



RESEARCH ARTICLE

E-VOTING, A PANACEA FOR CREDIBLE ELECTION IN NIGERIA

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ABSTRACT

This study investigated voter's perception of the role of e-voting in ensuring credible elections in Nigeria. The study is delimited to registered voters in Calabar metropolis. The research design adopted for this study was the survey design. The researcher adopted the purposive sampling technique in selecting sample from the population of study. A sample size of two hundred and fifty respondents were selected for study. The researcher utilized the questionnaire in gathering quantitative data for the study. The research questions were analyzed using simple percentage and chi-square test statistic. The results of the study highlighted that there existed significant challenges in the areas of malfunctioning smart card readers, poor network connectivity to enable the prospect of electronic transmission of results as well as poor technical skills of INEC adhoc staff amongst others. However the study was able to establish that e-voting had several benefits such as enabling credible and transparent elections. Further analysis using chi square test statistic established a positive significant relationship between e-voting and credible elections in Nigeria. The study recommended immediate legislation to enable full implementation of e-voting in future polls as well as comprehensive ICT education for voters and technical adhoc staff of INEC.

INTRODUCTION

Elections can be described as the process where the electorate chooses, by voting, officers either to act on its behalf or represent it in an assembly with a view to governing or administering. The electorate in turn refers to a class of citizens entitled by law to vote in an election, by whatever procedure. Elections are a critical aspect of the democratic process. It ensures that a tenured government can transition into another tenured government. Where elections do not hold peacefully and are not accepted widely, there is every possibility that such society may descend into chaos. Africa generally and Nigeria in particular has had a chequered democratic history. Until recently, the continent was still in the firm grip of 'strongmen', military dictators and despots who held their country in their firm grasp. In the past few decades however, Africa has made significant strides towards democratic rule. Nigeria for instance has now had about nineteen years of uninterrupted democratic rule. This democratic journey however has not been without challenges as Nigeria is still faced with how to organize credible elections that can be acceptable to all. The election process in Nigeria has been blighted considerably with malpractices of every imaginable nature, ballot box stuffing, over counting, impersonation etc. The outcomes of these elections whether at the national or regional levels have consistently been challenged in court.

In 2007, the presidential elections which saw the late president Umaru Yaradua emerge winner was widely criticized and challenged in court. Although, declared winner in court, the late president admitted the flaws inherent in the system. The introduction of e-voting systems in Nigeria's electoral processes has recorded some gains in terms of ensuring the openness of the system. In 2011, the electronic voters register (EVR) was used for the general elections. This was a technology where voters were captured electronically and eliminated the chances of double registration and voting. In 2015, the biometric smart card reader was introduced to read information contained in the embedded chip of the permanent voter's card issued by INEC to verify the authenticity of the Permanent Voter's Card (PVC) and also carry out a verification of the intending voter by matching the biometrics obtained from the voter on the spot with the ones stored on the PVC. Despite the gains made in the adoption of technology to voting processes in Nigeria, there is still apprehension to the full scale adoption of e voting in Nigeria. It is important to state that at the time of this paper, there is no enabling law for the use of technology in Nigeria's elections. Simply put, Nigeria's laws does not recognize e-voting. Voters remain ambivalent on the utility of the technology in ensuring credible elections. In a country where ICT infrastructures are insufficient and not well developed, there is still some way ward feeling on the sustainability, accessibility and integrity of e-voting in Nigeria. This paper surveys the perception of Nigerian voters on the use of e-voting technologies in ensuring credible elections in Nigeria. As voters will be the end users of the technology, it is imperative to assess their cognitive and affective

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understanding of e-voting and if this would boost their confidence in a free and fair election process.

Statement of Problem: Elections in Nigeria are usually characterized by violence. This is mainly as a result of malpractices that occur during elections. These malpractices range from ballot box snatching and stuffing, bribery of electoral officials etc. These actions have significantly tainted the electoral process and has influenced who emerge the winner or loser of the polls. As a result, the outcome of the elections are not often accepted, a situation which may lead to outbursts of violence. The search for credible elections has been a major source of concern to Nigerian. Elections in the past were done through the use of manual accreditation and this creates room for massive manipulation of election results by the ruling party. The resultant effect of this menace is poor governance as contestants who claim to emerge winners feel they bought votes by their money, as such, no meaningful development is recorded. To eliminate the loopholes created by manual voting, INEC over the past decades have introduced technological innovations to improve the transparency of the voting process. Despite the easing in of e-voting technologies in the form of electronic voting register and biometric smart card readers into our voting systems, elections in Nigeria continue to be a contentious issue. Voters do not seem convinced by these innovations for a variety of reasons. The problem of this paper therefore is to analyze the perception of voters towards e-voting in Nigeria.

Research Questions: The following research questions have been formulated to guide this study

- What are the challenges experienced by voters in using e-voting technologies during elections?
- What are the benefits of using e-voting during elections?
- Does e-voting lead to credible elections in Nigeria?

Literature Review

E-voting: Conceptual Clarification: Electronic voting or e-voting in very simple terms is a voting process that involves the use of electronic means in the casting and counting or collation of results. International Institute for Democracy and Electoral Assistance (IDEA, 2011) define e-voting as a system where the recording, casting or counting of votes in political elections and referendums involve information and communication technologies. Anderson (2006) defines e voting as the use of a computer rather than the traditional use of ballot at polling centers or by postal mail. It incorporates various types of voting such as kiosks, the Internet, telephones, punch cards, and mark sense or optical scan ballots. According to De Vries and Bolkslag (2016) e-voting has often been used interchangeably with internet voting. Their study indicates that electronic voting is one which employs controlled voting booths where the actual vote is cast on an electronic device. E-voting in essence involves the incorporation of ICT tools in a bid to make voting easier and more transparent. It involves some unique features such as.

- Electronic voter lists and voter authentication. Part of an electronic voting system can be an electronic voter list, covering either a single polling station or the entire country. This list can be used to authenticate eligible voters and to record that they have cast their vote.

- Poll worker interfaces. Special functionalities that are only available to poll workers, for example, resetting the vote count at the opening of the polling station, closing polling, printing and transmission of results.
- Interfaces for casting votes. These include touch screens, optical mark recognition (OMR) ballot papers that are fed into a scanner, touch-sensitive tablets, push buttons, web pages or special client software for Internet voting.

Electronic voting incorporates various types of voting such as kiosks, the Internet, telephones, punch cards, and mark sense or optical scan ballots. The benefits of e-voting are immense. Kohno, Stubblefield, Rubi, and Wallach (2004) highlighted some of the benefits of e-voting. These include

- Empowerment; It empowers members to have a voice in the leadership and direction of their organization. When allowed to vote in fair and open elections, members will feel a greater sense of value, ownership, and responsibility.
- Accessibility; With the surge of mobile devices, online voting is a convenient option for many members, allowing them to access ballots anytime, anywhere.
- Cost effectiveness; Elections are cost effective, especially when considering production costs of printing, postage, and mailing ballots.
- Security and confidentiality; A properly designed e-voting system will safeguard in place to assure the security of ballots and protection of voter identities.
- Transparency; E-elections, particularly those run by a third-party, eliminate the chance of election mismanagement or fraud. An audible trail helps increase voter confidence.
- Accuracy and expedience; since e-voting utilizes electronic ballots, there are no rejected, mismarked, or invalid votes and results are automatically calculated, eliminating the need for manual tabulation or dreaded recounts.

In addition, Thakur, Olugbara, Millham, Wesso, and Shari (2014) point out that e-voting promises an increase in participation and offers voters more options of convenience to vote, encourages more voters to cast their votes remotely, and has great potential to stimulate higher voter turnout. Casting and counting votes are much faster and more accurate with e-voting systems, by default there are no invalid or unclear ballots and the automatic gathering and counting of ballots reduce the amount of time spent counting votes and delivering the results.

E-voting in Africa: A review: There have been significant interests in e-voting in Africa in the past decade. This trend can be associated with the increasing acceptance of the democratic norm of holding periodic elections, a far cry from the vicious cycle of coup and counter coup in the past. Despite democracy gaining ground in the continent, most African countries 'have had persistent difficulties in conducting free, fair, credible, and transparent election'(Iwuoha, 2018). Elections in Africa have consistently been marred with irregularities, thus leading to attempts to engage modern technological systems in the conduct of elections. Biometric identification systems are currently already in widespread use for voter registration in over 34 of the world's low- and

middle-income countries. African states such as Ghana, Mali, Kenya, Cameroon, Sierra Leone, Mozambique, Zambia, Malawi, Rwanda, Senegal, and Mauritania have all enrolled – with varying degrees of success (Gelb and Clark 2013). Levels of implementation of e voting in Africa seems not to have gone beyond the rudimentary stage. The extent of e-voting seems not to have crossed the threshold of biometric validation. Despite the full automation of voter authentication, election malpractice across Africa has shown no sign of abating. Effah and Debrah (2018) focus on the importance of social factors for the success and effectiveness of biometric technology, explaining how and why Ghana's first attempts at using it for voter identification and verification in its 2012 general elections failed. The authors reveal that the effectiveness of biometric technology regarding the provision of reliable identification does not depend solely on its technical qualities, but also on real-time connectivity between registration centers and an electronic national register. Inadequate training of electoral officials on how to operate the machines and a lack of guidance on how to handle situations when breakdowns occur were also implicated as factors that contributed to the failure of the elections in Ghana in their findings.

Golden, Kramon, and Ofori (2014) conducted a study in Ghana during the 2012 national elections, when biometric identification machines were introduced into every polling station in the country as a way to reduce the very high levels of electoral fraud known in particular to affect voter registration. The authors randomly selected a large sample of electoral constituencies and polling stations in four of the ten Ghanaian regions, between them home to half of the country's population, and studied whether the presence of election observers systematically reduces machine malfunction. The main findings included a non-random pattern in machine breakdowns: they were much more likely to malfunction in electorally competitive areas and in polling stations without an election observer present. Two types of election fraud – over voting and ballot stuffing – were identified and furthermore found to more commonly occur in polling stations affected by the breakdown of the biometric identification machines, especially when an election observer was not present. This means that individuals interfered with the operation of biometric identification machines, and also took advantage of machine breakdowns to commit electoral fraud.

In South Africa, the electoral body has demonstrated its willingness to adopt e-voting systems. However this move has stalled because of lack of political will to commit the necessary resources to achieve this and the resistance from political parties. The extent of implementation of e voting in the country is just limited to the back end technology where vote slips are scanned and then added to a central digital database. In contrast, the actual voting process encountered by South African citizens remains completely manual, as does the vote counting process. The situation here is similar to that of Botswana where the introduction of election voting machines have bitterly divided the nation. Opposition parties accuse the ruling party of being behind the introduction of EVMs have warned of possible violence if the machines are used. (APA news, 2019). In Nigeria, biometric validation of voters via smart card readers have been on ground and fully utilized in two election cycles, the 2015 and 2019 general elections. According to Alebiosu (2016) 'the smart card reader was a critical component in the elections. It was used for the first time in the electoral process of Nigeria and it remains one of

the greatest technological innovations of the 2015 general elections'. The smart card readers were used for voter authentication via biometric verification. This was to stem the past trend of over voting and ballot box stuffing. In 2019 elections, use of the smart card readers became ever more imperative and its nonuse rendered elections held in such areas null and void. From the foregoing, the extent to which e voting has been implemented in the continent still remains considerably low. Besides biometric verification, no African country has made the leap to fully automate its voting process. This failure can be associated with a range of factors with every country having its own specific challenge(s). In the next section, we shall consider the challenges of implementing e-voting in Nigeria.

E-voting in Nigeria: The desire to conduct credible elections acceptable to all parties has been the driving force for e-voting in Nigeria. Elections in Nigeria have always been bitterly fought and has only stopped short of disrupting the unity of the country. Thus, the imperative for adopting a system insulated from external manipulation and largely transparent. The first attempt at integrating ICT strategies in elections in Nigeria was the adoption of the electronic voters register in 2007. According to Esan and Ayeni (2018), this involved the use of direct data capture machines (DDCMs) to capture the records of voters electronically with a view to eliminating most of the problems associated with previous elections and ensure free and fair elections in Nigeria. The implementation of EVR to a large extent eliminated the duplication of names on the register, which subsequently minimized discrepancies in the electoral process in Nigeria.

The electronic voter register was fully utilized in the 2011 elections. Prior to this, the voters register was manually collated and prone to incidents of double registration and inflation of the register with fictitious names. The introduction of electronic voter register was able to reduce this trend substantially. To achieve this, INEC deployed 132 Direct Data Capture Machines (DDCMs) to its 120,000 Polling Units to enroll prospective voters. (Yakubu, 2017). These machines captured the biodata, photograph and the ten (10) fingerprints of most registrants – over 74million voters enrolled. The voter register produced from this process has been adjudged to be the best register produced in the history of elections in Nigeria. Still in pursuit of credible elections in Nigeria, INEC introduced the biometric smart card readers (SCR) in 2015 general elections. The biometric smart card reader is a technological device configured to verify, authenticate and accredit electorates permanent voters cards (PVCs) in order to ascertain: whether such PVC was issued by INEC and to verify through biometric finger scanning the ownership of the card. The device uses a cryptographic technology that has ultra-low power consumption, with a single core frequency of 1.2GHz and an Android 4.2.2. Operating System (INEC, 2015). In other words, the INEC card reader is designed to read information contained in the embedded chip of the permanent voter's card issued by INEC to verify the authenticity of the Permanent Voter's Card (PVC) and also carry out a verification of the intending voter by matching the biometrics obtained from the voter on the spot with the ones stored on the PVC (Engineering Network Team, 2015). The rationale behind the deployment of this technology is to eliminate malpractices and ensure credibility, transparency, and free and fair election in Nigeria.

However, the use of this technology in the Nigeria electoral system has generated debates among stakeholders before and after the 2015 elections. There is mixed reception on the impact of the smart card readers in ensuring credible elections especially after its deployment in the 2015 and 2019 general elections. Beetsey and Akpoo (2015) analyzed the use of smart card readers and credible elections in the 2015 general elections. The study was conducted in Makurdi Local Government Area of Benue State and concluded that the evolution of smart card reader technology marks the significant development of electoral system in Nigeria. Its use was recommended as far as INEC officials, both adhoc and permanent were adequately trained. Other studies such as Esan and Ayeni (2018) still posit that the desired result was not achieved as the irregularities persisted. Election Monitor (2015) raised the issue of malfunctioning of voting smart card readers (SCRs) with technical and manufacturing faults.

Barriers to the implementation of E-voting in Nigeria: The barriers or challenges to the implementation of e-voting in Nigeria can be grouped into three broad headings; legal, infrastructural and political. Let us look into these factors closely.

Legal Barriers: Lack of enabling laws for the use of technology in elections is a major factor hindering the full implementation of e-voting in Nigeria. Obiefuna-Oguejiofor (2018) addressed this issue significantly in the paper 'advancing electronic voting systems in Nigeria's electoral process: legal challenges and future directions'. According to the study, the adoption of e-elections in Nigeria is bound to raise a lot of legal questions and challenges. Issues will crop on the illegality or otherwise of the said elections. The Nigerian Constitution does not specifically mention Internet or electronic voting either, rather s.77 of the 1999 Constitution of the Federal Republic of Nigeria states, "every citizen of Nigeria, who has attained the age of eighteen years residing in Nigeria at the time of the registration of voters for purposes of election to a legislative house, shall be entitled to be registered as a voter for that election." To address this challenge, there should be a comprehensive review of other relevant legislations to ensure that all aspects of e-voting are legally covered and appropriately regulated.

Infrastructural barriers: Full implementation of e-voting will require a scaling up of Nigeria's tech infrastructure. The relevant areas include ensuring every corner of the country, no matter how remote it is, is connected to the internet. Daily Trust (July 19, 2019) reports that the Independent National Electoral Commission (INEC) identified infrastructural challenges as one of the factors against the use of electronic transmission in the conduct of the 2019 general elections. The INEC chairman, Prof. Mahmoud Yakubu stated that he held discussion with the National Communications Commission (NCC) and identified blind spots and satellite locations in Nigeria where the network bandwidth was not up to 2G or 3G for easy electronic transmission of results. Another significant area of technology infrastructure that poses a challenge is that of cyber security. The adoption of e-voting may expose INEC to cyber-attacks. The threat of cyber-attacks in e-elections is very real – as real as desperate politicians snatching ballot boxes and rigging the elections! Various local incidents support the view. In Nigeria, for example, during the accreditation exercise for presidential and national assembly elections in 2015, INEC website was hacked by a group, which called itself Nigerian cyber army.

The group said they hacked and took control of the website to protect results from being manipulated by anyone through any means. This shows that our cyberspace is not safe; websites of government establishments, as well as private firms, could as well be compromised by hacking. This group could hijack the INEC website and manipulate the information fed to INEC's website by the SCR. They may favor a selected candidate which amounts to election rigging and stolen mandate which is the bane of manual elections in Nigeria.⁸³ Incidentally, there has been no arrest or prosecution of these cybercriminals

Political Will: The adoption of e-voting will certainly occur within a political context. Thus without sufficient political will to overhaul the current electoral system, any discussion on its implementation will remain a pipe dream. Strong political leadership is required to push through with the adoption of e-voting in Nigeria. There must be an interparty discourse and commitment that restores confidence in the e-voting system. It is only through vibrant and committed political leadership that the other barriers as highlighted above can be scaled and e-voting properly adopted.

METHODOLOGY

This study is conducted in the Calabar metropolis area of Cross River state. Calabar metropolis consists of two council areas that is Calabar South and Calabar Municipal. The area is located in the southern part of Cross River state and shares common boundaries with Odukpani and Akamkpa Local government areas in the north, Akpabuyo local government area in the north west and the Qua river to the south. A sample size of 250 respondents were selected for the study. The researcher adopted the purposive sampling technique in selecting the sample for the study. Respondents were selected on the criteria of having permanent voters card (PVC). Respondents were drawn across the different wards in the metropolis area of Calabar. Both primary and secondary sources of data were utilized for the study. Questionnaire was utilized in gathering primary data for the study. Simple percentage and chi square was adopted in analyzing the research questions.

Presentation of results: Research question 1

What are the challenges experienced by voters in using e-voting technologies during elections?

Research question 2

What are the benefits of using e-voting during elections?

Research Question 3

Does e-voting lead to credible elections in Nigeria?

DISCUSSION OF FINDINGS

This study examined the influence of e-voting on elections credibility in Nigeria. Three research questions were formulated to guide this study. The first research question was based on the challenges of e-voting in Nigeria. In general, respondents affirmed that there are a number of challenges associated with e-governance in Nigeria. These include, malfunction of the biometric smart card reader, poor internet

S/N	Items	SA	A DSD	Remarks
1	Biometric card readers malfunction regularly	112 (45.53%)	73(29.67%)	35(14.23%) 26(10.57%)
2	Internet voting system is not feasible because of	75(30.49%)	90(36.48%)	48(19.51%) 33(13.41%)
3	There are insufficient biometric smart card readers	33(13.41%)	47(19.11%)	68(27.64%) 98(39.84%)
4	INEC ad hoc staff are not properly trained to use	22 (8.94%)	37(15.04%)	91(36.99%) 96 (39.02%)
5	E-voting is vulnerable to cyber-attacks	101 (41.06%)	73(29.67%)	41(16.67%) 31(12.60%)
6	Most eligible voters in Nigeria are not ICT savvy	90 (36.48%)	91(36.99%)	33(13.41%) 32(13.01%)

S/N	Items	SA	A DSD	Remarks
1	E-voting decreases incidents of election rigging	101(41.06%)	76(30.89%)	40(16.26%) 29(11.79%)
2	E-voting increases confidence in the electoral system	96(39.02%)	73(29.67%)	37(15.04%) 40(16.26%)
3	E-voting reduces cost of elections	75(30.49%)	93(37.80)	35(14.23%) 33(13.41%)
4	E-voting decreases the chances of logistical failure	41(16.67%)	28(11.38%)	77(31.30%) 100(40.65%)
5	Diaspora citizens can participate in elections using	165(67.03%)	69(28.05%)	5(2.03%) 7(2.85%)
6	E-voting leads to increased credibility of election	125(50.81%)	112(45.53%)	4(1.63) (2.03%) results

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.910 ^a	9	.036
Likelihood Ratio	16.833	9	.051
N of Valid Cases	246		

reception that would make internet voting across the country not feasible, vulnerability of e-voting platforms to cyber-attacks and the high number of eligible voters not ICT savvy amongst others. These challenges as highlighted in this study pose a real challenge to the adoption of e-voting in Nigeria. It has also been well documented in other studies. Esan and Ayeni(2018) in their study on E-voting in Nigeria: Barriers to Full implementation remarked that ‘the risks of e-voting adoption are program error, software attack or system hacking, risk of fake voting sites and eventual submission of electronically altered result as a result of computer virus’. The findings of Iwuoha (2018) are in tandem with this result. According to the previous study, the application of e-voting in some rural communities presents a significant challenge because ‘Nigeria’s remotest communities generally face social deficits such as the non-availability of proper infrastructure and long distances between polling stations and their dwellings. Generally, the lack of effective electrical power supply and Internet services impinged on the functioning of the biometric technology and other ICT components deployed during the elections; on the part of rural voters, meanwhile, it largely limited their exposure to the digital media channels such as television through which voter education is promoted’. The second research question dealt with the accruable benefits of using e-voting system.

A number of benefits were identified in this study. These include: decreasing incidents of election rigging, increasing confidence and openness in the electoral system, decreasing the chances of electoral failure among others. In general, respondents affirmed that e-voting had significant benefits. This conclusion is in tandem with previous research. De Vries and Bolkslag (2016) in their study on e-voting; theory and practice identified some of the benefits of e-voting. These include fast counting, less labour intensive, cheaper and easily accessible. Habibu, Sharif and Nicholas (2017) carried out a study on the design and implementation of electronic voting system. They stated in their study that the importance of e-voting include; cost effectiveness , security and confidentiality, transparency as well as increased participation of the electorates in the electoral process.

The last research question evaluated the relationship between e-voting and credible elections in Nigeria. Results of the analysis indicate that voters perceived that e-voting would have a positive significant relationship with credible elections. This finding is not strange as several studies have posited that despite its limitations, e-voting holds the key to transparent and credible elections in Nigeria. Olurode (2017) carried out a study on technology and election conundrum in Nigeria. According to the study, ‘the introduction of election technology paved the way for a more credible and competitive elections in Nigeria.’ The study further stated that ‘deployment of the card reader was a particularly useful technological device in navigating Nigeria’s turbulent electoral landscape’.

Recommendation

The following measures are critical to ensuring full scale and successful implementation of e-voting in Nigeria.

- The Electoral Act should be amended to give room for electronic voting system. This will make the results of voting machines the only acceptable results and the idea of manual voting as alternative in case the e-voting fails should be discouraged as it would threaten the use of technology.
- Comprehensive voters’ education at community group level with comprehensive and down-to-earth demonstration of newly introduced technology should be done for electronic voting to thrive in the Nigeria.
- ICT staff and other well trained and certified staff should be used for technology support roles during elections. In addition, ad-hoc staff that has not undergone necessary training and passed necessary examinations should not be allowed to participate in any election activities
- .Caution must also be applied in designing the technology to ensure security, confidentiality and convenience to avoid losing public confidence in the technology

Conclusion

The discourse on the utility of e-voting in ensuring credible elections in Nigeria is one which will continue for a long time. There are still some factors which need to be properly evaluated before its full scale adoption. These issues still border on infrastructural capacity. Do we have the necessary capacity to maintain e-voting technologies in such a way that guarantees its insulation from external influence or cyber-attacks? Do we have the ability to sustain e-voting technologies in rural areas where network coverage are poor? Can e-voting temper our political temperament of 'win at all cost'? These questions still need to be squarely addressed. In conclusion, it is important to emphasize that the introduction of e-voting as a standalone variable may not be enough to address election malpractice in Nigeria. There is an urgent need for consistent political reorientation. Political leaders must be ready to embrace the spirit of sportsmanship and lead a people driven campaign.

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