, $t = 5.456$, $p<0.001$).

Also, it is evident from Table 6 that R^2 is statistically significant, with $F = 102.690$ and $p<0.001$ while the six independent variables are positively correlated to trust in e-government as the positive R value is = 0.796. An R square value of 0.633 implies that the variables explain over 63.3% of the variance in trust in e-government with a standard estimated error of 0.31902 indicating that almost all independent variables significantly affect trust in e-government and thus supporting their acceptance.

Trust in e-government and intention to use: The second step undertaken for the regression model is to carry out the simple regression analysis between trust in e-government and intention to test the following hypothesis:

H7: Trust in e-government will positively affect users' intention to use e-government service.

To test this hypothesis, a simple regression analysis is conducted whereby intention to use was entered as dependent variable while trust in e-government as independent variable. The R^2 value = 0.314 implied that trust in e-government explains 31.4% of the variance in intention to use with an estimated standard error of 0.41449. This shows that trust in e-government significantly relates to intention to use ($\beta = 0.560$, $t = 12.859$, $p<0.001$). The results of the analysis are presented in Table 6. It is evident that trust in e-government has a significant value lower than 0.05 indicating a positive significant relationship between the two variables with a statistically high significant R^2 at $F = 165.343$ and $p<0.001$, confirming the acceptance of hypothesis 7.

The hypotheses stating information quality, system quality, service quality, perceived usefulness, perceived ease of use and security and privacy's positive effect upon trust in e-government has been confirmed. In addition, the hypothesis stating that trust in e-government is positively related with intention to use has also been confirmed. The findings show that security and privacy have the highest impact upon trust in e-government followed by perceived ease of use, service quality, perceived usefulness, system quality and information quality respectively.

DISCUSSION

The primary aim behind the present study is to conduct investigate the relationship between information system factors comprising of information quality, system quality, service quality, perceived usefulness, perceived ease of use and security/privacy and trust in e-government and the secondary aim is to examine the relationship between trust in e-government and intention to use of public officers working in ten Palestinian government ministries. A review of literature presented that only limited research has been dedicated to IS factors affecting users' trust in e-government initiative adoption. This is supported by Navarrete (2010), who stated that although important advances in research of trust have been achieved, trust in the context of e-government transactions is relatively untouched. Therefore, the researcher was urged to carry out the present research; the outcome of which could be invaluable to government policy makers in

concentrating on the important IS factors affecting users' trust in e-government adoption and to future research in the area. In the following section, each of these issues is discussed in further detail in term of existing knowledge and the contribution of the findings in furthering understanding in the area.

H1: Perceived information quality and trust in e-government: Much research has been dedicated to the examination of information quality in e-government and e-commerce. For instance, Wangpipatwong *et al*. (2005) revealed information quality's significant impact on the e-government websites' adoption, David *et al*. (2004) found it to be the strongest significant predictor of willingness to use e-government and Almahamid *et al*. (2010) and it has a significant positive relation with intention to use e-government. Nevertheless, little or no research has been carried out on the impact of information quality upon the users' trust in e-government adoption in the context of public sector organization.

Based on the results of the regression analysis, hypothesis 1 was supported as information had a strong positive significant relation with trust in e-government (β = 0.11.2, $p<0.001$); a result consistent with prior findings such as (Phung *et al*., 2009) who revealed information quality's significant and positive influence on users' trust in an online company. In other words, higher levels of information quality were linked to higher trust in e-government initiative. Therefore, it can be stated that information quality impacts the users' trust in adopting e-government initiative in the context of public sector organizations implying that better information quality (up-to-date, timely, appropriate for their tasks, comprehensive, relevant, useful, error-free and precise) will make the users more inclined to adopt the e-government system.

H2: Perceived system quality and trust in e-government: The result of the regression analysis supports this hypothesis with the system quality's (β = 0.14.0, $p<0.001$). This finding is consistent with prior findings such as Tan *et al*. (2008); who found designing high quality e-government websites to be directly contributing to increase in trust in e-government. In other words, the higher the level of system quality, the higher will be the possibility of user's attraction to the system. It is therefore important for website designers and evaluators to keep the changing nature of website's quality future into consideration to suit the user requirements because a system with better quality attracts the users to use online government systems. On finding the websites helpful in providing instructions and necessary information in a timely fashion, attractive in its interface, easy to use, time and expense saving, they will be more inclined to use it.

H3: Perceived service quality and trust in e-government: Studies such as Lee *et al*. (2003) Wangpipatwong *et al*. (2005) and Shareef *et al*. (2007) have been dedicated to the investigation of service quality issues on e-government. However, little or no research has been conducted on the service quality's impact upon users' trust in e-government. The result of the analysis of the relationship between service quality and trust in e-government systems revealed a significant and positive relation between the two with (β = 17.9, $p<0.001$); a result consistent with prior studies by Colesca (2009). It can be stated that higher levels of service quality is related with higher trust in e-government initiative adoption which means that by offering better service quality, the government will encourage the use to make use of online government system. If the users are satisfied with the e-government's website in terms of performance, prompt service, choices for personalization, links to other sites, then they will be encouraged to contact and interact with government agencies through e-government.

H4: Perceived usefulness and trust in e-government: A significant positive relation was found between perceived usefulness and trust in e-government with (β = 14.8, $p<0.001$); a result consistent with prior studies (Liu and Zhou, 2010). Therefore, higher levels of perceived usefulness is related to higher trust in e-government adoption meaning perceived usefulness is an element that encourages the user to use e-government. If they eventually realize that the e-government websites can increase their transaction effectiveness with the government, enhance the transaction performance, improve service quality from the traditional type of system, useful for their transaction, and provide value for their services, then they will be more inclined to e-government adoption.

H5: Perceived ease of use and trust in e-government: For this hypothesis, similar to the preceding ones, a significant and positive relationship has been revealed between the two variables with (β = 19.2, $p<0.001$); a result consistent with and supported by prior findings (Liu and Zhou, 2010) that revealed that perceived ease of use directly improves trust in e-government. It can be stated that the higher the level of perceived ease of use, the higher will be the trust in e-government adoption which means

perceived ease of use attracts the use to use the online government system. If the users find e-government websites useful in completing their transactions in an effective and efficient manner, it's easy to use, user-friendly, and flexible they will feel the urge to use it.

H6: Perceived security-privacy and trust in e-government: Various studies have revealed the positive role of security and privacy in the development of users' trust in e-commerce (Cheung *et al*., 2005; Connolly and Bannister, 2006; Kim *et al*., 2008). Nevertheless, only a few are dedicated to the effect of both variables upon users' trust in e-government adoption in the context of public sector organizations. The findings revealed not only the positive relation between privacy and security with trust in e-government but it also revealed that privacy and security are the highest determinants of trust in e-government with ($\beta = 0.24.6$, $p<0.001$). This is consistent with prior studies (Beldad *et al*., 2012) that found confidence in online privacy statements significantly impacts trust in government organizations in the context of Holland among users without prior e-government experience and Liu and Zhou (2010) who also found perceived security to be directly improving trust in e-government. Therefore, it can be stated that with greater security and privacy follows greater trust in e-government meaning high security and privacy attracts users to use online government system. The importance of this finding lies in the fact that it provides invaluable strategic implications for e-government implementation in the future. It is important for users to be convinced that the site does not share their personal information, protects their credit information, guarantees the security of the transactional information, safeguards their personal information, and is effective in addressing any violation to the provided information.

H7: Trust in e-government and intention to use: This hypothesis was supported by the findings of regression analysis. The findings revealed trust in e-government's positive significant relation with intention to use with ($\beta = 0.56.0$, $p<0.001$); a findings consistent with and supported by other studies (David *et al*., 2004; Carter and Bélanger, 2005; Bélanger and Carter, 2008; Abu-Shanab and Al-Azzam, 2012) that revealed trust in e-government's positive effect upon intention to use. In other words, the higher the trust in e-government, the higher will be the intention to use it. It is important for users to be convinced that e-government sites will protect their personal information, will secure it and will not leverage it for any purpose. It is also important for them to believe that the technologies supporting such sites are reliable and secured, with adequate protection and it is user-friendly.

Consequently, these results of this study may consider as a suggestion for Palestinian government to take into account the greater effect of IS factors (information quality, system quality, service quality, perceived usefulness, perceived ease of use, and security-privacy) on users trust in e-government initiative adoption in public sector organization and subsequent impact of trust in e-government on intention to use.

Implications of the study: At the end of the study, several key conclusions have been reached and they are invaluable for relevant entities like the government. According to Lee *et al*. (2003) trust in e-government has significant impact upon intention to use, intention to provide personal information, and intention to depend on information from e-government services. As such, the present study will enable the Palestinian government to formulate and implement an effective strategy to increase the Palestinian users' trust in using e-government services.

Viewed from a broad perspective, the implications of this study can be categorized into methodological, theoretical and practical implications. The first category refers to the particular implications of the findings on the existing theory related to information system and e-government and in the context of the study's findings, DeLone and McLean (1992) model has been widely adopted by researchers to determine information system successes (Ballantine *et al*., 1996; Seddon, 1997; Myers *et al*., 1997) while other researchers have only adopted certain aspects of it.

As for the present study's methodological implications, it is its validation of Delone and McLean (2003) in its examination of the impact of information quality, system quality and service quality upon users' trust on e-government in the context of public officers employed in ten Palestinian government ministries. In a broader sense, it has validated the same in a developing country as opposed to majority of the studies in the field which were conducted in developed countries. The present study enables future studies to utilize information quality, system quality, service quality and intention to use as a uni-dimensional and reliable variable. The findings of the study displayed good reliability according to the rule of thumb established by Hair *et al*. (2006) with Cronbach Alpha as follows: information quality 0.815, system quality, 0.762,

service quality, 0.754 and intention to use 0.773. Further implications include the validation of the Technology Acceptance Model (TAM) (Davis, 1989). The present study's findings indicated TAM to be valid, uni-dimensional, reliable and summation appropriate in the examination of the impact of perceived usefulness and perceived ease of use upon users' trust in e-government in the context of public officers working in ten Palestinian government ministries. Similar to the first validation, this has been accomplished in a developing country as opposed to a developed one. The findings of the study are valid with Cronbach's Alpha as follows: perceived usefulness 0.738 and perceived ease of use 0.767 which are acceptable according to Hair *et al*. (2006). The instrument used by the researcher in the model can be invaluable to future researchers. The final methodological implication of the present study is its validation of security/privacy factors on the basis of literature review and their integration to TAM and IS Success Model in the context of Palestine. The instruments used can be used by researchers in developing countries.

On the other hand, theoretical implications are specific implications of the findings for the existing theory related to information system and e-government. In the present study, the theoretical implications are fourfold. Firstly, the study made use of both TAM (Davis, 1989) and IS Success Model (Delone and McLean, 2003) to study the variable affecting users' trust in e-government adoption in the context of public sector. Secondly, the study's investigation is simultaneous – it studies the impact of information system factors upon trust in e-government adoption in a public sector with a subsequent impact on intention to use. All factors impacted user's trust in e-government with security and privacy leading the way, and with perceived ease of use, service quality, perceived usefulness and system quality appearing more important than information quality in their impact upon users' trust in e-government. Thirdly, according to Ayyash *et al*. (2012), only a few studies have focused upon the implications of trust in e-government adoption and the present study filled this gap by studying the impact of trust in e-government on intention to use. Finally, in the present study, the determinant factors of the developed model can be added to e-government literature and the model can be used to examine the determinant factors to trust in other types of e-government.

On the other hand, the present study also has practical implications. The first of which is that the study's findings can be utilized by government policy makers to develop their information system strategies to effectively benefit their organization. Secondly, the government technology developer may make use of the findings and provide higher priority to information quality, system quality, service quality, perceived usefulness, perceived ease of use and security and privacy when they design e-government websites. As information quality was revealed to impact users' trust in e-government, government decision makers may improve the information quality of the e-government to influence the users' trust in its adoption. Similarly, as system quality was revealed to influence trust in e-government adoption, system outputs can be designed to facilitate high quality services to the users which will increase their trust in e-government adoption. In addition, website designers and evaluators should also keep the dynamic nature of system quality features in consideration. The importance of service quality is encapsulated by the findings of the present study by demonstrating that e-government website with high service quality will increase users' trust in e-government adoption in the public sector organization. Therefore, the decision maker should improve the service quality of the website. In addition, the importance of perceived usefulness has been reinforced by the present study by demonstrating it that perceived usefulness of e-government website will lead to the increase of users' trust in e-government adoption and hence, the decision maker should measure users' perceived benefits of e-government to reinforce their trust in the system. Moreover, the study demonstrated the importance of perceived ease of use by reinforcing the assumption that perceived ease of use of e-government website may increase the users' trust in e-government adoption and therefore, the decision makers should measure the user's perceived ease of use in using e-government sites to support and increase their trust in it. Furthermore, the study also reinforced the assumption that e-government security and privacy may increase user's trust in e-government. Hence, greater security and privacy protection will increase the citizens/users' confidence on e-government and decision makers should concentrate on these factors to reinforce users' trust on e-government adoption. Finally, the study demonstrated that trust in e-government is related with high intention to use it. As such, decision makers should concentrate on trust to increase the users' intention to use.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Although the present study has several contributions in all three aspects-methodological, theoretical and practical, there are still some limitations that need to be addressed so future research desirous of extending the study may know its weaknesses.

Firstly, the models used in the study include (Delone and McLean, 2003) IS Success Model and Davis (1989) TAM, with security-privacy based on literature review. IS presented four variables; information quality, system quality, service quality and intention to use while TAM presented two variables; perceived usefulness and perceived ease of use. Even with the total number of variables involved, their determination makes one of the study's limitations as there are other variables that may impact users' trust in e-government adoption in public sector organization. Future studies should study these other probable variables and other information system theories like Innovation Diffusion Theory or the Unified Theory of Acceptance and Use of Technology.

Secondly, the study sample was collected from ten Palestinian ministries which may not be enough to represent the entire ministries in Palestine. Hence, future researchers should caution against generalizing the findings to the whole country. In addition, the sample study comprised of a total of 364 respondents which is a 73.8% response rate, considered good for survey studies and the findings are consistent with studies involving greater samples. This implies that the findings are not affected by the size of the sample but it is better for future studies to have a larger sample size and include other governmental organizations in order to increase the generalizability of results. Comparison with other studies' findings in other countries of the same nature is also encouraged. In other words, the replication of the present study may assist in the investigation and the outcome of superior results that predict factors impacting users' trust in e-government initiative adoption.

Thirdly, the study is confined to the relationships between IS factors and trust in e-government with a subsequent study of the latter's impact on intention to use. It is recommended for future studies to examine other factors besides the ones included in the study that have to probability of impacting e-government (e.g. cultural factors).

Fourthly, the present study's scope is within the realm of Palestinian government ministries; the survey was distributed to the public officers using information system and working in ten Palestinian ministries. Future studies could broaden the study by studying other branches of government, or include businesses or other ordinary citizens.

However, even with the limitations of the small sample used, the researcher hopes that the study has done its part and provided a valuable insight into the analysis of the relationship between information system factors on trust in e-government and the subsequent impact of the latter on intention to use in the context of Palestinian public organizations. The findings represent a starting point for other future research in information system and e-government areas although considerable issues are still waiting to be explored.

The present research's main contribution is the hybrid information system model developed for the purpose of the study objectives. This model represents a coherent model that further empirical researches in the same field may use and may extend in varying directions. Future researches may study other countries, developing or otherwise with the help of the model, it may follow a qualitative approach as opposed to a quantitative one to provide an in-depth knowledge of the relevant issues. Attempts to replicate the study may be valuable in examining how trust in e-government and intention to use have changed based on new emerging technologies or new contexts. Finally, the online world is ever evolving, with novel website features being incorporated with the sophistication of technology. Therefore, future research may need to upgrade the present model to suit the technological advances and to align the requirements with users' needs with the main objective of the adoption of e-government initiative success.

CONCLUSION

The present research conducted an examination of seven hypotheses regarding the relationship between information system factors and trust in e-government with the subsequent impact of the latter upon intention to use in the context of ten Palestinian government ministries. Its main contribution is the clarification and the understanding of trust in e-government initiative adoption in public organizations and intention to use which has been largely ignored in literature.

The study has made use of multiple regression to analyze the first sixth hypotheses which are linked to the relationship between IS factors and trust in e-government while a simple test was made use of to analyze the relation between trust in e-government and intention to use. The findings revealed a positive and significant relationship between information quality, system quality, service quality, perceived usefulness, perceived ease of use, security-privacy and trust in e-government. Moreover, a positive and significant relationship was also revealed between the subsequent impact of trust in e-government on intention to use.

Although the analysis has supported the hypotheses proposed, further research is called for to examine other factors that may possibly impact trust in e-government and its subsequent intention to use in order to broaden and enhance the understanding of the issue.

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