Examining the Citizens' Self-Knowledge in Decision Making Model for Iraqi e-Government

Maky H.Abdulraheem, Shafiz Affendi Bin Mohd Yusof

School of Computing, Universiti Utara Malaysia, Kedah, Malaysia.
makyhss@gmail.com

Abstract—The study on citizens' behaviors and thinking is often dependent on the citizens' various levels of education, cultures, nature of jobs, experiences, and environments. These characteristics form the basis of Citizens' Self-Knowledge. Decision making in e-government is a collaborative action between the government who functions to serve the public and the citizen who are the recipient of the government services. Such collaboration would provide best e-government model (planning, application) and other parts of the e- government initiatives. This study is intended to improve the model of decision-making in E-government using the Citizens' self-knowledge. This article is intended to discuss the results and findings from the pilot study to develop the decision making model in Iraqi e-government by employing citizens' self-knowledge characteristics in decision making.

Index Terms—E-Government; Decision Making; Citizens' Self-Knowledge.

I. INTRODUCTION

The trust between governments and citizens is essential for good government. In order to build confidence through the citizen's participation, governments need to communicate in a transparent manner on the decisions and actions of past and future to achieve e-democracy [1, 2]. The experience offers interaction between institutions helps local agencies to take benefits like improving the accuracy and currency of information, and the reduction of documents or paperwork data management and become decision making more effective in e-government. This is what this study and Iraq government aspire to offer [3]. Both e-government and e-governance have been utilized interchangeably. The e-government idea is content subset of e-governance. The e-governance is a wide idea and contains the use of civil society and ICT by government to increase greater citizens' participation in the governance of political organizations [4]. The Iraqi government seeks to create e-government under the most recent model to provide the citizens good services. The government seeks to learn from other countries to avoid and minimize mistakes and realized their initiatives on Iraqi e-government successfully. As iterated earlier before, The Iraqi government is planning to develop e-government and improve citizens participatory as they (the Iraqi citizens) have experience to work on the e-government platform through using the Internet widely [5, 6]. Decision making in e-government is a collaborative action by the administrators who have been mandated to serve the public and their interest

who themselves are the end users or receivers of the government services. Such collaboration ultimately would provide best decisions and help to determine the shape of the e-government in all its stages (planning, application) and in all parts of the e- government initiatives [7]. Knowledge can be attained or generated from having continuous conversation between explicit and tacit knowledge. Knowledge can be accumulated from various source and opportunities. It can be attained from human experiences, scholarship, events, erudition, and continuous. Knowledge is applied to ideas or facts gained through observation, experience, study, or investigation. The knowledge is a mix of different contradictions through the interactions between the people, the organizations and the environment. Knowledge and having the right or sufficient knowledge is pertinent to human life and activities. The study of the activities of the humans hand included all the activities that involved behaviors, geometric constraint, and complex physical [8].

The Iraqi citizens and government were the main players in this study. This study focused on the collaboration between these two players. For this reason, the study intended to support the Iraqi government initiatives. In this research, the scope of e-government applications was limited to the usage of the Internet as the technology framework by the government, its citizens, and organizations for the purpose of distributing, communicating and/or conducting the exchange of information and business transactions with any government sector and other relevant clients. Iraq is pursuing a revolution on its e-government deliverables to its citizen. Keeping this in mind, a system can always be developed into one that has the potential to decrease the semantic gap between the citizens and e-government, and reduce the errors in decision-making. It is by virtue of having an integrated system that is built with the participation of all important stakeholders, namely government and the public (citizen) that an e-government initiative that are more realistic and attain the satisfaction of all parties.
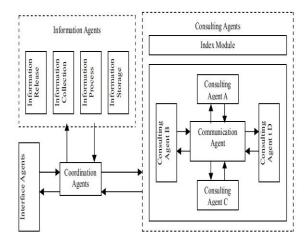
II. RESEARCH BACKGROUND

The study background attempts to propose and debate the possible resolution to improve the model of decision making in E-government by depending Citizens' self-knowledge characteristics. First the background explains one of the previous studies about the decision making in e-government to be clear for the readers. The background of the paper focuses

also on the geographic location and cultures of Iraq, the last section in the background of the study explains the objective of this paper.

A. Decision-Making

The important thing for the government pertains to the administrative decision making. In the past the government was inefficient for various stakeholders to participate effectively. This also included making decisions. At present, there are few studies that have worked on this area. For example, Zhang in his study worked on the multi-agent method technology, an administrative making of decision support system. This technique had four steps, which included interface, information, consulting, and coordination agents. The center of the system in administrative decision-making was the interface agents. The bridge between the three kinds of agents was the coordination agent as shown in Figure1 which showed the four steps clearly: The first step is the interface agents, which involved the decision-making support system and the decision maker; they could contact each other through the interface agents. The second step was the Coordination Agents, which was the main point in this system. They could manage and control any given problem by sending their representative to make deals and solve the problem. They then returned the results to the interface agents to process. The third step was the Information Agents: The main source of information to the system consisted of the collection of information, processing of the information, and storage of the proposed system information. The fourth and last step was the Consulting Agents: The centre of assessing and choosing viable plans for the proposed system and putting together the alternative plans [9].

The structure of the decision-making support system based on MA technology

Figure 1: Decision-making support system

B. Contribution: Geographic Location and Cultures of Iraq

The geography of Iraq is diverse with an area of 168,754 mi² (437,072 km²) and population of 33.42 million (2013). It encompasses four main regions: the desert (west of the Euphrates), Upper Mesopotamia (between the upper Tigris and the Euphrates rivers), the Lower Mesopotamia (the alluvial plain that extends from around Tikrit to the Persian Gulf), and the northern highlands of Iraqi Kurdistan The mountains in the northeast are extended from the alpine mountain system running eastward from the Balkans through the southern part of Turkey, northern part of Iraq, Iran, and Afghanistan, until it finally reaches the Himalayas. In the southwest and the central provinces along the borders with Jordan and Saudi Arabia, is the desert which belongs geographically with the Arabian Peninsula.

Since the Sassanid times, Arabs have been the majority of the population of Iraq. The indigenous empires of Akkadia, Sumeria, Assyria and Babylonia ruled Iraq. Islam, which is followed by 97% of Iraqis is the major religion in Iraq. Christianity, Yazidism, Mandaeians, and other religions make up the other 3%. The country of Iraq, home to many Muslims, is wide and full of diverse heritage with a wide spectrum of culture making Iraq a rich culture.

The study was supposed to be this research on three provinces in Iraq. These three provinces include. Namely these cities are: Baghdad, which is the capital city with a population of 6 554 126. The second city is Babylon which is located south of Baghdad with 85 kilometres in distance and a population of 1 472 405; and the third city is Karbala which is located 100 kilometres south of Baghdad with a population of 762 872 [10], but the study got approval from one province. Because situation is unstable in Iraq and political conflict continuous between all of parties. This study was unable to obtain approvals in each of the Baghdad and Babylon but got the approval to work in the Karbala province only. According to the Iraqi constitution, the No (Iraqi governorates not organized in a region Law No. 21 of 2008 amended) [11]. The structuring of provinces in Iraq is similar administratively and practically. From this point the study will not effect if take one province.

C. Research Objectives

The research objective of this research was to elicit and this research was intended to examine the above to develop a functional decision making model in the Iraqi e-government initiatives through citizenship collaboration with the state, county, and municipal governments. Their participation by the citizens' self-knowledge characteristics superseded even the advance most technology. The focus of this study was intended to examine the understanding and knowledge on Iraqi e-government initiatives and adoption, its antecedents as well as the impact of citizen participation on decision making processes within the Iraq e-government initiatives and system.

"To identify the potential impact of citizens' self-knowledge characteristics that would effect on decision making in the Iraqi e-government."

III. METHODOLOGY

The study methodology will discuss six points, the first point is the variables of the study which forms the citizens' self-knowledge characteristics, the second point is the research hypotheses that depend on the citizens' groups, the third point clarifies the social groups, the fourth point is the survey tools,

the fifth point is the sampling frame and sample size, and last point in the methodology of this study is the questionnaire design.

A. Variables

The current job of all researches is to explain and describe the variance between the variables in the given studies. The different sizes of citizens' participation in e-government from one country to another country depend on the gender, ethnicity, and culture. Through the descriptive study between variables, for example, life satisfaction and political participation, the citizens' participation in politics is dependent on the life satisfaction through survey data. Citizens of any given nation are more likely to vote and participate in a government when the citizens are satisfied with the policies of the government [12]. Necessity has always caused the creation or the need of a website to increase the citizens' participation. Quite often, such effort is preceded by various discussions with the relevant stakeholders. These also include discussion with small business owners, and governmental officials to improve the e-government performance.

Each study has two types of variables in its experiment: independent and dependent [13]. In this study the relationship between citizens' self-knowledge characteristics was independent variable and employing citizens' self-knowledge characteristics in decision making of Iraqi e-government was the dependent variable. All the above variables would contribute to a better understanding of the targeted citizen or population group. Therefore, in order to make effective decisions in e-government, the government must take into account the opinions of the citizens, beliefs, and trends of the citizens to develop the community. The simple reason for this is because the government is created by the community and the citizens must decide the fate and the future of this community.

B. Research Hypotheses

The hypotheses for this research are relative to the research questions and are intended to be tested. It provides an opportunity for this research to attain vital and important information on citizen self-knowledge in the research area [4, 14].

Social Groups (Citizens' Self-Knowledge Characteristics)

The citizens' participation in e-government contributes to prosperity and activation in e-government initiatives. Such collaboration as iterated earlier on also provides harmony between the government and the citizen. Studying the culture of the citizens and the nature of the citizens' jobs was very important to achieve the aim of this research. For example, if one group had a problem with technology, the government could leverage and learn the group circumstances and take actions to improve the situation. Such opportunity would also be useful for group comparison which may have contributed important information that could have generated best possible solution. Evidently, in Iraq, the precursor to active citizen engagement is the missing link in the current e-government system's development. This study was intended to focus on human behavior, which focused on participatory in decision making within the e-government initiatives in Iraq.

The activation of data sharing between the government and the citizens about e-consultation is special in decision making. Exchange of culture, methods of conflict resolution, and levels of collaboration and competition will all support the participation of the citizens in decision making. Subsequently, if all is good, the trust between the government and the citizens can help to materialise e-government initiatives which works well with citizens' participation [15]. Following is the hypothesis to be tested:

H 1.0:   There is a positive relationship between the citizens' self-knowledge characteristics and decision making in Iraqi e-government model.

H 1.1:   There is a positive relationship between the participation of political groups and decision making in the decision making model of Iraqi e-government by planning and managing the usage of politicians to the government.

H 1.2:   There is a positive relationship between the participation of economists groups and decision making in the decision making model of Iraqi e-government by gaining knowledge of business functional areas.

H 1.3:   There is a positive relationship between the participation of technical groups and decision making in the decision making model of Iraqi e-government by delivering technical skills knowledge.

H 1.4:   There is a positive relationship between the participation of workers groups and decision making in the decision making model of Iraqi e-government by gaining knowledge of work functional areas. Table 1, shows the IV and DV.

Table 1
Hypothesis

Hypothesis	I.V.	D.V.
H 1.0	Relationship between citizens' self-knowledge characteristics and decision making	
H 1.1	*Political groups* Plan and manage the usage of political	Employing citizens' self-knowledge characteristics in decision making of Iraqi e-government
H 1.2	*Economists groups* Gain knowledge of business functional areas	
H 1.3	*Technical groups* Deliver technical skills knowledge	
H 1.4	*Workers groups* Gain knowledge of work functional areas	

C. Survey Tools

There are many various ways to run of surveys in research, one of them is distributing the questionnaire papers manually. The research respondents in the questionnaire must complete the questionnaire by answering the questions listed. These include from sections on respondents demographic or personal information to all other sections. Once completed the respondents will submit the questionnaires it back to the researcher [16]. It is important for research such as this one that was intended to investigate the decision making in e-government (the proposed model) to adopt a probability sampling by random sampling method. Sampling must be chosen with great care because the respondents of this research were diverse in background and experiences there

was an extreme need to establish the decision making with the citizens' participation in e-government so as to achieve good research outcomes.

1. *Manual Distribution*

    This method refers to distributing the research survey manually to the respondents, and collected once the respective respondents complete the surveys. So this tool referred used in this study.

2. *Mailed questionnaires*

    Use of the mailed questionnaire has many benefits. It is easy to reach a group of people in a particular area of interest. It is easy to collect data with reduced time and cost. The disadvantage of the mailed questionnaire is that the participant may not respond; also, the researcher may be unable to explain the questions to the participant.

D. *Sampling frame and Sample Size*

Generally, the group of respondents who have the same characteristics and culture will form the population of a study. For example, all programmers in the world make up the population of programmers, and all the department administrators in the institute make up the population of administrators in the institute [17]. Relevant social groups include the political group (governors and their deputies with the members of the provincial council, not appointed but they were elected), economical group (the members of commerce chamber), information technology group (IT departments employees), and workers group (The members of general federation of Iraq trade unions). The province included: political group, the total of the council province members 27 respondents. In addition, each province has an ICT departmental, the total of IT employees 40 respondents. The members of commerce chamber 80 respondents. The members of general federation of Iraq trade unions 200 respondents. The total of all respondents on this study was 347.

E. *Questionnaire Design*

This section will provide the development of the questionnaire and the survey instrument. The researchers had to be careful when they designed their questionnaire so that it would be reliable, effective, and valid instrument to get the information needed from the sample. Choosing a suitable instrument reduces the loss of time to complete the questionnaire [14]. A perfect questionnaire design reduces the errors in the answers and makes the response rate better. The research involved many kinds of respondents from various background and profession. Therefore, time can be particularly important for them. It is imperative that the design of the research instrument (the questionnaire) is not too long and lengthy. Government officials and businessmen are always busy and do not have time to take an interest in these kinds of academic surveys [18].

The survey involved immediate gathering of information from the citizens. The kinds of information that was gathered from citizens contained various levels of attitude, beliefs, knowledge, preferences, or personalities. Questionnaires are largely employed to gather such information. The questionnaire was designed to provide the research valuable information that was good for systematic and quantifiable

analyses. The structure of the questionnaire design for this work contained three parts for data collection: The first part consisted of the demographic information, the second part related to the hypothesis information, and third part related to the suggestions. Table 2 explained the questionnaire design.

Table 2
Questionnaire design

Section A: Demographic		
Demographic questionnaire. Describe the citizens or demographic data for each citizen or the demographic position in the research. This to identify the relevant social groups to help this research in determining the needs of each group.		
Part	Section B: Main part	
1	Social Groups (The role citizens' Self-Knowledge) Selected the questions which involved all types of citizens to study the ideas and beliefs of these groups. This was to achieve better results.	
2	Dependent Variable Employing citizens' self-knowledge characteristics in decision making of Iraqi e-government.	
Section C: Suggestions		
The suggestions part for improving the questions and the study got a feedback from the responders to improve this research.		

According to Barnette and Benson (2000), the Likert scales options depend on the accuracy of the results and is based on what the research needs, furthermore the responder's level of education [19]. Zikmund and other authors are in favour of the seven points likert or more, which they claimed, could offer good results. In addition, the seven points likert are good to the human behavior study and the sciences. This study used the likert seven points according to the past studies. To examine the appropriate analyses of scalar data and when it's preferable to treat ordinal data as interval data, for that the study used the seven Likert scales with more option to analysis in the main study analysis.

IV. RESULT AND DISCUSSION

For the internal regularity of the elements, each variable in the research was investigated using reliability data analysis of approximated Cronbach's alpha. This research, took the Cronbach's alpha 0.6 and greater than 0.6 was reliability [17]. For reliability testing recommend by 37 respondents to reach the Cronbach's alpha 0.6 and greater than 0.6. Thus, version (21) the Statistical Package for Social Science (SPSS) was used to check the conducts the reliability and pilot test.

A. *Demographic Outcome*

The pilot test study was managed among 37 respondents for all groups, where there were questions unified for all groups to answer on these questions. The results of demographic were presented below in Table 3.

B. *Reliability Analysis Results*

Briefly, a pilot study test was run to measure the regularity among the elements of the study constructs; it was discovered from the pilot results. All the constructs had Cronbach's alpha of 0.6 and more than, as mentioned above. The result the pilot study below in Table 4, showed all Cronbach's alpha acceptable.

Table 3
Demographic Results

Category	Min.	Max.	Freq.	Percent %
Sample			335	100.0
Respondents Groups	1	4		
Political			7	18.9%
Economists			10	27.0%
Technology			10	27.0%
Workers			10	27.0%
Total			37	100.0
Respondents' Gender	0	1		
Female			12	32.4%
Male			25	67.6%
Total			37	100.0
Respondents' Age	0	6		
18-25			3	8.1%
25-32			7	18.9%
32-39			4	10.8%
39-46			6	16.2%
46-53			11	29.7%
53-60			5	13.5%
60-67			1	2.7%
Total			37	100.0
Respondents' Education Level	0	6		
Primary school			4	10.8%
High school			9	24.3%
Vocational/Technical			5	13.5%
school			17	45.9%
Bachelors			1	2.7%
Master			1	2.7%
Total			37	100.0
Respondents' Working	0	2		
Private			2	5.4%
Public			21	56.8%
Own			14	37.8%
Total			37	100.0
Respondents' Income	0	3		
150-350 IQD			6	16.2%
350-550 IQD			7	18.9%
550-750 IQD			3	8.1%
750-950 IQD			21	56.8%
Total			37	100.0
Respondents' Ethnicity	0	2		
Arab			33	89.2%
Kurdish			1	2.7%
Turkmen			3	8.1%
Total			37	100.0
Respondents' Religion	0	0		
Muslim			37	100%
Total			37	100.0

Table 4
Reliability Analysis Results

Construct	Coding	Number of Questions	Cronbach's Alpha
Political groups (Relationship) - plan and manage the usage of political	PQ1	2	0.909
Economists groups (Relationship) - gain knowledge of business functional areas	EQ2	2	0.620
Technical groups (Relationship) - deliver technical skills knowledge	TQ3	2	0.750
Workers groups (Relationship) - gain knowledge of work functional areas	WQ4	2	0.780

This section links the depended variable and the independent variables above to the practical cases. The section A variable was explained, there is one independent variable. After using the Cronbach's alpha to check from the items were PQ, EQ2, TQ3, and WQ4. The majority of the respondents, with different culture, Internet experiences, skills they showed positive perspective.

Through the results of each group the political group the hypothesis H1-1 in the current research was found to be supported. The relationship between political group and decision making is positive was found by Cronbach's alpha 0.909. The economical group the hypothesis H1-2 in the current research was found to be supported. The relationship among economical group and decision making is positive was found by Cronbach's alpha 0.620. The technology group the hypothesis H1-3 in the current research was found to be supported. The relationship among technology group and decision making is positive was found by Cronbach's alpha 0.750. The worker group the hypothesis H1-4 in the current research was found to be supported. The relationship among worker group and decision making is positive was found by Cronbach's alpha 0.780.

This study made mix between all the experiences of the players from the four groups above to develop the decision making with engage the citizens' self-knowledge. From the Cronbach's alpha and factor analysis, the study identified the good items from the variables. The political groups: Plan and manage the usage of political, economists' groups: Gain CDeliver technical skills knowledge and workers groups: Gain knowledge of work functional area. The variables that were examined using Kruskal Wallis Test, then check the strength of relationship between the variables through the Correlation test, finally examination the model by the multiple regression analysis, for these analyses choosing the seven Likert will give the researcher the strength to analysis with more option. The relationship between citizens' self-knowledge characteristics and decision making was positive and has the ability to achieve best results by involving more groups.

V. CONCLUSION

The aim of this research is to supply evidence regarding the citizens' self-knowledge characteristics in decision making that impact on decision making in Iraqi e-government. Iraq faced many suffering over the 15 years. Which stimulated the Iraq to start to use the e-government, because the terrorism and sabotage frequent and lost the information from the administrations, also the citizens needs more flexibility to finish their transactions. For these reasons, this study is intended to develop a decision making model by engage the citizens to develop the decision making in the Iraqi e-government. The pilot test data also saw that there is necessity to explained what should be done to improve the decision making model in the Iraqi e-government, as many of the respondents had satisfy about engage them opinions in decision making of Iraqi e-government. Despite the fact that the sample sizes for the pilot test was too little to generalize this result. Although, it is a good think to engage the citizens in decision making model, but the study need to focus on how take a good data.

ACKNOWLEDGMENT

REFERENCES

[1] M. Masrom, E. L. A. Ling, and S. Din, "The influence of e-Participation on e-Filing Participation: A Study of Citizen Adoption on e-Government Services," *International Journal of Engineering Science and Innovative Technology (IJESIT),* vol. 3, 2014.

[2] S. Gaber and N. Mojskerc, "E-PARTICIPATION AS A POSSIBLE UPGRADING OF REPRESENTATIVE DEMOCRACY," *Journal: Teorija in Praksa,* vol. 51, 2014.

[3] N. J. Al-khafaji, A. J. K. Shittu, and W. R.-z. S. Osman, "G2G interaction among local agencies in developing countries based on diffusion of innovations theory," in *Digital Information and Communication Technology and it's Applications (DICTAP), 2014 Fourth International Conference on*, 2014, pp. 125-131.

[4] S. A. B. M. Yusof and M. H. Abdulraheem, "Real Factors Which Impact on Decision Making in E Government," in *Proceedings of the 2015 6th International Conference on Intelligent Systems, Modelling and Simulation*, 2015, pp. 252-255.

[5] M. H. Abdulraheem, "Modelling the First Step of E-governance--A Case Study," in *Computational Intelligence, Modelling and Simulation (CIMSiM), 2012 Fourth International Conference on*, 2012, pp. 124-126.

[6] N. J. Al-Khafaji, A. J. K. Shittuline, and W. R. B. S. Osman, "The Effect of Resistance to Change in the Application of e-Government in Iraq,"

presented at the 2012 Tenth International Conference on ICT and Knowledge Engineering, 2012.

[7] T. A. Bryer, "Public participation in regulatory decision-making: Cases from regulations. gov," *Journal: Public Performance & Management Review,* vol. 37, pp. 263-279, 2013.

[8] I. Nonaka, "A dynamic theory of organizational knowledge creation," *Organization science,* vol. 5, pp. 14-37, 1994.

[9] Y. Zhang, Y. Siwen, and X. Xu, "An Administrative Decision-Making Support System Based on Multi-Agent Technology," in *Wireless Communications, Networking and Mobile Computing, 2008. WiCOM'08. 4th International Conference on*, 2008, pp. 1-4.

[10] G. Burnham, R. Lafta, S. Doocy, and L. Roberts, "Mortality after the 2003 invasion of Iraq: a cross-sectional cluster sample survey," *The journal The Lancet,* vol. 368, pp. 1421-1428, 2006.

[11] S. Royo, A. Yetano, and B. Acerete, "E-Participation and Environmental Protection: Are Local Governments Really Committed?," *Public Administration Review,* vol. 74, pp. 87-98, 2014.

[12] P. Flavin and M. J. Keane, "Life satisfaction and political participation: evidence from the United States," *Journal of Happiness Studies,* vol. 13, pp. 63-78, 2012.

[13] M. N. K. Saunders, M. Saunders, P. Lewis, and A. Thornhill, *Research methods for business students*: Pearson Education India, 2011.

[14] C. R. Kothari, *Research methodology: methods and techniques*: New Age International, 2011.

[15] E. Siskos, D. Askounis, and J. Psarras, "Multicriteria decision support for global e-government evaluation," *The journal Omega,* vol. 46, pp. 51-63, 2014.

[16] S. Kolachalam, "An Overview of E-government," *The journal Economia Aziendale Online,* pp. 1-12, 2012.

[17] W. Zikmund, B. Babin, J. Carr, and M. Griffin, *Business research methods*: Cengage Learning, 2012.

[18] J. W. Creswell, *Educational research: Planning, conducting, and evaluating quantitative.* vol. 39(2), 2014.

[19] J. J. Barnette, "Effects of stem and Likert response option reversals on survey internal consistency: If you feel the need, there is a better alternative to using those negatively worded stems," *Educational and Psychological Measurement,* vol. 60, pp. 361-370, 2000.