

ELECTRONIC VOTING SYSTEM AND PUBLIC TRUST: AN ASSESSMENT OF THE VOTERS' PERCEPTION IN DISTRICT PESHAWAR

Farmanullah¹, Arbab Haris Ahmad², Iltaf Khan³, Safia Ali⁴, Saeeda Sharif⁵

¹Assistant Professor, Pakistan Study Centre, University of Peshawar, Khyber Pakhtunkhwa, Pakistan. Email: farman.ullah@uop.edu.pk

²MPhil Scholar, Pakistan Study Centre, University of Peshawar, Khyber Pakhtunkhwa, Pakistan. Email: harisicp1@gmail.com

³Subject Specialist Elementary and Secondary Education, Khyber Pakhtunkhwa, Pakistan, Email: iltafkheshgi@gmail.com

⁴Visiting Lecturer, Women University Swabi, Khyber Pakhtunkhwa, Pakistan. Email: safiaali1793@gmail.com

⁵Lecturer of Pakistan Studies, Government Frontier College for Women, Peshawar. Email: m.saeed.afridi786@gmail.com

Abstract

This study examines perception of voters in Peshawar district about electronic voting system for building public trust in the electoral process. The evaluation was made based on its utility, its role in reducing electoral malpractices, improving reliability, voter recognition, and discouraging vote buying. The study is quantitative, and its scope is limited to the district of Peshawar. The information was gathered via a questionnaire from 400 respondents in the Peshawar District using convenience sampling. The frequency, percentage, and chi-square tests were used to analyse the data. The data was further refined by incorporating various independent variables such as area, gender, age, and literacy.

Keywords: Electronic Voting System, District Peshawar, Elections, Voting, Voters.

INTRODUCTION

The Electronic Voting (E-voting) System, in contrast to traditional paper-based voting, refers to a system wherein electronic means are employed in the voting process, comprising marking of the ballot paper, vote recording, data/information coding for transmission to the main server, and consolidation and tabulation of the final election result (Shanab, 2010: 265-266). An effective e-voting system must ensure electoral transparency, cyber-security, accuracy, swiftness, privacy, approachability, objectivity, cost-effectiveness, and contextual (social/cultural) sustainability (Traunmüller, 2003: 7-14).

Some advantages may reduce the barriers in the e-voting system. First of all, it is easier to count

the votes rapidly. It is easier to prevent fraud and rigging than it was with the manual voting system. It is also more accessible for those voters, particularly those who are partially sighted, because an audio ballot paper is likely to be efficient for blind people. Additionally, foreign citizens who are living away from their country can easily cast their vote. Manual voting is more costly than electronic voting. E-voting may save money (Alvarez, 2008: 138-142; Puiggali, 2007: 20-28).

E-voting is a new concept for an ordinary person. It may take some time for those who are illiterate, in particular, to understand e-voting. IT specialists, known for "hacking programs," may enter the electronic programming of the e-voting machines and

change the results of the election and the privacy of voters. Electronic voting machines can be costly for poor countries (Benoist, 2007: 29-37). Depending on the upgrade of electronic equipment and technology used in the electoral process, the evolution and typology of the e-voting system can be divided into four categories. The typology includes a punch card voting system, an optical scanning voting system, a direct recording electronic (DRE) voting system, and a remote Internet voting system (Gritzalis, 2003: 4-15; Jones, 2001).

Under the punched card system, voters insert a blank yellow card from the top into the punch card voting machine at the polling place. The voters then use a ballot booklet to punch their choices into individual holes on the card to mark their electoral preference. The device identifies the punch mark and records the vote accordingly. This recorded vote is segregated for the total result. The punched card voting machines were first used in the USA in 1964 for the primary presidential elections in Georgia and also in the 2000 presidential elections (Everett, 2007: 5-6).

Under the optical scanning voting system, the voter inserts a machine-readable ballot, counting the names of the candidates, into a scanning machine. The voter indicates his choice by filling in the symbol next to each candidate. The card is then fed into the computerised vote tabulating device, which identifies the mark and records the vote accordingly. The recorded votes are aggregated for the total result. This system is also called a "mark-sense optical scanning system" (Celeste, 2006: 39). Between the 1960s and the 1990s, mark-sense scanning voting was used in the United States (Hao, 2017: 63). It was initially used for various educational colleges' entrance tests between 1960 and 1996. In 1996, this system was used in US presidential elections, where 24.6% of voters used it along with the punched card voting system (Stenbro, 2010: 8-14).

Under the DRE system, the voter directly marks his choice on the electronic device by using the touch screen or push buttons at the polling station (Lindner, 2016, 138). The voting

choice is automatically recorded in the system through a removable or portable storage device. After the polls close, the voting data from the various polling stations is aggregated in a central computing system, which computes the overall result (Zissis, 2011: 56-57). The first DRE voting occurred during the 2004 presidential elections in the United States (Chaum et al. 2010: 175).

The discovery of the internet has made it convenient for voters to cast their votes. Internet voting has been divided into three categories. The first category is polling site internet voting, which includes client machines that are physically present at the polling station and controlled by official polling staff. The voter visits the polling station and casts his vote through the client machine in the presence of polling staff. The authentication of the voter is controlled by the official polling staff. The second type is kiosk internet voting, in which the client machines are controlled by the polling staff. However, the client machines are not present at the polling station; instead, these machines are provided at various public places like shopping malls, schools, libraries, etc. The authentication of the voter is not directly controlled by the official polling staff. The third type is remote internet voting, in which both the client machines and environment are not controlled by the official polling staff. The voters cast their votes at their convenience from their homes, workplaces, or public internet places. The authentication process is controlled by the voter. For the first time, internet voting was allowed in Switzerland in 2003, increasing turnout by allowing remote voters to vote (Kersting, 2004: 6-7).

Currently, many countries are practising the e-voting method in the form of DRE (Electronic Voting Machines—EVMs) or remote internet voting, or a combination of both. Countries with electronic voting machines are the USA, Brazil, Germany, the Netherlands, Italy, Kazakhstan, Namibia, the Philippines, South Korea, the United Kingdom, Scotland, Bhutan, and Belgium. Similarly, countries with remote internet voting are Switzerland, Canada, Finland, Estonia, France, Spain, and Norway. India and Australia, for example, have

electronic voting machines and remote internet voting (Zissis, 2011: 59-70; Alvarez, 2008:76-78).

Pakistan currently uses a manual paper-based voting system. After every single election, irregularities are noticed by the political parties and other stakeholders. As a result, various inquiry committees are formed in post-election scenarios to investigate anomalies and recommend next steps for electoral transparency and public trust (Khan et al., 2011: 5-30). Various recommendations and electoral reforms are kept in front of different stakeholders as a remedy to curb or decrease rigging (Khawaja, 2016: 1-2). E-voting adoption is one of many recommendations propounded by various stakeholders to lower electoral malpractices. However, due to the number of barriers, the e-voting system has not been implemented so far (Khan et al., 2011: 131-32). Pakistan has adopted an e-voting system to develop remote internet voting for those overseas in the 2018 general elections on a successful trial basis (Haq et al., 2019: 1-2). The present study will provide an overview of the challenges faced by the e-voting system and highlight its importance in building public trust in the electoral process in Pakistan.

LITERATURE REVIEW:

Most of the available literature has focused on electoral malpractices or recommendations for addressing these electoral irregularities. Some of the literature has covered the nature and background of the electronic voting system, while others have covered various forms of electronic voting systems. However, a small gap is found in the available literature concerning the role of the e-voting system in building public trust in the electoral process in Pakistan. The following are some of the sources in the literature review:

Alvarez (2008) elaborates in his work on some issues confronting the American public during the 2004 general elections. This book includes the evolution of electronic voting machines in the USA. To understand the new technology, it is necessary to first understand the brief

historical background of US elections. The next debate will be with critics from the American public. The United States Election Commission then explains the critics in a theoretical context related to electronic voting. It describes the successes and failures of electronic and paper-based voting. However, there is a dearth of information highlighting the role of the e-voting system in building public trust in the electoral process.

Celeste (2006) has thoroughly criticised the electronic voting system. Many information technologists and activists have raised important concerns regarding the security of such systems. The introduction of electronic voting systems is intended to make elections better. However, the electronic voting sceptics have raised important questions about the security, accuracy, and reliability of electronic voting systems that should not be discouraged or suppressed.

Gritzalis (2003) traces the history of the electronic voting system in the form of the punched card system and the optical scanning voting system. The cards used by these machines are printed with rows of marks where holes can be punched. The names of the candidates are not printed on the cards themselves but rather on a ballot holder device that looks something like a book with cardboard pages. Optical scan systems are a popular alternative to punch-card systems. Voters use a pen or pencil to fill in an oval or connect dots on a paper ballot. A machine scans these ballots to count the votes. Both punch card and optical voting systems can be tempered during the counting process. A computerised voting machine allows voters to register their votes using a touch screen. However, there is a dearth of information highlighting the role of the e-voting system in building public trust in the electoral process.

Kersting (2004) has covered e-voting in the form of electronic devices employed for electronic voting. It discusses various barriers in the way of the online voting system. Constitutional and normative issues related to online voting are debated, and reservations concerning internet voting are forcefully

formulated. However, there is a shortage of information when it comes to highlighting the role of the e-voting system in building public trust in the electoral process.

Khan et al. (2011) discusses several factors that are impeding the implementation of the e-voting system. The system requires qualified people who have knowledge about the technology and can train people about the e-voting system. Implementing a sound and secure e-voting system is not a simple task. In Pakistan, there are many challenges in implementing an e-voting system. However, the article places little emphasis on the role of the e-voting system in building public trust in the electoral process.

Lindner (2016) discusses the key findings derived from the analysis of the three main interrelated and partially overlapping perspectives on electronic democracy in Europe. It discusses European public opinion regarding the e-voting system. It has analysed the empirical findings in various European countries regarding e-participation and e-voting activities in Europe. However, the article places little emphasis on the role of the e-voting system in building public trust in the electoral process in Pakistan.

Zissis (2011) discusses electronic voting and its various forms. It includes an empirical analysis about the choices of voters in adopting the e-voting system. The voters support the e-voting system with more security, privacy, and accuracy. It highlights many shortcomings in the 2000 US elections and discusses various remedies for them. However, it has not focused on the e-voting system in terms of Pakistan.

RESEARCH QUESTION:

How can the e-voting system be helpful in building public trust in the electoral process in Pakistan?

RESEARCH METHODOLOGY:

The quantitative method has been used in the study. Quantitative data have been collected to highlight the role of the e-voting system in building public trust and confidence in the

electoral process in Pakistan in light of public perception in the Peshawar district.

Quantitative Method

Data have been collected through a quantitative method in order to examine the role of the e-voting system in building public trust and confidence in the electoral process in Pakistan in light of public perception in the district of Peshawar.

Sampling and Sampling Procedure

The universe of the study is the district of Peshawar. According to the census of 2017, the total population of the district of Peshawar is 426,079 people. According to the Yamane Formula (1967), a representative sample of 400 respondents has been selected through non-probability sampling, i.e., convenience sampling.

Yamane Formula is as under:

$$n = \frac{N}{1 + N(e)^2}$$

Where

“n” is the sample size

“N” is population size

“e” is sample error or level of precision

Here the sample error will be 5% while the confidence level will be 95%.

Based on Yamane Formula, the sample size for district Peshawar will be calculated as:

$$\begin{aligned} n &= \frac{4269079}{1 + 4269079(0.05)^2} \\ n &= \frac{4269079}{1 + 4269079(0.0025)} \\ n &= \frac{4269079}{1 + 10672.6975} \\ n &= \frac{4269079}{10673.6975} \\ n &= 399.9625 \text{ Or } 400 \end{aligned}$$

Thus, a total of 400 respondents have been taken from the district of Peshawar as a sample size. The respondents have been selected from various categories in the following way:

Category	Urban Respondents		Rural Respondents		Total
	Male	Female	Male	Female	
Literate	50	50	50	50	200
Illiterate	50	50	50	50	200
Total	100	100	100	100	400

Quantitative Data Analysis:

Quantitative data have been analysed with the help of SPSS software by dividing into two categories, i.e., descriptive and inferential statistics. In descriptive statistics, the analysis has been made in the form of frequencies and percentages. In inferential statistics, the analysis has been based on the chi-square test and p-value.

VARIABLES OF THE STUDY:

Dependent Variables

The following closed-ended statements constitute the dependent variables of the study.

- i. The casting of votes through an electronic voting system is good.
- ii. E-voting system will decrease electoral malpractices in Pakistan.

THE EXPERIENCE OF CASTING OF E-VOTE

Area Consideration

Table: 01
Casting of vote through electronic voting system is good.

		Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree	
Rural	Count	123	46	16	13	2	200
	% of Total	30.8%	11.5%	4.0%	3.3%	0.5%	50.0%
Urban	Count	134	34	13	19	0	200
	% of Total	33.5%	8.5%	3.3%	4.8%	0.0%	50.0%
Total	Count	257	80	29	32	2	400
	% of Total	64.3%	20.0%	7.3%	8.0%	0.5%	100.0%

χ^2 value=5.706, P-Value=.222

The majority of the respondents (64.3%) say that they agree with the electronic voting system. In terms of area, the majority of the urban population (33.5%) said that they know about electronic voting system. This means that

iii. The casting of votes through an e-voting system will increase the reliability of the electoral process.

iv. The casting of votes through the e-voting system will be helpful in identifying the voters.

v. The casting of votes through an e-voting system will discourage vote-buying.

All these statements have been measured on a 5-point Likert Scale ranging from strongly agreeing to strongly disagreeing.

Independent Variables

Area division (urban and rural), gender (male and female), and literacy (literate and illiterate) constitute independent variables of the study.

DATA ANALYSIS:

All the above five dependent variables have been analysed in terms of area, gender, and literacy. The analysis includes both descriptive statistics and inferential statistics. In descriptive statistics, the analysis has been made via frequency distribution and percentage. In inferential statistics, the analysis has been made with the help of chi-square and p-value. The analysis of these five dependent variables is as follows:

a lot of people consider it good to cast their vote through an electronic voting system. So it is concluded that the e-voting system will not be unfamiliar to the voters.

Gender Consideration

Table: 02

Casting of vote through electronic voting system is good.								
			Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree	Total
Gender	Male	Count	128	39	13	19	1	200
		% of Total	32.0%	9.8%	3.3%	4.8%	0.3%	50.0%
	Female	Count	129	41	16	13	1	200
		% of Total	32.3%	10.3%	4.0%	3.3%	0.3%	50.0%
Total		Count	257	80	29	32	2	400
		% of Total	64.3%	20.0%	7.3%	8.0%	0.5%	100.0%

χ^2 value=1.489, P-Value=.829

The vast majority of respondents (64.3%) are familiar with electronic voting machines. In terms of gender, the majority of the male respondents (32.3%) say that they know about electronic voting systems. This means that the majority of people are aware of the electronic voting system. So it is concluded that the e-voting system will not be unfamiliar to the

voters. We conclude that we received a rare sample, which is ineffective or a null hypothesis.

Literacy-Based Consideration

A large number of illiterate participants have expressed their point of view in favour of voting through an electronic system.

Table: 03

Casting of vote through electronic voting system is good.								
			Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree	Total
Qualification	Literate	Count	109	52	20	18	1	200
		% of Total	27.3%	13.0%	5.0%	4.5%	0.3%	50.0%
	Illiterate	Count	148	28	9	14	1	200
		% of Total	37.0%	7.0%	2.3%	3.5%	0.3%	50.0%
Total		Count	257	80	29	32	2	400
		% of Total	64.3%	20.0%	7.3%	8.0%	0.5%	100.0%

χ^2 value=17.791, P-Value=.001

The majority of the respondents (64.3%) say that they are familiar with biometric systems. In terms of qualification, illiterate respondents (37.0%) say that they know about electronic voting systems. This means that a lot of people

are aware of electronic voting machines. It is concluded that voters will be familiar with the e-voting system. The significance p-value shows that there is an association between gender and knowledge of the e-voting system.

KNOWING ABOUT THE DECREASE IN MALPRACTICES IN ELECTRONIC VOTING MACHINES

Area Consideration

Table: 04

E-voting system will decrease electoral malpractices in Pakistan.								
			Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree	Total
Area	Rural	Count	94	51	38	14	3	200
		% of Total	23.5%	12.8%	9.5%	3.5%	0.8%	50.0%
	Urban	Count	85	62	32	18	3	200

	% of Total	21.3%	15.5%	8.0%	4.5%	0.8%	50.0%
Total	Count	179	113	70	32	6	400
	% of Total	44.8%	28.3%	17.5%	8.0%	1.5%	100.0%

χ^2 value=26.849, P-Value=.000

A total of (44.8%) respondents expressed their views about the question asked. In terms of area, the majority of the rural respondents (23.5%) say that applying electronic voting will

change the election process and decrease the malpractices of the electoral process. This means that some numbers of rural people are in favour of electronic voting.

Gender Consideration

Table: 05

E-voting system will decrease electoral malpractices in Pakistan.								
		Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree	Total	
Gender	Male	Count	97	53	28	19	3	200
		% of Total	24.3%	13.3%	7.0%	4.8%	0.8%	50.0%
	Female	Count	82	60	42	13	3	200
		% of Total	20.5%	15.0%	10.5%	3.3%	0.8%	50.0%
Total	Count	179	113	70	32	6	400	
	% of Total	44.8%	28.3%	17.5%	8.0%	1.5%	100.0%	

χ^2 value=5.616, P-Value=.230

A number of respondents (44.8%) say that they are familiar with malpractices in the electoral process. In terms of gender, the majority of the male respondents (24.3%) have shown their response that they are aware of such rigging in Literacy-Based Consideration

elections. This means that a lot of people are aware of electoral rigging in elections. It is concluded that e-voting systems are known to the voters.

Table: 06

E-voting system will decrease electoral malpractices in Pakistan.								
		Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree	Total	
Qualification	Literate	Count	85	56	35	18	6	200
		% of Total	21.3%	14.0%	8.8%	4.5%	1.5%	50.0%
	Illiterate	Count	94	57	35	14	0	200
		% of Total	23.5%	14.3%	8.8%	3.5%	0.0%	50.0%
Total	Count	179	113	70	32	6	400	
	% of Total	44.8%	28.3%	17.5%	8.0%	1.5%	100.0%	

χ^2 value=6.961, P-Value=.138

The total number of respondents (44.8%) shows their opinion on election rigging. In terms of qualification, the majority of the illiterate respondents (23.5%) say that they are familiar with rigging in elections. This means

that a number of people are aware of malpractice in elections. It is concluded that voters are acquainted with the electronic voting system.

KNOWLEDGE ABOUT RELIABILITY ON E-MACHINES

Area Consideration

Table: 07

Casting of vote through e-voting system will increase reliability in electoral process.								
			Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree	Total
Area	Rural	Count	102	44	45	6	3	200
		% of Total	25.5%	11.0%	11.3%	1.5%	0.8%	50.0%
	Urban	Count	65	43	78	14	0	200
		% of Total	16.3%	10.8%	19.5%	3.5%	0.0%	50.0%
Total		Count	167	87	123	20	3	400
		% of Total	41.8%	21.8%	30.8%	5.0%	0.8%	100.0%

χ^2 value=23.263, P-Value=.000

The electronic voting system was deemed reliable by the majority of respondents (41.8%). In terms of area, the majority of the rural respondents (25.5%) say that the electronic voting system will create an enormous change in electronic voting. This means that a lot of people are aware of the electronic voting system. So, it is concluded that the e-voting system will not be unfamiliar

to the voters. The significance p-value shows that there is an association between gender and knowledge of the e-voting system.

Gender Consideration

In terms of gender, male participants show their preference for the reliability of the electronic voting system. Hence, it will increase in reliability with the passage of time.

Table: 08

Casting of vote through e-voting system will increase reliability in electoral process.								
			Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree	Total
Gender	Male	Count	89	45	52	12	2	200
		% of Total	22.3%	11.3%	13.0%	3.0%	0.5%	50.0%
	Female	Count	78	42	71	8	1	200
		% of Total	19.5%	10.5%	17.8%	2.0%	0.3%	50.0%
Total		Count	167	87	123	20	3	400
		% of Total	41.8%	21.8%	30.8%	5.0%	0.8%	100.0%

χ^2 value=4.896, P-Value=.298

The majority of the respondents (41.8%) say that they have an electronic voting system. In terms of gender, the majority of the male respondents (22.3%) showed their response. Male participants agree with the statement. Literacy-Based Consideration

This means that a number of people agreed with electronic voting. So it is concluded that the e-voting system will not be unfamiliar to the voters.

Table: 09

Casting of vote through e-voting system will increase reliability in electoral process.								
			Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree	Total
Qualification	Literate	Count	78	71	40	8	3	200
		% of Total	19.5%	17.8%	10.0%	2.0%	0.8%	50.0%
	Illiterate	Count	89	16	83	12	0	200

	% of Total	22.3%	4.0%	20.8%	3.0%	0.0%	50.0%
Total	Count	167	87	123	20	3	400
	% of Total	41.8%	21.8%	30.8%	5.0%	0.8%	100.0%

χ^2 value=54.327, P-Value=.000

The majority of the respondent (41.8%) asserts that casting votes through electronic machines will create reliability in this new emerging system. In terms of qualification, 22.3% of illiterate respondents say that they know about

electronic voting. It is concluded that the e-voting system will be familiar to voters. The significance p-value shows that there is an association between gender and knowledge of the e-voting system.

KNOWLEDGE ABOUT IDENTIFICATION OF VOTERS

Area Consideration

Table: 10

Casting of vote through e-voting system will be helpful in identifying the voters.								
		Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree	Total	
Area	Rural	Count	85	50	59	6	0	200
		% of Total	21.3%	12.5%	14.8%	1.5%	0.0%	50.0%
	Urban	Count	73	34	77	14	2	200
		% of Total	18.3%	8.5%	19.3%	3.5%	0.5%	50.0%
Total	Count	158	84	136	20	2	400	
	% of Total	39.5%	21.0%	34.0%	5.0%	0.5%	100.0%	

χ^2 value=11.541, P-Value=.021

The majority of the population (39.5%) believes that voters will be identified through the electronic voting system. Additionally, 21.3% of the rural population is in favour of voter identification through electronic machines. This means that a small number of

people are aware of electronic voting. Hence, it is concluded that the e-voting system has to be promoted through the media. The significance p-value shows that there is an association between gender and knowledge of the e-voting system.

Gender Consideration

Casting of vote through e-voting system will be helpful in identifying the voters.								
		Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree	Total	
Gender	Male	Count	89	42	57	11	1	200
		% of Total	22.3%	10.5%	14.3%	2.8%	0.3%	50.0%
	Female	Count	69	42	79	9	1	200
		% of Total	17.3%	10.5%	19.8%	2.3%	0.3%	50.0%
Total	Count	158	84	136	20	2	400	
	% of Total	39.5%	21.0%	34.0%	5.0%	0.5%	100.0%	

χ^2 value=35.354, P-Value=.000

The majority of respondents (60.5%) agreed that the e-voting system can easily be used to identify voters. In terms of gender, the majority of male respondents (22.3%) support the use of

electronic voting machines to identify voters. It means that a large number of people want an electronic voting system as opposed to a manual voting system.

Literacy-Based Consideration

Table: 12

Casting of vote through e-voting system will be helpful in identifying the voters.							
		Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree	Total
Qualification	Count	83	61	45	9	2	200
	Literate % of Total	20.8%	15.3%	11.3%	2.3%	0.5%	50.0%
	Count	75	23	91	11	0	200
	Illiterate % of Total	18.8%	5.8%	22.8%	2.8%	0.0%	50.0%
Total	Count	158	84	136	20	2	400
	% of Total	39.5%	21.0%	34.0%	5.0%	0.5%	100.0%

χ^2 value=6.290, P-Value=.178

A total of the respondents (39.5%) say that they are familiar with electronic systems. In terms of qualification, the majority of the male respondents (22.8%) become neutral in this regard. This means that a number of people are unaware of the identification of voters through

electronic machines. Moreover, this needs more propagation on different media channels. The significance p-value shows that there is an association between gender and knowledge of the e-voting system.

Area Consideration

Table: 13

Casting of vote through e-voting system will discourage vote-buying.							
		Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree	Total
Area	Count	76	67	28	22	7	200
	Rural % of Total	19.0%	16.8%	7.0%	5.5%	1.8%	50.0%
	Count	85	47	42	23	3	200
	Urban % of Total	21.3%	11.8%	10.5%	5.8%	0.8%	50.0%
Total	Count	161	114	70	45	10	400
	% of Total	40.3%	28.5%	17.5%	11.3%	2.5%	100.0%

χ^2 value=8.434, P-Value=.077

Respondents (40.3%) say that through electronic voting, buying votes from different political parties will discourage them. In terms of area, the majority of the urban respondents (21.3%) say that they agree that voting through

electronic means will decrease vote buying. This means that a number of people are aware of rigging in elections. So, it is concluded that the e-voting system will not be unfamiliar to the voters.

Gender Consideration

Table: 14

Casting of vote through e-voting system will discourage vote-buying.							
		Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree	Total
Gender	Count	94	50	29	21	6	200
	Male % of Total	23.5%	12.5%	7.3%	5.3%	1.5%	50.0%
	Count	67	64	41	24	4	200
	Female						

	% of Total	16.8%	16.0%	10.3%	6.0%	1.0%	50.0%
Total	Count	161	114	70	45	10	400
	% of Total	40.3%	28.5%	17.5%	11.3%	2.5%	100.0%

χ^2 value=8.904, P-Value=.064

The majority of the respondents (40.3%) say that they have known of rigging in elections. In terms of gender, the majority of the male respondents (23.5%) have agreed that rigging in elections is a symbol of corruption in elections. Additionally, this concludes that an Literacy-Based Consideration

unauthorised person won elections so that he or she could harm the environment of our society. So it is concluded that the e-voting system will create a fair environment in the coming elections.

Table: 15

Casting of vote through e-voting system will discourage vote-buying.

		Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree	Total
Literate	Count	68	72	34	20	6	200
	% of Total	17.0%	18.0%	8.5%	5.0%	1.5%	50.0%
Illiterate	Count	93	42	36	25	4	200
	% of Total	23.3%	10.5%	9.0%	6.3%	1.0%	50.0%
Total	Count	161	114	70	45	10	400
	% of Total	40.3%	28.5%	17.5%	11.3%	2.5%	100.0%

χ^2 value=12.789, P-Value=.012

A majority of the respondents (40.3%) agree that fair elections will stop vote buying in elections. In terms of qualification, the majority of the illiterate respondents (23.3%) say that they will be happy to stop rigging. This means that a lot of people are aware of electronic voting. So it is concluded that the e-voting system will not be unfamiliar to the voters. The significance p-value shows that there is an association between gender and knowledge of the e-voting system.

CONCLUSION

The article concludes that the e-voting system is a favourable one for Pakistan. This viewpoint has been supported by a large number of the respondents. An electronic voting system was preferred by the vast majority of respondents (84.3%). A large number of the respondents (73.1%) maintained that this system is better because it will decrease electoral malpractices in Pakistan. In addition, it was also asserted (63.6%) that the e-voting system will increase

the reliability of the electoral process. Likewise, it will help to a great extent (60.5%) to identify the voters. Similarly, an e-voting system will discourage the practise of buying votes in elections (68.8%). Thus, it is agreed that an e-voting system can improve the electoral process in Pakistan if implemented.

References

- [1] Alvarez, R. Michael and Thad E. H. (2008). *Electronic Elections: The Perils and Promises of Digital Democracy*. United Kingdom: Princeton University Press.
- [2] Benoist, E., Anrig, B., & Jaquet-Chiffelle, D. O. (2007). *Internet-Voting: Opportunity or Threat for Democracy? E-Voting and Identity*. First International Conference, Vote-ID 2007 Bochum, Germany, October 4-5, 2007 Proceedings, 29-37
- [3] Celeste, R. T. & D. Lin, H. (2006). *Asking the right question about Electronic Voting*.

- National Research Council of the National Academies. Washington DC.
- [4] Chaum, D. Jakobsson, M. Rivest, R. L. Ryan, P. Y. A. Benaloh, J. Kutyłowski, M. Adida, B. (2010). *Towards Trustworthy Elections*. Springer. Germany.
- [5] Everett, S. P. (2007). *The usability of Electronic voting Machines and how votes can be changed without detection*. Ph.D Dissertation Houston, Texas.
- [6] Gritzalis, D. A. (2003). *Secure Electronic Voting*. New York: Springer Science+Business Media.
- [7] Hao, F. Ryan, P. A. (2017). *Real- World Electronic Voting Design, Analysis and Deployment*. Auerbach Publications, London.
- [8] Haq, H. B., McDermott, R., Tahaal, S. (2019). *Pakistan's Internet Voting Experiment* arXiv:1907.07765v1 [cs.CY], 1-16 (Accessed on 13/10/2020)
- [9] Jones, D. W. (2001). *A Brief Illustrated History of Voting*, Online Book, <https://homepage.cs.uiowa.edu/~jones/voting/pictures/#punchcard> (Accessed on 02/11/2020)
- [10] Kersting, N., & Baldersheim, H. (2004). *Electronic Voting and Democracy: A Comparative Analysis*. New York: Palgrave Macmillan.
- [11] Khan, M. Q., Mehmood, F., Khan, D., Hussain W. (2011). *Barriers to Implement E-Voting System in Pakistan*. *Journal of Applied and Emerging Sciences*, Vol 2, No 2, 131-135
- [12] Khawaja, A., Jamal, S. H. (2016). *Implementing Biometric Voting System in Pakistan: An Analytical Review*. *Journal of Research Society of Pakistan*, Vol. 53, No. 2, (2016): 1-19
- [13] Linder, R. Aichholzer, G. (2016). *Prospects and Challenges of E-Publics, E-Participation and E-Voting*. *Electronic Democracy in Europe*. EU Publisher, Germany.
- [14] Lindner, R., Aichholzer, G., & Hennen, L. (2016). *Electronic Democracy in Europe: Prospects and Challenges of E-Publics, E-Participation and E-Voting*. Switzerland: Springer International Publishing.
- [15] Puiggali, J., & Morales-Rocha V. (2007). *Remote Voting Schemes: A Comparative Analysis, E-Voting and Identity*. First International Conference, VOTE-ID 2007 Bochum, Germany, October 4-5, 2007 Proceedings, 16-28
- [16] Shanab, E. A & Knight, M.B.D. (2010). *E-Voting Systems: A Tool for e-democracy*. *Knowledge Management Research and Practice, Management Research and Practice*, vol. 2, issue 3, pp.264-274
- [17] Stenbro, M. (2010). *A Survey of Modern Electronic Voting Technologies*. Master thesis, University of Science and Technology Department of Telematics, Norway.
- [18] Traummüller, R., & Wimmer, M. A. (2003). *E-Government at a Decisive Moment: Sketching a Roadmap to Excellence*. *Electronic Government. Second International Conference, EGOV 2003 Prague, Czech Republic, September 1-5,2003 Proceedings*, 1-14
- [19] Zissis, d. (2011). *Methodologies and Technologies for Designing Secure Electronic Voting Information Systems*. PhD Dissertation Department of Product and Systems Design Engineering, Greece.