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Implementing Electronic Voting System in Pakistan: Readiness, Challenges and Way Forward

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Abstract: *The purpose of this paper is to explore the possibility of implementing an Electronic Voting System (EVS) in Pakistan, as well as highlight some potential areas where improvement may be needed. The research is broken down into three sections: readiness, opportunities, and challenges. In the Readiness section, the researcher looks at factors such as public trust, resources, and technical infrastructure that would be necessary for an EVM to be successfully implemented in Pakistan. The Opportunities section discusses the favorable conditions in Pakistan for the implementation of the EVM, while the Challenges section outlines some of the obstacles that may need to be overcome before a system like this can be put in place. Based on our findings, the researcher provides a number of recommendations for moving forward with this initiative. Hopefully, this research provides a useful starting point for further discussion on this important topic in Pakistan.*

Key Words: Electronic Voting Machine (EVM), Digitalization, Public Trust, Election Commission of Pakistan, Polling Station,

Introduction

The election system is a critical component of democracy. It represents the method by which citizens can express their opinion on who should be allowed to govern them. In a political system of democracy, people choose their leaders through elections. A political party that wins the most votes is allowed to take control over the government and form a new government. Elections are held at regular intervals so that governments can be changed without having too much of an impact on daily life. An elected leader serves for a specific amount of time before another election takes place. To maintain the health of the democratic process, it is important for elections to be open and fair.

Votes are cast and counted using electronic means in the e-voting systems. This could be done by using computers, smartphones, or other electronic devices. The electronic voting system has been used in many countries for elections and referendums. The electronic voting system was first used in 1970s in some states of the United States for local elections. By 2000, more than 30 countries had adopted electronic voting systems for national elections. Electronic voting systems are used in elections and referendums to allow individuals to cast their votes electronically, either via a remote communication channel or at a computer terminal. Modern electronic voting systems can typically handle one large election at a time or several simultaneous referenda and can provide totals for each ballot position as well as overall totals for the entire

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election/referendum.1

Today's society is seeing a rapid expansion of Internet-based apps and systems that enable a wide variety of social activities to be conducted online. However, the majority of political elections in industrialized and developing states continue to be conducted using paper ballots or touch-screen voting methods that require voters to cast their ballots at a precinct.2 This might be a significant cause of poor voter participation during elections. A dependable and secure electronic voting (E-voting) system that is based on the internet would give voters more convenience and a more accurate vote counting procedure. Meanwhile, the considerable need for a dependable and secure E-voting system has fuelled academics' efforts for years. Since Brazil, India, and the Philippines adopted electronic voting systems, Pakistan has been attempting to use the new technology in general elections. However, social, political, economic, and technical obstacles have stymied the transition. For example, in 2010, an EVM Committee was constituted, which determined that introducing EVMs would impose high costs on Pakistan.

On the other hand, standard voting machines that use paper ballots will always have a certain percentage of ballot misreading. Meanwhile, employing paper ballots may result in significant delays and human error during the counting of results. For instance, several recounts occurred after Election Day in the 2018 elections. Therefore, the current government has passed an EVM and is determined to implement the system in the country as soon as in the upcoming 2023 general elections.

Identified Problem Area

The significance of the study is that it examines the readiness of Pakistan in the way of implementing the electronic voting system. This is a critical step towards ensuring free and fair elections in the country. The study provides valuable insights into the areas that need improvement before such a system can be put into place. It will help to inform policymakers and electoral officials about the necessary steps that need to be taken in order to ensure a smooth transition to electronic voting. Thus, the study is not only significant from a research perspective but also has far-reaching implications for Pakistani democracy as a whole. It is hoped that its findings will be acted upon swiftly so that Pakistan can join the ranks of other countries that have successfully implemented this type of voting system.3

Hypothesis

"Keeping in view the social, political, economic, and technological factors, Pakistan is not ready to implement the electronic voting system in the upcoming 2023 general elections."

Literature Review

This section examines the existing literature on the electronic voting systems around the world and it intends to identify the gap. This section has also been structured to provide an overview of principles such as the historical context, electoral system, electronic governance, and e-voting.

"Pakistan's Democratic Transition" by Ahmad, Ishtiaq, & Rafiq is a book that attempts to bring out the pattern of transition in Pakistan from the pre-independence era up until now with an aim of explaining what made democracy successful at certain periods but not during other times. The book suggests that the main reason behind failed democratic transitions are internal conflicts between different social groups in Pakistani politics which have led to violent clashes between them making way for military takeovers.

The review of the literature indicates that Amanat discusses in detail Pakistan's formative years when it was created after independence. He states how Jinnah's policies were influenced by the political views of the two main religious groups, Hindus and Muslims. The author also emphasizes on Jinnah's very strong drive to establish a united country for both these major groups. This can

be seen through his efforts in uniting Muslim League and Congress Party members during pre-independence times to achieve this goal.4

Another book reviewed is, "The Social Construction of Technological Systems" written by Bijker, W., Hughes, T., & Pinch, T. They argue that the idea of social construction is an important aspect of the creation of technological systems. The reason for this is that technologies are created by groups, communities, or societies with specific goals in mind. As these "inventors" bring their dreams to fruition, others become aware of them and judge them. These judges can be experts in the field as well as those who eventually use the technology. Despite initial intent, a technology's definition cannot be said to have reached its final form until it has been defined as such by society as a whole (Hughes). When the term "technology" comes up in everyday conversation, people do not typically categorize pens and pencils as technologies. However if one was to ask people passing by on the street, most would say that an iPhone is a technological device. Because it is the public, or society as a whole, who decides how they perceive technology, this is why social constructionism becomes relevant to the analysis of technology.5

Another aspect of social constructionism being relevant to technological systems lies within its implications for scientific knowledge. Since science uses evidence in order to prove facts about the world, it is often taken for granted by experts and non-experts alike that facts are not socially constructed (Bijker). For example, when one looks through an atlas the countries are all in the same place. This fact seems natural because one does not typically question an atlas's representation of physical space. However when this idea of "truth" is applied to the world of technology, one can gain insight on how it is socially constructed. For example, the first motorcycle was created by Gottlieb Daimler in 1885 (Bijker). However once society became aware of this new form of transportation they determined whether or not it was seen as a useful invention based upon their own standards. One year after its conception the first motorcycle appeared in Parisian streets and was received with curiosity at best, but mostly with hostility because people did not know what to make of it (Bijker). Despite initial lack of success, this idea caught on and motorcycles are now used all over the world for various reasons. The point that if motorcycles were neither good nor bad initially but only labeled so based on society's perception, then this theory can be applied to any technology.6

Similarly, another book, "Democracy: A Very Short Introduction", is written by Bernard Crick. It was first published in 1995 and remains to be considered a classic work of political analysis. Crick has produced a work that is both concise and informative. The book is very well-received by critics, especially for the clarity of its information, which seems always to be easy, logical, and free of complexities or excesses. Crick uses language that is highly accessible without being patronising. He manages to cover an immense amount of ground but also to provide depth in his critiques of key ideas and thinkers in political theory. It can easily be said that this text is both scholarly and convincing at the same time. 7

Crick's critique on Western Democracies provides valuable insights into how these states have developed over the years as well as what problems they face today as a result of their own success. This book seeks to prove that democracy can be shown to work and why it has such strong support in contemporary society. The book is organized into three parts, each of which focuses on a separate time period or aspect of democratic ideology with the final part being an exploration of how the idea of democracy has evolved through history. Crick also includes two shorter sections, one dealing with conflicting definitions of democracy, while the other explores its connection with liberalism.

Election law in most countries has not kept up with the evolution of technology and even though the outcome of an election using electronic voting machines may be reliable, there are still many issues surrounding their

use. There is a need to ensure that any new electoral process (including technology) complies with existing regulations.

E. Maaten argues in his article, "Towards Remote E-Voting: Estonian Case" that there are three main challenges to overcome in order to make e-voting, or the transfer of voter sentiment over electronic media, widely usable; system security, voter coercion and vote selling. This article discusses these issues as well as certain legal and social conditions that must be met in order for e-voting to become a realized concept.8

Electronic voting machines have been proven to be vulnerable to attack by unauthorized users because of their high degree of connectivity and networking capabilities. There's no way to determine if any modifications have been made and there is very little oversight in testing these machines before they're used during elections which makes them difficult for election officials to maintain honest elections without being manipulated themselves by hackers who know how to get around electronic voting machine security measures.

Methodology

With a Qualitative Approach, the research uses 'Literature Review' as the research methodology.
The literature review is defined as the systematic examination and evaluation of scholarly writings on a particular topic. It can be used for many purposes, including synthesizing existing knowledge, informing new research questions, developing hypotheses, and providing evidence to support arguments or theories. In its broadest sense, literature review refers to any type of scholarly writing that reviews the existing body of research on a topic.

Theoretical Framework: Social Construction of Technology (SCOT)

The Social Construction of Technology (SCOT) theory has been applied to this study. This theory was created between the late 20th century by the collective work of Wiebe Bijker and Trevor Pinch. This is a theoretical framework for understanding technical progress as a social phenomenon. The main goal of this framework is to refute the notion that technological growth is always logical and reasonable, following a predetermined route. "One cannot explain why a technology 'works' in society in purely technical terms from a social constructivist approaches." It is not the machines that determine the purposes, meanings, and designs, but rather the humans. More precisely, 'relevant social groups (RSG)' determine everything related to the development of a technology-based on their demands, beliefs, and so on. RSGs may be institutions or organizations, as well as structured and disorganized groups of people.9

Since Pakistan is on the way to implement EVM therefore, the social construction of technology (SCOT) framework is used in this research to understand the readiness of Pakistan for electronic voting. This framework looks at how technology is socially constructed or created by looking at the various actors involved in this process. In the context of Pakistan, the study looks at the different stakeholders who are pushing for electronic voting and sees if their motivations align with creating a system that is ready for use. It also looks at the barriers to implementing an effective electronic voting system in Pakistan. These include issues like lack of trust in the electoral process, poor internet infrastructure, and security concerns. By understanding these barriers, one works on solutions to address them and makes progress towards implementing an electronic voting system in Pakistan.10

Readiness of Pakistan to Implement EVM

The purpose of this section is to investigate the readiness of Pakistan for the implementation of e-voting. The study will first look at the legal and regulatory framework for e-voting in Pakistan. It will then analyze the existing infrastructure for e-voting and identify any gaps that need to be addressed. Finally, it will assess public trust towards e-voting in

Pakistan.

Legislative and Regulatory Framework

The legal and policy community is one of the sectors that are critical to the adoption of electronic voting. Some of the most successful nations in the world first struggled with issues of law and policy. India, for example, implemented electronic voting in part in 1982 before having it revoked since it was not in conformity with the legislation. Although the Indian parliament changed its regulations in 1989, e-voting in India did not become widespread until 2003, when it was implemented in all sixteen states of the country without the need for legislation or a lawsuit. In the same way, Brazil, which revised its voting laws in 2000 and deployed electronic voting in 2006, is a good example. Thus, it is necessary to develop the legal items and rules that will be used in the implementation of e-voting. Prior to putting laws into effect, the parliament and the government must draught or update existing legislation.11

Pakistan has a well-developed legal and regulatory framework for elections. The Constitution of Pakistan provides for universal adult suffrage and sets out the basic principles governing elections. The Election Act, 2017 lays down the specific provisions relating to elections in Pakistan. It covers all aspects of the electoral process, from the nomination of candidates to post-election complaints.

The Election Commission of Pakistan (ECP) is the independent body responsible for organizing and conducting elections in Pakistan. It has a wide range of powers to ensure that elections are conducted fairly and in accordance with the law. The ECP has been working on developing a framework for e-voting and has released a draft ordinance on this topic. The draft ordinance sets out the basic principles governing e-voting, including the types of ballots that can be cast electronically, the eligibility criteria for voters, and security requirements. Moreover, the recent passing of the EVM law by the Parliament of Pakistan has further paved the legal framework for implementing the electronic voting system in Pakistan. 12

Preparation of the ICT Infrastructure

The preparation of technical infrastructure for electronic voting is critical to the successful adoption of e-voting. Technology has a significant role in determining which nations are successful and which are failing in their implementation. India, Brazil, the Philippines, and Estonia are examples of nations that have effectively implemented their technology throughout the whole of their respective countries, resulting in a feeling of security and confidence among the general public in the process. When it comes to implementing e-voting in a country, public trust in the hardware, software, data transmission, and overall infrastructure security are all things that are considered important when looking at countries that have failed due to technological factors. The Netherlands, the United Kingdom, Germany, the United States, Norway, and others are examples of countries that have failed due to technological factors. 13

The 2018 elections were held at 85,000 polling stations, 240,000 voting booths, and 95,000 voter identification units, according to the Election Commission of Pakistan. Pakistan will require between 900,000 and 1,000,000 of these five different electronic voting machines (EVMs) to conduct elections for all provincial and national assembly seats on a single day, according to the number of polling stations, polling booths, and voter identification units that were used in the 2018 elections.

The ECP asserts that the time available for large-scale acquisition and deployment of EVMs, as well as for imparting training to a large number of operators, is insufficient and that it is not appropriate to implement EVMs throughout the country at the same time. It further objects to the fact that holding elections on a single day, as required by law, would be extremely difficult. Accordingly, Pakistan is not prepared (from an infrastructure standpoint) for the implementation of

electronic voting machines, at least not in the 2018 general elections.14

After everything is said and done, although there are certain issues that need to be addressed, Pakistan has the legal and regulatory framework, as well as the necessary infrastructure, to properly adopt electronic voting. However, it is critical to estblish that the general public is supportive of this approach before pushing ahead with the project.15

Public Trust

The public's confidence in the execution of e-voting is a crucial factor in the success of the initiative. The fact that the majority of nations that attempted to introduce e-voting failed shows that the function of public trust is very important. The introduction of electronic voting in the Netherlands was halted because the public did not have confidence in the security of the equipment. Following the implementation of electronic voting in the United Kingdom in 2003, the parliament opted in 2007 to hold general elections in the traditional manner due to widespread public concern about the security of the data created during the process.

E-voting in the United States has long been a source of contention in that nation. The usual technique, or the first method, is preferred by most people. In the 2016 elections, approximately seventy percent of voters in the United States used traditional voting methods, and in the 2018 elections, Americans reverted to traditional voting systems for the first time since 1994. Similar to other nations, lack of public confidence is one of the factors that contribute to the failure of e-voting adoption efforts. The public's confidence in the execution of e-voting has been gathered from a variety of sources.16

Pakistan is a country where the public trust toward the government and all of its institutions is continuously on decline. The major reason behind this trust deficit lies in the widespread allegations of corruption, mismanagement, nepotism, bureaucracy, and ineptitude at different levels within these institutions. The public has started losing faith in the ability of our democratic system to deliver good governance due to bad performance by successive governments. It is clear that there are widespread problems that have resulted in increasing mistrust between the state and society.

Moreover, public trust toward the electronic voting system is also not very strong in Pakistan.

A study by Media Matters for Democracy (MFD) revealed that people do not trust Electronic Voting Machines (EVM) due to various reasons such as misplaced votes, rigging, and malfunctioning of machines. Out of 1100 respondents, only 28% said they would use EVM if it was available to them.17

Human Resource Readiness

One of the most significant criteria in the effective deployment of electronic voting is the availability of qualified human resources. When it comes to the next general elections, the Election Commission of Pakistan (ECP) has been planning and preparing to utilize electronic voting machines (EVMs) for quite some time. Pakistan would need between 300,000 and 500,000 employees to be trained in order to operate the EVMs on Election Day. The ECP has entered into agreements with two businesses, Smartmatic and NEC Corporation, as well as other training organizations, to offer training for these employees.

Both companies have extensive experience in providing election-related training. NEC Corporation has provided such training in more than 100 countries around the world. Smartmatic has provided training for more than 14 million voters worldwide. Both companies have developed detailed training programs for the Pakistani workers who will operate the EVMs. The commission will need to ensure that there are enough people trained and ready to use the new system when election day arrives. This includes not only poll workers but also voters themselves. Voters will need to be familiar with how to use the new system and be comfortable casting their vote

electronically. They will also need to have trust in the security of the system. Poll workers will need to be properly trained to use the new system and be able to troubleshoot any issues that may arise.18

The ECP is aware of these challenges and is working hard to ensure that everyone is ready for the switch to electronic voting. They are also doing their best to educate voters about the new system and build trust in its security. With a little time and effort, the ECP should be able to successfully implement the new voting system in Pakistan.

Challenges in the Way of Implementing Electronic Voting System

This section explores the challenges that Pakistan can face in the way of implementing the electronic voting system. These challenges are related to security, regulatory framework, economic, lack of consultation, lack of awareness, and lack of time.

Ensuring the Security of the Electronic Voting System

Although the electronic system which Pakistan has planned to implement will not be connected to the internet, there is a high possibility of it being hacked. Such a case was seen in Iran, where the Nuclear Weapon Program was not connected to the internet, but still, it was hit by a sophisticated virus called Stuxnet. This being said, Pakistan, which is has been constantly placed in the least cyber secure countries, could face grave challenges in securing its electronic voting system from similar attacks.

Pakistan has faced many cyberattacks in the last decade, some of which are briefly described below; Pakistan has been the victim of cyberattacks for many years. The Federal Board of Revenue (FBR) was most recently targeted in a cyberattack that caused widespread damage and disrupted operations at the country's tax authority. The attack began in 2021 when hackers compromised the FBR's computer systems and used them to send ransomware to employees. This locked workers out of their computers and demanded a payment in order to release the data. As a result of the attack, the FBR was unable to process any tax returns or payments.19

Furthermore, cyberattacks are becoming increasingly common in Pakistan; one of such victims was Careem in 2018, a popular ride-sharing app. On January 14, Careem issued a statement confirming that they had been targeted by a cyberattack. The company stated that user data such as names, contact information, and trip details were compromised. This cyber-attack comes just weeks after another attack on Pakistani telco Jazz.0

These attacks underscore the need for better cyber security in Pakistan. While the government has taken some steps to improve cyber security, more needs to be done to protect businesses and individuals from online threats. Sadly, many people in Pakistan are still not aware of the dangers posed by cybercrime, and they continue to use unsecured devices and networks.

Issues with the Institutional and Regulatory Framework

Because elections in Pakistan have traditionally been conducted using paper ballots for many

years, implementing electronic voting would need modifications to the legal and regulatory framework. As a result of the change in election modes and procedures, a conflict between the authority of different state institutions may develop, which the ECP is not required to decide under the constitution.

According to the PTI administration's proposal, the legislative functions of the ECP and the NADRA overlap in a number of areas, raising the probability of institutional impasse and schism in the process. In addition, it is crucial to stress that the use of electronic voting must not jeopardize the fundamental necessity of conducting elections or the rights provided to the Pakistani people, such as the

right to universal and equal suffrage and the right to vote for the first time in a secret ballot.21

The Election Commission of Pakistan (ECP) retains the authority to purchase voting apparatus and technology, and any new element introduced into the voting system must be fully compliant with the Election Act of 2017, specifically Sections 84 to 90 and Sections 86 to 90 of the Election Code of Pakistan (ECP). The overlap of regulatory frameworks in Pakistan may present significant issues in the implementation of the EVM as a consequence of this.

Change Comes at a High Cost

Before doing a cost-benefit analysis and deciding whether or not it is feasible to deploy an EVM in Pakistan, it is necessary to extensively investigate and examine the expenses connected with manufacturing and logistics for an EVM. In the wake of external and internal concerns, the government finds itself in a difficult position at this time. Following the adoption of Covid-19, the price of everyday consumables has increased significantly, which may be a strong justification for postponing the implementation of the government's proposal to employ electronic voting in the next election until a later date.

Concerns about society and a lack of education Pakistan's literacy rate, according to government data, is 60 percent, which is below the global average. Since many people will never understand why their governments are implementing such technological changes, because of universal suffrage, these 40 percent of the population will be able to use their votes to determine the country's future, making it a very difficult task for the government and other relevant authorities to educate these individuals.22

Similar questions would be made by the educated public regarding the reason for such significant changes, necessitating the construction of an effective communication method for informing the public and dispelling their misperceptions.

It is not necessary for a voting system to be limited to a single machine in a polling booth in order to be functional. Instead, the system makes use of a number of 'modules,' each of which performs a specific function in order to enable electronic voting. Example: A fully integrated electronic voting machine system contains the following modules: a voter identification unit (Unit), a central control unit, a ballooning unit, a paper audit trail box (Printer Box), which is based on a printer, and an RTS Module. On election day in 2018, 85,001 polling stations were set up around the country. There were 240,001 polling booths and 95,001 voter identification units available for voters.

As a result, based on the number of polling stations, booths, and voter identification units that were used in the 2018 elections, the number of these five distinct EVM modules that will be required to conduct elections for all provincial and national assembly seats on a single day, as mandated by law, is expected to range between 900,000 and 1,000,001 in total. In accordance with Majeed's estimates, the overall cost of 900,000 to one million modules would range between Rs45 billion and Rs70 billion. When Pakistan's first electronic voting machine (EVM) was introduced in 2011, Majeed was a member of the team that designed and developed it.23

Pakistan, as a consequence, cannot afford to invest such a large quantity of money in the deployment of new technology, given the country's current economic situation.

Absence of Consultation with the Relevant Social Groups (RSGs)

The implementation of EVM in Pakistan has been done without any consultation with the stakeholders, especially the opposition parties and the election commission of Pakistan. The opposition parties have raised their concerns about the lack of transparency and fairness in the voting process, but they have been ignored by the government.

The Election Commission of Pakistan has also highlighted concerns over the usage of

electronic voting machines (EVMs) in the country. In its statement, the commission said that sufficient training of polling employees, as well as an improvement in security measures, are required before these devices may be utilized in real elections. However, all these concerns have been brushed aside by the government, which is determined to implement EVMs in order to ensure its victory in the next elections. The fact of the matter is that the ECP has the authority to make changes to the electoral system. Whenever the government allows the use of electronic voting in the 2023 general elections in spite of all of the objections and concerns mentioned in the ECP plan, it creates uncertainty and a loss of confidence for state institutions in the community.

This move by the government is not only irresponsible, but it is also against the will of the people. The passing of the EVM law without proper consultation will not only create mistrust among the people but will also lead to a legitimacy crisis for the government. Therefore, it is important for the government to take the opposition parties and the election commission in confidence before the implementation of the electoral reforms. Otherwise, such an initiative in Pakistan will not prove to be constructive.

There is also a lack of consultation with the youth, which makes up a major proportion of the total population. The government seems to think that it knows what's best for its citizen and is going ahead with this decision without taking their opinions into account. This could backfire horribly; citizens are the ones who will be using these machines. The youth is the digital natives, and they need to be consulted about this change. They should have a say in whether or not EVMs are implemented in our country. Sidelining these relevant social groups in the process of implementing an electronic voting system could bring many challenges for the government.24

Lack of Technological Awareness in the Society

Pakistan is a country that is greatly lacking in technological awareness. This lack of awareness is evident from the fact that most people here are not even aware of what the internet is. They see it as some sort of magic box that can be used to watch movies or listen to music without realizing the vast potential it has for education, communication, and business.

Another indication of Pakistan's lack of technological awareness is the dismal state of its telecommunications sector. The country's mobile phone penetration rate is just 54 percent, which is one of the lowest in the world. And only 23 percent of households have access to broadband internet service, which means that most people here are still using dial-up connections.

This lack of awareness also extends to the business community. Pakistani businesses are not taking advantage of the opportunities that technology presents, and they are not using information and communications technologies (ICTs) to improve their productivity and competitiveness.

This lack of technological awareness could hinder the implementation of the electronic voting system in the forthcoming general elections. The Election Commission of Pakistan (ECP) has been working on a plan to introduce electronic voting in the next elections, but it is not clear if this will be possible without the support of the people. The reason is that unless there is familiarity with the information and communication technology, people will not be able to accept the implementation of the electronic voting machine.25

Time Restrictions

Just a few years before the 2023 general elections, the government has initiated a fresh campaign to modernize the voting system, but this will not be enough to impact change at the grassroots level. Due to time limits, substantive and required talks and agreements between the many parties would be impossible. Countries such as the United Kingdom and India have also adopted e-voting in phases in order to gain public trust.

Furthermore, according to Majeed, in order to meet the requisite number of modules before the 2023 election, Pakistan would need to produce 3,000 modules each day, nonstop.

In this section, the researcher gives some detailed solutions to the challenges discussed above. These solutions could prove to be useful for the government in the process of implementing electronic voting system in Pakistan.

The Way Forward in Implementing EVM in Pakistan

In this section, the researcher gives some detailed solutions to the challenges discussed above. These solutions could prove to be useful for the government in the process of implementing electronic voting system in Pakistan. Below are the main ways forward for the challenges that Pakistan could face in the implementation of the EVM;

Using Bitcoin Technology for Securing E-voting

Bitcoin technology offers a potential solution for securing e-voting systems. Bitcoin is a digital currency that uses cryptography to provide security and anonymity for its users. The use of Bitcoin technology for securing e-voting systems has been explored in several papers and projects. One such project is BitVote, a Bitcoin-based voting system developed by the team at Coin Sciences Ltd. BitVote is a secure and anonymous voting system that can be used for online elections. It uses cryptography to protect voters 'privacy and ensure the accuracy of the vote count.

One potential advantage of using Bitcoin technology to secure e-voting systems is that it can help build trust in the election process. Bitcoin is a well-known and trusted technology, and its use for obtaining e-voting systems could help increase confidence in these systems among voters. Furthermore, the use of Bitcoin technology could also help to reduce the cost of implementing e-voting systems.26

Fill the Regulatory Framework Gaps

One such challenge is the regulatory framework for elections. The current regulatory framework was developed primarily for manual vote counting and did not consider the use of technology in the voting process. As a result, it is unclear how existing laws would apply to an electronic voting system or what new regulations would be needed. The government needs to make a special team to identify any gaps in the regulatory framework. The team should also develop a plan for how to address these gaps. This would include working with the Election Commission of Pakistan (ECP) to update the regulations related to voting and elections and collaborating with other government agencies that could be involved in implementing an electronic voting system.27

Public-Private Partnerships

The high economic cost of implementing an electronic voting system remains a significant hurdle. Several options are available to overcome this cost, including public-private partnerships and to use existing infrastructure. By taking these measures, Pakistan can move towards implementing an efficient and secure e-voting system that will benefit all citizens.

Public-Private Partnership (PPP) could be one way to reduce the high economic cost of an electronic voting system in Pakistan as it would involve both the government and the private sector working together. In this type of partnership, the government would provide land, licenses, and other necessary resources while the private sector would invest in construction costs and operate and maintain the system. This would be a win-win situation for both parties involved, as the private sector would gain access to new markets while the government would benefit from increased efficiency and security in the voting process.

Another way to reduce costs is by using existing infrastructure instead of building new facilities. For example, the Pakistan Telecommunication Company Limited (PTCL) has a nationwide network that could

be used for an e-voting system. PTCL has already proven its ability to handle large-scale projects, making it an ideal partner for implementing an electronic voting system. By using this type of infrastructure, Pakistan can avoid many of the initial costs associated with setting up a new system.

Consulting the Relevant Social Groups

The absence of consultation with the relevant social groups (RSGs) is a critical shortcoming in the government's current approach to electronic voting system implementation. The RSGs are best placed to provide insights into how the proposed system could impact their respective communities. In order to ensure that the voices of all stakeholders are heard, it is essential that the government engages with RSGs in an open and transparent manner. This would help build trust and confidence among citizens about the new system. Additionally, such consultations would also allow for input from various quarters on ways to improve and fine-tune the proposed e-voting system.28

The government must take immediate steps to rectify this situation by establishing a mechanism for regular engagement with RSGs. This can be done through the formation of a dedicated task force or working group, which will be responsible for assessing the implications of the e-voting system and consulting with RSGs on a regular basis. The task force should comprise representatives from relevant government departments as well as RSGs. It is important that this mechanism is effectively implemented so that all voices are heard and taken into account while finalizing the e-voting system. Only then can Pakistan move towards an inclusive and credible e-voting system that benefits all citizens.

Awareness Campaigns among Masses

Pakistan is a country where the lack of technological awareness among the masses is a major hurdle in implementing the electronic voting system. However, there are ways to overcome this obstacle. The government can play an important role in educating people about the benefits of using technology for voting and other purposes. In addition, private sector companies can also help by developing user-friendly applications and tools that make it easy for people to use technology. Overall, it is essential to create a culture of using technology in Pakistan if we want to move forward and benefit from its advantages.29

There are many countries around the world that have already implemented electronic voting systems with great success. For example, Estonia has been using online voting since 2005. This is possible because the Estonian government has made a strong commitment to using technology for voting and other purposes. In addition, the private sector in Estonia has developed user-friendly applications that make it easy for people to use technology. As a result, the majority of Estonians are comfortable using technology for voting and other activities. Hence, Pakistan can learn from the Estonian model of dealing with the lack of technological awareness among its general masses.30

Conclusion

Pakistan is gearing up to implement the electronic voting system in the upcoming general elections. This has been a long-awaited move, as it will not only help reduce election costs but also ensure transparency and accuracy of results. However, there are many challenges that need to be overcome before this system can be successfully implemented. In this research, the researcher discussed the readiness of Pakistan for e-voting, the opportunities, and the challenges that still need to be addressed. Overall, Pakistan seems far from being ready for e-voting, at least in the upcoming elections. The government has been lacking social, political, economic, and technological grounds and still needs a lot of work to be done.

There are still many areas that need improvements, such as the lack of awareness among voters and officials about the new system, the lack of trust, general political consensus, technological infrastructure, and

many others. Additionally, there are many security concerns that need to be addressed. The biggest challenge facing Pakistan is the lack of funds to properly implement the e-voting system. Despite these challenges, the implementation of e-voting in Pakistan is a step in the right direction. It will not only help reduce election costs but also ensure transparency and accuracy of results. Hopefully, the government will be able to address the challenges and successfully implement the system in time for the upcoming elections.

Recommendations for Further study Include the Following

The scope of the research undertaken by the researcher was confined to examining Pakistan's preparedness in terms of social, political, economic, and technical variables; however, there is a multitude of additional areas that may be studied or looked for.

Research may be carried out to determine how the government can raise public knowledge of new technologies in use and new methods of dealing with circumstances such as e-voting and how this might be accomplished. A study might be carried out to determine what sort of infrastructure is required to enable e-voting and how that infrastructure would aid in the development of the new method of voting. There are a plethora of issues that need to be addressed in terms of infrastructure development.

There is a high likelihood of discovering how and what security can be implemented to provide adequate space for the infrastructure to function properly, as well as if the security should contain physical requirements that must be followed or logical parameters that must be followed. The introduction of electronic voting in Pakistan would need more investigation due to the variety of ethnic groups and the fact that the nation does not have a small population in comparison to other countries in the region.

The amount of openness may be a source of contention for both citizens and government officials. As a result, it is possible to conduct research to determine what amount of openness would be adequate for both the public and the government at the same time.

References

Council of Europe. (2010). E-Voting Handbook: Key steps in the implementation of e-enabled elections.

Democracy. (2022). Meaning & Definition for UK English. Lexico.com. Lexico Dictionaries. Accessed January 24, 2022. https://www.lexico.com/definition/democracy.

General Documents on Electronic Voting and Counting Technologies 1. Council of Europe. (2004).

IFES Applied Research Center. (2021). Challenging the Norms and Standards of Election Administration. Country Experiences of Using Electronic Voting and Counting Technologies

Irish Commission on Electronic Voting. (2006). Second Report of the Commission on Electronic Voting on the Secrecy, Accuracy and Testing of the Chosen Electronic Voting System.

Legal, Operational and Technical Standards for E-Voting, Recommendation Rec. (2004). 11 adopted by the Committee of Ministers of the Council of Europe on 30 September 2004, and Explanatory Memorandum.

Nadir, G. (2021). *Dawn.com. Govt. Powers Through 33 Crucial Bills in Joint Session; Allows Voting Rights for Overseas Pakistanis, Use of EVMs."* DAWN.COM. Last modified November 17, 2021. https://www.dawn.com/news/1658607

Open Rights Group. (2007). May 2007 Election Report: Findings of the Open Rights Group Election Observation Mission in Scotland and England.

OSCE/ODIHR. (2008). OSCE/ODIHR Discussion Paper: In Preparation of Guidelines for the Observation of Electronic Voting.

Pomper, G. (2022). The Concept of Elections in Political Theory. *The Review of Politics* 29(4), 478–91. http://www.jstor.org/stable/1405722.

The Carter Center. (2021). *Developing a Methodology for Observing Electronic Voting.*

Tokaji, D. (2022). *The Paperless Chase: Electronic Voting and Democratic Values, Moritz College of Law*, Ohio State University.