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THE LIMITS OF DIGITAL TECHNOLOGY IN AFRICA: PERSPECTIVES FROM THE NIGERIA'S 2023 GENERAL ELECTIONS.

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Abstract
The electoral process throughout Africa is gradually becoming more digitalized because of the continent's information technological boom. The possible risks associated with the process of digitizing elections, however, have not received enough consideration. Using Nigeria 2023 general elections as an example, this study analyzes the limit of digital technology in Africa elections and its potential consequence for democratic sustainability in Africa. Using qualitative methods- (institutional reports and documentary sources), the study argues that, though, digital technology has improved the integrity of Nigeria's elections, there are structural and operational issues limiting digital technology as the game changer in the institutionalisation of electoral integrity. The study recommended the need to strengthen electoral frameworks through a broader management policy, deepening electoral institutions and enhancing technological infrastructures and broadband to bridge the gap between electoral technology and citizens expectations.

Keywords: digital technology, democratic sustainability, electoral process, electoral integrity, electoral institutions.

Introduction

Over the past decades, new technologies have increasingly played a significant role in the planning and conduct of elections worldwide, particularly in Africa. At every stage of the electoral process, several countries have employed a diverse array of technological solutions to boost efficacy, efficiency, and stakeholder trust. It is thought that implementing digital electoral technology would enhance electoral administration, discourage unethical behaviour by political leaders, and address issues related to stability of the democratic process in Africa's evolving political context.

Despite increasing the legitimacy of elections and consistency of their results, there are still debates in some nations about the efficacy of digital technology, prompting calls for prudence (Amoah, 2022). These debates were heightened by the evidence of Russian interference and media manipulation in the 2016 US presidential election (US Senate Intelligence Committee, 2019b). Concerns about the dependability of digital technology was called to question by the finding of identity theft discovered in Estonia's highly respected electronic identity card system, and the susceptibility of technology in obtaining government services (BBC News 2017). Similarly, claims of a voting website crash and attempt to influence the Brexit vote in 2016 by pessimists have highlighted the dangers of digital technology (Public Administration Committee). Furthermore, the initial hope sparked by digital technology was tempered in 2009 when the German Federal Constitutional Court reversed its decision to employ digital technology and instead chose to use ballot paper voting (Uzodike & Onapajo, 2019).

In Africa, digital adoption has not yielded many benefits, there have been issues with digitalised election procedures. In several African nations, election results are now even more contentious and hotly debated (Amoah, 2022). The difficult electoral circumstances in Kenya, Zimbabwe, and Nigeria, where electoral commissions have struggled to implement an un-controversial election have further heightened concerns that digital technology is not the answer to the electoral process's problems (Cheeseman, Lynch & Willis, 2018). For instance, in Country like Kenya where electoral technology was introduced in the phases of the nation electoral process, digital technology has become a mystery, presenting a blatantly electoral procedure that completely damaged the democratic process (Odote & Kayinga, 2021). Nyabola (2018) in his digital democracy, noted that "technology was intended to salvage an election but instead was used to compromised it (Nyabola, 2018)

Although this is not to undermine the significance of digital technology, there is still much disagreement over how sustainable it will be in the future (Owuoha, 2013). Concerns over whether digital democracy is the answer to the corrupt electoral processes that define many of these nations are developing because of mixed experiences in democracies like as Ghana, Mali, Zambia, Senegal, Sierra Leone, Nigeria, Mozambique, Malawi, and Rwanda.

A major factor which hampered digital technology is the structural and operational issues in many African nations. The prevalence of security deficit, inadequate digital infrastructure, election violence, and institutional weakness among others often compromise the viability of digital technology. Digital technology has the potential to improve election administration; however, inherent operational and procedural shortcomings are also a major factor affecting its efficiency. This is not to say that disagreements over elections are always caused by digital technologies. Studies have indicated that there are unanticipated situations and limits related to the digitalisation of the election process, (Cheeseman, Lynch & Willis, 2018; Moynihan, 2014). Surprisingly little attention has been paid to the limitations of digital technology, particularly in young democracies, despite the growing corpus of research and growing orthodoxy surrounding its use in the election process across Africa.

Despite its significance, I contend that there are still limitations and disadvantages that compromise the legitimacy of elections. To build a conceptual framework that examines the literature on digitalising elections in Africa, the study started with the introduction. The rise of the digital revolution in Nigeria's elections is covered in the following section. The final segment examines Nigeria's general elections in 2023, emphasising the limitations of digital technology and its implications for Africa's ongoing democratic project. Lastly, I wrap up and make suggestions where necessary.

Literature Review

Digital Technology in Africa’s Elections

The literature on Africa's digital technology has been bourgeoning, particularly since the improvement of the continent's elections after the third wave of democratisation (Dad and Khan, 2023, Fatai, 2020, Cheeseman, Lynch & Willis, 2018; Barkan, 2013). "Biometrics" and digital technologies are frequently utilised interchangeably in the voting process. According to IDEA (2017), biometric technology is the measurement and analysis of an individual's distinct biological traits, whether they be behavioural or physical, particularly when it comes to confirming and identifying them. It encompasses a broad range of physiological traits that may be measured, including DNA profiles, speech patterns, fingerprints, palm prints, retinal and iris scans etc (Bolle & Pankanti, 2004). It focused on identity to use the subject's name and birthdate that correspond to the captured features of a person to confirm that the person being photographed is who they claimed to be (IDEA,

2017). According to the National Institute of Justice (2011), the first biometric databases were created in the 19th century and were first used by criminal courts and police investigators. As a result, the use of technology has developed further and its use in the 20th century has increased significantly (Jain, FlynRen, and Ross 2008).

Research on digital technology has grown intermittently and is now the focus of current studies in Africa's emerging new democratic regimes (Fatai, 2023; Diamond 2010). The challenge of conducting legitimate elections and divergent viewpoints on how technology affects democracy have contributed to the growth of this debate. Some academics believe that technological developments in the political process are a crucial tool for bolstering democracy (Fatai, 2023). To them, the highest level of clarity and integrity could be achieved by incorporating technology into the electoral process (Diamond, 2010). This freedom highlights that voters are free to make their own decisions without hindrance or interference (Fatai and Adisa, 2020). While digital technology has liberalized the political space, it has also condensed the crisis of the electoral process by reducing the frequency of double registration, electoral fraud and violence which has sap some degree of confidence in the electoral process.

Following the initial optimism that bolstered technology as remedy for crisis of the electoral process (Barkan, 2013; Evrensel, 2013), studies have demonstrated that contemporary application of digital technology in Africa is prone to systemic issues and operational shortcomings (Moynihan 2004). For instance, Nigeria's general elections in 2015, 2019 and 2023 consistently had numerous instances of smart card readers breaking down in polling places, delayed accreditation and ultimately forced manual voting, especially in 2015 and 2019 (Fatai, 2020). Similarly, Venezuela's experience showed that fingerprint verification, in addition to photo ID cards, frequently failed to authenticate voters, which resulted in the technology's rejection (Russel and Zamfar, 2018). Thus, technology "relies on complex procedures that are liable to breakdown, increased suspicion of manipulation, and encourage complacency towards forms of electoral oversights," (Cheeseman et al., 2018:1939). According to Golden, Kramon, and Ofosu's empirical study on the 2012 Ghanaian national elections (2014: 23), electoral irregularities often take the form of interfering with the device's operation. It follows that human manipulation of digital technology can compromise its effectiveness and results.

Moynihan (2004: 516) asserts that the complexity of the digital paradigm makes it more dangerous for security than the traditional manual voting procedure. Election technology provides a false sense of security, leaving machines without redundancy or the capacity to recover from failure, even though, election administrators seem to have placed too much trust in it to the point of ignoring new vulnerabilities and unforeseen consequences (Moynihan, 2004: 517). In particular, the technology system is vulnerable to "programming error and tampering," which may make election fraud worse rather than better (Moynihan, 2004). Studies by Cheeseman, Lynch & Willis (2018), Barkan (2013), and Moynihan (2004) have shown that digital technology makes it more difficult to detect or confirm election fraud. They are often made fun of by the manner it is hacked. This was hinted at by Uzodike & Onapajo (2019:151), who called it "undetectable after the fact." This election fraud frequently leads to more "catastrophic" outcomes that jeopardise the foundations of democracy, but also incite violence (Blanc, 2007: 14)

Some studies have also examined the paradigm change in the shift from the use of electoral technology (Maseko, 2024; Uzodike & Onapajo, 2019). This change is underscored by the frustrations and poor outcome of these electoral algorithms. Several countries have also followed this trend. For example, the Netherlands, where nearly all elections were held

electronically before 2008 and mechanised voting had been in place since 1965, recently rejected electronic voting systems because of problems with software tabulations, certification, and result recounting (Uzodike & Onapajo, 2019). The decision to switch back to a paper balloting system generated media attention and raised some questions over the validity of technology for national elections. Similarly, Ireland also got rid of its contentious electronic voting system, following accountability and transparency issues about digital technology, (Russel & Zamfar, 2018). Empirical evidence indicates that digital technology cannot completely stop manipulation and anomalies. The effectiveness of digital technology has been questioned in situations where there are institutional and structural difficulties. Yet its institutionalisation has been hampered by a reluctance to consider its possible constraints and shortcomings (Pryce & Oidtmann, 2014).

Contentious Elections and Democracy in Nigeria

Since 1999 Nigeria has held seven major elections. Only the 2015 election resulted in a true, unprecedented transfer of power between political parties at the presidential level out of all these elections. Every other one in the post third wave of democratisation has been exposed to one controversy or the other. Although from the theoretical standpoint of the Huntington "two-turnover test" or the apologetics of electoral consolidologist, regularity of elections is an indication that democracy is taking root, nevertheless liberal democracy has suggested otherwise in Nigeria. Nigeria is still searching for democracy because of the widespread electoral fraud and scandals that have plagued elections since democratisation.

According to liberal democracy, the consolidation of democracy depends on several essential components, including viable political parties, robust democratic institutions, legitimate elections, and democratic political culture. In Nigeria's democratic practice, all of these are either nonexistent or insufficiently available. Nigeria has, in fact, been notoriously associated with electoral concealment, and her democracy has been referred to by several names, such as "authoritarian democracy" (Nolan, 2023), "garrison democracy" (Omotola, 2009). Without using fundamental democratic norms and principles, these abbreviations indicate a tendency towards de-democratisation. Therefore, it is undeniable that Nigerian elections are held without democracy (Fatai, 2017).

The above issue has significantly influenced the mentality and mindset that has accompanied electoral fraud and irregularities in Nigeria. Considering the concerns, experts and election watchers had argued that the general elections of 2003 and 2007 were the nastiest in Nigerian political growth. For illustration, Momoh (2016: 2) comments that 'the general elections in 2003 were fairly scandalous, the general elections of 2007 amounted to little more than the distribution of votes among candidates or contestants.' A complete assessment given by the Human Rights Watch categorically declared that the 2007 elections were "among the poorest elections they had ever witnessed in their history of human rights watch" and that they were "the worst ever seen anywhere in the European Union." As concluded by the TMG (2003:9), the 2003 election was a civilian equivalent of a coup d'état" (TMG, 2003:9).It was in the light of this electoral malfeasance that the 2007 election also got the worse rating. According to the TMG report:

> Based on the widespread and far-reaching nature of these lapses, irregularities and electoral malpractices, we have concluded that overall, the elections were a charade and did not meet the minimum standards required for democratic elections. We therefore reject the elections and call for their cancellation" (TMG, 2007: 1-2).

Nigeria's elections have fallen short of the regional and international standards (Fatai, 2017, Suberu, 2007). Going by various surveys and elections observation reports, elections quality

in Nigeria has become an albatross. For example, the 2009 Afrobarometer study showed that the consensus in Nigeria is that elections are unacceptable. According to 63% of respondents, the country's elections are marked by anomalies and fraud in relation to the 2003 and 2007 elections (Afrobarometer, 2009:10). Only after the 2011 elections, when digital technology was completely implemented, did the nation see a notable improvement in general elections (Afrobarometer, 2013).

Given that the country's election results have typically not matched the intentions of the electorate, many Nigerians show a lack of faith in the electoral process and the institutions that monitor it (Afrobarometer 2009). Because they were not elected by the people and are not concerned with building relationships within their constituencies, political office holders thus bear a certain burden of legitimacy (Uzodike & Onapajo, 2019). Furthermore, these situations are detrimental to governance due to the dissonance created by their lack of legitimacy, egotism for public support, and profit from a time-consuming and expensive legal battle to remain in office (Uzodike and Onapajo, 2019). This part provided the basis for the introduction of digital technology in Nigeria.

Introduction of Biometric Technology and Nigeria's Electoral Process

The INEC audit of the 1999 elections and the release of the "Tactical Plan" for the administration and reform of the electoral process marked the beginning of the initial attempt to digitise Nigeria's electoral process. The tactical plan primarily concentrated on information technology, computerisation, and registration database administration (Ayeni & Esan, 2018). This was followed by the Automated Fingerprint Identification System (AFIS), a specialised software program designed to link the biological data collected from the electorate (Ibrahim & Garuba, 2008). With the use of this technology, the AFIS eliminated false identities and more than 80,000 fraudulent entries from the voter registration were detected. As a result, the 2003 registration exercise recorded 68,833,476 million registered voters, showing a sharp decline from 73,528,040 million. The direct data capturing machines (DDCM) introduced by INEC also reinforced the registration process, giving legitimacy to the 2007 electoral process. Through this machine, INEC was able to implement over 13,000 integrated data systems through DDCM during the 2006 registration process and create more space for registration for the 2007 elections (Ayeni & Esan, 2018). However, the criticism and controversy which greeted the 2007 general elections raises concern about technological devise for the electoral process.

Under the chairmanship of Prof. Attahiru Jega in 2015, INEC implemented a biometric voter registration system that incorporates a revised Open Ballot System (MOB), an efficient production process, the securitisation of election materials, and a new framework for result collation, revision, and announcement to overcome these obstacles and improve election integrity (Jega, 2013:3). It launched the chip-embedded and machine-readable Permanent Voters Cards (PVC) and the Voters Identification System (VAS), also known as the Smart Card Reader (SCR), to further the advances (Owuoha, 2013). The PVC is a machine-readable card with a chip that stores the biometric data of the legitimate holders. Verifying the validity of each potential voter's card and personal data was necessary before they could cast their ballots on election day (Agbu 2016). On the other hand, the SCR was made to complement other electronic devices to ensure that the voting process was accurate. The purpose of these devices was to guarantee voter identity, verification, and authentication while solidifying reliable voter registrations (Odion, 2011: 650).

The Nigerian Senate had initially opposed the provisions of the Electoral Act that called for the adoption of an electronic voting system and the transmission of results, because of the report of the National Communication Commission's that highlighted fear regarding the transmission of election results (Medoye and Tukur, 2022). However, owing to numerous protests and objections, the National Assembly passed the 2022 Electoral Act and adopted electronic voting and results transmission. The Electoral Act 2022 addressed some of the issues raised in 2015 by legitimising INEC's use of technological breakthroughs to ensure smooth elections in line with global best practices and business trends (Sibe, 2022). For example, Section 41(1) of the Act required the commission to supply suitable boxes, electronic voting machines, or other voting equipment for conducting elections. Similarly, Section 50(2) stipulates that the "INEC-established procedure for the announcement of election results must be followed in accordance with Section 63; and Section 62(2) authorises the board to maintain centrally maintained computerised voter registration for compilation purposes".

Before the 2023 general elections, INEC deployed two complementing electoral technologies to further strengthen the integrity of elections and rebuild public faith in the electoral process. The INEC Result Verification site (IRev) and Bimodal Voter Accreditation (BVAS) were introduced. The BVAS is a portable electronic device designed to scan permanent voter cards and use a voter's fingerprint and facial recognition to confirm that they are eligible to vote at a particular polling station (Suleiman, 2022). Voters can obtain polling unit results transmitted by officials in real time using the IReV, an online INEC portal (Fatai, 2023).

Despite the application of these technological devices, the outcome of the election was rejected (Acheampong, 2023). The opposition party's challengers Alhaji Abubakar Atiku (PDP) and Peter Obi (LP) filed a petition claiming that the elections were unacceptable due largely to the failure of the Bimodal Voter Accreditation System (BVAS) and INEC violation of the Electoral Act 2022, which permits electronic transmission of results in real-time. This controversy cast doubt on the effectiveness of digital tools in the management of elections.

The Limits of Digital Technology in the 2023 General Elections in Nigeria

Although digital technology has improved the quality of elections in Nigeria by reducing multiple registration and voting, as well as implementing anti-fraud and anti-irregularity measures, there are certain drawbacks that still threaten Nigeria's democratic experiment. Some of these restrictions can be explained by structural and operational difficulties. These difficulties have raised doubts on the feasibility of digital technology in Nigeria.

Technical and Operational Problem

Since technology is a complex process, proper planning is necessary to guarantee its maximum performance. Digital technology will probably experience a setback if this doesn't happen. Technical and operational issues typically pose a significant obstacle to the use of digital technologies in elections in many democracies (Owen & Usman, 2015). Nigeria is not an exception, considering the nation's history of election technology failure. According to Alebiosu (2016), five biometric card readers malfunctioned for Nigerian President Goodluck Jonathan. The installation of the BVAS has also presented challenges. For instance, Odalonu and Ogu (2022) pointed out that the Anambra governorship elections had technological issues. This also happened during the Ogun and Ekiti gubernatorial elections (Iliyemi 2021).

There were also operational and technical issues with the 2023 general elections. Election monitors and observers noted several issues with the BVAS during the polling day (NDI, 2023, Hoffmann, 2023). The voter-accreditation process presents challenges for polling unit personnel (Acheampong, 2023). It seems that the time required to authenticate voters was

significantly overestimated, resulting in delays that ultimately prevented many electorates from exercising their right to vote (Oladeji 2023). Considering INEC's compelling promises and preparedness, neither voters nor election observers expected this failure. It should be stated that this setback occurred in the 2015 and 2019 elections and thus repeated itself again in 2023. Despite INEC evaluation of BIVAS for voter's accreditation in selected polling station in the country and using it in few state governorship elections and yet BVAS failed demonstrated that digital technology has its unpredictable limitations. As noted by Moynihan (2014), there are unpredicted circumstances and limitations associated with digital technology (Sibe and Kaunart, 2023).

Several reports from polling stations around the nation's six geopolitical zones showed that the BVAS periodically encountered technical difficulties or did not function at all in certain instances, particularly in Borno, Rivers and Lagos State (NDI, 2023, Situation Room, 2023, Itodo, 2023). Additionally, according to reports, the BVAS was unable to get the biometric data of several high-profile individuals, including the wife of the Governors of Rivers State who was not allowed to exercise her right to vote (Jaiyeola 2023). As revealed by Punch newspaper, an authoritative media outlet, part of the reasons why BIVAS failed was due to incorrect BVAS devices used by INEC in some polling centers (Punch, 2023). This situation disenfranchised many potential voters from casting their ballot (Acheampong, 2023). In addition, it was also reported that there were issues with the digital dissemination of outcomes on election day, especially for the presidential election result (EU-EOM, 2023). For example, many INEC officials stated that they could not recall their IReV portal credentials at the conclusion of the voting process (Akeaya-inne 2023). Many of those who were able to retrieve their passwords claimed that they were incorrect and that as a result, they were unable to upload the voting station outcomes in actual time (Unini 2023). It is possible that INEC officials purposefully manipulated the results of the polls, even if these occurrences may have originated from a lack of education for the ad-hoc workers in charge of running the BVAS (Akeaya-inne 2023).

Electronic Transmission of Vote and Results

The legal foundation for electronic vote transmission was established under the Electoral Act 2022 in Nigeria. In a nation with unstable network infrastructure electronic transmission of votes carries several potential perils. For example, the probable danger of system letdown, as recorded in the case of Nigeria and Kenya, where the server malfunctioned due to heavy traffic network was the basis why technology was derided during the 2023 general elections in Nigeria (Munya 2022). The failure to transmit election results in real-time have been widely documented by numerous independent observation groups. For instance, the Commonwealth Election Observer Group to Nigeria (2023) attested to this by claiming that the election results were not posted on the IReV platform in real-time as stated. YIAGA-Africa, a non-profit civic organisation, voiced concern over the unexplained delay in releasing voting unit results (YIAGA, 2023). The group noted that, despite INEC's promises, the presidential election results had not yet been posted to the IReV portal on election day, even though the counting had finished many hours earlier (Kareem 2023). INEC explained that these issues were caused by a technical issue with the server scaling for the IReV. According to the Commission, this was merely a technical problem and there was no proof of sabotage or intrusion. As can be seen on February 26, 2023, the day after the election, less than 30% of the presidential election results had been announced; therefore, this explanation raised more concerns than it did answers (The Guardian, 2023). Since scalability is an essential part of a well-designed system, INEC's defense seems untenable (EU-EOM, 2023).

Limited Internet Access and Infrastructure Problem.

An efficient internet infrastructure is also necessary for digital technology to work. This includes adequate computer power, a stable and accessible internet connection, and enough electricity. Before the 2023 elections INEC promised that the BVAS software have been updated and internet connection required for the system to function correctly and transmit election results in real-time has been fixed. Unfortunately, these requirements failed during the elections. Internet access was rather limited and connection erratic in remote areas where voting stations are located. Additionally, the frequent nationwide power outages made it difficult to use computerized voting equipment in some polling units during the elections.

Many political players and analysts continue to be baffled by Nigeria's poor internet capability and inclusion, even though it may be claimed that digital technology holds great promise for the country's electoral system. The Nigerian National Communication Commission (NCC), with respect to transmission of result has therefore said that the absence of technological infrastructure in the nation that can support digital technology compromises the dependability of digital technology. They claim that only 50.3% of polling places nationwide have 3G networks that can send election results. In Nigeria, only 473 of the 774 constitutionally recognised local governments have internet connectivity (Premium, 2019).

More crucial to the effectiveness of digital technology is the electrical problem. Nigeria is now plagued by inadequate power delivery and generation. It has been suggested that the erratic power supply brought on by load rejection by energy distribution firms during the elections was a contributing factor in the malfunctions of voting machines and voter accreditation in 2019 and 2023 (Premium Times, 2019, Acheampong, 2023). The legitimacy of digital technology has been called into question by the poor internet availability in rural regions and the corresponding voter turnout. Public confidence in the presidential election process was severely damaged by the fact that the results were not made public until three days after the polls, partly due to erratic power challenge (Okeaya-inneh, 2023). As posited by Cheeseman, Lynch and Willis, (2018)digital technology risk being compromised in a country which failed to provide power infrastructure useful for the operation of digital technology.

Structural and Security Problems

The effectiveness of digital technology is further hampered by the persistent and long-lasting insecurity that has characterised the nation since 1999. The Nigerian state's structural limitations are the cause of the security problems. The underlying cause of the rising insecurity in Nigeria is the state's vulnerability and its failure to maintain authority and order. The ongoing Boko Haram conflicts in northeastern Nigeria, the ongoing Niger-Delta demands, and the IPOB agitation for self-determination have created a pressured security ecosystem that does not offer a conducive peaceful electoral climate for the effectiveness of digital technologies.

The use of technology for elections was hampered by the atmosphere of dread and violence that accompanied the 2023 polls, particularly in Rivers, Kano, Benue, Sokoto, and Lagos, where INEC workers had to flee for their lives due to homicidal violence and disenfranchised. Election monitors' reports contradicted INEC's and the military's denials of any involvement in the elections. Accordingly, there have been instances of “the military disrupting polls in some areas, including Rivers states, where soldiers were deployed heavily around INEC's offices leading to the suspension of vote's collation,” (NDI, 2023). Election tampering is likely to occur when votes are delayed and not counted in real time, creating opportunities for errors and rigging.

Additionally, the character of the Nigerian state discourages the usage of technology. The state's restricted autonomy, which led to the lack of civility and normlessness in politics, has undermined digital technology (Agbaje & Adejumobi, 2006). The elite are determined to gain political power through both legal and illegal means because they view power as the means to an end. These elites nonetheless exhibit anti-democratic traits as disdain for democratic norms and procedures, personalisation of political power, and intolerance for opposition (Tenuche, 2009). Political actors have acted unchecked because of this dynamic, turning politics into a zero-sum game and violence. In blatant violation of the 1999 Constitution and the 2022 Electoral Act, registered voters were denied the opportunity to cast ballots in a few states, including Lagos and Kano States, during the presidential and gubernatorial elections (Yiaga, 2023). Voters were denied access to polling places to cast their ballots after being profiled according to their political or ethnic connections. The votes cast in some places were also suppressed by cases of thugs disrupting and stealing voting materials. For instance, in Ward 10, Unit 2 of Emohua LGA of Rivers State, a bus carrying election supplies and personnel was hijacked (Yiaga Africa, 2023). Prior to the elections criminals set fire to the commission's offices in Ogun State's Abeokuta South LGA and Osun State's Ede South LGA, destroying over 65,699 uncollected PVCs, 904 ballot boxes, 29 voting cubicles, 30 megaphones, 57 election bags, and eight electric power generators. INEC offices in Onyagede Ehaje, Ohimini LGA (Benue State), Izzi LGA (Ebonyi State), Orlu LGA (Imo State), and Ikpoba Okha LGA (Edo State) (Ita and Ibanga, 2025). It has been argued that the state supports these anti-democratic forces to further its own interests. This affects accountability, transparency, and fair play, all of which digital technology aims to advance.

Cost of Running Digital Technology

Installing software for biometric verification could be highly expensive. According to Daily Asset (2024), the "total cost of all the computers, mobile phones, and accessory equipment is very huge". The cost of digital tools for Nigeria's general election in 2023 was estimated to be 335 billion. According to the approved Election Project Plan's primary aims, this budget was broken down as follows: N159.7 billion for election operations, N117.3 billion for electoral technology, and N20.4 billion for electoral administration costs. Additionally, it disclosed that N7.4 billion, or 2.5 percent of the costs associated with administration, technology, and election operations, had been allocated for unforeseen electoral expenses (Daily Asset, 2024). Apart from the initial equipment cost, the issue is exacerbated by the requirement to disperse the machines across the nation, the expenses associated with employee training and upkeep, and the difficulty of maintaining the equipment in top working order.

Table: 1: The Approved Budget Plan for the 2023 General Elections

Items	Cost (NGN Billion)	Percentage of Total Budget
Procurement of Accreditation Devices	**105.25**	**34.51**
Provisions for Run-off Elections	**27.11**	**8.89**
Honoraria for Adhoc Staff	**23.77**	**7.79**
Election logistics movement and Deployment of staffs	**23.01**	**7.54**

Printing of Ballot papers	**20.68**	**6.78**
Procurement of Non sensitive materials	**12.72**	**4.17**
Printing of Result sheets	**9.58**	**3.14**
Procurement of Ballot boxes	**7.82**	**2.56**
Procurement of Operational vehicles	**3.9**	**1.29**

Source: INEC Approved Budget Plan for the 2023 General Elections

Although, overall, the above election budget is the largest in Africa, it is smaller than Kenya's budget for the August 2022 elections in terms of the amount allocated to each voter. Compared to Nigeria's $9 allocation, the Eastern African country's election costs came to N176.6 billion, or $17 on average per voter (Cheeseman et al., 2018). According to the budget analysis, nine items account for 79.68 percent of INEC's 2023 election budget, with much of that amount 34.51 percent going towards the acquisition of accreditation devices. The budget for the run-off election was a meagre 8.89 percent. The honorarium for ad-hoc employees amounts to 7.79 percent, logistics to 7.54 percent, and ballot paper printing to 6.78 percent (Business Day, 2024).

According to INEC, it purchased 200,000 of the devices. The 200,000 equipment will cost $159 million (N73,217,910,000) at a rate of $795 per gadget, which is 30.4 percent less than INEC's budget of N105,250,000,000 for the BVAS devices (Business Day, 2024). The Shenzhen Emperor technology, a Chinese company which produced the Biometric tablets have been transacting with INEC since 1995. The BVAS used during the 2023 elections costs $795 (about N366,089.55 at the exchange rate of N460.47/$) (Business Day, 2024). Even with the high cost of technology, there were still a lot of issues surrounding the general elections in 2023, including vote-buying, violence, intimidation, and technical issues. Accordingly, biometric technology cannot "prevent bullying, vote buying, technical glitch, low voters' turnout, or endemic political and electoral violence," despite their high cost and usage dynamics. Instead, they dissuade focus from addressing these fundamental issues (Nolan, 2023).

Fake News, Disinformation and Technological Propaganda

While digital technology has provided a solution to election fraud, it has also presented a significant threat to the political process. As such, it is a two-edged sword that may cut from both sides. It is risky for digital elections in 2023 if technology is used to spread propaganda, misinformation, and fake news. On February 15, Reporters Without Borders (RSF) voiced serious concerns about the way that the general elections of 2023 were marked by deception. They are frequently made possible by politically driven and ethnocentric propaganda (2019, Egbunike). For example, on December 4, 2018, Lauretta Onochie, a presidential aide on social media, purportedly uploaded a photo of a food bag containing 500 naira notes at the Abubakar Atiku Presidential rally in Sokoto, Northwestern Nigeria. It was discovered that this information was untrue because the package had nothing to do with the election. In fact, it was discovered that Onochie had occasionally misled the public with false images after the International Centre for Investigative Reporting (ICIR) examined more than 1000 photos that Onochie posted on Twitter between August 1, 2018, and July 31, 2019. As concluded by Madrid-Morales & Wasserman (2019) misinformation campaigns through technology have

been used to influence political agendas in Nigeria, Kenya and South Africa. This frequently leads to distrust among social media users on reliability of digital technology.

Cybersecurity Issues

Elections using contemporary technical advancements are becoming more vulnerable to cyberattacks and the possibility of tampering with Electronically Stored Information (ESI). These hazards are spread through important links in the political process. For example, there is a chance that votes may be intercepted during transit, that the electronic voter database could be manipulated technically, that the electronic register, the electronic collation process, and other crucial technological components in the election value chain could be hacked (Kaunert and Sibe, 2023). There is the potential risk of manipulating the data saved on the BVAS, and the potential risk of hacking the IReV and manipulating the result.

In fact, there are cases of fake election results flying round even before collation and announcement of election outcomes. There was the case that INEC website was hacked, although INEC refuted this claim, security sources claims that there were attempts to disrupt the 2023 general elections by some faceless element (Yiaga, 2023). Consequently, several Civil Society groups had alleged that some politicians thwarted the conduct of free and fair elections in 2023, recruiting foreign actors to hack into INEC's website to enable it upload fictitious results from remote locations' (Jannah, 2018:1). This similar experience occurred in the US during its 2006 Presidential election when the US Senate Intelligence Committee found that Russian was responsible for hacking into its database, media manipulation and foreign interferences (Garnett & James, 2023).

Despite claims by INEC that it has adopted the essential safeguards to avoid hacking, and that cyberattacks, or sabotage did not occur during the 2023 elections (The Guardian 2023), there are concerns especially that INEC has a record of being at the receiving end of cyber-attack. Its targeted and vandalization of its website in the run-up to the 2015 general elections suggest the vulnerability of potential risk. According to the Ministry of Communication and Digital Economy about 12 988 978 cyberattacks occurred with most of these assaults from domestic and global context (Izuaka 2023). When these are broken down, there were a total of 1 046 896 attacks on Friday, March 17, 2023; 1 481 847 attacks on Saturday, March 18, 2023, which was election day; 327 718 attacks on Sunday, March 19, 2023; and 977 783 attacks on Monday, March 20, 2023 (Izuaka 2023).

While the Ministry of Information alleged that INEC had purposefully blocked the electronic transmission of data after suspecting a cyberattack on their electoral infrastructure and the reason why results were not transmitted to protect elections results, this emphatic statement contradicts INEC's claim that there was no cyberattack (Daramola 2023). This discerning further suggests that digital technology is precarious to attacks. The issues have emerged as a key concern for the reliability and sustainability of digital technology.

Conclusion

Using the 2023 general elections in Nigeria as a backdrop, the study examined the limit of digital technology in Africa. It argues that even while digital technology has increased election credibility, several issues still exist which impact on the viability and trustworthiness of digital technology to enhance democratic elections. Caution therefore should be exercised in the promotion of technology for elections in Africa. In many democratising nations where there are systemic and operational issues conflating with the lack of electoral body's autonomy, digital technology is not likely to be sustainable. These boundaries are even more obvious with the failure of infrastructure, security flaws, and structural issues.

Many African countries currently lack the requisite infrastructure to facilitate extensive use of technology in elections. Regarding these difficulties, it is critical that these nations consider the most effective ways to use technology in their electoral processes. Proper planning should be a top concern, including enough staff training, testing, and technical solution piloting. These can lessen the scope of failure, yet they still cannot ensure that technology will deliver perfectly in the end. Regarding this, it is equally critical that nations think about reliable backup plans and fallback systems that can be used in the case of technological malfunctions without jeopardising the integrity of elections. This was the case with Ghana during the 2016 general elections.

Electoral laws must also be established to achieve a tight balance between the use of technology, and legitimate back-up and manual methods. Given the delicate nature of elections and the possibility that poorly handled political developments could turn violent, these are especially crucial. Technology will continue to change the electoral landscape in Africa, but African nascent democracies must foresee and prepare for the challenges that come with it, if they hope to maximise its gains. There is the need to focus more attention on issues and conditions which impair the viability and reliability of digital technology, otherwise digitalisation of elections would likely be a futile exercise and could provoke democratic reversal should these problems remain.

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