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E-voting, Information Gap, and The Digital Divide in Zimbabwe

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Abstract. The objective of this research was to establish if Zimbabwe has the potential and Information Communication Technology (ICT) capacity to implement e-voting methods in the country's often discredited electoral process. The study adopted qualitative methods and secondary data collected from relevant reports, questionnaires randomly distributed to the general populace as well as interviews with Zimbabwe Electoral Commission (ZEC) and the Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) officials. The paper highlights the global and national status of ICT adoption in Zimbabwe which is the key driver to the successful implementation of e-voting, internet coverage, and use in the country. The research also investigated how Zimbabwe citizens in the diaspora, through new Internet platforms, can exercise their right to participate in the country's political discourse and vote using the e-voting model. The findings indicate that though it can be done, it is not being practiced. Hence citizens in the diaspora are being excluded from the electoral process. The research findings also give credence suggesting Zimbabwe has sufficient infrastructure to implement e-voting methods as a trial in selected local government elections.

Keywords. E-voting, Internet, Democracy, Technology, Digital Divide, Information Gap, Social Media, Communication

Introduction

Section 238 of the Zimbabwe constitution gives the Zimbabwe Electoral Commission (ZEC) the authority to plan, oversee, and conduct presidential and parliamentary elections, referenda, and other elections for offices in the nation. The president appoints its members after consulting with the head of the Judicial Service Commission and the Standing Rules and Orders Committee of parliament. ZEC has however conducted several elections after independence whose credibility has been disputed by key stakeholders. The country has many citizens residing abroad who fled the Zimbabwe economic crisis following a controversial land redistribution exercise. These citizens reckon their right to participate in the electoral process is being violated.

Zimbabwe Electoral Process: 2018 Harmonised Elections

The majority of election observation teams agree that ZEC managed the technical groundwork for the 2018 Zimbabwe harmonised elections within the allotted time. However, the electoral body's efforts allegedly frequently lacked inclusivity of other significant

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participants and openness, which hindered preparations. During the process leading to the 2018 harmonised elections, several election observer mission bodies noted that ZEC used its expedience to allegedly interdict other stakeholders and arbitrarily made pronouncements on very important matters such as the presidential ballot's design, the locations of polling places, and did not creditably divulge other important determinations, including those on ballot security features. Election Observer Mission(EOM) organisations voiced their worries over alleged ZEC's failure to use its discretion to increase public confidence in the electoral process. In contrast, also according to EOM, ZEC allegedly adopted an oddly divisive strategy during the election process to meet the essential minimal standards for election management. Concerns and reluctance expressed by participants over the engagement and transparency of the process eventually gave rise to allegations that the ZEC was politically biased against opposition parties.

The Electoral Act in Zimbabwe requires ZEC to "promote transparency and accountability" in its operations and processes. EOM organisations acknowledge that ZEC originally made commendable efforts to effectively involve stakeholders, including civil society, in aiding the government's decision to accredit and certify foreign election observers.Unfortunately, however, ZEC allegedly made many pronouncements without much thought given to reaching an agreement with the relevant political parties. The alleged lack of consultation by the election management body of opposition parties undermined faith in ZEC's obligation as an independent arbiter (Commonwealth Observer Group Report (COG), 2018; AUEOM, 2018).

According to the COG Report (2018), ZEC arranged an event for political parties and observers to attest to the printing of ballots. The event however did not allegedly provide a sufficient or acceptable level of transparency to guarantee confidence in the process. ZEC is alleged to have rejected the opposition's submission to determine the efficacy of the indelible ink used on election day. The event was meant to address allegations of multiple voting as well as appeals to examine the security mechanisms included in the ballot paper manufacturing process. Zimbabwe Election Support Network (ZESN) reckons the credence entrusted in ZEC's competence to administer credible elections was severely compromised by the no-bid contracts given for the procurement of Biometric Voter Registration tool kits (ZESN, 2018). When confronted on these issues, the ZEC allegedly resorted to an obstructive interpretation of its judicial mandate without implementing requisite steps to repel mistrust generated by Zimbabwe's protracted and stained history of holding monumentally flawed elections (AUEOM, 2018).

2018 Harmonised Elections: Challenges

When the 2018 election candidates were asked about the challenges which were faced during the 2018 Harmonised Elections, the majority highlighted that the credibility of the election was allegedly compromised by the ZEC which controlled entire the process. They also emphasised how the ZEC allegedly appears to be biased in favour of the ruling party which makes determining whether an election was free and fair nearly impossible. Inevitably, voters are said to no longer have confidence in the ZEC's competence to oversee the electoral process. Additionally, the candidates noted that while biometric technology simplified voter registration, the outcomes showed that it was unable to address long-standing problems and claims of ghost voters and duplicate registration. Some stakeholders allege that the ZEC's assertion that a biometric voter list was developed as a result of biometric voter registration is false. The

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candidates also emphasised the ZEC's alleged contempt for implementing an accurate voters' roll which was an obvious outlier from the 2013 election.

The election candidates claim that the pre-election campaigning climate raised issues for the 2018 harmonised elections, with opposition parties alleging they were denied access to state media. The participants also emphasised on allegations of people having their names removed from the voter roll and claims of voter disenfranchisement at some polling stations. This led to chaos at certain polling places which allegedly prevented some people from casting their ballots. They pointed to the manual tabulation of results as the primary stumbling block that produces a significant advantage to allegedly manipulate outcomes in the ruling party's favour. Human mistake is likely and inevitable when election responsibilities are carried out by humans.Unfortunately, because the authorities reverted to an old technique of manually tallying the ballots, the BVR technology was unable to thwart the alleged fraud.

Impending 2023 Harmonised Elections: Pre-Election Challenges

Zimbabweans of all political stripes anticipate the 2023 election, which seeks to choose a government that represents the will of the people, as being peaceful, credible, free, and fair. However, early concerns about the electoral process have been voiced by a number of parties which could undermine the legitimacy and fairness of the elections in 2023. The Private Voluntary Organisation (PVO) Amendment Bill, the Cyber and Data Protection Act, the delimitation exercise, the voters roll debate, and the ZEC court lawsuits are just a few of the contentious topics that have already called into question the validity of the upcoming elections.

1. ***The Private Voluntary Organisation Amendment Bill (H.B. 10A, 2021)***

In order to amend the PVO Act, the PVO Bill was published in November 2021. One of the Bill's three objectives is important to this research, a clause outlawing "supporting or opposing" any political party or candidate during an election. However, because the Bill does not define what constitutes supporting or opposing a political party hence stakeholders fear it could be allegedly abused to further cunning political moves. PVOs are primarily tools for change in a variety of ways, such as advocating and lobbying for human rights. The Special Rapporteur on the right to freedom of association and the right to freely participate in activities related to the electoral process consider the Bill to be unconstitutional. These include, among other things, exercising one's right to vote, speaking out in favour of electoral and broader policy reforms, debating topics of public interest and participating in political discourse, monitoring and observing electoral processes, starting polls and surveys while voting, and participating in voter education. The prohibition is allegedly calculated to benefit the ruling party which has unrestricted access to all areas of the country. The Bill seeks to prohibit outreach programs and voter education initiatives by PVOs targeting populations in isolated rural communities. These communities will inevitably give in to purported intimidation and a lack of awareness about their rights to certain freedoms and options available to them apart from the ruling party, which has unrestricted access to them through channels like traditional leadership. In line with this, the PVO Amendment Bill allegedly revokes the ZEC's promise to hold credible, free, and fair elections in 2023.

2. ***The Delimitation Exercise Controversy***

After compiling the voters roll, a delimitation process was carried out with regard to the harmonised elections in 2023. In accordance with section 161(1) of the Constitution, the ZEC is required to conduct a delimitation of the electoral boundaries into which Zimbabwe is to be divided once every 10 years following a population census and then submit a report 161(7) to the President. In terms of section 161(11) of the constitution, the President must make a

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proclamation (SI 2023-014 Proclamation 1 of 2023) in the Government Gazette within fourteen days of receiving the ZEC report. The report includes maps that depict the wards and constituencies as well as a list of wards and constituencies with names given to each.

Some of the proposed constituency borders have allegedly been modified, according to claims made by key stakeholders in order to favour some political ideologies while disadvantaging others. Other interested parties accuse the ZEC of employing "incorrect formulas to calculate the permissible variations in voter numbers between constituencies and wards" (Veritas, 2023). It is alleged that the ZEC permitted modifications of up to 40% rather than the limit 20 percent permitted by section 161(6) of the Constitution. Most of the constituencies defined by ZEC, according to Veritas (2023), are currently located outside the permitted boundaries. Therefore, according to the organisation, the entire delimitation must be viewed as constitutionally flawed and cannot be applied to a 2023 election in Zimbabwe that is free, fair, and credible.

3. ***The Voters' Roll Court Litigations***

The voters' roll is a document in which all persons who have registered as voters are listed . At the writing of this research paper, the ZEC is yet to avail electronic copies of the voters roll to candidates as compelled by provisions of section 21(6) of the Electoral Act. An opposition lawmaker sued the ZEC to obtain an electronic copy of the voters' list for 2023 harmonised elections. However, the Zimbabwe High Court denied the application and affirmed the ZEC's claim that releasing the voters roll in the electronic format would compromise the database security of the election agency. The ZEC insists that interested parties wait until the voters' roll is printed. The legitimacy of the 2023 harmonised election, according to important election stakeholders, will be harmed by the delay or denial of their access to the voters roll in an electronic format.

4. ***Cyber and Data Protection Act: 2023 Harmonised Elections***

The Media Institute of Southern Africa (MISA) requested that the Postal and Telecommunication Regulatory of Zimbabwe (POTRAZ) investigate the ruling party's sending of unsolicited political short messaging services to mobile phone subscribers. Registered voters received text messages purportedly requesting support for current President Emmerson Mnangagwa ahead of the 2023 harmonised elections. Prospective voters' names and constituencies are clearly stated in the messages requesting that recipients save a certain number in order to be kept up to date "on all national development issues and matters."

The unsolicited SMS, according to MISA Zimbabwe, contravene the Cyber and Data Protection Act [Chapter 12:07], which restricts the use of personal biometric data. The Act stipulates that using personal biometric data in this manner is unlawful unless the data subject gets written approval. POTRAZ as the data protection authority and telecommunications sector regulator in compliance with the Cyber and Data Protection Act, 2021 [Chapter 12:071, has jurisdiction over how personal data is utilised. In this context, MISA Zimbabwe wants to know how third parties gain access to subscriber numbers and are sending unwanted messages in violation of the law. The unsolicited text messages sparked outrage with political participants and observers accusing the ZEC of leaking confidential information. The ZEC however distanced itself from the political messages claiming ignorance about how data was obtained. Major network service providers have also distanced themselves from the incident.

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Research Significance

The digital divide entails the social and economic gulf between people, communities, or countries that have access to computers, the Internet, and other sources and platforms of technology (Diamond, 2010), and those that do not (Abubakar, 2012). The term also refers to disproportion gaps in existence between communities and their aptitude to apply information and communications technologies ICTs as a result of varying levels of literacy and mechanical proficiency (Afriyie, 2012).

The digital divide and information gap, through alleged manipulation or otherwise, is believed to sideline Zimbabwe citizens from their democratic right to fully utilize their role in choosing their political leaders. In a sound democracy, the media (Egbala, 2014) has a constitutional mandate to exercise its Fourth Estate obligation (Heywood, 2007), but when that is denied through restricted internet access, the electorate is disadvantaged in making informed choices. Scholars (Branston & Stafford, 2010; Bruns, 2008 & Gigler, 2004) are generally in agreement that the latest developments in interactivity through new media forms, platforms, and software enable internet users to share information (Ahiabienu, 2013) and (Foster, 1994). The writers note the development of the internet and the enabled platform to go online to search for information, or to merely send an email, altered various facets of communication. Using Clay Shirky's methodology from French sociologist Pierre Bourdieu, Branston and Stafford (2010) highlight Twitter's participation in the 1999 Iranian elections, bringing to mind the larger spectacle of collaborative media. In a study that documents how numerous new communication technologies are reshaping the communication landscape, Kovarik (2011) supports the aforementioned claim.

Few studies on electronic voting and Zimbabwe's digital divide have taken into account the information gap caused by alleged election manipulation, which is believed by key election stakeholders to deprive Zimbabweans of their democratic rights to fully exercise their role in selecting their political leaders. The research focused on determining Zimbabwe's ICT capabilities and potential to deploy electronic voting, the opportunities afforded by using technology, and how it may help incorporate citizens living abroad and decrease election-process manipulation.

The main purpose of this study was to:

(i) Highlight the fundamental capabilities of the internet and new digital technologies in light of citizens' political participation and technological determinism

(ii) To determine whether Zimbabweans living abroad can exercise their right to vote using the e-voting model.

Zimbabwe can implement an e-voting approach that can potentially solve contentious issues like alleged election fraud and voter intimidation if the country has a sufficient ICT infrastructure. Access to information equips the electorate to make informed decisions in an electoral process (Akindele, 2011). Authoritarian leaders according to (Kurki, 2013) sometimes manipulate information flow to deny segmented voters they deem are a threat to their stronghold on power. Google made the discovery that it was being slowed down or blocked by border routers infamously dubbed as "The Great Firewall of China" in the year 2000 when it tried to serve Chinese language web searches from its American base. By building a "great wall" around the Internet, Kovarik (2011) claims that governments can restrict social media activity (Kaplan & Haenlein, 2010). As a result, internet policing can be utilised to deny citizens access to information.

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Paletz (1999) believes Internet communication technology expedites the mobilization of political partaking and also enables people to define the value of information. An electoral process should merge relationships between politicians and the people. "Repressive laws" in Zimbabwe, according to a legal think tank Veritas , have been a bottleneck for the possibility of free and fair elections in the country. According to the organisation, these laws, if not amended or repealed, will make it impossible to hold an election that is free, fair, and peaceful, as required by section 155 of the Zimbabwe constitution, and frequently result in election-related disputes. In Nigeria, Ayemi (2018) acknowledges the full implementation of the electronic voting system in the country will significantly improve election management.

Literature Review

Every Zimbabwean should exercise their democratic right to vote in elections to select political leaders. The right to receive and disseminate information or ideas through any media, independent of borders, is guaranteed under Article 19 of the Universal Declaration of Human Rights, which includes Zimbabwean nationals (Pearson and Polden, 2011). The UDHR's Article 21 further states that "the will of the people shall be the basis of the authority of government" and that "free and fair elections shall be the basis of such authority." Hirst and Harrison's (2007) theory, which claims that knowledge and power are related, holds that information can either empower or disenfranchise citizens in their right to democratic election participation.

Nigeria introduced a number of innovations that had mixed results (Yusuf, 2016). The Zimbabwe election process has been a major source of dispute. Zimbabwe elections have frequently been contentious and marked by violence that has resulted in casualties just like many other fiercely contested elections in Africa. Political elections that are transparent and fair enable voters to actively participate and voice their preferences in the administration of their nation (Debrah, 2011). Technology was promoted primarily in relation to the idea of "one person, one vote" as a response of suspected electoral fraud allegedly observed in Kenya during the 2007 presidential election (Okuro,2021).

One of the characteristics of a democratic election in every nation is voter registration. For there to be a free, transparent, and fair election, a reliable voter registration process is necessary. Zimbabwe implemented the Biometric Voter Registration (BVR) system in accordance with the Electoral Act's (Chapter 2:13) legal requirements and the ZEC's constitutional mandate. If used in accordance with internationally recognised criteria, the technology aims to resolve key stakeholders' worries about alleged voter fraud, numerous registrations, and public suspicions of ghost voters. The BVR method, according to ZESN, will at the very least result in a clear, complete, and reliable voters' roll with no duplicate names and will minimise multiple voting. Iwu (2008) remarked that the implementation of biometric-based registration in Nigeria was a significant technological advance in the electoral process. In the instance of Zimbabwe, several stakeholders have criticised the electoral process for what they claim is manipulation by those legally tasked with upholding its integrity. The majority of elections in underdeveloped nations are conducted manually and are rife with alleged fraud and manipulation. Following the example of Western countries, the majority of African countries began using ICT in elections in 2000 and the electorates are gradually getting accustomed to the usage of biometrics (Adeniyi, 2019).

Yusuf (2016) noted that the use of technology throughout the electoral processes was one of the benefits of the 2015 general election in Nigeria. The author contends that technological advancements have significantly decreased instances of electoral fraud in Nigerian elections. The primary purpose of the adoption and usage of technology was to alleviate some of the drawbacks of earlier elections and electoral processes. The

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Commonwealth (2018) conducted an unbiased evaluation of the elections in Zimbabwe and found that the electoral officers count the votes after a long day of observing voting. Inadvertent mistakes may be made as a result of weariness (Taylor, 2018).

Similar to Nigeria before the adoption of technology, it has been alleged that Zimbabwe's electoral procedures allow for multiple voter registrations, vote manipulation, ballot box stuffing, and voter intimidation (Chigora & Chilunjika, 2016). Multiple registration and voting have been drastically reduced in Nigeria thanks to the introduction of technologies like the Electronic Voters Register (EVR), Automatic Fingerprints Identification System (AFIS), and Smart Card Reader (SCR) (Ayemi, 2018). The construction of the e-collation support platform, according to the writer, has significantly decreased the instances of result manipulation at collation centres. ICT use in Nigeria's electoral process "has reduced excessive electoral fraud to the barest minimum and foster credible elections". Odeyemi (2015) argues technology has greatly increased public awareness and boosted liberal ideas of individualism.

It was reported that the Electoral Commission of Ghana (EC) used to take roughly three (3) days to finally publish a presidential election result, according to Ofori-Dwumfuo and Paatey (2011). This is because they manually compile results from all the different polling places, constituencies, and ultimately the national levels—a task that would take hours to complete—this predicament persists in Zimbabwe.

However, the general elections in Senegal in 2019 demonstrate that the biometrization and digitization of the electoral register did not end contentious elections. Instead, there were ongoing formal lawsuits both before and after the elections (Eze &Enem 2022). The writers further argue that biometric voting has aided in deepening democracy and enhancing governance on the continent of Africa. However, the use of ICT in the political process over the past ten years has improved its effectiveness and provided new, well organized techniques to rig elections ((Eze &Enem 2022). The investigation of the circumstances surrounding the Senegalese election in 2019 demonstrates how the promise that biometrics would result in an electoral register that all electoral stakeholders could accept was not kept. At most, it might be assumed to have reduced election tensions, but even this is very challenging to prove (Passanti 2021).

In their study, Fagbayibo *et al.* analyse how the judiciary is handling the rise in technological election interference and look at possible future directions for forward-thinking interpretation and proactive adjudication of election-related issues in Africa. A court must be technologically savvy in order to admit, look into, assess, and decide on a technologically based election (Fagbayibo & Kaaba,2021). An investigation by Samuel A. *et al.* on how voters interacted with election technology, such as biometric technologies for voters' registration and verification (BVRV) in Ghana's 2012 and 2016 elections, was published in Ghana in 2019. Their analysis found, using both primary and secondary data, that Ghana's adoption of BVRV in election administration had an impact on both educated and uneducated voters' turnout. The study also found that when adding technological involvements, institutions failed to address demographic diversity. Some of the population suffered as a result from neglect and marginalisation (Eze &Enem 2022).

The use of biometric technologies in Ghana's 2012 election resulted in confusion and compromised the validity of the results. Data from 100 interviews and 500 surveys were analysed, and it was found that the biometric method increased voter turnout and confidence in the voting process. There was a problem however with the electronic voter verification system. The effectiveness of the biometric technology as a tool for producing a credible election outcome was neutralised by human error and policy manipulation by polling officials (Debrah,

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OwusuMensah, Effah, & 2019). A recent development in the majority of African nations is the use of biometric voter registration and identification on election day. Large-scale political data mining has been required as a result. It was discovered that some countries like Tanzania lack a holistic regime for personal data protection using international standards for personal data protection from Kenya and Ghana (Makulilo,2017).

Methodology

This research is an exploratory qualitative study with an interpretivist approach (Cohen,2007). The fact that there are fundamental dissimilarities between the natural world and the social world serves as the bedrock for interpretivism (Hammersely,2013). Hence, interpretivist researchers attempt to assimilate a paradox by making inroads into the interpretations that participants gave to it. Interpretivism aspires to discern the distinctive experiences of persons being examined, as well as how they think, feel, and behave in familiar situations (Creswell,2007).

As mentioned earlier, the purpose of the study was to establish the potential and information communication technology (ICT) capacity to implement e-voting in electoral processes in Zimbabwe. The study also focused on the elements that may affect it from the viewpoints of voters, politicians , POTRAZ and the ZEC. It was challenging to choose the right sample from the population for several reasons. First, Zimbabwean society is highly diverse, with differences in age, culture, education, and attitudes toward technology. Second, for most Zimbabweans, the idea of electronic voting is either foreign or non-existent.

It is not typical for everyone to adopt and use new technology as soon as it enters the culture. This idea served as the foundation for the sampling strategy used in this study. On the other hand, the adoption process occurs in stages, starting with a small number of people who then urge others to utilize the new technology after doing so successfully. In light of this viewpoint, the study selected two sampling units in Harare, the nation of Zimbabwe's capital. The first sample unit consisted of voters who were thought to be more technologically adept and who were either eager to use technology or who were currently using a technology similar to e-voting. The second sampling unit consisted of the personnel of POTRAZ and the ZEC, with the former being an ICT regulatory authority and the latter being in charge of overseeing the elections in Zimbabwe. The opinions of these two sampling units were assessed, as well as their knowledge of e-voting technology and how prepared they thought Zimbabwe was to deploy it.

A thorough semi-structured interview and an online survey questionnaire served as the study's primary data sources. The survey, which was developed in accordance with (Babbie & Mouton, 2001) principles for questionnaire design, focused on participants' perceptions of e-voting technology in comparison to the current manual paper-based voting techniques. Before the questionnaire was distributed to the research population, it was first tested on a small group of people. This was done to make sure that the respondents understood the questions and to find out which ones they were hesitant to answer.

The pre-test participants were no longer eligible to be included in the survey's final sample. The study's final draft of the questionnaire was used after the questions were altered in response to the observations made. A link to the survey was then sent to participants through email. In order to gather participants for this study, purposive sampling, a kind of non-probability sampling, was used (Vasja, Toepoel, & Steinmetz, 2016). The researcher pondered on which respondents would be most capable of giving the required data for this study via purposive sampling. (Etikan, Musa, & Alkassim, 2016).

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A maximum of 100 volunteers signed up to participate in the survey due to scheduling constraints thus a larger sample size could not be obtained. The response rate was 85%, or 85 out of the 100 invitations that were sent. The study acknowledged 60 out of the 85 responses showing that all of the questions were properly answered. The remaining 25 respondents either gave up in the midst of the survey or skipped some of the questions.

A thorough semi-structured interview with POTRAZ and the ZEC officials was conducted. In the semi-structured interview, topics such as election-related queries, issues with the current electoral system, and solutions to those issues were explored. The ZEC and POTRAZ understanding of e-voting and e-counting technologies, Zimbabwe's readiness for an e-voting or e-counting system, and any obstacles the organizations believe may prevent the adoption of any of these systems was also explored. Secondary data from other reports was also used by the researcher.

Thematic data analysis was also performed in this study to examine the data. Thematic analysis, according to Braun and Clarke (2006), is a qualitative analytic technique for locating, examining, and summarizing patterns (themes) within data. Searching through data gathering for repeating meaning patterns is a common step in thematic analysis. (Braun and Clarke, 2006). Additionally, thematic analysis is a sort of pattern discovery in which the categories for investigation are emerging themes from the data. (Fereday & Muir-Cochrane, 2006). The ability of thematic analysis to thoroughly summarize key features of a large body of data, provide a thorough description of the data set, and highlight similarities and differences within the data set led the study to choose this method after reviewing some analytical technique literature. Relative advantage, compatibility, and complexity—the three theoretical constructs—were used to group the themes that emerged from the data. However, this study does not reveal the identities of the participants but their perspectives are considered important for analysis. Anonymity and confidentiality ensure that the participants' identities are not and should not be revealed in the study against their consent (De Vos, 1998).

Results/Findings

Out of the 60 survey replies that were valid, 58% of the respondents were men and 42% of the respondents were women. 72% of participants said they were between the ages of 18 and 35, while 28% said they were 40 years of age or older. The respondents' average age was calculated to be around 33 years. Ethnicity was not included in the study's demographic factors because it was determined not to be a relevant factor.

E-voting In Zimbabwe

The following are the responses from participants; the interviewed participants had varied perspectives on e-voting and the digital divide in the electoral process. These perspectives included the benefits and challenges of e-elections in Zimbabwe.

Benefits of e-voting

Participants at the ZEC stressed that because electronic voting uses a device that can be used remotely without having to go to a polling station, it makes voting easier. The benefits of computerised voting greatly outweigh the negatives in terms of voting accuracy. The theory behind electronic voting, which stipulates that voters can only support candidates on a list of names displayed on a screen, would, in the opinion of the ZEC participants, address the issue of spoiled ballots.

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Participants in the ZEC agreed that utilising electronic voting machines is a good concept, particularly in developing countries. They offer a number of benefits, which sets them apart from conventional voting methods. Faster vote tallying and results tabulation, according to some POTRAZ interviewees, made changing election results more challenging because results were given or made public right away. As a result of fewer instances of human mistake and other related problems, election outcomes are also more accurate and real.

Both POTRAZ and the ZEC officials acknowledged that voters occasionally write alternative alphabet characters that are difficult to see or misprint a voting symbol, leading to numerous spoilt ballots that are frequently contested. Other study participants said e-voting is a wonderful innovation that will also allow frequently disenfranchised Zimbabweans living abroad to exercise their right to vote. Other study respondents said the BVR system implemented in Zimbabwe helps to combat alleged voter fraud through impersonation by voters by storing biological and behavioural features in a database and using them to identify voters on election day.

The display and analysis of candidates' photographs, as well as the convenience of voters, have all been improved by electronic voting, according to other study participants, which both directly and indirectly increases voter interest and participation. The elderly and physically challenged people, the respondents added, may vote more easily thanks to electronic voting. For voters with eyesight issues, audio guidance can be accessed through electronic voting using a designated voting equipment, according to a POTRAZ official. E-voting can be convenient and accessible, according to the majority of respondents, for voters who have internet access at home, at work, or when travelling, as well as for people with disabilities, members of the military, and voters who are on the road. The ZEC officials said the use of e-voting methods in conjunction with the BVR system would help to re-establish faith and confidence in the electoral process which has been a source of contention in previous Zimbabwe elections.

Challenges to e-voting success in Zimbabwe

As part of the purported government's attempt to silence political discourse, internet penetration was slow in the days or months preceding up to a general election. Other key issues raised throughout the research participants interviews included infrastructure and resources. According to the ZEC authorities, while e-voting would be a useful system to have, the absence of suitable infrastructure, information gap, the digital divide, and inadequate resources to enable its implementation, particularly in informal settlements and rural communities, will make adoption difficult.

Other roles of ICT in the electoral process

Also according to the ZEC and POTRAZ respondents in this study, when adopting an e-voting system, a voting device serves two functions: (1) casting ballots and (2) recording vote data, hence decreasing human labour expenses. Information technologies are seen as potential solutions to a number of electoral difficulties, including the establishment of accurate voter registration, expedited voting and result counting, and faster communication of election results. On the other hand, practise has demonstrated that the adoption of ICTs involves some risks, such as equipment malfunction, contested machine integrity, or vulnerability to hackers. In the case of Zimbabwean citizens in the diaspora, e-voting equipment connected to a network can also be deployed at Zimbabwe Embassies or Consulates General around the world to serve its citizens.

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Digital divide and voter apathy

Respondents from POTRAZ said there is a large digital gap in Zimbabwe, particularly between urban and rural areas, the elderly, and younger generations. As evidenced by their use of computers and cellphones for both work and communication, the younger generations have embraced technology. Many people live in remote areas, and some of them cannot afford the equipment, power sources, or data required for internet access. There is a lack of digital literacy and ability in both urban and rural areas, notably among the elderly. A ZEC respondent said due to a lack of experience or ability to surf the internet, some people in rural areas may struggle to understand the value of such services. As a result, the digital divide may render e-voting difficult.

Diaspora Voting

Out-of-country voting occurs when expatriate citizens with the right to vote cast their ballots at special polling places, generally at their home country's embassy or by mail. However, this service is not available to the almost three million Zimbabweans living in exile. Currently, Zimbabweans are only encouraged to visit the nation during election seasons. Due to the socioeconomic impasse, about three million Zimbabweans have left the country in search of more or less permanent settlements in countries such as South Africa, Botswana, the United Kingdom, the United States, Canada, Australia, and New Zealand, among others.

Context, Challenges and Opportunities

The following tables present the status of ICT adoption in Zimbabwe using different variables and different sources. Table 1 shows the global rank of ICT adoption in Zimbabwe.

Table 1: ICT Adoption in Zimbabwe

	Zimbabwe		**107/132**
Index	Component	Score*	Rank/132
3.1	**Information and communication technologies (ICTs)**	48.1	107
3.1.1	ICT access*	64.4	107
3.1.2	ICT use*	30.4	112
3.1.3	Government's online service*	52.3	99
3.1.4	E-participation*	45.2	108

Source: Global Innovation Index Report, 2022

The table uses access, use, government online services, and e-participation as factors to show Zimbabwe's adoption of ICTs among 132 other nations. The results show that Zimbabwe as a country has internet connection and is able to use online services, including government services, demonstrating its ability to conduct online voting during elections. Once more, its score on e-participation indicates that it may easily participate in election processes online.

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Growth in Internet & data usage

According to POTRAZ Internet and data usage has been consistently increasing, owing to a more digitalized economy. Mobile internet & data traffic totaled 32 473.1 Terabytes in the third quarter of 2022, representing a 26.1% growth from 25 755.9 Terabytes recorded in the previous quarter. Used Incoming International Internet Bandwidth Capacity also increased by 4.3% to record 230 677Mbps, from 221 181Mbps recorded in the second quarter of 2022 (POTRAZ, 2022). These statistics plainly illustrate that there is an improvement in network coverage, an increase in population access to the internet, and also an increase in usage. These statistics are also supported by the table showing a quarterly increase in internet and data subscription in 2022.

Table 2 presents the results for total active internet and data subscriptions in Zimbabwe for the second and third quarters from the POTRAZ Report (2022).

Table 2; Active Internet and Data Subscriptions

Technology	**2nd Quarter 2022**	**3rd Quarter 2022**	**Variance (%)**
3G/HSDPA/LTE	9 101 949	9 505 628	4.4%
Leased Lines	2 573	2 620	1.8%
DSL	109 743	105 396	-4.0%
WiMAX	7 141	7 306	2.3%
CDMA	8 165	6 855	-16.0%
VSAT	3 289	4 282	30.2%
Active Fibre Subscriptions	67 700	68 298	0.9%
Total	9 300 560	9 700 385	4.3%

Source: POTRAZ Report (2022)

Growth in subscriptions across all markets

Total active mobile subscriptions increased by 4% to reach 14,562,242; up from 14,006,034. Hence, the mobile penetration rate increased by 3.6% to reach 95.9%, from 92.3%. Total active Internet and data subscriptions increased by 4.3% to reach 9,700,385, from 9,300,560. The internet penetration rate increased by 2.6% to reach 63.9%, from 61.3%, in line with the growth in active subscriptions. Total active fixed telephone lines increased by 2.8% to reach 290,810 from 282,843; hence, the fixed teledensity increased by 0.06% to reach 1.92%, from 1.86%.

State of the Digital Development Dashboard in Zimbabwe (adopted from International Telecommunication Union Report, 2021)

Infrastructure and Access

Network Coverage: Population covered by a mobile cellular network - 94%
Population covered by at least 3G mobile network - 84%
Population covered by at least 4G mobile network – 39%

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ICT Access at Home: Households with internet access at home – 50%
Households with internet access at home rural- 36%
Households with internet access at home urban- 74%

Zimbabwe ICT Performance Indicators

The Network Readiness Index for 2022 identified Zimbabwe's best and worst ICT metrics. In this study, the adult literacy rate, the socioeconomic gap in the use of digital payments, and the gender gap in internet use are the most important indicators that can shed light on Zimbabwe's ability to conduct online elections and the digital divide. The findings show that both men and women have access to the internet and own mobile phones, making it possible for the public to vote online successfully and without problems. The populace won't have any problems voting online if everyone, including the elderly, is literate and has access to online financial accounts.

Discussion

Is e-voting in Zimbabwe realistic or a pipe dream?

According to the Zimbabwe National ICT policy issued in 2016, the government reported the uptake and use of ICTs had vastly improved because of a significant reduction of the digital divide between rural and urban areas. This reduction, also according to the government, was illustrated by an immense improvement registered by ICT indicators such as mobile Internet penetration. The government mentioned that the policy introduced institutional and legal frameworks to promote growth in the ICT sector. The government also cited policy capacity building and e-government as crucial linchpins for an ICT development blueprint. The Global Network Readiness Index, in 2022, ranked Zimbabwe number 107 out of 132 countries concerning the country's ICT adoption. Due to the significant increase in ICT adoption and the use of online services, there is hope and potential for Zimbabwe to implement and practice electronic electoral processes. It is evident from the results that both rural and urban populations have access to and can use the internet, therefore e-voting has the potential to succeed if implemented. Also, it is evident that in this day and era, almost all generations can operate at least a smartphone which makes it easier to carry out e-voting.

ICT Adoption

Accelerated and brisk infrastructure development has aided the advancement and availability of a wide range of e-services. According to the government, through POTRAZ quarterly reports, these e-services have been embraced by users as easier ways to communicate and conduct business from person to person, person to business, and business to business. Also according to the government, Zimbabweans have embraced mobile money transfers, mobile wireless broadband, greater usage of plastic money, and a variety of social media platforms such as Facebook, Twitter, WhatsApp, TikTok and Instagram, among others.

As mentioned earlier in this paper, Gigler (2004) emphasizes the essential function of information and communications technologies in fostering people's advancement in third world countries. The writer also explores keynote components where information and knowledge can be contributory and pragmatic for the enfranchisement of unheeded communities. The government of Zimbabwe is cognizant of the fact that political debates by citizens particularly through social media have the potential to influence events similar to the ones in Iran, Tunisia, and Egypt (Williams & Spiro 2015).It is not naive to believe that, unlike his predecessor Robert Mugabe, Zimbabwe's current president, Emmerson Munangagwa, is now using social media

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platforms like Facebook and Twitter to directly engage the voters, aware of the potential social media possesses.

Mobile Network Population Coverage in Zimbabwe

Welz and Junk (2009) highlight political violence in Zimbabwe during the 2008 election allegedly perpetrated by the ruling party on perceived opposition supporters in an attempt to intimidate voters for the then main opposition party, Movement for Democratic Change (MDC) in the disputed presidential run-off elections. Nyere (2016) believes violence in Zimbabwe is both systemic and political, as such, continues to be allegedly used for statecraft, as a result, intrinsically linking violence to political muscle. Since e-voting significantly reduces potential political violence due to its minimization of physical contact with political opponents, as such, election stakeholders in multiple democracies harnessed the advantage of ICT platforms in their electoral process (Odeyemi 2015).

Chiumbu (2009); Burgess and Banks (2010): Mazango (2001) analysed media laws and legislation affecting freedom of expression through social media. They conclude digital literacy and social inclusion can be used by governments to stifle political discussion through the Internet. Iwokwagh and Okworo(2012) also argue social media now provides a platform for citizens to engage in political debate in Nigeria. Repressive governments can however still muzzle information flow in developing countries saddled by poor Internet connectivity. Zimbabwe has taken considerable strides in addressing the digital divide as seen by the increase in active Internet and data subscriptions.

Active Internet Participation

Bruns (2008); Burgess and Banks (2010); Erington and Miragliotta (2011) acknowledge that in the age of mass media power and dominance of politicians, media advisors, and journalists produced the content of politics which was disseminated to the people through the media. Burgess and Banks (2010) suggest people had no choice but this has changed with the advent of social media which now enables consumers of politics to act in response to the producers.

The writers further argue that, as a result, the balance between mass and networked media is shifting further in favor of citizens. Jameson (2010) in his study on the digital abyss in Zimbabwe however nullifies their claim as inapplicable in developing countries due to the information gap. Jameson (2010) argues the digital divide issues in Zimbabwe as well as astringent insufficiencies in access to new technologies confronting the country are momentous. The Internet through social media may not be one of the platforms that would make such a debate possible in some parts of Zimbabwe because of severe insufficiencies in access to new technologies in the country (Jameson 2010). The writer also reckons the alleged history of oppression, economic collapse, mismanagement, corruption, and public sector breakdown has left Zimbabwe virtually disenfranchised in information communication technology. However, POTRAZ in their 2022 reports, appears to now invalidate (Jameson 2010) findings by reporting that the Internet penetration rate in Zimbabwe grew.

Internet Penetration Rate in Zimbabwe

POTRAZ also stated that mobile Internet and data consumption in Zimbabwe has been steadily increasing from quarter to quarter. Although Zimbabwe has yet to achieve 100 percent coverage for all network technologies, it is not impossible for the government to explore adopting e-voting in stages. The International Telecommunication Union (ITU) ranks

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Zimbabwe favorably concerning digital development with reference to infrastructure and access. According to the ITU, Zimbabwe had 94 % population coverage by the mobile cellular network in 2021. Odeyemi (2015) further argues as access spreads in national societies, the Internet provides potential platforms for direct access to political information for unmediated communication and even interactive discourse for electoral processes among citizens (Moog, 2000).

State of Digital Development in Zimbabwe

Since ITU reported Zimbabwe has 84 % of the population covered by a 3G mobile network and 39 % under 4G, it is reasonable to believe the country can introduce e-voting as a trial at selected district or ward level in local government elections. Erington and Miragliotta (2011); Gigler (2004) and Poster (2001) agree on the conceivable potential that new media has to alter ways in how politics is created and distributed. Burgess and Banks (2010) also observed the diverse and rapidly evolving ways Internet users participate in co-creative media and online social networks, but cite the bureaucratic licensing of Internet Service Providers (ISPs) by governments as an impediment to the prospects of democracy in light of the new media.

Chiumbu (2009) in a study on the democratic functions of a public broadcaster notes the editorial autonomy at the Zimbabwe Broadcasting Corporation (ZBC) is hypothetical and the broadcaster is, in reality, allegedly manipulated by the Ministry of Information, with assertions of direct political meddling. In another study to investigate how ordinary voices were featured on the ZBC, by researchers from the Media Institute of Southern Africa (MISA), Mawarire and Nyakunu (2007) argue that the subjugation that former President Robert Mugabe and his colleagues endured during the colonial era trained his government the signification of media control to hold on to power since they were prohibited publicity as nationalists and freedom fighters.

Erington and Miragliotta (2011) however emphasize various channels in which new media is changing the configuration of politics and communication in society and how that shapes prospects for democracy. About the Internet and new communication technologies, the writers also allude to societies shifting away from an epoch in which parliaments and media companies were gatekeepers of what people could read, hear and see. Alternatively, Burgess and Banks (2010) maintain, through Internet media platforms such as social media, Zimbabwean citizens now have an opportunity to assert a greater share of participation and a rehabilitated chance to become dynamic participants in the formulation of democracy.

The achievement of borderless, inclusive communication and political dialogue is attributed to the Internet (Ranchhod, Gurau, and Lace, 2002). In a study by Gigler (2004) to investigate if information communication technologies (ICTs) can empower communities, the research findings are in agreement with Jameson (2010) on the important function of information and communications technologies in fostering indigenous people's advancement in underdeveloped countries. Gigler (2004) also believes that upgraded access to information and ICT services, just like improving a person's literacy, can develop indigent peoples' proficiency in making premeditated life choices and in determining what they value. Poster (2011) however reckons that even if people are equipped with ICTs, and the Internet is a decentralized communication system where anyone connected can receive and disseminate information, issues of commodification and encryption confines emphasis and restricts discussion of politics over the Internet.

Pearson and Polden (2011) stress the importance of the concept of separation of powers which prescribes that the arms of government—the judiciary, the legislature, and the executive

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ought to be autonomous and detached from each other. This alignment is essential in a democratic mechanism because it ensures that the judicial system and the executive administration can function independently, and the media as the 'Fourth Estate', can bring to light through reportage any breach of the separation of powers. Hirst and Harrison (2007) argue Internet activism is expanding at a dramatic rate and the Internet is gradually decentralizing conventional media power base and structures. The Internet has also enabled citizens a political partaking platform once a preserve for conventional media and it is now sometimes referred to as the 'Fifth Estate' because it offers users a greater capacity to determine elected office bearers, including assessing the quality of public services (Crouzet, cited in Frère and Kiyindou 2009).

E-voting for Zimbabweans in the diaspora

According to Darwish, Youssif and Mohamed (2012), online voting system embodies three types:

(1) ***Poll Site Internet Voting*:** this method of election requires the presence of polling stations where voters go there to cast their ballots by using appropriate computers and officials superintend the election. During the counting phase, a network is used to transfer ballots from each polling location to a central station, where votes are counted and election results are displayed.

***(2) Remote-voting system*:** entails the casting of ballots from any computer or digital device linked to the Internet. This mode of open network is linked to neither time nor place however, the accompanying risks, according to ICT experts, are huge.

***(3) Kioske-voting system*:** through this method, polling stations are manned by election officials situated in appropriate locations like schools, community centres, or offices. The observers watch over and cameras monitor the kiosk voting to prevail over the security susceptibilities and avert compulsion.

The ZEC officials interviewed in this study said it is widely believed challenges associated with the kiosk voting method are regarded as less threatening as opposed to those on remote voting. If the government of Zimbabwe can adopt any of the e-voting methods mentioned in this paper, mobilize financial resources, and effective implementation, and supervise the system, it is indeed reasonable to assume, Zimbabwe can allow the country's citizens in the diaspora to vote. This paper hypothesizes that Zimbabwe can introduce e-voting albeit in phases.

It is evident from the research findings that all challenges experienced during the 2018 elections are due to underutilisation of technology. The main challenges raised are issues that can be solved with the adoption of information technology and communication strategies in the electoral system. Zimbabwe as a nation has to drift from using traditional ways of voting and move towards global technological advancements and practice e-voting.

According to the research findings which clearly show Zimbabwe's status on ICT adoption and internet penetration, it is very possible and practical for the government to adopt e-voting to minimise human error in the electoral process. Again, the results of the study indicate that Zimbabwe has network coverage that can accommodate all people from both urban and rural areas. The majority of the Zimbabwean population owns a smartphone with active internet access which is essential in the implementation of e-voting.

Everything considered, these results suggest that Zimbabwe has the potential and capacity to implement e-voting successfully making use of parallel vote tabulation to eliminate human error in the tabulation of election results. E-voting presents an opportunity to conduct a

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free and fair election in Zimbabwe since everything in the electoral process is done electronically with minimum human interference.

Conclusion

Remote voting is made possible by e-voting, lowering physical barriers and fostering inclusivity. It improves transparency and streamlines the voting process, saving time and effort. Stakeholders may more effectively monitor the voting process thanks to real-time monitoring, which fosters confidence. E-voting systems also save money in the long run since they do away with the need to print, distribute, and manually count paper ballots. By eliminating human error and boosting voting accuracy, electronic voting methods mitigate voter intimidation. They ensure the fairness of the electoral process by enabling voters to cast their ballots covertly and independently. E-voting methods allow for quicker results tabulation and analysis, fostering political stability and public trust. Depending on the number of voters, they can be readily scaled up or down to accommodate expanding electorates and meet certain demographic or geographic needs.

If e-voting systems are to be used on a broader scale, it is crucial to build strong safeguards to ensure their integrity and security, and to effectively address their drawbacks. There is a need therefore for Zimbabwe to begin undertaking all-embracing capacity building and training programs to cater ample allocation of qualified ICT human resources and expert workers covering all sectors. If government-owned companies and other private entities continue boosting the advancement and use of ICTs and safeguard impartial access to benefits provided by ICTs throughout all segments of society in Zimbabwe, the country has the potential and capacity to introduce and sustain e-voting methods. The advantages of e-voting seem to far outweigh the disadvantages thus there is a need for the government of Zimbabwe to implement the voting method and put to rest concerns by Zimbabwean citizens in the diaspora about their desire to be allowed to vote.

Recommendations

1.Legal Framework: The government of Zimbabwe should create a thorough legislative framework that outlines the requirements, guidelines, and practises for electronic voting. Ensure that the legislative framework assures the fairness of the electoral process, safeguards the privacy of voters, and resolves any potential issues.

2.Stakeholder Engagement: Include all necessary partners in the preparation and execution process, such as political parties, civil society organisations, election management organisations, and technical specialists. To establish trust and consensus, have open discussions and consult a wide audience.

3.Pilot Projects: Test the viability, dependability, and security of the e-voting system should be done on a modest scale. Before stepping up the implementation, identify and address any technical or operational difficulties using the results from the pilot projects.

4.**Voter Education and Awareness:** Run comprehensive voter education initiatives to make sure people are aware of the advantages of electronic voting and how to use it. Insist on the significance of voter registration, the confidentiality of the voting process, and the system's general integrity.

5. **Security Measures**: Put strong security measures in place to protect the electronic voting system from hacking, manipulation, and other hostile acts. To guarantee the confidentiality and integrity of the votes, use encryption, strict access rules, secure transmission protocols, and independent auditing systems.

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6.**Transparency and Auditing**: Allow unbiased observers and auditors to evaluate the electronic voting system will promote transparency. Create an independent oversight organisation, make the software's source code public, and allow access to logs and other pertinent data for analysis and confirmation.

7. Backup Plans: Create backup plans and contingency strategies to handle technological difficulties, power outages, and other unforeseen situations. To preserve continuity and the legitimacy of the electoral process, continue to use a paper ballot voting mechanism in parallel.

8.Inclusivity and Accessibility: Make sure that everyone, including those with impairments or restricted access to technology, can use the electronic voting system. For people who might not feel comfortable or able to use the technological system, offer alternate voting alternatives.

9. Building Capacity: Invest in programs that will teach and build the skills of election officials and other participants in the e-voting process. Ascertain that they possess the expertise and knowledge required to use the technology proficiently and resolve any issues that may emerge.

10.Independent Evaluation: To determine the effectiveness of the electronic voting system, pinpoint areas that need improvement, and foster public confidence in the procedure, independent reviews and audits should be carried out after each election cycle.

- The country should adopt e-voting as a trial for the City of Harare council and mayoral election.
- Zimbabwe citizens in the Diaspora should be used in the trial phase of e-voting before a national roll-out.
- Government should expand e-government services with an inclination toward ICT and electoral processes.
- Government should license more Internet service providers to curtail the digital divide.
- Democratize the electoral process premised on a digital economy.

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