RESEARCH ARTICLE

Transiting from Manual Voting to Electronic Voting System for Enduring Democratic Governance in Nigeria: The Imperative for Digital Solutions

Chima Paul[1*]

[1]Department of Public Administration, Faculty of Management Sciences, University of Abuja, Nigeria

Corresponding Author: Chima Paul, chima.paul@uniabuja.edu.ng

Abstract

The paper investigates the enormity of hitches tied to transiting from manual-based electoral systems to the electronic voting system and determines whether hurdles with the electronic voting system could be sufficient enough to prevent Nigeria from adopting it to enhance her democratic governance in the 21st century. This enquiry was prompted on the ground that there are mixed reactions from different individuals, scholars and societies that the Nigerian state is not ripe for electronic voting and as such may not be able to sustain it if it eventually steps into full adoption of electronic voting system. Therefore, they argue that the status quo ante should be maintained. However, available documentary evidence and cases drawn from other climes where electronic voting has been practised across the globe show that the cost-saving potential of electronic voting is limitless, it eliminates electoral frauds, votes are completed and submitted online, thereby saving ample time, it restricts movement, which eventually eliminates voter apathy caused by fear of violence, etc. On the other hand, most scholars are overwhelmingly inclined to the opinion that the electronic voting system is capable of exacerbating the digital divide as it is lopsided in affecting the turnout of certain groups of citizens. This implies that e-voting will favour only well-educated and wealthy people to the detriment of the downtrodden in the society. The paper however concludes that the Achilles' heels of transiting from manual to the electronic voting system identified are tangential and could be surmounted with the passage of time through sensitization and awareness creation.

Keywords: Manual Voting; Electronic Voting; Democracy; Governance

Introduction

One of the basic functions of elections and the consequences that come with them is the democratic legitimization of those in power (Raciborski, 2003). Election constitutes an important element in liberal democracy (Adejumobi,2000). Elections are tools for ensuring orderly succession and leadership change, as well as a source of political authority and legitimacy. However, Nigeria has always struggled to establish a true democracy through elections (Ajayi, and Ojo, 2014, Babalakin, 2021). This is partly due to the frivolous electoral system in Nigeria characterized with assassination, political bullying, rigging, stuffing and snatching of ballot boxes during and after the election. (Ighodalo, n:d). Substantiating the preceding exposition, Ogunboded and Adelakun, (2018) assert that Nigerian elections are marred with crises, which have hampered democracy and development. Reiterating the ugly scenario as it occurred during the electoral process in Nigeria, the Guardian (2021) reports that votes buying and/or "hands shake" with the people working at the polling stations coupled with physical injuries and fatalities dominated the six national elections conducted between 1999 and 2019 because the system was entirely manual (Stephanie, Burchard & Simati, 2019). The plethora of

negative cases arising from the Nigerian elections necessitates the implementation of a total electronic voting system as the only solution for a credible, free, and fair election in Nigeria. Corroborating this view, Nwogu (2015) opined that due to the problems with manual voting systems in Nigeria, exploration for a more efficient voting system that is cost-effective and reduces electoral fraud is imperative. Extending this frontline of argument, Onu and Chiamogu (2012) urged that adopting robust IT policies and programmes are the most effective solutions to the problems of weak democratic institutions in Nigeria. The comparative advantage of e-voting over the conventional voting system according to them is obvious. The argument against manual elections is that elections in Nigeria have been controversial since 1964. Ballot boxes were frequently stolen, and those declared winners by the electoral arbiter were actually candidates that lost during the election (Alfred, Ngara & Nnadozie, 2018). In addition, missing names of some registered voters, intimidation and disfranchisement of voters, multiple and underage voting, snatching or destruction of ballot boxes, miscomputation and falsification of results were some anomalies associated with manual elections in Nigeria (Kuye, Coker, Ogundeinde Coker, 2013). The aforementioned suggests that it is only a computerized system that cannot be hacked

or conned that can convert the burdens inherent in manual voting to blessings for the Nigerian democracy. Nigeria needed a system that would allow citizens to vote freely while also ensuring that the results were fair. Therefore, this paper attempts to demonstrate that e-voting systems have inherent advantages over paper-based voting systems, and thus should be embraced in Nigeria. To achieve the above objective, the paper is divided into the following segments: conceptual elucidation, the flaws with conventional/manual voting in Nigeria, the imperative of transiting from manual to electronic voting in Nigeria, and the last section draws conclusions and recommends accordingly.

Conceptual Elucidation

Electronic Voting: Electronic voting (e-voting) is a system that allows voters to send their votes to election officials in a secured and confidential manner over the internet using electronic ballots (Oostveen & Bessdaar, 2009). Similarly, it can be defined as a system where the recording, casting or counting of votes in political elections and referendums involve information and communication technologies. It can also be seen as the use of information and communication technologies to record, cast, or count votes in political elections and referendums (IDEA, 2011). From the foregoing, e-voting is a system that enables a voter to securely and privately cast his vote for a specific contestant. Electronic voting is a comprehensive interconnected arrangement that uses a microcontroller to generate results based on public opinions. Electronic voting is of different types. Generally, e-voting can be divided into two main categories as can be seen in the diagram below:

Figure 1: Types of Electronic Voting
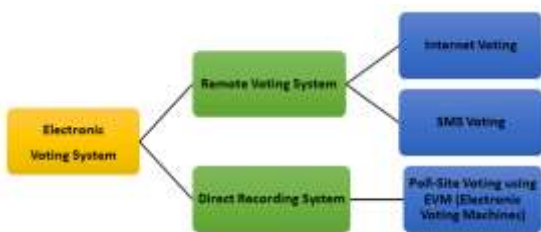
Source: Ashrit Laxmi (n:d)

Remote voting adopts mechanisms that allow voters to vote in ways other than casting a ballot in person at a polling station in their district of residence, whether they are abroad or within the country (European Union, 2018). Remote voting, therefore, is the type of e-voting that can be done in person at a location other than the designated polling station or at a different time, or by mail or proxy. Remote Internet voting according to HTET & AUNG (2014) is highly beneficial because it aims to increase voters' convenience and accessibility by allowing them to cast ballots from virtually any Internet-connected location. However, HTET & AUNG (2014) maintain that while this concept is appealing and offers many benefits, it also poses a number of security risks and raises other concerns about civic culture. They assert that the technologies that are available now and in the near future are insufficient to combat these threats.

Remote voting takes the form of Internet and SMS voting. "Internet voting" refers to electronic voting that takes place over the internet. France, Switzerland, and Estonia are the few countries that use Internet Voting for national elections (i-Voting) (Ashrit Laxmi, (n:d). On the other hand, short Message Service (SMS) voting is the process by which the electorates vote by sending SMS to a specific number. An SMS is sent using a mobile phone. For the poll site, voters can cast ballots from any polling location using Electronic Voting Machines (EVMs). The tallying process is quick and accurate, convenient and efficient. Security risks associated with such systems could be managed because election officials would have control over both the voting platform and the physical environment (HTET & AUNG, 2014). Australia, Belgium, Estonia, Brazil, Canada, France, Germany, India, Italy, Norway, Netherlands, Namibia, Peru, Philippines, Romania, Switzerland, United Kingdom and Venezuela, are countries that have used Electronic Voting Machines (EVM) in their national elections ((Ashrit Laxmi, (n:d).

A lot of benefits are accruable to the use of e-voting. In this regard, Benoist; Anrig & Jaquet-Chiffelle (2007) argue that traditional ballot handling, such as manual counting, is costly and time-consuming. Similarly, Cranor & Cytron (1996) affirm that the following advantages are associated with e-voting.

Table.1

curacy	ery voter has the urance that his or her lot will be counted. cast vote cannot be nged invalid vote will not be nted
mocracy	ly authorized voters are mitted to vote, ch voter is only allowed cast one vote.
vacy	cing a ballot to a cific voter is difficult.
rifiability	ery voter can check ether or not his or her e has been counted.

Source: Author's Construct, 2022

Reechoing the benefits of the e-voting tabulated in the above, Simon Batt submits that:

Ballots must be collected and counted from polling stations using traditional paper methods. This procedure takes a long time and causes the final result to be delayed. Election results could be available in hours rather than days if electronic voting is used. More people would vote if they could vote from home or at work. This preserves anonymity while encouraging the disabled and elderly to make their voice heard. Human counters can be replaced with electronic ballot-counting machines, and polling location employees can be replaced with internet voting. The infrastructure can be reused for each election, making it a one-time investment (Simon, 2019:2).

However, despite the numerous benefits associated with e-voting as can be seen from the foregoing, Geralach and Gasser (2009) contend that there is the risk that some people would be excluded from voting. Their argument is hinged on the fact that electronic voting may contribute to a growing digital divide in participation and knowledge between the skilled and knowledgeable and the poorly equipped and unskilled. By implication, this divides society into two groups: those who benefit from the convenience of electronic voting and the associated services, and those who do not. Apart from the digital divide, frequently perceived barriers are security and technological challenges which constitute barriers to internet voting implementation. Risks associated with technology, in particular, are into two classifications: (1) human-related and (2) technological-related.

Table.2

Human-related Risks	Technological-related ks.
ers' strong belief fidentiality regarding ir votes is guaranteed;	complexities of a vote ount requested by didates in the case of remely close election ults;
e use of remote internet ing is difficult due to dequate technical skills ong voters;	implementation of ventative measures to vent multiple voting;
ters who do not have or ire internet access may l discriminated against if ote internet voting is the y option available.	possibility of a system ck, failure, or loss of nectivity;
k of technical skills ong election officials, ich could result in them ng control or oversight key aspects of the Internet ing process;	sibility of distortion of e decisions and/or entire rnet voting system by ses or malware infecting ers' computers;
ere is a lack of sparency when voters	difficulty in accurately ntifying the voter;

unsure if their votes are perly counted and stored;	
prospect of voting by xy is high. For example, hebody at home or at rk will interfere with hote internet voting in er to influence voting isions through fraud, midation, compelling ple to vote for mselves.	even Internet access ong socio-demographic ups (digital divide); as a ult, internet voters may y account for a small portion of the electorate, wing voting results in our of specific socio-nographic groups.

Source: Adapted from Alexander H. Trechsel, Vasyl Kucherenko & Urs Gasser (2016)

In addition to the foregoing, it was reported in an empirical study conducted by Achieng and Ruhode (2013), that the lack of proper infrastructure and low resources to support e-voting implementation, particularly in informal settlements and rural communities, will make its adoption difficult. In the nutshell, the challenges associated with e-voting have discouraged some countries from using it. For instance, it was reported that: After several years of using electronic voting machines, the Netherlands decertified all of them in 2008 and switched back to paper balloting. Similarly, electronic voting machines were recently banned in Germany as well. Thousands of euros were spent on e-voting machines in Ireland, but they were only used in a few small pilot projects. Electronic voting systems have always been contentious in the United States and have sparked a heated debate between proponents and opponents (Achieng and Ruhode, 2013:4).

Despite the challenges, quite a good number of countries across the globe are leveraging on the benefits accompanying technological revolution to adopt e-voting and stay put with it. India and Brazil are leading the way (Kobie, 2015). In Belgium and the Philippines, electronic voting and counting technologies are also used in national elections. Electronic voting and counting technologies, including internet voting, are being tested in various stages by countries such as Estonia, Norway, Pakistan, and the United States (Achieng and Ruhode, 2013). In the nutshell, electronic voting and counting systems are gaining popularity around the globe as nations are using them to address a variety of issues related to the manual paper-based electoral process.

Democracy: The etymology of the word "democracy" is traceable to the Greek words' "demos" (people) " and "kratein," (to govern, to rule). Therefore, the term "democracy" is "government of the people" or "government of the majority." (Becker and Ravelosom, 2008). Consequently, where people maintain political sovereignty and apply it directly, democracy is being practised (http://en.wikipedia.org/wiki/Democracy). It was simply defined by Abraham Lincoln, a one-time President

of the United State of America as the government of the people, by the people and for the people (http://en.wikipedia.org/wiki/Gettysburg_address). This means that the beginning and the end of democracy are the citizens. The foundation of democracy is the right of all adults to have a say in public affairs as it affects them. This right includes, but is not limited to, the rights to volunteer for public service, run for elective office, and elect public officials by universal secret ballot by international "free and fair" standards. (Bassiouni; Beetham; Beevi; Abd-El; El Mor; Kubiak; Massuh; Ramaphosa; Sudarsono; Touraine; & Luis,1998). Voting is an important way for people to express this type of right. It is widely accepted in democratic societies and is thus used to express the willingness of a society to choose its leaders. Most importantly, voting contributes to the electoral process of a democratic country in determining the composition of its government. Thus, this study attempts to understudy the feasibility of adopting and sustaining e-voting in Nigeria to provide democratic dividends to the citizenry.

The Flaws with Conventional/Manual Voting in Nigeria

Figure 2. Total Expenses Wasted Due to Lower Voter Turnout in Naira

Total Expenses Wasted due to lower Voter Turnout in Naira

Year	No. of Registered Voters (A)	Actual Voters (B)	Cost per voter in Naira (C)	Total Expense in Naira (D = A*C)	Actual Cost due to Voter Turnout in Naira (B*C)
2011	73,528,040	39,469,484	1,893	139,188,579,720	74,715,733,212
2015	68,833,476	29,432,083	1,691	116,397,407,916	49,769,652,353
2019	84,004,084	28,614,190	2,249	188,925,184,916	64,353,313,310
Total				444,511,172,552	188,838,698,875

Table: Dataphyte · Created with Datawrapper

Adapted from Datapyte, 2022

The INEC recorded 73.5 million registered voters in 2011. That year's election budget was based on an average cost of N1,893 ($9) per voter. This totalled N139 billion. A total of 116.3 billion was budgeted for the 2015 elections, at a rate of N1,691 or $8.5 per voter for the 68.9 million citizens who had registered before the election funding stage. Before the most recent general elections in 2019, the highest number of registered voters was recorded. The electoral commission registered 84 million voters and budgeted N2,249 ($6.24) per voter. This cost the country N189.2 million.

Nigerian elections have been conducted manually since the country's independence. This includes, among other things, voter registration, ballot papers, and voting procedures. The credibility of free and fair elections through these processes has been questioned as a result of a series of anomalies (Ishaq., Osman., & Jaleelkehinde, 2012). In the 2003 presidential election, for instance, human lives were lost. Similarly, during the 2019 presidential election, about 40 people were killed during the election including 11 in Rivers State (Premium Time, 2019). Herskovits (2007) reports that some 700 violent election-related incidents between November and March occurred where two gubernatorial front-runners were assassinated. Financially, a total of 444.5 billion naira (N444.5 billion) was spent by the Federal Government of Nigeria on the country's last three general elections, but over N255 billion was wasted due to low voters' turnout in each election (Datapyhte, 2022). A low turnout that might not be unconnected with fear of violence. The breakdown of the analysis is shown in the figure below:

Besides the financial wastage, voters' time has been wasted during elections in Nigeria. Voters in Balanga and Yamaltu Deba local governments of Gombe State waited in vain for electoral materials and INEC staff to appear during the presidential election, but to no avail (Human Right Watch, 2007). In Federal Low-cost I polling unit in Gombe, Human Right Watch (2007) reported that the presidential election which was slated to start at 8:am, eventually commenced between 3:30 pm and 4 pm, and the residents claimed that not more than 130 people had voted by 5 p.m. However, official result sheets at the collation centre claimed that more than 900 votes had been cast in that short

period, 876 of them for the People Democratic Party (PDP) (Human Right Watch, 2007).

In Kaduna state, the collation of the presidential election in 2019 was hampered by the late arrival of materials and the incompetence of some presiding officers. The state governor, returned to his polling unit around 6 p.m. on election day to observe the ballot counting, but when he left at 9.30 p.m., the presiding officer was still battling to reconcile the figures (Premium Time, 2019). The 2019 election was characterized with the late arrival of materials,

malfunctioning card readers, and violence (Premium Time, 2019). Closely related to what happened in Kaduna state, some polling units in Otukpo Local Government Area of Benue state had INEC staff arrive four hours late for the exercise, resulting in voting being carried over to the next day (Premium Time, 2019). The situation delayed the commencement of the election and eventually wasted voters' time in the polling units. Below is the evidence of time wastage during election in Nigeria occasioned by manual voting system.

Figure 3: Image of Time Wastage During Election in Nigeria

Source: https://www.premiumtimesng.com/news/headlines/343971-626-killed-during-2019-nigeria-elections-report.htm

In addition to the time wastage, manual elections in Nigeria have been characterized with rigging. The issue of rigging in Nigerian elections is historical. The post-independence elections in Nigeria marked the beginning of manual election rigging in the country's history (Obiefuna-Oguejiofor, 2018). There have been massive rigging, intimidation, oppression, violence, and indiscriminate killings. As a result of these pressures, the electoral process failed completely. After this election, the existing fragile peace could no longer be sustained, and the wanton rigging at the election ensured that the demise of the Republic was only a matter of time. This according to Nkasi, as cited in Obiefuna-Oguejiofor (2018), resulted in a three-year civil war and the country's worst humanitarian disasters. Similarly, the general public's perception of the 1983 election was that it was massively rigged (Apter, 1987). There were accusations and counter-accusations from the political parties of intimidation, manipulation of ballot papers, thuggery and fraud.

Likewise, during the 2003 presidential election, the polling station was tainted by stolen ballot boxes and erroneous vote counts (Herskovits, 2007). Professor, who was the returning officer in an Akwa Ibom state north-west senatorial election in 2019, was accused of falsifying

results. The All-Peoples' Congress (APC) obtained 10,534 votes, while the PDP scored 25,123 votes. However, the accused declared a result in which the APC garnered 15, 534 votes and the PDP received 20,123 votes, resulting in 5,000 fewer votes for the PDP and 5,000 more votes for the APC (Channels Television, 2021). After pleas for mercy by the defence counsel and the accused, the judge ordered the accused to pay a fine of N100, 000 on the first count and sentenced him to three years in a correctional facility with no option of a fine. The common cause of these inaccurate results is vote-buying. This is opposed to the ethos and norms of democracy. Before the 2015 elections, for example, it was reported that during the All-Progressive Congress (APC) presidential primary in Lagos State, "over 8 000 delegates who participated allegedly earned US$5 000 each from the candidates." Delegates were to receive $2,000 from one presidential candidate's campaign and $3,000 from the other candidate's campaign. Given that over 8000 delegates were reported to have attended the primaries, the competing camps could have spent more than US$16 million and US$24 million on vote-buying during the primary stage, respectively (Matenga, 2016). Human Rights Watch observed that the Presidential election of 2007 was characterized with violence and intimidation that marred the electoral process in the states of Gombe and Katsina, denying a large number of voters

the opportunity to vote (Human Rights Watch, 2007). Voting was marred by late opening of polls, a severe dearth of ballot papers, obvious voter intimidation, hooligans snatching of ballot boxes, vote-buying, and other unscrupulous attitudes widely displayed where elections took place. With this background on the situation of manual election elections in Nigeria, it is imperative to seek digital solutions to remedy the above abnormalities that are asymmetrical to enduring democratic governance in Nigeria.

The Imperative of Transiting from Manual to Electronic Voting in Nigeria

In 2007, the desire to reclaim INEC's lost integrity, improve the veracity of election results, and exonerate INEC from public accusations of colluding with the ruling party to manipulate election results prompted the development of the Electronic Voting Machine (EVM) (Idris & Yusof, 2015). This is coupled with citizens' desire to elect credible and committed leaders for infrastructure development and the need to reduce post-election violence, which has claimed the lives of many innocent people in previous elections (Adebayo, Ugiomoh, & AbdulMalik, 2013). The burdens associated with manual elections in Nigeria range from the cost of paper ballot elections, with their massive logistics requirements, movements of multitudes of ad hoc voting staff and security officials, high-security printing costs to slow and ponderous counting, frequently open to manipulation and fraud, calls for a transition to e-voting for Nigeria. These necessitate the transition from manual to electronic voting. However, a series of debates have been trending for and against e-voting in Nigeria. Some argue that the remedy for abnormalities associated with elections cannot be tackled through e-voting (Vanguard, 2021). Those who argue against it used the case of the 2015 general election in Nigeria to buttress their position. For them, e-voting was pilot-tested during the 2015 general election and triggered national outrage and embarrassment when the then-president Goodluck Jonathan, his wife and mother could not be accredited at the polling booth for half an hour due to the malfunctioning of the Independent Electoral Commission (INEC)'s Smart Card Reader (SCR) (This day Newspaper, 2015). On the other hand, it is contended that e-voting holds greater promise as a panacea for voter fraud in Nigeria's electoral system if properly implemented and funded (Obiefuna-Oguejiofor, 2018). Those who argue in favour of e-voting for Nigerian aptly submit that the Kaduna state government deployed e-voting in the 2018 council election and it was successful (The Nation Newspaper, 2021). The success of the electronic voting tryout in Kaduna State has triggered the Independent National Electoral Commission (INEC) under pressure to use it in the next general elections, come 2023. However, the Nation Newspaper (2021) claimed that the Kaduna State local government elections that used e-voting were not subjected to independent verification and validation,

hence, cannot be used to assess the feasibility of e-voting in the 2023 general elections. Substantiating the foregoing, The Nation Newspaper (2021) argues that "The ballot machine is a sensitive material." Unfortunately, opposition parties were not permitted to monitor or inspect those items to see if they have been tampered with. Thus, it was insinuated that some of the machines were preloaded. This equally accounts for the reason why it was rejected in western countries like Germany, Ireland, and the Netherlands. It was largely rejected due to opposition pressure. However, this was done without a concrete and comprehensive evaluation of the e-voting systems (Niemoller, cited in Uzedhe, & Okhaifoh, (2016). Notwithstanding, with the humongous benefits as obtainable in other climes, electronic voting is both feasible and practicable in Nigeria, and as such should be used in future elections in Nigeria. No doubt, the benefits that will accrue to the adoption and use of e-voting in Nigeria are innumerable. Huge burdens would have been lifted off the electoral process in Nigeria thereby leading to a stable democracy. Countries across the globe have utilized the e-voting system and many challenges with their electoral processes were reduced to the barest minimum. Summarizing the benefits of e-voting, Data-monitor (2008) opined that E-voting reduces costs, increased participation and voting options, increased the speed and accuracy of placing and tallying votes, and provides greater accessibility and flexibility to the disabled. Similarly, Okoro (2016) affirmed that the adoption of electronic voting systems is a significant process that is required for the improvement of election outcomes as well as the reduction of fraud and corruption associated with ballot boxes and ballot papers. According to a study conducted by Nnaeto and Anulika (2018) on e-voting and credible elections in Nigeria: A study of Owerri Senatorial Zone, 85 per cent of respondents agreed that the use of e-voting in Nigeria will reduce the rate of election fraud. This is due to the fact that most electoral proceedings will be powered by electronic means, leaving a small window for fraudulent manipulation. This affirms the finding of Ephias (2010), who opines that an electronic counting system was installed in the Philippines, and it deals with fraud during the counting process. However, just because it works in the Philippines does not guarantee that it will work in other democracies in the same proportion. Without mincing words, International Peace Institute (2011) affirms that a critical advantage of electronic voting is the elimination of human involvement in polling stations and locations arising during transmission, tabulation, and distribution of results. Similarly, Obiefuna-Oguejiofor (2018) echoed that with e-voting, Nigeria can overcome voting frauds, impersonation, multiple voting that constitutes a major step in restoring public faith in an electoral system bedevilled with challenges. For Professor Mahmood Yakubu, the Chairman of the Independent National Electoral Commission (INEC) of Nigeria, the Internet voting system tends to maximise user participation, by allowing them to vote from anywhere and allowing access from different

computers systems and from any device that has an Internet connection (The Guardian Newspaper, 2020). This is consistent with the viewpoint of Germann and Serdült (2014), who argue that the elderly, disabled, those living in remote areas, citizens residing abroad (expatriates), for whom it saves the return time associated with postal service are the categories of people the internet voting appeals to most. This is because they do not have the opportunity to vote at a polling station. In the same vein, Arent (1999) submits that it is accessible at any time and from any location – at home, at work, on vacation, or for business – and enables citizens to "vote in [their] underwear." But Norris (2001; 2002); Oostveen and Van den Besselaar (2004); Gainous and Wagner (2007) on the other hand, argues that e-voting will only benefit citizens (well-educated and wealthy) who are already familiar with the internet and vote on a regular basis, while leaving behind the less educated, the elderly, and women. Supporting this position, research conducted in Canada and Europe show that internet voters are typically older, wealthier, and better educated (Goodman, 2014, Serdult; Germann; Harris; Fernando; & Alicia; 2015). The key message is that internet voting is expected to increase turnout by providing an easy way to vote, but does not affect the turnout of only certain groups of citizens.

Another strength of e-voting closely related to the foregoing is that, it is capable of curtailing heavy election expenses. This is another critical dimension of reducing the burdens associated with elections. The cost-saving potential of an online voting system is limitless. Ballots are not required to be printed. Voters must simply complete and submit an online ballot. Citizens can also use "Follow My Vote" to ensure that their vote was correctly cast without needing a physical receipt. Voting machines, which are costly to purchase and maintain, have become obsolete as a result of online voting. Voting machines and software contracts and IT maintenance can cost thousands of dollars, and a single polling place usually houses several machines. Voting machines are not only expensive, but they are also vulnerable to hacking (https://followmyvote.com/cost-savings/). Similarly, Punch (2021), noted that since Nigeria already has a functioning biometric voter registration system and records, the costs of adapting the technology and perfecting bank-grade cyber security and data storage can be met at a fraction of the current INEC election budget. Punch (2021) re-echoed that the exorbitant cost of reprinting election materials to correct errors or comply with court judgments obtained after the materials were printed is immediately eliminated in an electronic voting process because INEC can simply correct online at any time before election day. Viewing the extent to which e-voting would cut costs for the Nigerian government, Prof. Adesina Sodiya, President of NCS, called for the adoption of an electronic voting (e-voting) system, which he claims will eliminate electoral fraud and cut election costs by 95% (Thisday Newspaper,2022). The perceptions above are not different from what obtains in countries that have been conducting

their election through electronic voting over some decades. India for instance, has used relatively cheap EVMs for decades and has concluded that EVM-based elections are much cheaper than paper-based ones (https://aceproject.org/aceen/topics/em/emia/emia11/mobile_browsing). Specifically, India utilized e-voting in her 2004 election and installed 800,000 voting machines at $200 million. It was predicted that the authorities will save approximately 10,000 tons of ballot paper for every future election.

Regarding the time-saving dimension, Punch (2021) affirms that electronic voting will also end the inefficient practice of restricting movement on election day and bring our general population up to speed on technology use. This helps in reducing voter apathy caused by fear of violence, long lines, and queuing in inclement weather at polling places on election day. Without mincing words, Uzedhe and Okhaifoh (2016) posit that the traditional voting system with paper ballots used in Nigeria's electoral system is time-consuming and, in most cases, marred by irregularities caused by the system and/or human errors. Inconclusive election results, heated debates, and costly litigation resulting in further financial and time loss to the country are the aftermath of irregularities.

Conclusion and Recommendations

The electoral process in Nigeria has been characterized with a series of abnormalities. The abnormalities are antagonistic to the democratic ethos of good governance befitting of a modern country in the 21st century. The ugly scenario has been perhaps attributed to the manual-based electoral system that is cost-intensive, submerged in violence, electoral frauds, restriction of movement of people from one location, wastage of peoples' time under the harsh weather, and many other unfair deals. The paper explores the feasibility of transiting from manual to electronic voting amidst some challenges associated with the electronic voting system. This paper demonstrates that the manual voting system has huge flaws as deduced from the documentary evidence. However, it concludes the Achilles heel of e-voting systems are tangential and cannot constitute tangible barriers to implementing electronic voting in Nigeria. Its inherent advantages over paper-based voting systems are overwhelming and thus should be wholeheartedly embraced in Nigeria. In view of the lacuna identified that it is capable of widening digital divide, the paper recommends aggressive sensitization and awareness creation that it is valuable to both the rich and the poor, the educated and the non-educated ones. Voter education campaigns, capable of effectively communicating the benefits of the internet voting procedure, the system's overall security, and clear instructions to voters on how to vote online, are required. A comprehensive study of Nigerian citizens' attitudes toward internet voting is required in order to assess the public acceptance of such a novel procedure and, more importantly, to identify citizens'

main concerns, which can then be addressed when the system is designed. In addition, the paper recommends the universal principle that: "you do not deploy a technology on a large scale without it being tested on a smaller scale". Therefore, the paper strongly recommends that the government of Nigeria should pilot-test the electoral digital solution at local or state government elections before spreading it to other levels of government.

References

Achieng M. and Ruhode, E. (2013). The adoption and challenges of electronic voting technologies within the south african context. International Journal of Managing Information Technology (IJMIT), 5(4), 1-12. Available@ https://arxiv.org/pdf/1312.2406.pdf.

Adebayo, O. S., Ugiomoh, D. O., & AbdulMalik, M. D. (2013). The design and development of real-time e-voting system in nigeria with emphasis on security and result veracity. International Journal of Computer Network and Information Security (IJCNIS), 5(5), 9.

Ajayi, A. T. and Ojo E. O. (2014). Democracy in Nigeria: Practice, problems and prospects. Developing Country Studies 4(2). Available@ https://core.ac.uk/download/pdf/234681488.pdf.

Alfred, C; Ngara, C; & Nnadozie, P.U (2018). Electronic voting system in other jurisdictions: issues & lessons for Nigeria. Available@ https://nilds.gov.ng/themes/nils/newnils/dds_ib/13.pdf.

Apter A. (1987). Things fell apart? Yoruba responses to the 1983 elections in Ondo State, Nigeria. Journal Moder African Studies. 25(3), 489-503. Available@ https://www.jstor.org/stable/160832.

Arent L. (1999). **Vote in your underwear**. Retrieved from http://archive.wired.com/politics/law/news/1999/11/32266?currentPage=allGoogle Scholar.

Ashrit L (n:d). How Electronic Voting (e-Voting) Works – Types, Application & Advantage.Available@https://electricalfundablog.com/electronic-voting-works-types/.

Aworinde, T.(2021). With e-voting, Nigeria can save half of INEC's current budget – Eyoma, Pollbook founder. Punch Newspaper Available@https://punchng.com/with-e-voting-nigeria-can-save-half-of-inecs-current-budget-eyoma-pollbook-founder/.

Ayitogo, N. and Ukpong, C. (2019). Analysis: Delayed voting, malpractices, other lapses observed on February 23elections. Premium Time. Available@https://www.premiumtimesng.com/news/top-news/317067-analysis-delayed-voting-malpractices-other-lapses-observed-in-february-23-elections.html.

Babalakin A (2021). Challenges to true democracy: Poverty and poor education (2). The Vanguard.Available@ https://www.vanguardngr.com/2021/11/challenges-to-true-democracy-poverty-and-poor-education-2/.

Babalola, A. (2021). The e-voting system vis-à-vis Nigeria's electoral challenges. Vanguard Newspaper. Available@ https://www.vanguardngr.com/2021/12/the-e-voting-system-vis-a-vis-nigerias-electoral-challenges/.

Balz. D (2000). Up by 930, Bush side assails recount. Washington Post. Available@ https://www.washingtonpost.com/wp-srv/onpolitics/elections/election19.htm.

Bassiouni C; Beetham D; Beevi J.M.F; Abd-El K. B; El Mor A; Kubiak H; Massuh V; Ramaphosa C; Sudarsono J; Touraine A, & Luis V. (1998). Democracy: Its principles and achievement. Geneva: The Inter-ParliamentaryUnion.Available@ http://archive.ipu.org/pdf/publications/democracy_pr_e.pdf.

Becker P. and Raveloson A. (2008). What Is Democracy? Available@ http://library.fes.de/pdf-files/bueros/madagaskar/05860.pdf.

Benoist E., Anrig B., Jaquet-Chiffelle DO. (2007). Internet-voting: Opportunity or threat for democracy?. In: Alkassar A., Volkamer M. (eds) E-Voting and Identity. Vote-ID 2007. Lecture Notes in Computer Science, vol 4896. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-540-77493-8_3.

Channels Television, (2021). Court jails unical professor for manipulating election results. Available@https://www.channelstv.com/2021/03/25/court-jails-unical-professor-for-manipulating-election-results/.

Cranor, Lorrie Faith and Cytron, Ron K., (1996). "Design and implementation of a practical security-conscious electronic polling system" Report Number: WUCS-96-02. All Computer Science and Engineering Research. https://openscholarship.wustl.edu/cse_research/394.

Data-monitor, (2008). Feature analysis, Data-Monitor, 209-210.

Datapyte (2022). Nigeria wasted over n255 billion due to low voter turnout in the last 3 general elections. Available@ https://www.dataphyte.com/latest reports/governance/nigeria-wasted-over-n255-billion-due-to-low-voter-turnout-in-the-last-3-general-elections/.

Gainous, J. Wagner K. (2007). The electronic ballot box: a rational voting model for class, age, and racial bias Am. Rev. Polit., 28, 19-35.

Germann, M. and Serdült, U. (2014). Germann, Serdült **Internet voting for expatriates: the Swiss case**e-J. eDemocracy Open Government, 6(2), 197-215.

Goodman, N.J. (2014). Internet voting in a local election in Canada, in The internet and democracy in global perspective: voters, candidates, parties, and social movements, edited by B. Grofman, H. A. Trechsel

and M. Franklin, 7–24. Cham: Springer International Publishing.

Herskovits, J. (2007). Nigeria's rigged democracy. Foreign Affairs, 86(4), 115–130. http://www.jstor.org/stable/20032419.

HTET N. O & AUNG M.A (2014). A survey of different electronic voting systems. International Journal of Scientific Engineering and Technology Research. 03(I)3460-3464.

Human Right Watch (2007). Nigeria: Presidential Election Marred by Fraud, Violence. Available@ https://www.hrw.org/news/2007/04/25/nigeria-presidential-election-marred-fraud-violence.

Ibekwe, N. (2019). How irregularities at ward collation affected presidential, National Assembly elections. Premium Time. Available@ https://www.premiumtimesng.com/news/headlines/3 17962-how-irregularities-at-ward-collation-affected-presidential-national-assembly-elections-cdd.html.

Idris, A. & Yusof, R. (2015). Adoption of E-voting system in Nigeria: a prospect for poverty alleviation. Proceedings of the International Conference on E-commerce, 20-22 October 2015, Kuching, Sarawak, Malaysia.

Ighodalo A. (n:d). Election crisis, liberal democracy and national security in Nigeria's fourth republic. European Scientific Journal. 8(26). 21-36. Available@https://core.ac.uk/download/pdf/328023 482.pdf.

International Institute for Democracy and Electoral Assistance (IDEA) (2011). Introducing electronic voting: essential considerations. Policy Paper. Available@ https://www.corteidh.or.cr/tablas/28047.pdf.

Ishaq, R., Osman, W. R., & Jaleel Kehinde, A. (2012). Adoption of E-Voting Systems: A case study of Independent National Electoral Commission (INEC), Nigeria: A Preliminary Study. Conference Paper. Available@ https://www.researchgate.net/publication/32588143 6_Adoption_of_EVoting_Systems_A_case_study_o f_Independent_National_Electoral_Commission_IN EC_Nigeria_A_Preliminary_Study.

Kobie N. (2015). Why electronic voting isn't secure – but may be safe enough. The Guardian. Available@ https://www.theguardian.com/technology/2015/mar/ 30/why-electronic-voting-is-not-secure.

Kuye, C.O., Coker, J.O., Ogundeinde I.A. & Coker C.A., (2013). Design and analysis of electronic voting system in Nigeria. International Archive of Applied Sciences and Technology IAAST. 4(2):15-20.

Matenga, G. (2016). Cash for votes: political legitimacy in Nigeria. Available @https://www.opendemocracy.net/gram-matenga/cash-for-votes-political-legitimacy-in-Nigeria.

Nnaeto J.O and Anulika N. J (2018). Electronic voting and credible election in Nigeria: A study of Owerri senatorial zone. Journal of Management and Strategy, 9(3) 30-40.

Norris P. (2001). Digital divide: Civic engagement, information poverty, and the internet worldwide. Cambridge: Cambridge University Press.

Obiefuna-Oguejiofor, O. (2018). Advancing electronic voting systems in Nigeria's electoral process: legal challenges and future directions. Journal of Sustainable Development Law and Policy (The), 9(2), 187.doi:10.4314/jsdlp.v9i2.10.

Ogunbodede N. and Adelakun, O. (2018). The effect of election violence on democracy and democratic consolidation in Nigeria. Afro Asian Journal of Social Sciences. IX(IV), 1-15. Available@ http://www.onlineresearchjournals.com/aajoss/art/2 95.pdf.

Ojo O.V (2014). Turbulent election history: An appraisal of precipitating factors in Nigeria. International Journal of Politics and Good Governance, 5(5.2).

Okonji, E. (2022). Nigeria computer society [ncs] faults inec process, advocates e-voting to eliminate fraud, reduce cost by 95%. Thisday Newspaper. Available@https://www.thisdaylive.com/index.php/ 2021/11/18/ncs-faults-inec-process-advocates-e-voting-to-eliminate-fraud-reduce-cost-by-95/.

Okoro E. (2016). A cost-benefit analysis of electronic voting operations and capabilities in sub- saharan africa. Journal of Business & Economic Policy, 3(3),22-31. Available@https://jbepnet.com/journals/Vol_3_No_ 3_September_2016/2.pdf.

Onu, G., & Chiamogu, A. P. (2012). E-Governance and public administration in Nigeria: A discourse. International Journal of Management Tomorrow, 2(9), 1-8.

Oostveen A.M. & Bessdaar P.V., (2009). Users' experiences with e-voting: A comparative case study. Journal of Electronic Governance, 2(4), 38-46.

Oostveen, A.-M. Van den Besselaar P. (2004) Internet voting technologies and civic participation: the users' perspective Javnost - The Public, 11(1) 61-78.

Raciborski J. (2003), Polityka polska, Warszawa: Wydawnictwo Akademickie Żak.

Serdult, U. Germann M; Harris M; Fernando M; & Alicia P; (2015). Who are the internet voters? electronic government and electronic participation, edited by Efthimios Tambouris, Hans J. Scholl, and Marijn F. W. Janssen, 27–41. Amsterdam: IOS Press.

Simon B. (2019). How electronic voting works: Pros and Cons vs. Paper Voting. Available@https://www.makeuseof.com/tag/how-electronic-voting-works/.

Stephanie M. Burchard **e** Simati M. (2019). The Role of the courts in mitigating election violence in Nigeria.

Open Edition Journal. Available@ https://journals.openedition.org/cea/4407.

The Guardian (2021). Electronic voting and the prospect of free and fair elections in Nigeria. The Guardian Newspaper. Available@ https://guardian.ng/opinion/outlook/electronic-voting-and-the-prospect-of-free-and-fair-elections-in-nigeria/.

Uzedhe, G. O. and Okhaifoh, J. E. (2016). A technological framework for transparent e-voting solution in the Nigerian electoral system. Nigerian Journal of Technology (NIJOTECH) 35(3) 627 – 636.