Predictors of E-Participation Levels: The Case of Jordan

Heba K. Al-Quraan
MIS dept., IT College, Yarmouk University
Irbid, Jordan
heba.quraan@yahoo.com

Emad A. Abu-Shanab
MIS dept., IT College, Yarmouk University
Irbid, Jordan
abushanab@yu.edu.jo

Abstract: **According to the revolutionary advancement in information and communication technologies, citizens are becoming more open-minded, ambitious, aware of technology capabilities, and empowered enough to participate in the decision making process. Citizens are motivated to be an active part in the political process and they are encouraged to be involved in order to have collected feedback from them for the social and political reform process. This study tried to explore the factors influencing the level of electronic participation (e-participation) within an e-government context. Ease of use, infrastructure readiness, cost, and relative advantage are factors hypothesized to have an impact on participation success. The results supported the influence of three predictors (ease of use, cost, and relative advantage) in their effect on participation levels. Only infrastructure readiness was not significant in predicting participation levels. Conclusion and future work are discussed later in the paper.**

Keywords: E-government, Open government, E-participation, E-consulting, Social Media, Transparency, Collaboration, ICT, Digital Divide, Maturity Model.

1. INTRODUCTION

E-government is an extension of traditional government that supports conducting all related transactions electronically. E-government implementation enhances performance, reduces cost, minimizes errors, utilizes information and communication technology (ICT), improves service provision process, and increases transparency and credibility [1]. E-government also empowers citizens to participate in the decision making process and policy making to guarantee the highest participation and interaction from citizens. E-government includes the following dimensions: e-democracy, e-consultation, e-campaign, e-voting, e-election, and e-participation. E-participation means using any electronic channel/device to contribute in the political process. Research reported more than one version of e-participation levels, where three, four and five stages were reported from different perspectives. The major five stages are: 1) *E-informing*: it is about providing and publishing information to the public by the government in a one way interaction mode. *2) E-consulting level* is the second one, which represents a two way interaction between citizens and governmental bodies in order to take feedback from them. *3) E-involving* is the third level that aims at keeping citizens in touch (involved) with every decision made and to understand their concerns and issues. *4)*

E-collaborating is the fourth level, which represents more advanced two way interaction and revolves around the partnership between governments and the public. *5) E-empowering* level is the level through which citizens reach the highest engagement in the political process and take the responsibility of taking their own decisions, it is the last level [2].

The paper explored the levels of e-participation, and the literature related to such concept. Also, an empirical test was conducted utilizing a sample of responses to probe Jordanians' perceptions towards such phenomenon and the factors influencing it. The paper consists of a literature review (section 2) followed by a description of the research method conducted. Section 4 will describe the analysis and discussion of results. Finally, conclusion and future work are depicted at the end.

2. LITERATURE REVIEW

One of the major objectives of the e - government projects is to reach the largest number of audience to be involved in policy and decision making processes. Governments need to collect public opinions, make them satisfied with such initiative; and to assure the project acceptance and its success [3]. Furthermore, governments are utilizing social media for

reaching citizens and enhance the participation level. Many researchers consider such initiative as a mean to achieve mutual benefit between the government and citizens; for the government, it improves efficiency, effectiveness, and facilitates service delivery process. For citizens, e-government plays significant role in increasing transparency, accessibility, accountability, and their participation in the political process [4].

2.1 E-government and e-participation definitions

E-government is defined as the existence of required and special services and options of websites, which focus on online service delivery [5]. Another definition focus on utilizing ICT tools in order to facilitate the interaction between citizens, businesses, and the other governmental agencies [6] [7].

E-government is considered as a national project that has been developed by the aid of both public and private sectors; which have the responsibility to promote more efficient and effective government. It also facilitates more accessible services, and makes government more accountable to citizens [8]. Utilizing an empirical test, Abu-Shanab has emphasized the importance of the three major dimensions related to the success of e-government projects and they are summed in the following: infrastructure readiness, social forces and governmental issues [9].

Anthopoulos, Siozos, and Tsoukalas have illustrated that e-government initiative is a project that may include policies and targets, but not principles or even instructions. Also, such project needs to be designed and then executed carefully by involving civil servants through a bottom-up design process, which aims at enhancing the participation and knowledge sharing processes by using e-Government Groupware (eGG) application (a collaboration application that exploits the digital public services) [10].

The authors have defined e-government project as " The use of ICT in an innovative way; to exploit any opportunity that leads to enhance the relationship between government and citizens and making them empowered enough to participate effectively in the political process in its different forms and patterns, and enabling government to have constructive feedback from citizens to participate efficiently in both social as well as political reforming processes."

E-participation is considered as a dimension or a subset of e-government as a whole; it is seen as the engagement and involvement of citizens in the decision making process, by benefitting from the advantages of ICT tools in order to improve social and political responsibility [11]. E-government and e-participation are related within two aspects: the first association is related to the political system and the society interaction, where e-participation represents public policy formulation process. On the other hand, the relationship between society and the administrative system can be considered as e-government initiative itself, where it emphasizes the improvement of service provision process [12].

2.2 Case Studies in e-participation

The Arab Open Government is a study that focuses on appreciating the role of technology represented by social media specially the distribution of information to citizens so they can be an effective part in the open government initiative. The initiative emphasizes using one way interaction tools to achieve its objectives in reflecting transparency, public participation, service provision process, and collaboration. The study also indicated that there is an initial interest of open government project in Bahrain, Saudi Arabia, UAI, Morocco, and Jordan [13].

The United Arab Emirates (UAE) case study has explored the readiness of infrastructure to assure the success of the e-government project. It has clarified a number of stages and one of them was the interaction and participation. The first is *emerging,* which is about having an official website for the government. The second is about how the stored political information can be accessed by the citizens and called it *enhanced*. The third one is the core of this paper which revolves around delivering convenient services to citizens via a friendly website or portal; it was called *interactive.* The *transactional* stage is the fourth one which is about introducing two way interaction channel to connect the governments with citizens. The final stage is *connected,* which prepares the back office infrastructure to be able to respond quickly to citizens' needs and expectations [7].

In the UK, e-government is considered as an information system (IS) that has been designed to exploit any opportunity to enhance the communication of citizens in the democratic process, thus improve the level of e- participation [14].

Based on the previous cases, the authors suggest that the relationship between the interactivity and e-participation is much supported. Once citizens are informed by the government with any needed political information (like providing their sensitive data, suggestions, or even their complements/complaints to the government), both parties are getting closer to each other and thus eliminate the gap between them. Citizens' interactions and engagements with the e-government program is the best form of participation, which supports a positive correlation between interactivity and e-participation.

2.3 E-participation evaluation models

The UN E-Participation Index was developed as a qualitative indicator of both the capacity and the willingness in encourage ing citizens in promoting and enhancing a participatory decision-making process and to reach out for the citizens within its own governance program. E-participation index attempts to see whether the country is able to increase e-information for citizens, promote e-decision making, and enhance the e - consultation process. Curtin attempted to design an e-participation model that focused on providing citizens with enough information to participate efficiently and effectively in policy and decision making process. The

proposition tries to enable them to express their opinions and suggestions to be heard and known [15].

The research proposed five key indicators of e-government projects and they are: service, technology, employees, policy and social responsibility (STEPS model). In their paper, the research model included a number of these factors or sub factors; (i.e. Infrastructure is included as a sub-dimension within the technology factor; and the cost is a sub-factor of policy). Relative advantage is embedded in the service dimension and includes support and efficiency. Finally the participation factor was estimated by user take-up factor. The result of the study supported the influence of the five predictors [16].

An analytical framework of ten dimensions was proposed and studied to determine citizens' participation, technologies, and the level of participation, which represents how far citizens can be engaged in the democratic process. The study also explored the decision making process and the rules of engagement and needed information. The other five dimensions are duration, accessibility, resources, evaluation, and critical success factors [17].

Navarra and Cornford looked at how e-government services, applications, and infrastructure can be developed. They proposed to study multiple models from four dimensions (governance model, service delivery, policy focus, and the actors) which are managerial, consultative, displinary, and the participatory models. The last model represents the promotion of free speech and expression. It revolves around the civil society involvement executed and supported by the voluntary associations [18].

2.4 Innovations in ICT to Promote E-Participation

ICT plays significant role in achieving the transparency and credibility, and it is an effective mean to increase the openness and to reduce the corruption by enabling citizens to track their own activities and decisions instead of supporting them with final information. A number of key factors for building a culture of transparency to increase citizen participation in the e - government initiative and overcome any potential barrier through the combination between technology and the political will; these factors are ICT access, trust, empowerment, social capital, and the acceptance of transparency itself [19].

For the importance of e - participation issues, many researchers were interested in deciding which technologies are the most appropriate to meet the goals and objectives of involving citizens in the policy making in the democratic process, Macintosh had explored and clarified ten key dimensions (which have been mentioned in the previous section) for characterizing e-participation in policy making and focused on utilizing ICT in an innovative way to get the intended aims [17]. Governments should take some pro-active measures to guarantee reaching the largest audience base, and make ICT-related services accessible, attainable, and available anytime. Cell phones, PDAs, wireless networking, and speech technology are efficient tools to promote e-participation. There are three major prerequisites for e-participation: governments

should focus on targeting specific issues, specific groups, and selecting a small number of priorities [20].

Phang and Kankanhalli proposed a framework that focuses on studying ICT utilization toward e-participation initiatives. They concluded that not a single participatory technique or ICT tool can satisfy multiple goals, where each objective has its own means to be achieved effectively**.** Countries may force e-government projects to be a path for openness, but such decision needs to be taken cautiously; as the shift from traditional government toward e-government requires tailored user involvement practices in government development projects [21].

2.5 E-Participation and the digital divide

The "digital divide" or "digital inequality" phenomenon is attracting more attention from researchers as it is the path to the success of e-government projects. The digital divide has five major types: demographic divide, which may include gender, age, education, location of resident factors. The second type is the economic divide, which is related to socioeconomic circumstances. The access divide is the third type that is concerned with the physical access to ICT. The fourth one is the capability divide, which focuses on the citizen's believe of his or her capability to utilize and benefit from ICT. The last type is the innovativeness divide, which relates to the tendency to change and try new/different technologies [22].

Al-Rababah and Abu-Shanab have studied the demographic divide and focused on exploring the impact of gender digital divide and the participation of women in the e-government domain. The study concluded that little or even no IT skills are acquired by women in rural areas, and thus need to empower them to gain access to e-government services [23]. They concluded that there is still a gap between actual participation in e-government systems and the required and intended level of participation. Usability and accessibility are key factors that come to reduce and simplify the digital divide and they could be related with creating and increasing the divide itself (including age, gender, culture, income, education, and disability) [24].

In the case of United States (US), many strategies were developed in order to secure Internet access, implement the needed training and education, and encourage using the Internet to increase the participation in the e - government project. Such efforts are targeted toward disadvantaged areas as a proposed solution for bridging the digital divide problem [25]. The digital divide can be considered as one of the reasons for increasing the failure rate of e-government projects. This virtual inequality is a real limitation that hiders such projects. Many potential procedures can be put in place to attempt to eliminate such factor by having a comprehensive view of the policies proposed, and taking the issues of supply and demand into account. Such procedure may have a positive impact on e-government within societies [26].

The digital divide is a challenge for e-government project adoption, where research has clarified four key barriers to the

access and use of e-government systems, they are the awareness, trust, usefulness, and digital divide [27] [28].

Rahman has studied the role of trust and the digital divide within the context of e-government and concluded with the following: trust is an important factor in reducing the complexity by converging the different expectations. Trust also is a factor believed to be an indicator for e-government systems success. The author asserted the need to develop new comprehensive policy to bridge the gap and improve e-government success [29].

Another study tried to explore the relationship between the quality of e-government services which has been reflected by (communication, collaboration, openness, and sharing of information factors) and the trust in it according to the digital divide groups (passive, progress, alienation, and desire groups of information). The result was that there is a partial correlation between quality and trust of e-government services. Also, there should be policies to be developed to overcome the obstacles related to information sharing factor, and keeping control on issues like; privacy, security, and the collaboration among individuals [30].

3. RESEARCH METHODOLOGY

The literature review concluded with a set of factors that would influence the e-participation levels. Four key factors would increase the levels of participation electronically within e-government context. Such factors would enable citizens to become active component of such system and being empowered enough for interactive participation. Table 1 depicts the definition of variables proposed in this study, and Figure 1 illustrates the research model proposed based on the literature review and the previous studies. Based on that, the following hypotheses are stated:

H1: Ease of use of e-government systems will be positively associated with the expected e-participation levels.
H2: Relative advantage of e-government systems will be positively associated with the expected e-participation levels.
H3: The cost of e-government systems will be positively associated with the expected e-participation levels.
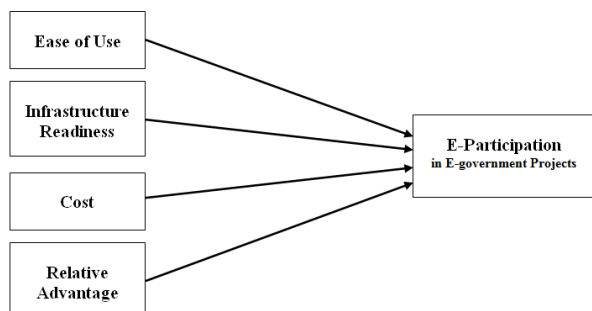*H4: Infrastructure readiness will be positively associated with the expected e-participation levels.*

Figure 1: proposed research model

Table 1: Proposed definitions of Constructs

Construct	Definition
Ease of use	*The use of friendly technologies, and the utilization of other facilities in an easy and compatible fashion.*
Readiness	*The level of availability of needed infrastructure components (e-devices, PCs, and network connections.)*
Cost	*The reduced prices of the devices needed to use e-government services.*
Relative advantage	*The expected generated benefits to be achieved from using such services by citizens.*
E-participation	*The involvement of citizens in the political process (policy and decision making processes) and their role in the development process by their interaction.*

3.1 Instrument used

The paper used previous research to build the instrument used in this study. A questionnaire included three sections was utilized to collect the required data of this research. The first section clarified the purpose of research and the concepts of e-government and e-participation. The second section included few demographic questions like gender, age and education. The instrument included no identification questions exposing respondents identity and to let respondents freely fill the survey.The final section included 22 items measuring the five constructs shown in the research model. The five constructs used in this study were measured using: 4 items for measuring ease of use, 4 items for measuring infrastructure, 4 items for measuring cost, 4 items for measuring relative advantage, and 6 items for measuring participation.

The instrument utilized a 5 point Likert scale with 1 representing total disagreement, and 5 representing a total agreement. Once the instrument was ready, content analysis was conducted using 5 master degree students who are taking a course in e-government. They read the survey and commented on both the statements and the content, then they added their comments on the items and the dimension they are measuring.

The instrument was also checked for internal reliability and yielded acceptable results. Cronbach's alpha was used for measuring internal consistency, where all values were more than 0.6 (the threshold level for such measure in social sciences.) Table 2 shows the estimations of Cronbach's alpha for the five variables in the model. The highest value was for the participation construct, and the lowest value was to relative advantage, but still at acceptable levels.

Table 2: Reliability Analysis and the values of Cronbach's alpha

Construct	Valid N	Number of	Cronbach's

		Items	Alpha
Ease of use	248	4	0.842
Infrastructure	236	4	0.863
Cost	245	4	0.778
Relative advantage	239	4	0.775
Participation	237	6	0.903

3.2 Sample and sampling process

The survey was distributed to many schools in the Northern part of Jordan, where teachers filled the survey and return it to the researchers by hand. Teachers were chosen as a sample because they represent the largest and the most educational segment using government services. Such sample is also convenient to our study from two sides: first, it is easy to attain the required sample size. Second, their sociability and their ability to express their perspectives within the domain they are in. Also, building an online survey contributes in widening the size of the sample, around 100 surveys were received online via email and google drive. The survey collection process was done in August 2014, and the total surveys distributed were 260 surveys. The total collected surveys were 250 surveys, were 2 surveys were removed because of empty responses (only demographic data filled). The total size of used sample was 248 surveys, in which the male participants were with 51.6% and female with 48.4%. The majority of them was between 20 and 40 years old with 69.8% and 58.5% of them are having Bachelor degree. Table 3 shows the demographic of sample used.

3.3 Descriptive statistics of variables

The first step in the analysis was to investigate the level of perceptions Jordanians hold for the five variables in the instrument. Table 4 shows the results of calculating the means and standard deviations for the five variables in the research model. Results indicated high perceptions for the five variables as all means were above 3.66. The cutoff points for a 5 point Likert scale in the social sciences is 1-2.33 representing low perceptions, 2.33-3.66 as medium perceptions, and 3.66-5 as high perceptions. The results indicated that all constructs are highly perceived and thus support our research premise and the importance of the constructs adopted. Finally, the standard deviation values indicate a consensus with close values when comparing the variables.

Table 3: Sample demographics

Gender	Count	%
Male	128	51.6%
Female	120	48.4%
Total	248	100%
Age	Count	%
Less than 20 years	22	8.9%
20-40 years	173	69.8%
41-60 years	51	20.6%
More than 60 years	1	0.4%
Not reported	1	0.4%
Total	248	100%
Education	Count	%

High School or less	44	17.7%
Bachelor	145	58.5%
Master/PhD	49	19.8%
Other	10	4.0%
Total	248	100%

Table 4: The means and standard deviations for the research model variables

Construct	N	Min	Max	Mean	Std. Deviation
Ease of use	248	1	5	4.002	0.734
Infrastructure	236	1	5	3.781	0.808
Cost	245	1	5	3.952	0.825
Relative Advantage	239	1	5	3.803	0.757
Participation	237	1	5	3.925	0.780

4   DATA ANALYSIS AND DISCUSSION

The proposed research model hypothesized four relationships that map the factors influencing the levels of electronic participation in e-government projects. The data collected was analyzed using SPSS and the research model was tested using multiple regression, where four independent variables predicted one dependent variable. The results of the model indicated a high prediction value of e-participation, with a value of coefficient of determination $R^2 = 0.693$ (adjusted $R^2 = 0.688$). The model was extremely significant with a value of $F_{4,244}= 125.513$, $p<0.001$. Such high value indicates a great explanation of the dependent variable equal to 69% of the variance in sustainability. The model also utilized four predictors that define the four stated hypotheses. To explore the individual influence of the predictors, a coefficient table was generated which is shown in Table 5 below.

The results in the table indicate that three of the four constructs significantly predict e-participation. The only construct that failed to predict the dependent variable is the infrastructure readiness. The recommendations of research in the area of e-readiness emphasized the role of infrastructure in improving e-government accomplishments in the country and specifically the relationship with businesses [31]. Still, the other three variables significantly predicted participation at the 0.05 level. Ease of use and cost factors predicted participation at the 0.05 level, whereas, relative advantage predicted participation at the 0.001 level.

Table 5: The coefficient table of the regression test

Construct	Unstand. Beta	Standard Error	Stand. Beta	t	Sig.
Ease of use	0.123	0.056	0.116	2.184	0.030
Infrastructure readiness	0.021	0.060	0.023	0.351	0.726
Cost	0.144	0.062	0.152	2.342	0.020
Relative advantage	0.621	0.068	0.608	9.197	0.000

Dependent Variable: e-Participation

5   CONCLUSIONS AND FUTURE WORK

E-participation is one of the major dimensions of open government initiative proclaimed by the Obama's administration [32]. This research tried to investigate Jordanians level of e-participation in e-government project as reported by a sample of 248 citizens. Jordanians perceived highly the five proposed variables utilized in this study. Also, the five variables demonstrated reliable estimates.

The major factors influencing the level of e-participation directly were regressed on the dependent variable (e-participation in e-government projects) and they are: ease of use of e-government systems, which plays a significant role in encouraging citizen to be motivated and involved in the political arena through the interactive participation in e-government services and websites. Secondly, the cost of using such e-service is expected to be lower than the cost of getting the same service traditionally. Thirdly, the expected advantage from using such systems is increased through the increased participation and by using e-government systems. All these factors were supported in the study, but the influence of infrastructure readiness was not supported. It is believed that there is no well equipped and prepared infrastructure to start launching the initiative of e-government (not ready yet).

Based on this, three out of four hypotheses were supported, where H2 was the only rejected hypothesis. More research is required to investigate the real reasons behind citizens' perception about the deficiency of the infrastructure in Jordan. Also, a validation of the instrument using a different sample will provide future research with a suitable instrument to be used for measuring the five variables used.

Biography

Heba K. Al-Quraan earned her both master and Bachelor degrees in MIS from Yarmouk University (YU) in Jordan. . Her research interest in areas like *E-government, technology acceptance, E-learning*, and *medical informatics.*

Dr. Emad A. Abu-Shanab earned his PhD in business administration, in the MIS area from Southern Illinois University – Carbondale, USA, his MBA from Wilfrid Laurier University in Canada, and his Bachelor in civil engineering from Yarmouk University (YU) in Jordan. He is an associate professor in MIS. His research interest in areas like *E-government, technology acceptance, E-marketing, E-CRM, Digital divide, and E-learning*. Published many articles in journals and conferences, and authored three books in e-government. Dr. Abu-Shanab worked as an assistant dean for students' affairs, quality assurance officer in Oman, and the director of Faculty Development Center at YU.

REFERENCES

[1] Abu-Shanab, E. (2014). Electronic Government, a tool for good governance and better service. Dar Al-Ketab, second edition (ISBN: 978-9957-550-99-8), 2014, 262 pages.

[2] Al-Dalou', R. & Abu-Shanab, E. (2013). E-Participation Levels and Technologies. The 6th International Conference on Information Technology (ICIT 2013), 8-10 May, 2013, Amman, Jordan, pp.1-8.

[3] Alcaide-Muñoz, L., Hernández, A. M. L., & Caba-Pérez, C. (2014). Public Managers' Perceptions of e-Government Efficiency: A Case Study of Andalusian Municipalities. In Measuring E-government Efficiency, pp. 135-156. Springer New York, pp.1-19 " No issue and volume determined"

[4] Tufts, S. H. (2014). Citizen Engagement 2 Facebook Pages To De Civic Engagment. Journal of Information Technology Management, 25(2), 16, pp. 15-21.

[5] Rorissa, A., Demissie, D., & Pardo, T. (2011). Benchmarking e-government: A comparison of frameworks for computing e-government index and ranking.*Government Information Quarterly*, *28*(3), 354-362.

[6] Joseph, R. C. (2013). A structured analysis of e-government studies: Trends and opportunities. *Government Information Quarterly*, *30*(4), 435-440.

[7] Westland, D., & Al-Khouri, A. M. (2010). Supporting e-government progress in the United Arab Emirates. Journal of E-Government Studies and Best Practices, 2010, pp. 1-9.

[8] Odat, A. & Khazaaleh, M. (2012). E-Government Challenges and Opportunities: A Case Study of Jordan. IJCSI International Journal of Computer Science Issues,9(5), 2, September 2012, PP. 361- 367

[9] Abu-Shanab, E. (2012). Digital Government Adoption in Jordan: An Environmental Model. The International Arab Journal of e-Technology (IAJeT), Vol. 2(3) January 2012, pp. 129-135.

[10] Anthopoulos, L. G., Siozos, P., & Tsoukalas, I. A. (2007). Applying participatory design and collaboration in digital public services for discovering and re-designing e-Government services. Government Information Quarterly,24(2), 353-376.

[11] Maier-Rabler, U., & Huber, S. (2010). Sustainable e-participation through participatory experiences in education. *JeDEM-eJournal of eDemocracy and Open Government*, *2*(2), 131-144.

[12] Peristeras, V., Mentzas, G., Tarabanis, K. A., & Abecker, A. (2009). Transforming E-government and E-participation through IT. Intelligent Systems, IEEE, 24(5), 14-19

[13] Schwalje, W., & Aradi, W. (2013). An Arab open government maturity model for social media engagement. Tahseen Consulting. Retrieved January, 19, 2013, pp. 1-35

[14] Olphert, W., & Damodaran, L. (2007). Citizen participation and engagement in the design of e-government services: The missing link in effective ICT design and delivery. *Journal of the Association for Information Systems*, *8*(9), 27, pp. 492-507

[15] Curtin, G. G. (2006). Issues and Challenges: Global EGovernment/E-Participation, Models, Measurement and Methodology. E-Participation and E-Government: Understanding the Present and Creating the Future, pp. 1-33

[16] Osman, I. H., Anouze, A. L., Azad, B., Daouk, L., Zablith, F., Hindi, N. M., . & Weerakkody, V. (2013). The elicitation of key performance indicators of e-government providers: A bottom-up approach, pp. 1-17

[17] Macintosh, A. (2004, January). Characterizing e-participation in policy-making. In System Sciences, 2004. Proceedings of the 37th Annual Hawaii International Conference on (pp. 1-10).

[18] Navarra, D. D., & Cornford, T. (2005). ICT, Innovation and Public Management: Governance, Models and Alternatives for eGovernment Infastructures, pp. 1-11

[19] Bertot, J. C., Jaeger, P. T., & Grimes, J. M. (2010). Using ICTs to create a culture of transparency: E-government and social media as openness and anti-corruption tools for societies. *Government Information Quarterly*, *27*(3), 264-271.

[20] Ahmed, N. (2006, April). An overview of e-participation models. In UNDESA workshop "E-participation and E-government: Understanding the Present and Creating the Future ", Budapest, Hungary (pp. 1-17).

[21] Phang, C. W., & Kankanhalli, A. (2008). A framework of ICT exploitation for e-participation initiatives. Communications of the ACM, 51(12), 128-132.

[22] Rahman, A. (2014). Toward a comprehensive conceptualization of the digital divide and its impact On e-government system success: evidence from local governments in Indonesia, pp. 1-26

[23] AL-Rababah, B. & Abu-Shanab, E. (2010). E-Government and Gender Digital Divide: The Case of Jordan, *International Journal of Electronic Business Management (IJEBM),* V8(1), 2010, pp. 1-8.

[24] Choudrie, J., Ghinea, G., & Songonuga, V. N. (2013). Silver surfers, e-government and the digital divide: An exploratory study of UK local authority websites and older citizens. *Interacting with Computers*, iws020, pp. 1-25

[25] Sipior, J. & Ward, B. T. (2005). Bridging the Digital Divide for e-Government inclusion: A United States Case Study. The Electronic Journal of e-Government, 3(3), pp. 137-146, available online at www.ejeg.com

[26] Helbig, N., Ramón Gil-García, J., & Ferro, E. (2009).Understanding the complexity of electronic government: Implications from the digital divide literature. Government Information Quarterly, 26(1), 89-97.

[27] Abu-Shanab, E. & Al-Azzam, A. (2012). Trust Dimensions and the adoption of E-government in Jordan. International Journal of Information Communication Technologies and Human Development, Vol. 4(1), 2012, January-March, pp.39-51.

[28] Abu-Shanab, E. & Abu-Baker, A. (2011). Evaluating Jordan's E-government Website: A Case Study. Electronic Government: An International Journal, Vol. 8(4), 2011, pp. 271-289.

[29] Rahman, A. (2014). Does Trust in E-Government Mediate the Relationship between Digital Divide and E-Government Use?. *Middle-East Journal of Scientific Research*, *21*(8), 1203-1212.

[30] Myeong, S., Kwon, Y., & Seo, H. (2014). Sustainable E-Governance: The Relationship among Trust, Digital Divide, and E-Government. Sustainability,6(9), pp. 6049-6069.

[31] Obeidat, R. & Abu-Shanab, E. (2010). Drivers of E-government and E-business in Jordan. Journal of Emerging Technologies in Web Intelligence, Vol. 2 (3), August 2010, pp. 204-211.

[32] Abu-Shanab, E. (2015). Open Government Initiatives In Public Sector: A Proposed Framework For Future Research. Saba Journal of Information Technology and Networking, Vol. 3(1), pp. 4-14.