Nigeria: Curtailing Electoral Violence through Information and Communication Technologies

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Abstract: This paper examined the contributions of the Information and Communication Technologies (ICTs) towards transparent and violence-free elections in African countries with specific focus on Nigeria, which is the largest democracy in the continent. Many countries have witnessed violent electoral contests, arising from the inability of the electoral umpire to conduct free and fair elections, hence the introduction of ICTs to correct the lapses. The objectives of this paper were to identify major ICTs gadgets for the conduct of elections in Nigeria and evaluate the extent to which the devices have curtailed electoral violence. The paper adopted an interpretive case study as its research methodology. The interpretive method is based on analogical deductions and re-analysis of relevant existing literature from secondary sources to generate new findings. Findings from the paper were that the ICTs have added tremendous values to the credibility of electoral process in Nigeria by securing elections from intense manipulation and violence through the use of electronic gadgets, including the use of Direct Data Capturing Machine (DDCM), Automated Finger Prints Identification System (AFIS) and the Smart Card Reader (SCR). However, it is concluded that the use of ICTs has improved electoral credibility but has not substantially reduced electoral violence in Nigeria as the electronic gadgets have relocated such electoral debacle from physical to electronic violence, and from manual to digital electoral manipulation. Digitalized electoral process in Nigeria is also faced with machine failure, system hacking and poor logistic supports. It is recommended that the usage of ICTs in the conduct of elections in Nigeria should be sustained as a complement, rather than supplement, to the traditional manual voting system in Nigeria. This recommendation is premised on the fact that Nigeria is not yet ripe for sole

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reliance on electronic voting system, which is largely challenged by inadequate power supply, derth of highly skilled ICTs technicians and high rate of ICTs non-compliance illiterate voters.

Keywords: contribution, credibility, violence, Nigeria, politics, election, ICTs.

Introduction

Election occupies a central place within the democratic space in most countries of the world as a platform for making an alternative choice among political contestants (Raji, 2014). Electoral contest equally gives legitimate authorities to elected political leaders to govern while also serving as a transitional renewal of governance process and a competitive avenue for stable polity. In view of the centrality of election to political process, democratic nations across the world organize periodic elections as a sacrosanct governance process for either renewing the electoral mandate of political office holders or as an avenue to elect a new set of political leadership. In fact, the overwhelming values democratic societies attach to election is confirmed by the amount of human and financial resources deployed to it by such societies, which was documented by the Economist Intelligence Unit's (EIU) Index of Democracy to have caused the world democracies a conservative figure of about $11 trillion between 2008 and 2018 (EIU Democracy Index, 2018). The 21st century in particular, has witnessed many important elections in Africa with countries like South Africa, Ghana and Egypt holding elections respectively (Abayomi, 2015). Other African countries that have held elections within the century include Nigeria, South Sudan, Zimbabwe and Gambia, among others. In the past, critics of African politics (Karim, 2014; Raji, 2016) have questioned the genuineness of electoral process in African countries, which is largely characterized by intense manipulation and violence, especially by "sit tight" leaders, who are sometimes chased away through the assistance of international community as witnessed in Cote d'Ivoire and Gambia in 2010 and 2017 respectively. However, regular conduct of elections in Africa, as being currently witnessed, has confirmed the relevance of transitional democracy as a cardinal principle of all inclusive political process in the continent in spite of the occasional political hiccups.

In Nigeria, which is the focus of this study, the history of party politics has largely been characterized by conflicts while electoral violence has been identified as a major hallmark of Nigerian politics (Charles, 2018). Table one below presents few but notable incidences of electoral violence in Nigeria within the first month of January 2019 alone.

The above table clearly confirms the frequency of electoral violence in Nigeria as the table recorded seven notable incidences within a month.

Apart from the first elections, which took place in Lagos and Calabar in September 1923, which were devoiced of overwhelming rancour in its conduct, virtually all other elections

Table 1: Incidences of electoral violence in Nigeria in January 2019

Date	State	Typology of Electoral Violence	Casualty Figure
08/01/2019	Lagos (Ikeja)	Intra party/intra union supremacy battle among members of the Nigeria Union of Road Transport workers who doubles as members of the All Progressive Congress (APC).	6 persons injured.
13/01/2019	Kwara (Ilorin)	Inter party campaign rivalry between members of the People's Democratic Party (PDP) and All Progressive Congress (APC).	1 death, 17 injured and destruction of over 50 vehicles.
12/01/2019	Imo State (Oweri Dan Anyiam Stadium)	Intra party rivalry during the APC South-East Women and Youth Rally and protest against the presence of the Action Alliance Gubernatorial candidate, Uche Nwosu at the rally.	21 persons injured.
17/01/2019	Taraba (Wukari)	Attacks on the Southern Senatorial District campaign convoy of the APC Governorship candidate, Sanni Danladi by hoodlums.	1 death, 12 injured and destruction of 13 vehicles.
18/01/2018	Oyo (Ibadan)	Attack on the convoy of the wife of the PDP presidential candidate, Titi Abubakar, by political hoodlums who rioted for her refusal to give them enough money as demanded.	9 injured,14 vehicle damaged/ vandalized.
21/01/2018	Plateau (Jos)	Destruction of the APC campaign bill board after the campaign visits of its Presidential candidate, Muhammadu Buhari, to the state.	24 bill board destroyed.
17/1/2019	Jigawa (Garam)	Intra party violence during the PDP Gubernatorial campaign rally	11 persons injured.

Source: Election Monitor, 2019.

in Nigeria have been marred by substantial dispute and violence (Ezeanyika & Onyeama, 2017). For instance, the 1964 elections were characterized by political bickering, thuggery, arrests and imprisonment of political opponents, including the incarceration of Obafemi Awolowo and many of his political supporters for treason by the federal government. The political confusion and violence generated from the 1964 general elections and the 1965 regional elections in the South-Western Nigeria truncated the first republic, which led to the military take-over of the civilian government in January 15th, 1966. The manipulation of the 1983 general elections, which declared the candidates with minority votes as the winners of the gubernatorial elections in Ondo and Oyo states, respectively, led to widespread election violence in the South-West, which recorded the death of about 187 citizens (Raji, 2016). The widespread of election rigging and violence in the second republic was primarily attributed to the second military take-over of the Sheu Shagari's government in December 31, 1983. The European Union Election Observer Mission (EUEOM), who monitored the 2003 and 2007 general elections in Nigeria, observed in its interim report that the elections were fraught with irregularities and violence, as there were cases of multiple voting, illegal stuffing of ballot papers into the ballot boxes and forceful hijack of ballot boxes. In fact, the successor to former President Olusegun Obasanjo, and the direct beneficiary of the manipulated electoral victory, Umaru Musa Yar'adua, confirmed, while inaugurating the Electoral Reform Committee headed by Muhammadu Uwais, that the election that brought him into power was substantially flawed by irregularities and violence (Karim, 2014).

For many years, the electoral hiccups, which is characterized by violence in Nigeria were attributed to weak traditional method of voting, which largely revolves around manual computation of voters' register and crude jotting of election results, which gives room to perpetrate electoral fraud and violence that include declaration of fake election results, multiple and underaged voting, miscomputation and deliberate falsification of manual results, intimidation of political opponents at campaign rallies, hate speech, hate action, snatching or destruction of ballot boxes, and destruction of result sheets. Such weak electoral process that is largely aided by fraud-ridding manual voting methods without an electronic data base has eroded peoples' trust in the electoral process in Nigeria.

To reduce violent electoral contests, fraud and improve the credibility of the electoral process, the conduct of elections in Nigeria is currently characterized by the introduction of advance Information and Communication Technologies (ICTs) devices, which were largely deployed for the 2003, 2007, 2011 and 2015 elections to ensure that every eligible vote counts while also aiding citizens to access and share relevant electoral information, organize electronic campaign and monitor electoral results electronically. However, in spite of its centrality to the success of elections in Nigeria, the use of the ICTs has generated both interest and concern among electoral stakeholders, including the voters, the electoral commissions, political analysts and observers. While advocates

of the introduction of ICTs into the electoral conduct calls for its continuation because of their overwhelming conviction that the electronic devices have the needed capacity to reduced electoral fraud and enthrone violence-free contests in Nigeria, many critics contend that ICTs has actually aggravated fraudulent and violent elections having relocated electoral fraud and structural violence from physical to digital violence. The aim of this paper is to examine the contributions of the ICTs towards violence-free elections in Africa with specific emphasis on Nigeria, which is the largest democracy in the continent. The specific objectives of the paper are to identify the ICTs gadgets being used for elections in Nigeria and discuss their effects and challenges on the process. The paper adopts as its research methodology, an interpretive case study method that is based on analogical deductions and re-analysis of relevant existing literature from secondary sources.

Operational Definition of Terms

Election: a formal political decision making process by which the population chooses individuals who holds public office. It is a mechanism by which those who hold political authorities through representative governance are voted into office by the electorates.

Electoral Process: refers to all activities and procedures involved in the election of political contestants by the electorates. The process covers all the pre - and post-election activities, which include the registration of political parties, review of voters' register, delineation of constituencies, voting, election of public officials and swearing-in-of elected representatives and resolution of electoral disputes.

Electoral Credibility: means the trustworthiness, genuineness and the confidence reposed on an electoral process leading to its overwhelming acceptability as a worthy and trusted exercise to the stakeholders in an election.

Electoral Violence: All forms of disturbances associated with any stage of the electoral process, including physical confrontation, violent protest, snatching of ballot boxes, destruction of election material paper, physical obstruction of electoral officials from performing their lawful duties, structural and psychological violence, including hate speech and hate actionsin the electoral process.

Information and Communication Technologies (ICTs): any electronic device, including radio, television, mobile phone, desk or laptops, which are used as means of conducting, communicating and informing the general populace during an election exercise.

Review of Literature

The relevance of Information and Communication Technologies (ICTs) to elections is well captured in the work of Farid (2008), which contends that ICTs have played credible roles in facilitating fraud-free elections having enthroned a more reliable electoral

bio-data, precision and accuracy in the deliverance of credible election results. The Internet has provided the means by which citizens have been able to play more active roles in shaping governmental policies and influence the decisions that affect their lives by making their input into the governance process through theuse of ICTs facilities, especially the radio and mobile phones. Thus, e-democracy has been used as a very fast tool of aggregating people's preferences and demand on the political system while also getting feedback from the government through electronic communication gadgets, thereby aiding the principle of all-inclusive political participation through the ICTs. While discussing the nexus between electronic gadgets and electoral process, Mutula (2008) identifies the relevance of ICTs to the electoral process to include the use of computer systems by the electoral bodies for their internal data management and to communicate with voters in order to checkmate election rigging and increase the credibility of such elections. The author posits further that government and private organizations across the world have used ICTs to improve the relationship between contestants and voters in electoral contests in both public and private elections through mutual information sharing to establish the nexus between the expectations of the electorates and campaign promises of the contestants. For Diamond (2008), ICTs has a direct impact on the electoral process having improved its credibility as a legitimate means of choosing those who govern the people through timely declaration of election results while also serving as anti-vote theft electronic devices.

Similarly, Aziken (2015) observes that disputed elections in Nigeria have been resolved largely through the adoption of the ICTs as anti-rigging mechanisms for the confirmation of the authenticity of election results through electronic documentation of records and its ability to re-call such documents when needed. Raji (2014:7) identifies the problems of ICTs in the electoral system to include deliberate sabotaged, lack of adequate access to the Internet by many citizens coupled with high level of illiteracy in developing countries. What was distilled from the above review is that, prior to the deployment of ICTs to secure electoral process in Africa, the process has witnessed monumental fraud and violence from the traditional manual electoral system. However, the advent of ICTs has charted a positive course for democratic practice and improved the credibility of electoral process in Africa by exposing fraud and abuses, though, the devices have their own challenges too.

Theoretical Framework

This paper adopts Communication Theory of Governance as its theoretical frame of analysis. The theory, which is also known as Cybernetic Theory, was popularized by Simeon Hebert (1983) and Maxwell Maltz (2015) as a model for unveiling the roles of communication in democratic governance and electoral process. According to Hebert, the entire political system, which is largely premised on logical reasoning, is a "network of communication channels" which has its processes and mechanisms for acquiring,

collecting, transmitting, selecting and storing information on the entire governance processes from the formation of that government through the electoral process, and from one regime or republic to the other. As noted by Maltz (2015) also, relevant information, which flows from the mindset of the informant, is central to the collation of appropriate needs of the governed by the government while such information also serves as a feedback mechanism on the decision of government on the requests of the governed. The relevance of communication theory to this study borders on the realization that clear information flow is very central to every democratic governance by spelling out the roles of both the government and the governed in the governance processes, including their roles towards the success of the electoral process,which must be communicated to the concerned parties before proper implementation could be guaranteed. The decisions taken by the government on the demand of the governed are also based on the correct or otherwise interpretation of the information available to it on the request of the people while both parties relies on adequate information towards the realization of their collective interests in governance. The entire governance process thus survives on adequate information and communication between the government and the governed. As argued by communication theorists, the effectiveness of information on both the government and the governed for credible governance depends on the quality of such information and the understanding the receiving parties are able to decode from information receiving devices, whose effectiveness could be aided by the use of advanced communication technologies, which is largely characterized by unambiguous and clearer signal for the receiver to be able to act appropriately on it. The growth of ICTs in contemporary society has enhanced the ability of the stakeholders in the arts of governing to send and receive messages across the globe for sustainable relationship between the government and the citizens, hence the relevant of communication theory to this study.

Random Overview of ICTs-Induced Electoral Process across African Countries

Electoral contests in Africa are largely characterized by manipulation and fraudulent practices, leading to outright violence and crisis of legitimacy in governance in many countries. In Zimbabwe, there was a violent conflict of succession between the then former President, Robert Mugabe, and the former opposition leader, Morgan Tsvangirai, over allegation of election rigging (Charles, 2018). However, the use of ICTs has relatively changed the course of political discourse in Zimbabwe towards a fraud and violence free elections, though there is still the challenges of media regulation, which curtails direct deployment of electronic devices on the electoral process in the country. For instance, there is media repression and tight control over print and electronic media discourse in Zimbabwe, which ranked the country as 133rd out of 179 countries on the 2014 press freedom index (Reporters Without Border, 2018). The relative poor record on media freedom in Zimbabwe, as witness in the above report, is not totally surprising because

there is a combination of legal strands which prohibits and control the establishment of local and foreign electronic media that are unsupportive of the Zimbabwe state and the enthronement of draconian broadcasting services law that requires strict licensing and state surveillance on the practice of journalism along the coercion against dissenting voices through the public order and security subversive Acts. In spite of the challenges of monopolizing the political space by the government through strict regulation of the use of ICTs in Zimbabwe, the social media, including the Facebook, Twitter, Whatsapp and Instagram, has largely been used by the opposition Movement for Democratic Change (MDC) to sensitize the electorates on the methods of electoral manipulation, human rights abuses and illegal arrest of political opponents by the Zimbabwe African National Union-Patriotic Front (ZANU-PF) under Robert Mugabe between 2009 and 2013. The social media has also become an alternative space of airing dissident political views to those of the government and a platform of upholding the freedom of ordinary Zimbabweans in an authoritarian regime under Mugabe. Though, there are no direct involvement of ICTs devices on the conduct of elections in Zimbabwe, the Digital Networked Technologies (DTNs), including the mobile phone and the internet, has empowered the citizens to campaign for their preferred candidates and changed political power relations in Zimbabwe while also limiting the electoral manipulative tactic of the Mugabe's regime. The use of Facebook and social network blog to access information has also aided the input of the Zimbabweans in Diaspora on the electoral process in their country. According to Reporters Without Border (2018), the eventual ouster of Robert Mugabe from power in 2017 by the Zimbabwean Military was largely aided by the use of social media to expose his atrocities. However, Zimbabwe is still far from wholesale embracement of the ICTs on the electoral process. Though the current Zimbabwe President, Emmerson Mnangagwa, launched the national information communication technology policy in Harare on March 14, 2018, the policy and its legal framework mainly focused on the economic growth of the country through the use of ICTs and not on the electoral process.

Kenyan has also been troubled with disputed elections over allegation of election rigging, which led to the Supreme Court's annulment of the results of the presidential votes in the August 2017 general elections before fresh presidential election was held on 26 October, 2017. ((Reporters Without Border, 2018). Earlier, in 2007, the alleged manipulation of the electoral process by the government against the opposition parties in the country led to violent demonstration by pro-democracy groups where about 1,080 people were killed by state security agencies. Election frauds in Kenya revolve around double registration, where prospective voters registered twice in different locations, which gave them the opportunities of multiple voting. There is also the problem of impersonation where many voters, whose names are on the register, didn't show up for voting but their voters cards are used by other persons to vote. The Kenyan electoral process also witnessed the problem of ballot stuffing, which is one of the most blatant

election malpractices involving the placing of pre-marked ballot papers into the ballot boxes before voting formally commenced.

The year 2013 marked a significant improvement in the Kenyan's electoral system as ICTs were used as instrument of mobilization and communication between politicians and electorates. The electoral-electronic devices as introduced in Kenya include the biometric voter registration machines, which captures the biological features of the electorates, including their finger prints. The machine enables the Kenya electoral commission to electronically audit the records of the voters at the end of voters' registration exercise by deleting double registration. The biometric features captured during voters' registration are also used on Election Day to ensure that those voting are indeed those who registered. The electronic machine also eliminate threat of vote manipulation in Kenya by requiring voters to impress their finger prints on the Card Reader, which highlights the consistencies or otherwise between the electronic and manual data of voters. Kenya also adopted the Electronic Result Transmission System (ERTS), where collated results are electronically transmitted by the electoral officer from the collation poll units to the central collation centres. The transmitted results serves as an advanced copies of the manual results from the collation centre, which are then compared when the manual copies arrives the Central Collation Centre (CCC). The Centre works with the electronic results before the arrival of manual result sheet and thus, hastens the announcement of the results. The Electronic Result Transmission System (ERTS) minimizes electoral manipulation and increases the credibility of such elections in Kenya while also discouraging the certified results from being tampered with from the polling booth since the advance copies have been sent to the collation centre.

In South Africa, the 1994 elections, which were the first multi-party electoral contests conducted by the South African Electoral Commission, encountered problems such as the inability of the Commission to register all eligible voters, delays in receiving results from polling stations, long queues of voters, tedious counting process along other logistic problems (Mutula, 2008). However, subsequent elections, starting from the 1999 parliamentary and presidential elections were improved upon with the use of sophisticated Information and Communication Technologies (ICTs) for the conduct of voters' registration, voting, result collation, verification and relaying of election results. The ICTs hardware and software used in South Africa for elections include a Satellite Wide Area Network (SWAN) which is connected to fax machines. The device enables the people in rural areas to vote electronically while the Bar Code Readers (BCR) authenticates the genuineness of the voters register and aids the counting of votes at a faster rate. The Geographical Information System (GIS) is being used to draw up boundaries around the districts in South Africa while election centres are linked with a set of heavy-duty servers to a central call centre to collect and display election results to the public through a satellite-based communication system, which are linked to telephone and fax.

Apart from adapting modern ICTs like the Smart Card Readers and Direct Data Capturing Machine from Nigeria, Gambia is securing the credibility of her electoral process through a "home grown" technology. The locally devised Voting Marble (VM) finds solution to the problem of electoral fraud and illiteracy of many electorates in the country. The system works with the deployment of three metal drums in the 2017 elections, representing the three presidential candidates, who contested the election; Yahyah Jammeh, Adama Barrow and Mama Kandeh (Agence France-Presse, 2018). In this voting method, voters enter a private area that is demarcated and drop a marble into one of the three drums that are painted with the party colours and logos, and a loud bell rings to confirm that a vote has been cast. This system alerts the electorates outside on the number of votes that were cast in the polling booth. As observed by Gambian IEC Vice-President, Malleh Salam:

> "*The device is unique and we are very proud of it as the system allows illiterate Gambians to monitor the number of ballot dropped in the marbles from outside to ensure that only one vote is cast per person*" (Agence France-Presse, 2018).

In 2012, the Ghanaian Electoral Commission (EC) introduced the Biometric Data Capturing Machine which registers citizens of 18 years and above to vote. The 2012 exercise was a pace setter for future elections in Ghana as the country has successfully deployed modern gadgets, including the Direct Data Capturing Machine (DDC) and Smart Card Reader (CR) to coordinate her subsequence elections in 2016 where twenty six thousand (26, 000) electronic voters verification devices were deployed with other backup devices such as thumb scanners, laptops, digital cameras and official website for the people to access authentic information (Reporters Without Border, 2018).

Despite her late embracement of popular electoral participation, Egypt's attempt to ensuring a fraud and violence-free elections through the use of ICTs is very profound. In the 2012 Presidential and Parliamentary elections, for instance, Egypt's High Elections Committee (Al-lajnatul'ulya Lil intijabaat) deployed over 20000 Biometric Morpho Tablets (BMT) with Morpho front and back-office applications to register genuine voters (Perala, 2015). The Morpho Tablet is a mobile biometric solution which is used for a large-scale enrolment of voters in Egypt. It is a versatile touch-screen device, which captures the biometric data of voters, including their fingerprints and the face to capture and verify their identities. The device, which is as portable as an android phone has the ability to read contact and contactless smart cards and share information with other relevant electronic devices through the use of Bluetooth, WI-Fi and Cellular Networks. Egypt was the first country in the world to use such technology for its election (Perala, 2015).There are also the use of Security Writing Pen (SWP) and Eye Glasses Camera (EGC) often worn by election observers and party agents to monitor election proceeding in Egypt.

It is evident from the above examination of selected African countries that the continent encounters one form of troubled elections or the other, which revolves around

stage-managed electoral conduct and electoral violence and that many of the concerned countries are making concerted efforts towards reducing the electoral logjams with the introduction of the ICTs. Two major ICTs facilities that are directly and commonly connected to the conduct of elections across African countries are the Direct Data Capturing Machines (DDCM) and the Smart Card Readers (SCR) while other ICTs gadgets, including smart phones, radio and the Internet have contributed directly and indirectly to the credibility of the electoral process in the continent. Some African countries, including Gambia, have also devised local technologies, such as the Voting Marble (VM) to curtail electoral fraud in the continent. It is also evidence from the examination in this section that there are still African countries, including Zimbabwe, that are yet to adequately adapt the use of ICTs for the conduct of elections in Africa in order to manipulate the democratic space.

Communication Technologies and Information Dissemination in Nigeria

Modern Telecommunication technologies remains the primary means of information dissemination in Nigeria, which began with the first trunk telephone service between two towns, Lagos and Calabar, in 1923 (Raji, 2016). It was not until the 1950s that substantial expansion of communication devices began with the introduction of VHF radio systems, 116 manual and five automatic telephone exchanges into Nigeria's regional headquarters in Kaduna, Ibadan and Enugu. In order to enhance the quality of telecommunications services in Nigeria, the telecommunications arm of the Post and Telegraph Department and the Nigerian External Telecommunications Limited, which previously managed the domestic and external services respectively, were merged in 1984 as a single profit-oriented limited liability company called NITEL. Under NITEL, the number of automatic switching centres in Nigeria grew from 112 in 1984 to 227 in July 1986 (Charles, 2018).

The Nigeria national telex network equally grew from its 5,600 total network capacity in 1984 to 12,800 lines with only one international exchange model, which has 1,500 trunks in 1988. The transmission media for both the toll and trunks telecommunication lines included terrestrial microwave, coaxial cable, and domestic satellite (Charles, 2018). The Lanlate Satellite Earth Station, which was Nigeria's first international satellite telecommunication gateway, became operational in March 1971 with one antenna (Lanlate I), which tracked the Indian Ocean INTELSTAT satellite. A second antenna, called Lanlate II, operates with the Atlantic Ocean satellite and was added in December 1975 by Nigeria. By the end of 1989, the two antennas had provided 417 circuits, with 248 in the Atlantic Ocean region and 169 in the Indian Ocean region while another international earth station was also built at Kujama in Kaduna State. With these facilities, most of Nigeria's external telecommunications connections, including the telephone, telex, facsimile, and television, have been by satellite. The Nigeria Domestic Satellite

System was established in 1975 with a network of six 11-metre earth stations operating on a leased INTELSAT satellite transponder.

The network was subsequently expanded with three leased transponders, each of which is 36 MHz, 20 earth stations, a network monitor and control station, and backup radio links between the DOMSAT earth stations and NITEL as well as stations of Nigerian Television Authority. The first transponder was allocated for television transmission, while the other two were reserved for telecommunication services. The Nigeria's digitalized earth station, the third gateway after that of Lanlate in Oyo State and Kujama in Kaduna State, which was built in 1989, has facilitated telecommunications link between Nigeria and other parts of the world. The Olusegun Obasanjo civilian regime also liberalized the telecommunication industries in 2002, which allows for private sector participation in the industry leading to a boom in the availability of mobiles phones to about 17 million Nigerians and the penetrations of the ICTs into the rural areas. The availability of the above ICTs facilities laid the foundation for effective introduction of ICTs devices into the management of the electoral system in Nigeria.

Information and Communication Technologies (ICTs) and Electoral Process in Nigeria

The Nigerian Independent National Electoral Commission started the use of advanced Information and Communication Technologies (ICTs) with the conduct of the 2003 general elections by introducing the electronic voters register to eliminate electoral fraud, which is primarily characterized by multiple registrations to accumulate illegal votes. Since then, the scanning and processing of election results through the ICTs have been intensified in Nigeria. According to Chikodiri **(**2015), the specific ICTs gadgets introduced into the electoral process in the country from 2003 to 2017 ranges from typewriters and computer machines to the use of Direct Data Capture Machine (DDCM), Electronic Voters' Register (EVR), Electronic Result Collation (ERC), and Smart Card Reader (SCR). The 2003 elections, in particular, was characterized by advanced ICTs input with the introduction of Optical Magnetic Recognition (OMR) forms while still retaining the manual records as backup. The INEC also incorporated the computerization of the voters register with the use of the Optical Mark Recognition (OMR) technology, which involves the compilation of the names of prospective voters or registrants on the form EC.1A (Chikodiri, 2015).

The information so obtained on the form is then shaded and transferred into a computer readable OMR Forms, which were later, scanned into the electronic database after the completion of field operation. The scanned information is then processed by the computer to produce the electronic Voters Register data base. Each OMR Form has a peculiar identification number assigned to the registered voters who are then issued with a new Temporary Voters Card (TVC) bearing the same number with their particulars in the

OMR form. There were many advantages of using the OMR technology over the previous manual register during the 2003 elections in Nigeria as the electronic voters' register was faster to create and more accurate with unique features that included personal identification of registrants while also giving room for the register to be updated on continual basis. However, the limitations of OMR technology as introduced in the 2003 electoral process included the absence of voters photograph and non-adoption of ICTs devices for voter accreditation, voting, sorting and counting of results, which gave room for electoral fraud, including multiple voting.

The procurement of the Direct Data Capturing Machines (DDCM) for the registration of prospective voters introduced some level of credibility to the electoral system in the build-up to the 2007 elections in Nigeria. The DDCM was introduced specifically to eliminate double registration and double voting. The electronic device components that were introduced in 2007 included a computer system for capturing and storing voters' information, a scanner for capturing fingerprints of registrants, an in-built camera for taking pictures and a backup battery to provide extra power charge to the computer. The electoral-electronic machine also consists of External Hard Disk Drive (HDD) for data backup and a printer, for printing Temporary Voters Card (TVC). About 40,000 DDCM were deployed by INEC for the eighty-one days voters' registration exercise in 2006, which aided the registration of over 61 million voters for the 2007 elections and made the exercise to be more transparent, speedy and far less cumbersome (Emmanuel, 2015).

Through the use of DDCM also, double registration was reduced while the INEC was able to produce Permanent Voter Cards (PVCs) for 68,833,476 persons in the biometric Register of Voters shortly before the March 28th and April 11th, 2015 general elections in Nigeria (Emmanuel, 2015**)**. The DDCM, as a biometric registration device, was able to identify genuine voters in the 2007 elections through their biological features, including their finger and palm prints while the incorporation of the machine into the electoral system equally captures the bio-data of Nigerian electorates into the computer network. Thus, information on any electorates in one particular location is easily accessed from other parts of the country during the 2007 general elections in Nigeria. To aid the optimal performance of the DDCM, the Very Small Aperture Terminal (V-SAT) was installed in the 774 INEC local government offices and its state headquarter offices to allow for smooth electronic transmission of election results from various local government areas to the state and national headquarters. However, the Terminals were not optimally utilized for the 2007 general elections due to system failure and inadequate skilled manpower to manage them.

The conduct of the 2011 general elections in Nigeria was largely aided with the introduction of ICTs devices into the electoral process. The INEC, under Atahiru Jega, procured and deployed about 132,000 Direct Data Capture Machines (DDCMs) in 2010, with each of the 119,973 polling units (PUs) and 8,809 registration areas (RAs) having one tablet

while the remaining machines were kept for logistic contingencies (Election Monitor, 2019). The introduction of the DDCM machines assisted in ridding the electoral register of multiple registrations while Electronic Voter Register (EVR) was generated for the 2011 general elections. There was also an electronic transmission of results from local government and state offices of INEC to their national headquarter in Abuja. The introduction of the ICTs into the 2011 electoral process was applauded by both the domestic and international observers, which acclaimed the election as largely credible and transparent.

The Smart Card Reader (SCR) machine was introduced into the electoral process in Nigeria in 2015 as an anti-rigging technological device for the authentication of biometric Permanent Voters‟ Cards (PVCs) and accreditation of voters. The Reader is an electronic detective device designed to establish genuine voters and detect fake, stolen and cloned voter's card. In fact, the Smart Card Readers, which were about 145,000 in number, was the main additional point of attraction and the most unique IT innovation in the 2015 general elections. The Reader was designed as a highly secure and cryptographic technology with ultra-low power consumption, single core frequency of 1.2 GHz and an Android 4.2.2 speedy operating system. For instance, it takes an average of 10 seconds to authenticate a voter unlike the manual process that takes several minutes. The card readers were earlier subjected to Quality Assurance, Integrity and Functionality test and found reliable in its ease of use, long battery life span and speedy processing capacity before being introduced into the electoral process in Nigeria in 2015 (INEC, 2017). The states where the reliability and credibility of the SCR was test-run in 2015 included Kebbi and Kano (North-West), Rivers and Delta (South-South), Anambra and Ebonyi (South-East), Bauchi and Taraba (North-East) and Niger and Nasarawa (North-Central), Ekiti and Lagos (South-West). The electronic device was also testedin 225 out of the total 120,000 polling units and 358 out of the 155,000 voting centres in the 12 states earlier mentioned (Emmanuel, 2015).

The use of Card Readers in the 2015 general elections in Nigeria, aided the breaking down of the election accreditation processes into three stages for easy coordination, including the Identification, Verification and Authentication stages. The identification process physically compared and authenticated the bio-data and the face of card holder and compared it with the image displayed on the SCR for conformity, the Verification exercise established the originality of the voter's card presented while the authentication process scanned and compared the fingerprint stored on the card reader with the voter's for conformity. The SCR also has a Voter Identification Number (VIN), which stored the data of the voters once their PVCs have been read and accredited by the Reader and does not allow for the accreditation of that VIN on that particular Smart Reader any longer. The Smart Reader was equally able to read the biometric information of voters and record the numbers of vote cast in the polling stations where it was used

in Nigeria. The deployment of the electoral device in the country also ensured that each elector only voted in the ward where he or she was registered. Although the technology did not offer solution to all forms of electoral malpractice, the use of the SCRs made it more difficult to brazenly rig the 2015 General Elections in Nigeria.

The Temporary Computerized Voters' Cards (TCVCs) which were issued for the 2011 general elections was replaced with a Permanent Voter Cards (PVCs) in 2015. The PVC is an electronic print-out whose features include a base substrate, security printing device with an average life span of ten (10) years unlike the manual voters' card, which has an average life span of three months. There was also a partial introduction of e-voting into the electoral process in Nigeria. Though this was not used for the general elections, it was adopted as a pilot project by the legislative Houses of Senate and Representatives as a pilot model to generate quantitative figures instead of the current qualitative voting patterns that relies on collective "Yes" or "Nay" voting pattern in the two houses. The electronic voting system was abandoned in the two federal legislative houses due to the malfunctioning of the voting devices.

Apart from the direct election-related technologies like the Direct Data Capturing Machine and the Card Readers, three key items of technology have also helped the electoral system in Nigeria (Raji, 2014). These technology devices include the smart mobile phones, powerful independent Frequency Modulated (FM) stations and the Internet. With wider network coverage, mobile phones have improved the accuracy and timely reporting of elections procedures and outcomes as voters, election observers and journalists, among others are able to report electoral events almost immediately from polling centres through the use of their mobile phones. Many voters and political commentators in Nigeria used their phones to comment and report on election conducts, including irregularities on local Independent FM Stations for the attention of the Electoral Commission. Political campaigns are also being conducted through texts and blog messages while there are on-line publications detailing political manifestoes and campaign promises while many political parties, the electoral commissions and independent observers have equally set up their own websites for proper and prompt coordination and monitoring of the conduct of elections in Nigeria.

Through the introduction of ICTs into the electoral process in Nigeria, political conversation is no longer monopolized mainly by the ruling parties, which earlier had the monopoly of the public media. For instance, the success of the 2015 presidential election in Nigeria, where the then opposition presidential candidate under the All Progressive Congress (APC), Muhammadu Buhari defeated the then sitting President, Goodluck Jonathan of the People's Democratic Party (PDP), was largely attributed to landmark contributions of independent media technologies to the democratic process. In this particular instance, many voters were able to monitor the conduct of elections through their mobile phones and made necessary political manoeuvrings almost immediately.

Mobile technologies, especially the smart phone, has also created improved accuracy in election analysis, monitoring and election observers' report, both local and foreign, as the device was used to gather relevant information from different sources. There is also the introduction of "Eye Witness Election Reporter by the INEC" that avails an eye witness to access the INEC websites to report electoral fraud with proof of evidence through the use of audio and video cameras.

Effects of Information and Communication Technologies on the Credibility of Electoral Process in Nigeria

There are reasonable levels of positive impact of the introduction of the ICTs facilities on the credibility of electoral process in Nigeria. The devices have brought about more accurate results declaration with adequate precision than the manual records. For instance, the use of Bio-metric card readers in the 2015 general elections in Nigeria aided the accurate reading of registered voters who voted in those elections, unlike the manual voters' registers in the previous elections which recorded huge compilation of fictitious names. The ICTs has equally improved electoral time management as the card reader calculates data in seconds unlike the manual methods, which take hours to calculate the same figure, which may even not be accurate. The SMC has helped to accurately verify the genuineness of voters card and assisted in biometrically authenticating eligible voters among those who presented their PVC at the polling unit. The card reader has also aided the disaggregation of data of accredited voters into different electoral categories along gender, age, and educational qualification, a disaggregation that has helped INEC's research and planning unit for the conduct of transparent elections in Nigeria.

The Card Reader has also helped to audit figures subsequently filed by polling officials at the polling units to determine any possible fraudulent alterations while the introduction of ICTs has boost the image of INEC as a credible electoral umpire as other countries, including Ghana, and Kenya have under-studied the Commission and domesticated some of the Nigerian electoral ICTs gargets, especially the Smart Card Reader and the Direct Data Capturing Machine for the conduct of their elections. The ICTs devices, as introduced into the electoral process in Nigeria have provided better communication network between the electorate and aspiring politicians having served as a credible e-campaign platform, thus curtailing physical violence that are often associated with physical campaigns in Nigeria. Also, the use of phones and the internet has helped to transfer confidential electoral information across Nigeria in short time leading to increased reinforcement of public confidence in the electoral process. In fact, some of the major contenders that did not win in the 2015 general elections congratulated the winners. For instance, the PDP presidential candidate and the then sitting President, Goodluck Jonathan, immediately congratulated the APC presidential

candidate, Muhammadu Buhari, who won the election because of the transparency engendered in the election through the use of the card readers.

The use of ICTs have also helped to reduce identity fraud and pseudo-registration by fraudulent electorates while also reducing paperwork and saving human energy from manual electoral process (Chikodiri, 2015). Electoral violence was largely curtailed in 2015 as political contests were reasonably confirmed as being credible by both local and international observers. Thus, the erstwhile excessive and needless attacks between the winners and losers in past electoral contest were significantly curtailed while tensions were equally minimized among political contestants in Nigeria (Chikodiri, 2015).

The use of electronic devices has reduced voting timelines and election queues because of its fast accreditation capacity and has helped to generate reliable voting statistics by disaggregating real voter turnout from fictitious figures. With a wireless broad band, smart camera phone and micro surveillance equipment such as pen and eye glasses, the fraudulent activities of politicians are easily monitored and unveiled to the world before, during and after elections, thus, serving as deterrence to perpetrating electoral fraud in Nigeria.

The Challenges of Enthroning Credible and Violence-Free Elections through the ICTs in Nigeria

There is an overwhelming nexus between credible election and electoral violence in Nigeria as those who are fraudulently rigged out of electoral contest often result to violent agitation for redress. However, while the ICTs have improved the credibility of the electoral process in Nigeria, there are inherent challenges in the strategy, which has intensified electoral violence in the country. The challenges included cases of fingerprint and even PVC rejection by the card readers while there were incidences of non-functioning of card readers along non-display of genuine pictures of voters and rejection of smart passwords, which many voters violently protested against. For instance, some voters were denied opportunity to exercise their franchise in 2015 elections in Kwara state because the thumb print machine couldn't recognize their fingers. These happened mostly to aged people, farmers and artisans whose sensation in their thumb has reduced as a result of using it for their craftwork. Also, there were cases of quick drain of the DDCM battery without adequate backup while majority of the Presiding Officers and Assistant Presiding Officers in the polling units were not effectively trained on the proper use and handling of the ICTs devices leading to delay registration and violent agitation by impatient registrants to be attended to promptly.

Also, there is serious concern with program error, software attack or system hacking of ICTs devices deployed for election in Nigeria, which often generate controversies over the reliability of ICTs-backed electoral process. For instance, the INEC's @inecnigeria website was hacked in 2015 by a group which called itself Nigerian Cyber Army before

it was rectified by the Commission. The introduction of ICTs has brought about fake voting sites and eventual submission of electronically altered results leading to loud protest or violent rejection at times. There were many sites, which released fake results during the governorship and presidential elections in the 2011 and 2015 elections in Nigeria, thereby causing confusion and strong agitation for manual computation of results (Ezeanyika and Onyema, 2017). There were also cases of influential politicians colluding with both the ad hoc and regular staff of INEC to take possession of the DDCM to register mainly members of their supporters in their private homes, a decision that was violently resisted by the opposition parties. A leading politician in Ibadan, in Oyo state of Nigeria took possession of almost half of the data capturing machines in Ibadan to his home, which became the "registration centre" for his supporters while the machines were not adequately available at the official registration centres, which led to violent agitation for redress. It took the intervention of security agencies before the machines were rescued and made available to the people. At the end of the exercise, INEC conducted a mock fingerprint examination on the purported electronic voters' registered in Nigeria in 2011 and it was found that not less than 6,000,000 multiple registrations were discovered, thus undermining the credibility of the performances of the ICTs and the registration exercise.

There is shortage of highly skilled ICTs technicians and engineers to manage faulty ICTs devices (INEC, 2017). Thus, many faulty electoral machines could not be repaired immediately during the voters registration exercise in Nigeria, thus, delaying the registration process, which times lead to fight among impatient registrants who had being on the queue for long. The adoption of electronic voting system has no legal backing. Infact, President Muhammad Buhari refused to assent to the 2018 electoral bill for the conduct of the 2019 elections in Nigeria, which was largely premised on the use of electronic voting system because its working is far less understood by most illiterate voters. The non-signing of the electoral bill, which involved the use of ICTs has generated controversy among Nigerian politicians.

The use of ICT facilities in election management in Nigeria, especially in the rural areas is characterized by the problem of epileptic power supply. Since government provides weak electricity in many Nigerian rural areas, the ICT facilities procured for election management in those areas, like DDCM could not be recharged regularly, thus, disenfranchising many eligible voters, who often result to violence to protect their exclusion from the voters' registration exercise. In some instances, the communities had to rent generators to power the electoral machine, a gesture that occasionally leads violent protest as those who donated money for petrol often insist they should first be attended to ahead of those they met on the queue. There is also the problem of vandalization of power cables and ICTs facilities by thieves, which curtailed the use of such facilities during elections in Nigeria. Information dissemination barrier is another challenge to

effective deployment of the ICTs facilities for the conduct of elections in Nigeria due to weak internet services, especially in the rural areas, which has obstructed free flow of such pertinent information required during the election period. Hence, the purpose of e-registration is largely defeated. In many instances, electoral eye witness reporters with vested interest have reported fake news through the use of "Photoshop" and stage-managed images to confuse INEC on the true position of electoral conducts.

Discussion of Findings

Findings from this study clearly revealed that the introduction of ICTs into the conduct of elections has relatively impacted positively on the credibility of electoral process in Nigeria by securing such elections from intense manipulation and violence through the use of the electronic machines and the enthronement of e-campaign platforms devoid of physical violence, among others. However, the use of ICTs in the conduct of elections in the country is still faced with challenges that included the re-location of electoral fraud from manual to digital manipulation, machine failure, system hacking and poor logistic supports. With the introduction of the ICTs also, electoral violence, rather than abate, has largely been transformed from physical to structural electronic violence (e-violence) as political campaigns on social media and websites are bereft of focused and actionable campaign promises and enthronement of credible campaign manifestoes. Current e-campaign strategies in Nigeria are largely characterized by hate speech and hate actions that are directed against political opponents. Such e-structural electronic violence includes character assassinations, deliberate lies, insults, politically motivated ethno-religious incitement and electronic treasons in the name of political campaign on the social media. This study equally confirmed that electoral violence is usually very rampant in Nigeria in the build-up to transitional elections. For instance, Nigerians will go to the poll in February 2019 but table 1 above had already recorded an average of an electoral violence in every three days within January alone, which is just one month to the general elections.

There are many reasons why election has become a "do or die" affair in Nigeria in spite of the introduction of the ICTs into the process to enthrone credible elections, six of which are analyzed. Many Nigerian politicians perceive political power as a means of a massing state wealth for personal gains through Prebendal politics (Raji, 2014). Such political environment of privatized and commercialized politics is characterized by politics of patronage rather than politics of service under a zero-sum political dividends outcome, where the winners wins everything and the losers loose all without being proportionally represented or compensated in government. The ensuring political competition under such unhealthy political exploitation is often reduced to violent through "a do or die" competitive strategy, including the use of legal or extra legal means. More so, correlation exists between political ambitions, financial investment into electoral contest and electoral violence in Nigeria (Ake, 1992). The violent contest as introduced into the

electoral process in Nigeria is a reflection of the premium and the extent of financial investments that many jobless Nigerian politicians have placed on their political career, which is often funded from their savings, disposal of valuable properties and loans obtained under draconian conditionality, leading ultimately to intense and violent political competition to protect such political investments. Such desperate Nigerian political contestants relies more on efficiency norms-whether normal or abnormal in order to realize their political goals, a move which the opposition frequently counters through violence. Through patrimonial politics also, Nigeria's electoral process and governance system largely rests on the logic and practice of organized criminal enterprise, which employs unholy secrecy, thuggery, corruption and coercion to capture state power, which has largely been reduced to a resource re-distributive platform to reward various groups within the power equation instead of using such power to benefit the generality of Nigerians. Many extremely poor Nigerians, which constitute almost 70% of the population, are easily mobilized as combatants for political rigging, electoral violence and political assassination because such jobless and highly impoverished electorates tie their personal economic survival to those of their political financiers. A perceive electoral failure by their mentors is thus seen as an open signal to their own impending personal economic doom which must be prevented by all means including the use of violence to sustain their political godfather in power.

Electoral violence has persisted in Nigeria in spite of the introduction of the ICTs to improve its credibility because of the frustrations of the larger percentage of the exploited Nigerians who have been marginalized in the power struggle with the manner political appointment are eschewed in favour of those within the power equation while leaving vast majority in poverty. Electoral violence has thus been employed as a means of registering people's frustrations to the government. The introduction of the ICTs into the electoral process for a violent free election has not helped optimally in Nigeria because the success of such electoral process is not determined by the electoral umpire only but by the unbiased input of other critical stakeholders in the electoral process who are, in the case of Nigeria, mostly unreliable, manipulative and who have remained partial stakeholders in the Nigerian electoral structures leading to enthronement of non- credible and violent elections in the country. For instance, the police, judiciary, media and national orientation agencies, amongst others that are critical stakeholders in the conduct of credible election have largely been politicized and compromised in many instances in favour of the ruling parties at the national and state levels. Such political environment of partial umpires has made many electorates to lose faith in the electoral structure, process and justice administration leading to disputed results and electoral violence. The complex nature of the Nigerian federation and the complications arising from its operational diversities has increased the chances of electoral violence in Nigeria in spite of the introduction of ICTs to improve its credibility. This negative tendency of the Nigerian federation and its operations are not unconnected

with the extreme centralization and concentration of much power and more financial resources at the federal level, which have led to mutual hostilities and violent contest amongst different ethnic nationalities to control such political power and remain the main distributors of political patronage.

Another fall-out of the unfavourable nature of the Nigeria federation that has contributed to electoral violence in spite of the introduction of ICTs into the electoral process in Nigeria is the issue of identity crisis owing to the proliferation of sub-federal administrative boundaries of identities which often serve as a platform to struggle for federal resources allocations, especially in a contest that discriminates against settlers by indigenes. Such discrimination leads to more crises as groups engage in fair or foul electoral contest in order to win elections at all cost in an atmosphere of the "end justifies the means" while political contest is seen in most instances by the concerned groups as war by other means. The proliferation of small arms, especially in the hands of political thugs is a pointer to the link between arms and electoral violence in Nigeria in spite of the introduction of the ICTs into the process as thugs use the weapons to scare away eligible voters or cause intense mayhem during elections. What has been distilled from the above analysis is that the introduction of ICTs into the electoral process as a remedy against the shortcomings of the manual process has not produced the required result of improving electoral credibility and reducing violence from the process because the issues involved in electoral contests and transitional democracy in Nigeria are more complex than using election as a platform for recruiting political office holders and transcends the use of the electronic devices as mere logistic support to sort out the problems associated with manual method, which the ICTs was designed to correct. Rather, the electoral system in Nigeria is largely seen as a platform of promoting parochial interests of vested groups rather than collective interest of generality of Nigerians. Discredit electoral process in Nigeria could also not be adequately corrected through the use of ICTs because a large segment of Nigerians has suffered from deep seated frustration arising from democratic deficits rather than democratic dividends and unresolved contradiction inherent in the construction of the Nigerian state towards the unity of the federating units.

Conclusion

It is concluded in this paper that the introduction of ICTs into the electoral process in Nigeria has greatly improved the electoral system but with many challenges. The innovation is too advanced, especially for the rural communities where voter education and literacy level is very low. Even though the ICTs have helped to reduce electoral fraud, it has opened another gate of sophisticated digital fraud in the electronic voting machines and enthroned new forms of electronic-electoral violence. In spite of these challenges, the relevance of ICTs to electoral process cannot be over emphasized but

the electronic process needs to be back-up with manual updates because of high rate of ICTs non-compliance illiterate voters in Nigeria.

Recommendations

Based on the above findings, it is recommended that the usage of ICTs in the conduct of elections in Nigeria should continue. However, such method should complement rather than supplement the traditional manual voting system because Nigeria is not yet ripe for sole reliance on electronic voting system, which is largely challenged by other factors, including inadequate power supply lack of skilled human resource to repair ICTs facilities and less ability of the illiterate voters to use ICTs facilities optimally. There should be improvement of the power sector in Nigeria to aid effective functioning of electoral ICTs and there should be improved voter education on how to use ICTs facilities efficiently. More technical experts should be trained to manage the likely challenges of the devices while more funding should be released to INEC to buy latest ICTs equipment for the conduct of 2019 elections. The implementation of the above recommendations would improve the credibility of the electoral process and reduce electoral violence in Nigeria.

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