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Impact of digital technology on voters participation percent in Iraq election 2021

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Abstract

digital technology is the main factor shaping the features of this era and her entry into the political field is considered the most influential on the life of society. As it entered the electoral process in all its stages to ensure efficiency, accuracy and speed in its completion. Free and fair elections are the basic foundation for building a democratic system and the legitimacy of the authority in any country. Therefore, this research came to demonstrate the extent to which digital technology can be used in the electoral process Iraq and how impact it to voters' participation in October 2021. the mean of responses 3.48 from them believed you decision to participate in the electronic vote was correct and this value not encourage. In previous years, if the use of technology in Iraq was done in a specific way, it was limited to some Aspects of the electoral process, and technology was not used in the voting stage, which is one of the most important stages The electoral process because it represents a translation of the will of the people in drawing up the general policy of the country. The importance of this research on the electoral system dependent to electronic voting lies in ensuring its transparency and impartiality and the possibility of its application in Iraq.

Keywords: Election, digital technology, E-voting

1.0 Introduction

Election is the democratic means for rulers to gain power. Election is a natural right that the individual exercises freely, and he chooses whomever he deems appropriate to exercise power, and he has the right to abstain from voting [1]. In 2018 the Independent High Electoral Commission adopted two methods (Paper and electronic elections). Iraqi community that has not yet adopted the E-election has not proceeded for a different of cases such as a lack of political will from the parliament council, bureaucratic backing, financial constraints or inadequate resources required to support that type of election, concerns about fraud, unwillingness to adopt technology too quickly without first learning from the experiences of the countries that used it. Through the clear messages were appeared in the results about situation Iraqi politics, not least decline in voter turnout and many people taken decision to boycott the elections, that reflect uncomforted from politics state in the country because the spread bureaucracy. The detect electoral fraud and the low participation (44.5 percent) indicate that it will be difficult for the political class to overcome challenges to keep trust citizens. the project was submitted by the "Institute of Regional and International Studies" (IRIS) as a result of study mobilization strategies and Iraqi elections results 2018. This project forms one from several of the Conflict Research Programme, funded by the UK Department for International Development [2]. According to Election Law No. 9 of 2020 law, the House of Representatives consists of 329 seats. 320 are distributed among the governorates located within the 83 electoral districts, which were identified within the framework of the new electoral system. As for the

remaining nine seats, they are reserved for minorities, which are called the component seats as follows: Christians 5 seats in Baghdad, Dohuk, Erbil, Kirkuk, and Nineveh: Yazidis, Shabak, Sabeen Mandaeans, and Faili Kurds one seat for every minority. According to the constitution, 25 percent of all seats in the House of Representatives are reserved for women. One seat in each of the 83 electoral districts is allocated to female candidates. This is the bare minimum. More female candidates may be elected; Where 83 the number constituencies across the country. only the single vote uses in the system Iraqi election and cannot transform it to another candidate. Which is a pluralistic electoral system based on multi-member constituencies. Each voter casts one vote for one candidate. But there are several seats in each governorate. The candidates with the most votes win the seats. An eligible voter must be a full citizen of Iraq, must be at least 18 years of age in the year of the election, and must be registered in the voter register. Proxy voting is not permitted. Of the candidates allowed running in the elections 3249 from them 951 were female and this percent 29%. According to the National Office, the number of registered voters is 25182594, 12941671 males (%51.4), and 12240923 females (%48.6). The last processes of elections in Iraq were heavily reliant on e-election systems 2018[3]. Before the election process in 2021, many electoral commissions were upgrading their existing system and developing a new system to streamline or replace manual processes. The widespread adoption of electoral systems (any information system used for elections) has created many challenges to ensuring the quality and transparency of our elections. To date, electronic election systems have been developed and operated in accordance with standard industry practices [4]. However, this is inappropriate for mission-critical systems where security and reliability are imperative. The last practice has resulted in several examples of poor-quality e-election systems, which have experienced failures in the last recent elections. We identify in the last election that ensures the electronic election system is insecure, unreliable, and not transparent. The general challenges that are common to all electronic-election systems include e-voting and e-counting. the politics leaders must be true representative of the voters and others from persons in the all society. Thus, with different electoral systems in the countries of the world , it is necessary to take into account the characteristics of each society and at the same time include means to solve problems related to the system [5]. The electoral process revealed significant concerns about the independence of the Iraqi Electoral Commission, restrictions on political parties and their candidates, misuse of public resources, some unbalanced public media coverage, shortcomings in the compilation of the voter list, and serious problems related to the provision of ID. The holding of general elections does not in itself guarantee the restoration of democracy. Unwarranted interference in electoral events, as described above, regardless of the alleged motivation, resulted in serious shortcomings in the electoral process. Additionally, the questions remain that occupy a large part of the thinking of the organizers and participants in the elections; Malfunction of some devices used in the voting process, sometimes the biometric card is not read because the SIM card is damaged or the device is malfunctioning, the users of the devices are trainees contracted with the Independent High Electoral Commission, most of them are not specialized, updating the voter register manually is one of the challenges that both voters and election officials face[6]. The hypothesis of the research: are there fundamental differences in the percentage of participation in the 2021 electronic elections due to the job factor, are there fundamental differences in the percentage of participation in the 2021 electronic elections due to the gender

factor and are there fundamental differences in the percentage of participation in the 2021 electronic elections due to the age factor, The main target to identify efficiency digital technology in E-election and the implications of using it on voters' participation percent in Iraq election 2021. The importance of this research on the proposed electoral system lies in ensuring its transparency and impartiality and the possibility of its application in Iraq. The search limits: Theoretical focused on two variables referred to in the study model. Spatial boundaries: Al-Mansour Medical Technical Institute, Iraq - Baghdad - Al-Mansour and The Bar Association. Temporal limits: The study relied on data collected from the study population in the period between October 13 to November 28, 2021. Human limits: the study was limited to faculty members, staff (technical, administrative and service workers), and students. The generalization of the results of the study depends on the following determinants: Accuracy and objectivity of the responses of the study sample to the study tool items most of the members of the study community are holders of certificates and few of them hold a primary certificate or do not read or write, while the illiteracy rate in Iraq is nearly 15%.

2.0 Review

In the era of technology, they are increasingly systems being used in elections around the world. Some argue when a country's capabilities and resources are limited, such technologies provide a quick jump to cleaner and more reliability elections. This article argues that the increased use of these technologies was driven by passion for the technology rather than an accurate assessment of its effectiveness; that it could create significant opportunities for corruption (among other things) that negate its potential impact; And they incur significant opportunity costs. Indeed, as new technologies tend to distract from "traditional" strategies, the failure of digital checks and balances often makes the electoral process more vulnerable than ever to fraud. These notes are not a statement against the digitization of elections. Among other things, we argue that the driving forces behind these new approaches are too strong to resist. But the analysis highlights the importance of a more in-depth assessment of the challenges as well as the benefits of these technologies, as well as the need for more careful planning for their implementation[7]. Despite the widespread belief that established democracies will conduct electronic voting first and then in developing countries, adoption in developing countries came faster than in countries known to be countries that have adopted democracy for a long time, specifically in countries such as Argentina, Brazil, Ecuador and Venezuela, which are from America Latin countries. The electronic voting discussed in this article applied the experience of Salta, the first province in Argentina to offer electronic voting to all voters in 2013. Based on a survey of 1,000 voters in the 2013 provincial election, voters' experience and confidence in the electoral process was analyzed. Key findings include the strong influence of a voter's ability to use a voting machine without assistance on public support for electronic voting and a positive perception of the integrity of the electoral process. These findings have both theoretical and policy implications [8]. Internationally, research and publication of e-voting over the past 15 years has clearly shown that digital technologies are not a magic stick that will fix electoral problems, such as a dramatic increase in voter participation or a significant increase in public confidence in elections. Some voters, candidates and election organizers, which explains why Ontario's voting method is so popular. These advantages, along with the problems and drawbacks, have demonstrated the use of digital voting in local elections. Elections in Australia rely heavily on electronic voting systems. Many electoral commissions

are now updating their existing systems and developing new ones to simplify or replace manual processes. Especially this new generation of electronic elections the systems aim to enable greater online access for both voters and employees[9]. The disadvantages of the electronic election system are Resistance to change: the psychology of man makes him resist change in various fields Life, especially the political one, regardless of the form and extent of this change[10]. the electoral process requirements in the technology era need the provision fundamental factors like a stable energy supply and high finance potential, that meaning pay of huge money to ensure electronic devices suit working and electronic security, considering that the more precise and the security guarantees of electronic devices as their price increases [11]. The electronic system may fail when used in the electoral process when an error occurs in the design of the program. Providing guarantees to address the electronic defect is no less important about the design of the device. This point is considered one of the main challenges that accompany the elections during the electronic voting process, which favors paper (manual) voting due to the absence of Mistakes like this[12]. The possibility of exposing the electronic system to piracy operations from abroad is an example of cases electronic piracy What happened to the electronic system of the Russian Central Elections Committee, and it was Originating from Europe. Lack of transparency, because the electronic voting process does not take place under the eyes of observers Manual voting, which is under their supervision, starting from the issuance of the ballot paper and the voter casting with his vote, the end of the votes, and the announcement of the results [13]. We conclude from the foregoing that the risks that stand in the way of using the electronic voting system can be eliminate them, and this is what many technologically advanced countries have worked on by developing devices used in the electronic voting process, including the United States of America, as stipulated in the "Helping America Vote" law stipulates conditions that must be met by the device used in electronic voting is:

A- As little error as possible.

B- Enabling the voter to review the accuracy of his choice before counting his vote.

C - Ensuring that people with disabilities are able to vote independently

D- Possibility of using more than one language for voting.

E- Developing a mechanism to check the votes for reference in case of need.

F- Developing standards for verifying the performance of devices used in the voting process by providing them by companies with experience in this regard, with guarantees and with the possibility of pre-testing these devices. Providing such requirements will facilitate the voting process and other subsequent operations such as counting and sorting, as well as the release of results.

3.0 Method and procedures

The research community consisted of official circles in Syndicates Street in Baghdad, Mansour district. The Bar Association and the Technical Medical Institute Al-Mansour were chosen as a model for these departments. and the study sample was taken from the employees of the two departments, Initially, a list of 50 was prepared for Persons working in the Bar Association including Lawyers, administrators, and service workers in addition to 50 persons working in the Medical Technical Institute Al-Mansour, including lecturers, technicians, administrators, and service workers, in addition to the students of the institute with the help of the administrative official and students' affairs. As a preliminary test on the questionnaire, 20

percent of the respondents were interviewed before collecting official data, in order to remove some unnecessary questions from the data collection tool. Every four employees of the Bar Association were interviewed, as well as the institute's employees, to know their opinion of using digital technology and its impact on the participation rate in the parliamentary elections. The sample size of 50 respondents (12 lecturers, 8 administrative, 9 services workers, 9 students and 12 lawyers, the respondents were randomly selected. As a data collection tool a well prepared and structured questionnaire was used. The data was collected from surveys administered to verify the stability of the tool; The data were analyzed using SPSS[14]. the researcher found the internal consistency using Cronbach's stability coefficient alpha. The value of the internal consistency coefficient was (0.854), and this value is good for such studies. The sample distribution as shown following in table1

Table 1: gender * job

	Job					Total
	lecturer	administrative	Student	service worker	lawyer	
gender male	7	5	5	5	5	27
female	5	3	4	4	7	23
Total	12	8	9	9	12	50

Table 2: items Statistics

	N	Mean	Std. Deviation
Your acceptance degree whether the polling center opened its doors on time and closed on time	50	3.72	.454
The degree of your acceptance Can the elderly vote without assistance	50	2.68	.621
Acceptance degree of using electronic voting devices inside the polling center	50	3.64	.563
Is placing equipment at the polling station sufficient to protect the secrecy of voting	50	2.98	.589
the degree of overcrowding on the voting machines	50	3.00	.606
To what extent do table members understand the mechanism of the electronic voting system	50	3.68	.471
The degree of your acceptance of electronic voting	50	3.74	.527
Acceptance degree of voters to convert traditional voting to E-voting in the 2021 Iraqi election	50	3.74	.853
What reassurances do make you use electronic voting instead of paper voting	50	3.42	.642
The degree to which you believe that your decision to participate in the electronic vote was correct	50	3.48	.909
Valid N (listwise)	50		

The equality hypothesis test was conducted as a variable mean of two independent samples and has two forms: The first assumption is the homogeneity of the variance in the two study

samples, while the second is the heterogeneity of the variance for them and is statistically written as follows:

Ho: $\mu_1 = \mu_2$

H1: $\mu_1 \neq \mu_2$

Where μ_1 represents the mean of the first population and μ_2 is the mean of the second population. The T - test was carried out as shown below.

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

\bar{X}_1 represents the first sample mean, \bar{X}_2 is the second sample mean, S_1^2 represents the first sample variance and S_2^2 represents the second sample variance as well as n_1 the number items of observation of first sample and n_2 the number of observation for sample two. [15].

Table 3: relationship between gender and Voter participation in the 2021 Iraqi elections.

table:3 Independent Samples Test for gender

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
x	Equal variances assumed	.039	.845	-2.186	48	.034	-.25089	.11479	-.48168	-.02009
	Equal variances not assumed			-2.191	47.177	.033	-.25089	.11449	-.48119	-.02059

A t-test was conducted for independent samples to examine the study question: Are there significant differences in the level of male participation and the level of female participation in the 2021 electronic elections in Iraq. Through the results of this test, the results of which are shown in Table 3. it was found that there is a difference in the level of participation in the electronic elections of 2021 due to the gender factor, as the value of T equal 2.191, which is statistically significant at the alpha level, is less than 5%. And we will choose the value of T in the event that the variances are not equal, according to the value of F in Table 3. and its level of significance is greater than 5%. The average participation in electronic elections for males 3.29 was with a standard deviation 0.41, while the average participation of females 3.54 in electronic elections was with a standard deviation 0.39, and this shows the extent of convergence in the participation rate for both type gender in the elections of October 2021.

table:4 ANOVA: relationship between job and Voter participation in the 2021 Iraqi elections

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.582	4	.645	4.797	.003
Within Groups	6.055	45	.135		
Total	8.637	49			

one - way ANOVA table used in analysis to answer the question about relationship between the personal job and impact it to participation in the Iraqi elections 2021? It has been shown from the results shown in table 4 that there is a statistically significant relationship in the change in the number of participants in electronic elections depending on the job in which he works. The value of $F = 4.97$ has reached at the alpha level of statistical significance less than 0.05. The Dunnett C Post Hoc test was used for Multiple Comparisons. The sources of differences revealed by the analysis of variance in table 5 were between the group of lawyers and the group of students where the value of the difference 5.14 and the difference between the group of lawyers and the group of service workers where the value of the difference 5.47 statistical significance at the alpha level of less than 0.05 in the both cases terms of their participation rate in the electronic elections 2021. While no statistically significant differences appeared between the other groups.

Dependent Variable: Voter participation in the 2021 Iraqi elections

Independent variable: Job

table:5 Dunnett C

(I) job	(J) job	Mean Difference (I-J)	Std. Error		
				Lower Bound	Upper Bound
Lecturer	administrative	.02917	.20524	-.6777-	.7360
	Student	-.39722-	.13704	-.8442-	.0497
	service worker	-.43056-	.14331	-.9003-	.0392
	Lawyer	.11667	.17735	-.4569-	.6902
administrative	Lecturer	-.02917-	.20524	-.7360-	.6777
	Student	-.42639-	.16744	-1.0238-	.1710
	service worker	-.45972-	.17262	-1.0744-	.1550
	Lawyer	.08750	.20177	-.6088-	.7838
Student	Lecturer	.39722	.13704	-.0497-	.8442
	administrative	.42639	.16744	-.1710-	1.0238
	service worker	-.03333-	.08032	-.3108-	.2441
	Lawyer	.51389*	.13177	.0838	.9440
service worker	Lecturer	.43056	.14331	-.0392-	.9003
	administrative	.45972	.17262	-.1550-	1.0744
	Student	.03333	.08032	-.2441-	.3108
	Lawyer	.54722*	.13829	.0934	1.0010
Lawyer	Lecturer	-.11667-	.17735	-.6902-	.4569
	administrative	-.08750-	.20177	-.7838-	.6088
	Student	-.51389-*	.13177	-.9440-	-.0838-
	service worker	-.54722-*	.13829	-1.0010-	-.0934-

*. The mean difference is significant at the 0.05 level.

table:6 ANOVA: relationship between age and Voter participation in the 2021 Iraqi elections

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.465	4	.616	4.494	.004
Within Groups	6.171	45	.137		
Total	8.637	49			

Use one-way analysis of variance (ANOVA) to answer the study question is there a relationship between the age per person and his participation in the electronic elections 2021 in Iraq? It has been shown from the results in table 6 that there is a statistically significant relationship in the change in the number of participants in electronic elections depending on the age. The value of $F = 4.494$ has reached at the alpha level of statistical significance less than 0.05. The Dunnett C Post Hoc test was used for Multiple Comparisons. The sources of differences revealed by the analysis of variance in table7 were between the group of age 18-25 and the group of age 34-41 where the value of the difference 6.66 statistical significance at the alpha level of less than 0.05 of their participation rates in the electronic elections 2021. While no statistically significant differences appeared between the other groups of age.

Multiple Comparisons

Dependent Variable: Voter participation in the 2021 Iraqi elections

Independent variable: Age

table:7 Dunnett C

(I) age (J) age		Mean Difference (I-J)	Std. Error	Lower Bound	Upper Bound
18-25	26-33	.42222	.16163	-.2181-	1.0625
	34-41	.66667*	.18274	.0353	1.2980
	42-49	.27124	.10885	-.0707-	.6131
	50-57	.10000	.09412	-.2252-	.4252
26-33	18-25	-.42222-	.16163	-1.0625-	.2181
	34-41	.24444	.23415	-.6210-	1.1099
	42-49	-.15098-	.18243	-.8334-	.5315
	50-57	-.32222-	.17404	-.9996-	.3551
34-41	18-25	-.66667-*	.18274	-1.2980-	.0353-
	26-33	-.24444-	.23415	-1.1099-	.6210
	42-49	-.39542-	.20138	-1.0727-	.2818
	50-57	-.56667-	.19381	-1.2362-	.1029

42-49	18-25	.27124-	.10885	.6131-	.0707
	26-33	.15098	.18243	.5315-	.8334
	34-41	.39542	.20138	.2818-	1.0727
	50-57	.17124-	.12655	.5791-	.2366
50-57	18-25	.10000-	.09412	.4252-	.2252
	26-33	.32222	.17404	.3551-	.9996
	34-41	.56667	.19381	.1029-	1.2362
	42-49	.17124	.12655	.2366-	.5791

*. The mean difference is significant at the 0.05 level.

4.0 Results and Discussion

voters' participation in Iraq election 2021: This research focused on the issue of the extent to which information technology can be used in the electoral process Iraq, especially in the voting phase under the name of electronic voting. The primary objective of this research was to avoid the consequences of loss Voter confidence in the elections in all its stages to ensure efficiency, accuracy and speed in its completion. Free and fair elections are the basic foundation for building a democratic system and the legitimacy of the authority and circulated in any country. The sample comprised of fifty respondents from The Bar Association and the Technical Medical Institute Al-Mansour for the test: male and female were 54% from male and 46% female the questionnaires distributed to them in order to gather data. The average of respondents (3.72%) stated that existing most of election center opened its door and closed on time. 2.68 % from the respondents they think Can the elderly vote without assistance it is a weak percentage as well as 3.64% they accept using electronic voting devices inside the polling center. 2.98% from the respondents they think is placing equipment in election station sufficient to protect the secrecy of voting so, it is a weak percentage too. As for the overcrowding in the voting stations, the percentage was a neutral value. The average of respondents (3.68%) polling staff understanding the mechanism of the electronic voting system. 3.74 % from the respondents they are acceptance of electronic voting, and acceptance to convert traditional voting to E-voting in the 2021 Iraqi election. the respondents said the E-voting best than traditional way in terms of accuracy and speed of results. finally, the average of respondents 3.48% they believe was correct decision to participate in the electronic vote. Through the results that appeared in the averages and the variance of the ratios, it led to conducting the T-test, ANOVA, and the post-comparisons between the averages for all groups according gender, job and age.it was found there is a difference in the level of participation in the electronic elections of 2021 due to the gender(male, female) factor as well as it was found there is a difference in the level of participation in the electronic elections of 2021 due to the type of job where relationship in the change in the number of participants in electronic elections depending on the job in which he or she works clear between lawyers group and students group also between lawyers group and service workers group.

5.0 Conclusion

As the election challenges in Iraq Specifically 2014 and 2018, people began to wonder, "Wouldn't all our problems be solved if they used electronic voting?" Election management bodies around the world are increasingly adopting technologically advanced systems for voting on election day. Electronic voting helps simplify and speed up the voting process, counting and



scheduling votes, and provides more options for citizens. In this research, we have reached a set of conclusions and the following: The adoption of the electronic voting system in the electoral process reflects the extent of scientific progress the state and speeds up the electoral process, as well as the accuracy it provides in sorting and showing the results. The use of electronic voting helps facilitate participation for all groups of people, especially people with disabilities and those residing abroad. The data storage in the electronic voting programs constitutes a reference for the state that can be used in various fields of life. The devices used in Iraqi electronic voting in 2021 not comply with international standards to ensure accuracy, Efficiency and preventing cases of electronic piracy, hacking during their transmission from polling stations to the central data unit. Badly pre-examination processes were conducted before proceeding with its circulation and selection, also this research conclude weak work to disseminate electronic culture among all groups of people. The absence of an alternative emergency plan to deal with sudden system failures by providing a reserve of replacement devices and necessary spare parts, and a qualified technical team to deal with.

6.0 References

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