

**INDEPENDENT NATIONAL ELECTORAL COMMISSION AND USE OF
ELECTRONIC DEVICES IN THE CONDUCT OF ELECTION IN NIGERIA: A
FOCUS ON THE 2020 GOVERNORSHIP ELECTION IN EDO STATE,**

BY

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**BEING A DISSERTATION SUBMITTED TO THE
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REQUIREMENTS FOR THE AWARD OF MASTERS DEGREE IN
ELECTIONS AND PARTY POLITICS**

MARCH, 2022

CERTIFICATION

This is to certify that this thesis titled: **INDEPENDENT NATIONAL ELECTORAL COMMISSION AND USE OF ELECTRONIC DEVICES IN THE CONDUCT OF ELECTION IN NIGERIA: A FOCUS ON THE 2020 GOVERNORSHIP ELECTION IN EDO STATE**, was carried out by Hassan Lumumba Okundia, which has been read and approved for the award of Masters in Elections and Party Politics of National Institute for Legislatives and Democratic Studies/ University of Benin.

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PROFESSOR AHMAD ALI
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DECLARATION

I, Hassan Lumumba Okundia with Matriculation Number **PG/NLS/1900009** do hereby declare that this thesis is a record of my research work, available records at my disposal reveal that this research work has not been presented anywhere as a prerequisite for the award of any degree.

Where references were made to other related literature works, they were duly acknowledged.

Hassan Lumumba Okundia
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APPROVAL PAGE

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DEDICATION

This research work is dedicated to all living political actors, who have continued to advocate for electoral integrity in Nigeria.

And above all, to God Almighty for his grace and banner over us.

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ACRONYMS

ADC: African Democratic Congress

AFIS: Automated Fingerprint Identification System

APC: All Progressives Congress

CNE: National Electoral Commission (Cabo Verde)

COMELEC: Commission on Elections (Philippines)

CIPP: Context Input Processes and Products

DEO: District Election Officer ECES: European Centre for Electoral Support

EGDI: Electronics Government Digital Index

EMB: Electoral Management Body

EVM: Electronic Voting Machines

EVR: Electronic Voter Registration

GDPR: General Data Protection Regulation

GSM: Global System for Mobile Communication

HCI: Human Capacity Index

ICT: Information and Communications Technology

INEC: Independent National Electoral Commission

IT: Information Technology

LGAs: Local Government Areas

LP: Labour Party

MNOs: Mobile Network Operators

NCC: Nigerian Communications Commission

OMR: Optical Mark Recognition

OSI: Online Services Index

PDP: People's Democratic Party

PVT: Parallel Vote Tabulation

TII: Telecommunications Infrastructure Index

RMS: Results Management Systems

ICT: Information and Communications Technologies

IFES: International Foundation for Electoral Systems

VR: Voter Registration

VVPAT: Voter Verified Paper Audit Trail.

ABSTRACT

The independent national electoral commission and use of electronic devices in the conduct of election in Nigeria: a focus on the 2020 governorship election in Edo state. The study examined the reliability and sustainability of the use of electronic devices on the conduct of elections. To provide INEC opportunity, resources and enabling legal framework to address the challenges that are hindering her efforts of conducting free, fair and credible elections in time past. it intends to scrutinize the reliability of electronic devices in the conduct of Elections. It chronicles the electronic devices deployed in the conduct of the 2020 Governorship Election in Edo State, by evaluating the roles and challenges of electronic devices in the conduct of elections. The relevance of the study is to help fill the gap in the framework of the stakeholders, political actors that sustainability of the use of electronic devices in conduct of elections will improve the electoral process and contribute to the extant literature on election management in Nigeria.

The survey method was employed in carrying out this research. Questionnaires were administered to elicit answers from sampled respondents in selected Local Governments of Edo State. A total of 485 respondents responded to 41 questions in the questionnaire. To obtain the sample size from the population of study, the Taro Yamane sampling technique was applied. While the respondent's views were analysed and presented in simple tables of numbers and percentages. Two statement hypothesis forms null; (H_0) and research (H_r) were tested using Chi- Square. The survey data findings reveal from respondents' responses are that electronic devices influences citizens' confidence, trust, and participation in elections and ability in its outcome as true reflection of their wishes. Therefore, the reliability and sustainability doubt are the gap this research seeks to fill, with a focus on the 2020 Governorship Election in Edo States.

Based on the following findings, the study justifies that electronic device have a role in the conduct of election, electronic devices in the conduct of election have instilled citizen's confidence in the electoral process in Nigeria, there are challenges and prospects with electronic devices in the conduct of election in Nigeria. That the use of electronic devices and that electronic transmission of election result is *doable* in Nigeria.

Hence following relevant recommendations were proffered, which mainly includes; Strengthening electronic devices research institutions to develop and train the critical mass manpower needs on use of electronic devices for sustainability. Signing into law the 2022 electoral amendment bill in Nigeria (due to its incorporation of use of electronic devices in the conduct of elections. To create or develop infrastructures and home-grown devices. Adopting and adapting electronic devices that are amenable to periodic updates. In furtherance of this, the Diffusion theory was applied to explain the rationale for the use of electronic devices for the conduct of election in Edo state.

CHAPTER ONE

1.1 Background to the Study

The recently passed 2021 Electoral Bill in both Chambers of the National Assembly generated a lot of controversies, especially as it relates to the exclusion of the use of electronic transmission of electoral results. This development is adduced to the Nigerian political trajectory which could be traced to the failure to conduct free, fair and credible elections from 1964, resulting in the crisis that has continued to trail the Nigerian electoral process.

The quest for “one man, one vote”, a credible election that is devoid of rigging, manipulation of results have culminated in a growing agitation for the introduction and use of electronic devices in the conduct of elections in Nigeria. Although experts have argued that the introduction and use of electronic devices in Nigeria electoral processes is not an end in itself when compared to countries like Brazil and India, where electronic devices and internet penetration is relatively higher, some political observers insist on the prospect of electronic devices in the electoral process and its many benefits to electoral integrity.

The call for the use electronic devices in elections as an ongoing reforms advocacy. By the Independent National Electoral Commission (INEC) in addressing the problematic challenges of trust, is germane in deepening democracy in order to protecting the integrity and credibility of the electoral process in Nigeria.

It is an indisputable fact that credible elections are indeed the cornerstone of an ideal democracy but conducting free and fair elections is a very difficult task. In a diverse country like Nigeria, the hard-to-reach logistics issues in terms of materials and manpower involved in the entire process is very complex and challenging to manage. Thus, elections managers need to provide a level playing field to all the players in the game. The entire electoral process should be enhanced with electronic device that create efficiency.

Conducting elections remains a recurring problem of Nigeria electoral process. The credibility and general acceptability of any election outcomes and the legitimacy of the elected government are a function of the transparency, freeness and fairness of the electoral process. The 2007 general elections, for example, appeared to be the most critical in the nation's efforts to consolidate and sustain the growing democracy.

The challenges of conducting credible elections have stimulated keen interest, because of its role in determining the future of democracy in Nigeria. An attitude of distrust about the achievability of a successful transition are created by the prevailing difficulties confronting the transition process in terms of growing political violence, manipulations of election results etc.

The overwhelming challenges confronting INEC in its attempts to conduct credible elections with popularly acceptable outcome. That is devoid of the traditional controversies and crises associated with previous transitional elections, is the major reason for the call for the deployment of electronic devices. The Independent National Electoral Commission (INEC) has employed a number of innovative approaches aimed at improving the conduct of elections in the country.

As years pass by, INEC gets more sophisticated with its technologies in order to meet up with international standard. In this study the researcher examines the impact of these electronic devices and the effects they have on election activities in Edo State election. Following the introduction of these devices: Electronic Voters Register (EVR), Automatic Fingerprints Identification System (AFIS) and Smart Card Reader (SCR) have reduced the incidence of multiple registration and multiple voting to the barest minimum while the development of e-collation, INEC Result Viewing (IRV) support platform has drastically reduced incidence of result manipulation at collation centres.

Hence, it is believed that the incorporation of electronic devices in the 2020 Edo State Governorship election, has reduced excessive electoral fraud to the barest minimum and it fostered credible election. (Ayeni et al 2018)

The 2020 Edo State gubernatorial election took place on September 19, 2020. The incumbent Governor, Godwin Obaseki had defected from the All-Progressives Congress (APC) to the People's Democratic Party (PDP) and won re-election for a second term, defeating in the

process, Osagie Ize-Iyamu who had himself earlier defected from the PDP to APC and lost with several minor party candidates. Obaseki received 57.3% of the votes. (Yiaga Africa 2020).

Godwin Obaseki had emerged unopposed in the PDP gubernatorial primary after all the aspirants stepped down for him. While Philip Shaibu remained as his running mate.

Osagie Ize-Iyamu was the APC candidate with Audi Ganiyu as his running mate. The African Democratic Congress (ADC) featured Mabel Oboh as candidate. Aboi Lucky Emmanuel stood for ADP in the polls and Osifo Uhun-Ekpenma Isaiah represented the Labour Party (LP). In the election, fourteen (14) candidates contested out of which 12 were male, while 2 were female and two of the deputy governorship candidates were female. With new innovations that INEC introduced in 2020 Edo state Governorship election it overcame the challenge of delay in the final collation of results through the use of electronic collation. It saved collation officers the risk of travelling all night to get results submitted for final collation. It also saved INEC some costs.

This research seeks to examine the use of electronic devices in the conduct of the 2020 Governorship Election in Edo State. The work is limited to considerations that applies to the use of electronic devices in the conduct of Elections. While the reliability and sustainability ability is the gap this research seeks to fill.

1.2 Statement of the Problem

Elections have different stages and strategies in place to facilitate the smooth conduct at every stage of the electoral cycles. The application of human skills, less skill staff, all other human errors and manipulations has generated the desire for effectiveness and efficiency in the electoral process. In Nigeria, as conducting credible elections have been one of the main problems of the democratic process (Omotola, 2010).

The institutional inability to conduct elections that meets the desired outcomes of the greater percentage of citizens, and the cumulative controversies that follow most election stimulated various concerns from stakeholders. Thus, agitations for the introduction of electronic devices were aimed at reducing or eliminating those problematic areas of the democratic phase.

The use of electronic devices in the political processes is the effect or benefits derivable from the deployment of, “ all such devices, such as Computer hardware and software programmes, digital

tools, Electronic apparatus as printers, scanners, bar code readers, Communications technologies like mobile phones and SMS applications; e-voting systems including specialized machines; the internet, the internet applications; sensors that are capable of enrolling biometric data of Citizens that are assigned or deployed for managing Elections, political party, voting during the election, participating in the electoral campaign, community affairs and other political activities”(EU-UNDP, 2017) “However, there are various phases in the electoral cycle where “some form of new devices can be used. Countries around the Globe, including some new democracies, deploy some forms of electronic voter registration machines, data capturing and identification devices, for the use of biometrics data of Citizens”. (Yinyeh and Gbolagade 2013).

Because of the above, there is no reservation as to whether INEC and political experts have made obvious reforms in recent times, hence the focus of this study is on the 2020 Governorship Election in Edo State.

The 2020 Governorship Election in Edo State became a reference point with the use of new electronic devices in the conduct of election in Nigeria. It is against this backdrop that the problem this study seeks to answer is what is the reliability and its sustainability of electronic devices in the conduct election in Nigeria?

1.3 Research Questions

The question raised to direct course of study are:

1. Do electronic devices play a role in contemporary conduct of elections?
2. Will the use of electronic devices instilled citizen’s confidence in the electoral process in Edo State?
3. Are there challenges and prospects of electronic devices in the conduct of elections?
4. Has electronic devices consolidated Nigeria’s democracy in the Fourth Republic?

1.4 Research Objectives

The objective of this research study is to examine INEC and use of electronic devices in the conduct of election in Nigeria: a focus on the 2020 governorship election in Edo State.

Academically, it intends to

1. To scrutinize the reliability of electronic devices in the conduct of Elections.
2. To chronicle the electronic devices deployed in the conduct of the 2020 Governorship Election in Edo State.
3. To evaluate the roles and challenges of electronic devices in the conduct of elections.
4. To contribute to the extant literature on the conduct of elections in Nigeria.
5. Proffer strategies for public private financing of electronic devices for conduct of elections in Nigeria.

1.5 Research Hypotheses

The following Hypotheses were drawn, due to the empirical nature of the study

1. H^1_0 : The deployment of electronic devices has not improved the conduct election in Edo State.
 H^1_r : The deployment of electronic devices has improved the conduct of election in Edo State.
2. H^2_0 : The challenges of deployment of electronic devices has not hindered its use in conduct of elections.

H^2_r : The challenges of deployment of electronic devices have hindered its use in the conduct of elections.

1.6 Significance of the Study

The findings of the study will be significant to the following institutions, (EMBs), stakeholders and political actors that sustainability of the usage of electronic devices in conduct of elections will improve the electoral process. In specific terms and as an expensive undertaking, it requires that the EMB apply the recommendations for the education of stakeholders and mobilization of the needed resources, which in most cases may be beyond the financial capacity of the Nation to bear alone.

The findings of the study will serve as a reference documents or guide for educating elections officials, political party managers and will enhance the citizens participation in the political process.

The significance of this research is to fill and model a veritable sustainability approach to the body of knowledge and extant literature, on how the private sector, corporate entities, which requires a stable, peaceful socio-economic, and political environment to operate and thrive, to contribute to meeting the cost of elections in Nigeria.

The research findings will be useful to other researchers in understanding the numerous challenges related to the deployment, adoption and adaptation of electronic devices in the conduct of elections, including the huge deficit of infrastructural support and expertise, cost, choice and effectiveness of electronic devices.

It is significant as it will help contribute to body of existing knowledge on the use of electronic devices in conducting election in Nigeria, by taking advantage of the opportunities offered by INEC innovations in the 2020 Governorship Election in Edo State.

Finally the study will be significant for further research, as it will open up space in addressing the problem of unstable internet penetration and the threat to the security of sensitive election data by cyber warfare and election interference through the use of electronic devices by hackers.

1.7 Scope of the Study

The scope and focus of this research study was limited to the use of electronic devices in the 2020 Governorship election in Edo State. While the thrust was to analyse the reliability and sustainability of use electronic device in future elections in Nigeria. To achieve this, the scope of the study was limited to three Local Government Areas of Edo State, namely; Ipkoba-Okha, Ovia LGA, South West LGA and Uhumwonde LGA respectively.

1.8 Limitation of the Study

The research study of this nature has its limitations; encountered some challenges administering the structured questionnaires in eliciting the views of some uncooperative respondents as it concerns the use of electronic devices in the conduct of election in Edo State. In the course of the

study other impediments were encountered such as Time constraints, financial constraints, logistics and lack of relevant information concerning electronic devices in the conduct of election from some respondents.

1.9 Definition of Terms

Edo State: Edo State is one of the 36 states of Nigeria, located in the southern region of the country. Edo State is a diverse state that is predominantly inhabited by the Edo peoples, including the Edo (or Bini), Esan, Oke, Owan and Afemai peoples.

Governorship Election

Election held every four years to elect the Governor of the State, who govern and manage in an executive cadre of the State.

Electronic Devices

Electronic devices include devices such as computer hardware and software programmes; electronic equipment, computers, printers, scanners, bar code readers; communications devices like mobile phones SMS applications; e-voting systems, including specialized voting machines; the internet and internet applications; sensors capable of enrolling biometric data of Citizens, Devices applied in monitoring of political parties' activities etc.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

In this chapter the researcher specifically focused on the secondary data of related literature such as books, journals, published articles and from the internet ‘sources etc. on electronic devices in the conduct of elections and the arguments around it.

In specifics the chapter discusses the nuances, concepts around the use of electronic devices in the conduct of elections globally, in Nigeria with focus on the 2020 governorship election in Edo State, the challenges, reliability, sustainability arguments in Nigeria and the theoretical framework.

2.1. Overview on the Concept of Electronic devices

Electronic devices encompass any devices employed in the conduct of elections these includes; computer hardware and software programmes; electronic equipment such as computers, printers, scanners, bar code readers; communications devices such as mobile phones and SMS applications; e-voting systems, including specialized voting machines; the internet and internet applications; sensors capable of enrolling biometric data of citizens, technology applied in monitoring political parties’ activities, etc. (EU-UNDP; Ace project2017)

The concept of electronic devices in the conduct of elections, have continues to receive attention from EMBs as there is a growing need for more efficient and transparent electoral outcomes, due to the increase in the sophistication of electoral cycles. The need to respond to popular movements and demands for change, as evident, for example in West Africa and sub-Sahara Africa. Especially In the third wave of democratization, many countries are going through crucial transitions, and elections are the bedrock of these transitions.

According to Leterme (2014) “The introduction of electronic devices in the conduct of elections is not new, but what is relatively new is the debate on the reliability of open-source technology (OST). One of the reasons for the increased debate on the issue is the demand for full transparency throughout the different phases of the electoral process. It is believed that the use of OST in implementing elections will increase transparency and therefore increase the level of trust in the results of those elections.”

History has it, that electronic devices has evolved, EMBs around the world have integrated electronic-based devices solutions to strengthen citizen participation through more repeated, reliable, transparent and secured voting. The first voting machine, which had a mechanical lever, was patented in 1892 by Jacob H. Myers Rochester. (New York times 2015).

This device, was later renamed Mayers box, it was meant to speed up the vote count and reduce the possibility of a counting errors. The first county to process votes this way was Lockport, in NewYork, in 1895.

According to (AIS publication 2008) In 1930, the use of punch cards was introduced, it is a mechanism where votes are recorded on a card using a small device, the size of a hole punch. Voters make holes on the cards to mark their choices with the device supplied by the poll station workers. The two most used cards were the votomatic and the data vote systems. The use of this system generated controversy in 2000 during the Presidential Elections between George W. Bush and Al Gore in the state of Florida.

Optical scanners. the first optical scanner voting system was used in 1970. Scanners were used to read the paper ballots marked by votes and tally results. Today, the system is used in countries like the Philippines, Russia, the United States, Canada and Mongolia.

Also in 1991, electronic voting. Electronic voting machines directly record the voter's choices through different interfaces. In some countries, touch-screen machines are used while others employ machines with number pads. Belgium, India and Brazil are among the pioneers of this technology. To add transparency to the election, some machines include a printer that generates voting vouchers and logs for the different stages of the process. Venezuela was the first country worldwide to use machines that printed vouchers during a national election.

Ever since Internet use became popular in the '90s, election commissions have looked for ways to harness the benefits it offers. However, concerns regarding its security, transparency, privacy and cost have worked as barriers to its implementation.

In 2005, Estonia became the first country to conduct a national election in which citizens had the option to vote online. Since then, it has conducted eight (8) elections with great success. With just

a computer, a smartcard reader, an identity card and a pin-number, citizens can vote from any corner of the planet (Smartmatic Foundation).

The use of electronic devices in elections is increasing around the world, and a number of growing parallel myths and misconceptions surrounding its use. These include concerns that electronic devices provide little transparency and is difficult to understand, given the perceived complexity of many technologies.

Zuckerman (1925) “opined that the voting machine does require an act of faith on the part of the voter in a mechanical contrivance whose workings he cannot see. No more so, however, than is required in the case of the automobile in which he drives up to the polls. Indeed, he has even less assurance that the paper ballot will be counted as he intended; or see his vote recorded, nor does anyone else’. In nation-states that follow democratic principles, elections are a celebration of democracy and considered the backbone of a democratic process that should ideally be trusted by everyone not just for a select few.”

Therefore, it is important, that when electronic devices are deployed in the conduct of elections, that all relevant stakeholders such as the electorates, political parties, election officials and Citizens, accomplish enough level of trust in the electoral outcomes.

Elections as an expression of local and national identity are unique when compared with other Technological projects, as they come with time deadlines, especially in terms of the electoral cycle activities and the declaration of final results. Which is usually guided by-elections calendar and stipulated in law which cannot be extended. This makes the introduction of electronic devices in the conduct of elections particularly difficult.

There are also other external challenges for use of electronic devices in the conduct of election, such that elections are recurring events that take place every three to four years, by which time the underlying devices (hardware and software) might have been updated to newer versions or rendered obsolete.

In either case, this will lead to changes to the election software that must be executed, tested and audited. These arguments prompted the discussion of whether electronic devices are a better model for the conduct of elections.

Depending on the devices, each can or may be broadly categorised as Low-level technology: largely data processing, transferring from paper to computer). Medium-level technology: e.g. paper + Optimal Mark Recognition (OMR); digital cameras to capture voter photographs, barcode scanning, etc.).

High-level technology: e.g., laptops at registration or voting sites, direct data entry; biometric capture sensors and enrolment; fingerprint identification systems; geographic information systems; drones; etc.). EMBs, in consultation with relevant stakeholders, must then decide which level to adopt, that is appropriate to the context and realities where any would be deployed.

Ayoade (1998). “African fledgling democracies have had persistent difficulties in conducting free, fair, credible, and transparent elections. Most are marred by gross irregularities, electoral fraud, violence, and inconclusive ballots”

This is why most countries fervently desire to key into modern technological systems in the conduct of elections, mainly to strengthen the quality of the electoral process. ”Deployment of Biometric identification systems are now widespread for voter’s registration in many of the world’s low- and middle-income countries. African states such as Ghana, Mali, Kenya, Cameroon, Sierra Leone, Mozambique, Zambia, Malawi, Nigeria, Rwanda, Senegal, and Mauritania have all enrolled – with varying degrees of success (Dantani et al 2017).

The supports that electronic devices options such as electronic voting machines, polling station webcams, and biometric identification equipment offer the promise of rapid, accurate, and seemingly tamper-proof innovations that are expected to reduce fraud in the processes of registration, voting, or vote count aggregation. (Golden, Kramon, and Ofofu 2014).

Nigeria, from the era of the Federal Electoral Commission (FEDECO) to the National Electoral Commission (NEC) and now the Independent National Electoral Commission (INEC), has explored various voting devices peculiar to both the open and secret ballot systems.

During Ibrahim Babangida’s transition to democracy open ballot system was seen as making voters susceptible to the prying eyes of political actors who could easily determine electorates’ choice of candidates by who they queue behind during an election exercise. Hence, the secret ballot.

The evolution of technology in Election has enhanced the country's democratic process against electoral malpractices, which have prompted the upgrade from Nigeria's outdated legacy voting system of inaccurate paper records to Electronic Voting System (EVS) and Electronic Voters Register (EVR) that has minimised the inconsistencies in the electoral outcomes.

The adoption of electronic devices in Nigeria has gone through stages in the conduct of elections, Most remarkable are the; Optical Magnetic Recognition, Temporary Voters' Card (TVC) (2003), Direct Data Capture (DDC) Machines, Temporary Voters card TVC (2007), Direct Data Capture (DDC) and the Smart Card Reader (SCRs), Permanent Voters' Cards (PVC) s electronic mail used to transmit results from LGs and State too) Abuja HQ (2015). DDC. SCRs. PVCs. Z-file in (2020). Igbanoi (2020)

The Nigerian Government acknowledges that Controversies over highly rigged elections have been the forerunner to political violence and instability in Nigeria. The conduct of credible elections has always been a problem which have continues to threaten the very survival of the country and questions the relevance of democracy" (Agbu, 2016).

EMBs should see the use of electronic devices in the conduct of elections as a facilitator, rather than a "magic bullet" for the delivery of transparent and credible elections by the adaptation of less complex, appropriate, cost-effective and sustainable devices. The use of such electronic devices and applications should be supported by relevant legal framework to protect against breaches or Black hackers and accompanied by appropriate training of election officials including effective Citizen's education to build trust, confidence and ownership by all stakeholders.

The computation, tabulation and transmission of results can also be done with electronic devices. There is also the possibility of these devices failing to support the process of elections and recruitment of ad-hoc staff, coding sensitive materials and mapping of polling stations and delineation of Constituencies.

Corroborating the above, the former Chairman of Nigeria's Election Management Body- the Independent National Electoral Commission (INEC) asserts that "a series of badly conducted elections could create perpetual political instability and easily reverse the gains of democratization... it can be argued that the consequences of badly conducted elections and poorly

managed electoral processes are major contributing factors to military interregnum in Nigeria's political history". (Jega, 2015:2).

The foregoing analysis, domestic observers described Nigeria's 2007 general election as "a charade". Such was the prevalence of malfeasance and rigging. (INEC), credibility bolstered under the leadership of Such that Technology played a crucial role in ensuring that the elections offered the contingent of change, rather than merely substantiating the status quo. (Guardian New 2007)

There were reports of election results manipulation, staff irregularities and conducts that played out and the outright rigging, ballot boxes snatching, and diversion of materials for election, vote-buying and other fraudulent practices. This largely created an atmosphere of political apathy among the people thereby limiting the level of citizens' participation in the process.

Since the inception of the current democratic dispensation in Nigeria in 1999 (Fourth Republic), the political processes have been marred with violence and electoral irregularities (Ojo, 2014). In the case of the 2016 governorship election in Edo State, for example, even though the process was quite peaceful, just like every other election conducted in Nigeria, some level of manipulation, human errors and irregularities still marred some parts of the whole process.

Nigeria's democratic development have been echoed elsewhere in the region. In 2016 election, Ghanaians denied John Dramani Mahama a second term, voting out a sitting president for the first time. The same way, voters in Gambia brought an unexpected end to President Yahya Jammeh's two decades in power. Behind these changes were electoral management bodies with remarkably different approaches to information technology, but an understanding of the need to entrench institutional credibility". Hitchen (2017)

In Ghana, electronic devices took "centre stage". The Electoral Commission of Ghana (ECG) displayed the readiness to engage citizens on social media platforms ahead of and during the vote, and the electronic transmission of results, bolstered transparency and accountability. These steps may not have been possible had the ECG not invested in devices aimed at restoring its credibility following a disputed vote in 2012. The opposition New Patriotic Party petitioned Ghana's Supreme Court to overturn the results, leading to the disclosure of an array of voting irregularities.

Although, after eight months of deliberation, the judges reached the verdict that the mistakes were insufficient to alter the outcome of the election, their 588-page judgment set out an agenda for reform. A new and accurate voter register was identified as a key priority for the ECG.” Ibeanu (2017).

According to, Jega, (2015) who introduced the biometric voting technology in Nigeria, has this to say: “We have made rigging impossible for those (electoral fraudsters) as there is no way the total number of votes cast at the polling unit could exceed the number of accredited persons. As such discrepancy in figures will be easily spotted. With this technology any corrupt electoral officer will find difficult to connive with any politician to pad-up results.

The card reader device helps to address all those irregularities, ranging from the accreditation of voters at all the polling units. The data stored in both the card readers and the result sheets taken to the ward levels would be retrieved once there is evidence of tampering. We believe that this is an added value to our process, it is something that we have not been able to do in the past”. (Jega, cited in Nnochiri 2015)

Innovations in science and technology on one hand and cutting-edge research in Information Communication Technology (ICT) has been accompanied by tremendous changes in the dissemination of information and social interaction whose impacts have been felt by all social institutions: political, social, judicial, economic, familial, military and cultural.

The speed of delivering messages and information instantaneously to masses of people in any part of the world between computers and smartphones connected by internet service has revolutionized the traditional means of communication in both developing and developed countries. The purpose of revolution in the political dimension is a change in the existing order.

It is different from reform in terms of profound changes in the system. The change brought by revolution is sudden and not gradual (Das & Choudhury 2002). This is akin to the development and innovation in science and technology; the internet, in particular. The invention of the internet has forced many means of communication and interaction to become obsolete. It has helped in unifying the world by making the democratic system of government the only system accepted in the international community. In this sense, globalization is not only the internationalization of

capital and capitalism but also the penetration of global institutions and processes into all parts of the world (Schwartz and Lawson (2005).

Democratic principles in the modern world, however, presumes regular elections in which the rights of citizenship include, equal participation and collective influence over the composition of the government. For individuals, casting a ballot is, by far, the most common act of citizenship in any democracy (Scholzman & Brady 1995).

As important as elections, some traumatic factors shape the behavior of voters before and during elections. The invention of the internet and rising globalization (which has transformed the world into a self-contained village) has had a profound influence over the outcome of elections in the twenty-first century in some democratic societies while it has not made any appreciable impact in others despite the twenty-first century being inundated by myriads of scientific breakthroughs and compelling changes. Elections are not the only barometer for measuring democracy.

Based on the aforementioned, the 2010 election in the United Kingdom was ascribed as the internet election: the social media election with much concern on how campaigners, commentators and voters would react to groundbreaking digital campaigns elsewhere, notably in the United States (Newman 2010).

From New electronic devices such as Twitter to Facebook, through viral crowd sourced advertisements, sentiment tracking and internet polling, electronic devices appeared to offer political parties and mainstream media organizations powerful new options to engage voters and audiences.

2.2 Nexus between Electronic devices and Conduct of Elections

Innovations on use electronic devices to strengthen the democratic processes first emerged in the USA in the early 1970s. The driving force was the increasing concern with the ‘health’ of the American political system due to the declining rates of political participation (principally voting) and high levels of cynicism and civic distrust.

Consequently, most of the experimental phases of the electronic devices in the American democratic process and the subsequent analysis of its potential were heavily dependent upon features of American political history and culture which do not necessarily translate into other

democracies. Nevertheless, more recent European interest in the subject began to redress this imbalance.

According to Abramson (1988), the debates of electronic democracy generally concentrate upon three broad conceptions of democracy: direct or plebiscitary, representative and communitarian. Each understanding of democracy argues for a different design, use and regulation of new electronic devices.

An understanding of this fact is fundamental when evaluating the work of other authors, as Arterton put it, electronic democracy projects have to a large degree been shaped by a lot conception. New electronic devices pose both opportunities and threats for democracy. On the one hand, ICTs offer an information-rich society where citizens have access to a wide range of information from a variety of sources in which every issue is extensively debated amongst citizens and policymakers through interactive media and one in which participation in the electoral process is greatly increased.

On the other hand, the use of electronic devices is also threatened to undermine democracy by escalating existing biases in the distribution of knowledge and information, by breaking discourse between the ever-increasing differentiated policy areas, and by reducing participation to distanced and marginalized voters that occur as ‘knee-jerk’ reactions to a limited number of ‘sound bite’ options. New electronic devices, therefore, have ambiguous but profound consequences for democracy, both now and in the future.

Before analyzing the significance of the specific role of electronic devices models in the conduct of election, however, it is necessary to outline the devices that are of interest and their general relationships to the conduct of election. One of the most comprehensive attempts to define the devices that are important to democratic politics has been that developed by Abramson et al.

Given the pace of advancement in electronic devices, any attempt to limit its scope without reference to the valuable product of their work and their identification of six properties that characterize new ICTs, which make them especially relevant to political activity.

Electronic Democracy expanded all previous limits on the volume of information that can be exchanged. They make it possible to exchange information without regard, for all practical

purposes, to real-time and space. They increase the control the consumers have over what messages are received and when. They increase the control senders have over which audiences receive which messages. They decentralize control over mass communication. They bring two way or interactive capacities to television.

This identification of characteristics is helpful in that it both defines the broad range of technologies that can have an impact upon democracies, and indicates how those technologies may influence politics. In particular, it highlights the importance of telematics (fleet management is the integration and synthesis of computing with communication devices) and its ability to transform traditional democratic processes and the conduct of election.

According to Laudon (2016), he classified ICTs into three families: “data transformation devices such as the computer which serves as a tool for the collection, storage, manipulation and retrieval of very large sets of information, the mass-participation devices such as the traditional broadcast media (radio and television) which function to transmit information from one central source to thousands or millions of persons and the interactive electronic devices ‘which allow for horizontal communications flows among individuals and organized groups’”.

Examples of the latter include telephones, two-way cable and other interactive forms of television, and interactive computer networks which allow computers (and operators) to communicate. (The advent of the Internet can be seen as being one of the most important recent developments in the evolution of interactive electronic devices.)

The scope of different interactive devices to enhance political participation varies, what distinguishes them from earlier mass participation electronic devices is that information recipients are no longer passive, but can actively participate in, and control, the nature and flow of communications.

The most significant feature of Laudon’s work is his attempt to analyse the relationship between electronic devices, ‘modes of organization’ (who has access to the information potential and who controls its flow) and the models of democracy implicit within each.

He argues that each class of devices is characterized by a particular mode of organization which, in turn, implicitly leads to a particular model of democracy. Thus, data transformation devices are

typically organized around experts and lead to managerial (or technocratic) models of democracy in the case of conducting election.

Citizens' participation with electronic devices that encourages plebiscitary modes of organization and generally lead to political models that concentrate upon populism; inter-active devices are the most appropriate for organising sub-groups which eventually lead to implicitly pluralist models of democracy.

Laudon (1985) opined that "the important feature of this model is that when studying the political implications of electronic devices in a democracy it is the differences in access and control that lead to differences in 'who benefits and who loses influence, who participate in what decision, when and how. Given that all types of devices are present in most (Western) democracies, it is not only the existence of such devices but their relative influence on the policy process that is significant. Furthermore, different political cultures will develop distinctive balances between the types of electronic devices, and will exploit their democratic potential in very differing ways".

The use of electronic devices has permeated partially if not wholly every aspect of electoral process. Because, when deployed in the conduct of election and well designed, it makes election function better in terms of speed, reliability, efficiency, convenience, security, capabilities and most often than not in a preferred magnitude.

Obviously, if citizens can trust computers with their money and huge financial transactions, why not elections? In developing countries like Nigeria, where citizens often lack reliable means of identification documents, biometric devices would help to identify voters, thereby reducing or eliminating fraud in the form of multiple registration or voting. Electronic voting machines count votes faster and accurately.

The most challenging aspect of manual voting is that it leaves very weak record (audit trail), with a deficit of data. An election that deploys electronic devices in its conduct certainly will, produce multiple copies of every data both in electronic and paper-based records, thereby creating a very robust audit trail that can be verified. Which will give the political parties, the election officials, candidates, accredited election observers and even electorates the capability to have confidence that the results truly reflect the choice of the voters. These is a very strong argument for the nexus between electronic devices and the conduct of election.

According to Jega (2021), the nexus between electronic devices and the conduct of elections “is that the security of a paper-based, manual vote with a manual count is extremely low. Single copies of each vote make them easy to tamper with or destroy. The most vulnerable type of election is that which uses no electronic devices at any stage. Well-designed, special-purpose systems reduce the possibility of results tampering and eliminate fraud. Security is increased by 10–1,000 times, depending on the level of automation.”

While it is obvious that the principles of elections have remained the same, the adoption and adaptation of electronic devices in the conduct of elections has witnessed an upsurge in the last two decades in ECOWAS and SADC countries. Considering the growing use of electronic devices in Election worldwide,

2.2.1 Infrastructural Supports

Infrastructure generally means the set of interconnected structural elements that provide a framework support to an entire process of development. It is the tools of achieving an Objective or set of objectives and also includes the objectives. It is an important index for assessing a country, region or states and organization’s developments status.

It refers to the technical facilities that support a society, such as roads, internets, water supply, sewage, electrical national grids, telecommunications, etc., and can be defined as the physical components of interrelated systems providing commodities and services essential to enable, sustain, or enhance societal living conditions" (Fulmer, 2009).

Infrastructure is all basic but not limited to the physical and organizational structures needed for the operation of a society like industries, buildings, roads, bridges, health services, governance and so on. It is the enterprise or the products, services and facilities necessary for an economy to function” Sullivan and Sheffrin, (2003).

There are two types of infrastructure, “Hard and Soft" infrastructure. Hard refers to physical networks necessary for the functioning of a modern industrial nation, whereas “soft" infrastructure refers to all the institutions which are required to maintain the economic, health, and cultural and social standards of a country, such as the financial system, the education system, the health system,

the governance system, and judiciary system, as well as Electoral system and security” (Kumar, 2005).

Therefore, every facility that support the use of any level of electronic devices in the conduct of election in the three phases of the electoral cycle (pre-election, election-day and post-election activities) are referred to as infrastructural support in this research work. The Global call for Action called “Decade of Action” for the implementation of the 2030 Agenda for Sustainable Development, Science, electronic devices and innovation developed the strategies to break through some of the most complex challenges facing the world today.

Digitalization in the public sector provides opportunities to support the achievement of the 2030 Agenda and the Sustainable Development Goals (SDGs), to enhance the efficiency and effectiveness of public service delivery, to reach those left behind. Indeed, recent experience suggests that deploying e-government in support of good governance generally is essential for building effective, accountable and inclusive institutions at all levels, as called for in Goal 16, and for strengthening the implementation of Goal 17. To capitalize on the power of modern technologies, growing numbers of United Nations Member States are accelerating the digital transformation of governance and public administration. (NDI resources)

E-Government Development Index (**EGDI**) is an electronic devices data-driven analysis of key trends in e-government development. It also describes and analyses global trends in electronic and mobile service delivery and the distribution of online services based on country income levels and on the provision of services in specific sectors that are particularly important for sustainable development.

EGDI ranks the 193 United Nations Member States and places them in their relative position within four EGDI value groups (very high, high, middle and low) in the 2020 ranking, Nigeria was ranked 148.

The analysis focuses on the major factors contributing to EGDI levels, such as progress in online transactional services delivery, trends in the provision of mobile services, and regional-level transformations in e-government development. Linkages to the SDGs are highlighted, including those relating to key priorities such as Election, health, education, social protection, decent work, and justice for all.

The trends in e-government development are presented based on the assessment of values reflected in the EGDI, a normal composite index with three components: the Online Services Index (**OSI**), the Telecommunications Infrastructure Index (**TII**) and the Human Capacity Index (**HCI**). Each of the indices in on it own a composite measure that can be extracted and analyzed independently.

The composite value of each component index is structured to fall within the range of 0 to 1, and the overall EGDI is derived from taking the arithmetic average of the three-component indices. The biennial assessment of e-government development that is reflected in the EGDI allows the Member States to follow up on the Survey results and initiate improvements after each measurement.

The 2020 Survey reflects relative improvement in global trends in e-government development and the transitioning of many countries from lower to higher EGDI levels. 57 countries have very high EGDI values ranging from 0.75 to 1.00, in comparison with 40 countries in 2018 a 43 per cent increase for this group. A total of 69 countries has high EGDI values of 0.50 to 0.75, and 59 countries are part of the middle EGDI group with values of between 0.25 and 0.50. Only eight countries have low EGDI values (0.00 to 0.25), which represents a 50 per cent reduction in the number of countries in this category in 2018.

The global average EGDI value continues to rise, reaching 0.60 in 2020 in comparison with 0.55 in 2018. Average HCI and OSI values are slightly higher than or comparable to 2018 averages, while those for the TII have improved significantly. It is important to note that while small changes in the HCI and OSI could be attributed (at least to some extent) to the updated survey methodology, the magnitude of the improvement in the TII subcomponents suggests an increase in infrastructure investments globally (2020 UN e-government survey).

In the renewed vigor and readiness to conduct credible elections in 2023, the Independent National Electoral Commission (INEC) has insisted on electronic transmission of election results.

It also affirmed that 93 per cent of the Polling Units across the country have internet and Global System for Mobile Communication (GSM) facilities to cover the remaining seven per cent.

INEC revealed in its 10-year diverse pilot program it conducted since 2011 and the follow up discussions it held with the Nigerian Communications Commission (NCC) and the Mobile

Network Operators (MNOs) show that the national infrastructure has the capacity to support electronic transmission of results.

On the desirability position paper of electronic voting and transmission of results, signed by the INEC Chairman, Prof. Mahmood Yakubu, the EMB said it had developed adequate support structures and facilities to transmit election results electronically and that “electronic transmission of results will improve the quality of election management as the engagement with stakeholders shows that the Nigerian public supports the initiatives.” INEC website (2021)

And that if the choice was up to INEC, the commission prefers to transmit election results electronically if the necessary legal backing is provided,” because “the electronic transmission of election results is both desirable and doable”.

The commission argued that the controversies over the provision of Clause 52 (3) of the Electoral Bill 2021 concerning the electronic transmission of election results “have been marked by entrenched partisan fallacies, inadequate information, unsubstantiated fears, groundless conspiracy theories, and profound misconceptions”.

NEC based its position on a decade of its technical field experience and engagement with critical stakeholders, particularly with the Mobile Network Operators (MNOs) on electronic transmission of election results. And that the answer to the question of the desirability of electronic transmission of election results in Nigeria today would be summed up in three words – trust, efficiency, and safety.

The desire of Nigerians is that a progressive application of electronic devices to election management be adopted in the electoral processes as election stakeholders have advocated for more and more reduction in human intervention that could alter the wishes of voters in elections”.

INEC has continued to work tirelessly to introduce appropriate and safe electronic devices to electoral activities, adding that the most recent was the introduction of online pre-registration for the Continuous Voter Registration (CVR), while the health and safety of people must be paramount in all electoral activities, including elections.

In conclusion INEC said it relied on the “diverse pilot’s schemes conducted since 2011 that the country is ready for electronic transmission of results and the national ICT infrastructure is also adequate for the electronic transmission of results.

Over the years, INEC have a longstanding partnership with both MNOs and NCC in sending bulk SMS, providing short codes, assigning e-lines, as well as mapping networks for the use of Smart Card Readers, all of which have been invaluable to the work of the commission. This partnership extends to the discussion on electronic transmission of results.

In furtherance to this the two commissions established the INEC/NCC Joint Technical Committee on Electronic Transmission of Election Results, which was co-chaired by Mr Ubale Maska, the NCC Commissioner for Technical Services, and Dr Mustapha Lecky, an INEC National Electoral Commissioner. Punch newspaper (2021)

According to INEC, the Joint Technical Committee report (2021) included all the major MNOs. It further disclosed that the final report of the committee signed by the Co-Chairmen and presented August 9, 2018, had noted that mobile networks adequately covered 93 per cent of INEC Polling Units with the capacity to cover the outstanding seven per cent.

“The committee went on to allocate Polling Units to the four major mobile network operators – Airtel, Glo, 9Mobile and MTN – to transmit election results,” adding that a total cost implication of N395,123,000 was worked out for the services covering the cost of SIM, system configuration and integration, system support and data bundle with one-year validity.

Further technical recommendations by the committee, are the allocation of one terabyte (1TB) of data bucket per 10,000 SIMs per annum for the network operators and configuration of one Access Point Name (APN) and Virtual Private Network (VPN) “by all operators towards INEC platform to enhance security”. INEC committee report (2021)

The committee disclosed that the detailed work and recommendations concerning the major MNOs and the NCC as the regulator of telecommunications in Nigeria, utterly convinced INEC, that electronic transmission of election results was possible for future general election.

“INEC is expected to receive the legal backing for electronic transmission of election results with the Electoral Act amendment bill recently passed and awaiting presidential assent to commence implementation. (INEC Website)

22.2 Prospects of Electronic Devices in the Conduct of Election in Nigeria

The National Assembly (NASS), have at different time, altered the Constitution and Electoral Act, in order to improve and enhance the performance of INEC in the task of conducting national and State elections. The four alterations to the Constitution and four amendments of electoral Acts as well, in 22 years of this Fourth Republic which started in 1999 marked the beginning of prospect of Technology in Election.

They are 2001 Electoral Act, 2002 Electoral Act, 2006 Electoral Act and 2010 Electoral Act. The 2001 Electoral Act was short-lived, due to certain controversial clauses contained therein. One of such was the National Assembly's plan to make laws for the conduct of Local Government elections that was challenged by Attorney-General of Abia State, and was ruled in favour of Abia State by the Supreme Court, that National Assembly has no power to make laws for the conduct of LG elections.

The 2002 Electoral Act was then passed, and used for the conduct of 2003 General Election. That contained the section that try to order the sequence of election for INEC. This was also challenged by the Commission went and the court struck out that section in favour of INEC.

The correct thing to do is to ensure that the electoral bill is passed, so that the positive provisions of the bill especially on the card reader, strengthening of INEC, over voting and electronic transmission of results will be implemented in 2023 elections.

This gives legal backing for the use of electronic devices in the conduct of election otherwise referred to as legal framework. The term “legal framework for elections” generally refers to all legislation and rules relevant to elections of a given country. A legal framework for elections includes the applicable clauses or provisions in the constitution, the electoral laws or Acts and other Bye-laws that affect elections.

It also includes Independent National Electoral Commission (INEC) regulations in the case of Nigeria and other relevant instructions and regulations and code of conducts stipulated by the

Administering EMB. Therefore, legal framework is the structure of electoral processes consisting of the constitution, electoral laws, complementary regulations, instructions, directives and codes of conduct. Legal framework, guiding elections may vary from country to country. The legal framework determines the “rules of the game”. Establishing the framework for elections should be the vital concern to political parties, candidates and citizens alike. Democratic elections play fairly and peacefully the competition for those seeking to exercise political powers as representatives of the people.

It is in the interest of electoral contestants, political parties as well as the whole citizens to ensure that the rules for electoral competition, as well as the manner those rules are applied, genuinely to guarantee that democratic election takes place”. (NDI Resource).

Elections Legal Framework in Nigeria includes but not limited to the 1999 Constitution of the Federal Republic of Nigeria as amended; The Electoral Act 2010 as amended and the Regulations and Guidelines for the Conduct of Election including the Act establishing the institution.

As a result of the clamor for a reform of the Nigeria Electoral system and the need to address the shortcomings in line with the introduction of Technology in Election in Nigeria, the 2021 Electoral amendment Bill was recently passed transmitted by the National Assembly to President Muhammadu Buhari assent according to Section 58 (3) of Nigerian Constitution. The extant legal framework of the Election Administration in Nigeria were products of legislative interventions according to public outcry and part of the recommendations of the Electoral Committee set up by the Government.

As a living document that defines power relations, rights and obligations within a sovereign state, a constitution also serves as a basis for controlling state power and involving the people in the political process, and should clearly articulate the aspirations of all communities and individuals in society. It must directly go to the heart of engaging not only those contentious issues that shape politics and power, but also those that shape the larger society, and breed distrust, tolerance and violence.” (Ihonvbere 2000).

An examination of the legal and constitutional framework of Nigeria’s elections must, therefore, necessarily include a critical analysis of the nature of the Nigerian post-colonial state, how the

dominant elite appropriates power and the erosion of the rule of law, which subverts the enthronement of a stable democracy in the post-colonial” (Mbembe 2001).

Outside the Nigerian legal framework, some other instruments established are principles of political rights and freedoms relating to elections. These is international instruments contained in declarations, treaties, protocols and conventions adopted by the United Nations, African Union, Economic Community of the West African States and the Commonwealth’ (ECOWAS)

2.2.3. Cybersecurity

International treaty and Legal instruments that address digital technologies are highly relevant although they do not deal specifically with elections. For example, the Convention on Cybercrime of the Council of Europe (Budapest Convention) that is a guideline for any country developing comprehensive national legislation against cybercrime as well as a framework for international between states that are parties to this treaty.

The Convention on Cybercrime criminalizes several types of conduct, namely would-be-crimes directed at elections. Its procedural powers and mutual legal assistance provisions are relevant when investigating and proceeding against election interference.

According to paggio (2018). There are several established methodologies on the selection and implementation of security controls for electronic devices processes. However, it is a common understanding that the identification of relevant assets and threats at least on an abstract level is a prerequisite. This particularly applies to election processes, as the threat landscape is not necessarily standard in its integrated and fast-moving nature.

Table 2.1 Cybersecurity Phases, Indicators and Threats

Phases	Indicators	Threats
Setup	Party/candidate registration	Tampering with registrations, DoS or overload of party/campaign registration, causing them to miss the deadline; fabricated signatures Setup from sponsor

Setup	Electoral Register	identity fraud during voter registration; Deleting or tampering with voter data; DoS or overload of voter registration system, suppressing voters.
Campaign	Campaign Devices	Hacking candidate laptops or email accounts; Hacking campaign websites (defacement, DoS); Misconfiguration of a website; Leak of confidential information.
All phases	INEC Devices	Hacking/misconfiguration of government servers, communication Networks, or endpoints; Hacking government websites, spreading misinformation on the election process, registered parties/candidates, or results; DoS or overload of government websites.
Voting	Electronic Devices	tampering or DoS of voting and/or vote confidentiality during or after the elections; Software bug altering election results; • tampering with logs/journals; Breach of voter privacy during the casting of votes; Tampering, DoS, or overload of the systems used for counting or aggregating results; Tampering or DoS of communication links used to transfer (interim) results; Tampering with supply chain involved in the movement or transfer of data.
Campaign, public communication	Media/press	hacking of internal systems used by media or press; Tampering, DoS, or overload of media communication links; Defacement, DoS, or overload of websites or other systems used for publication of the results.

The development practices to consider in ensuring the cyber security of electronic devices, regardless of what part of the election process the particular devices is used in, involves a unified approach to data integrity and possibly the use of (cryptography) across the platforms and solutions used. The key parts of code or information can be sealed before the beginning of the election process until its end, as far as possible. the alternative, include integrity checks to safeguard against logic bombs or alterations in the code. A back-up of all data regularly with increased frequency of back-ups in the run up to an election.

Compliance with cyber security requirements and standards as applicable to election technology, reference to standards or technical specifications and the specific protection profile;

Evaluation criteria and evaluation methods, as well as the intended level of assurance (basic, substantial and/or high), documentation and procedural controls. With secure development, supply chain management and procurement;

Support for the integrity/confidentiality of votes and the availability of relevant systems in line with relevant national or international standards, ownership model of the solutions.

Communication channels and responsible disclosure mechanisms with different parts of the supply chain should be part of the initial procurement, negotiations and contract award;

Vendor responsibility including the legal provisions for it should be part of any electronic device's procurement process from the start.

Development and Supply Chain Assurance Cyber security certification plays an important role in the necessary trust and security of electronic devices.

However, it should be understood that certification and accreditation are not security warranties but rather assurance that the solution meets specific criteria in terms of functionality and/or security. NIS Cooperation Group (2018)

Data protection instruments, namely the Council of Europe Modernized Convention for the protection of individuals concerning automatic processing of personal data (Convention 108) and the EU reference instrument, Regulation (EU) 2016/679, General Data Protection Regulation

(GDPR) 9 are relevant. The Council of Europe Convention 108 and the GDPR were developed in parallel and are consistent with each other. A European Commission guidance document explains the application of the GDPR in an electoral context.

However, most data used in elections are qualified data whose processing can only be allowed if appropriate safeguards are enshrined in law. This means that election data protection should be covered in election-specific regulations which are more stringent than data protection instruments” Maurer (2020).

Supranational (EU) legislation on cybersecurity is emerging. As Adopted by the European Parliament in July 2016, the Directive on the security of network and information systems (NIS Directive) is the first piece of EU-wide legislation on cybersecurity. It provides legal procedures to improve the overall outlook of cybersecurity in the EU by requiring the Member States to be appropriately equipped, by setting up a cooperation group to support and facilitate strategic cooperation on cybersecurity incidents and information gathering about risks, and promoting a culture of security across sectors that are vital for the economy and society.

Following the Directive, an EU Cybersecurity Act was adopted in 2019 which introduces, for the first time, an EU-wide cybersecurity certification framework for ICT products, services, and processes.

Quite recently (especially since 2016), concern has been placed on the cybersecurity of the Technology used in elections and the rigid application of international instruments on data protection or cybersecurity to them. The European Commission has developed guideline on the application of the European Union data protection law, General Data Protection Regulation (GDPR) in the electoral context.

Action at the EU level on the cybersecurity of election technology resulted in a Compendium on Cyber Security on Election Technology which aims at sharing experiences and providing guidelines as well as an overview of tools, techniques, and protocols to detect, prevent, and mitigate cyber threats.

The Council of Europe Cybercrime Convention Committee has produced guidance on the application of the Budapest Convention to election interference employing computer systems.

Other documents of interest provide an overview of how different countries deal with such issues and identify good practices (International Institute for Democracy and Electoral Assistance/IDEA, Cybersecurity in Elections and Models of Interagency Collaboration, 2019).

One of the most debated emerging issues in the broader domain of ICTs is cybersecurity where relentless weaponisation of digital technologies (cyber-attacks). Which is most prevalent around the globe to undermine electoral outcomes. If technologies are not resilient to breaches, then the integrity of the Election is under serious threat.

Online media sites that electorates engage need to be protected such that information from these can be trusted, and accurately inform voters' choices and conclusions. Hence, a herculean task before an EMB remains on how to ensure that all of the technology and processes deployed in an election cycle are protected

Data security of candidates, voters, political parties, and Sensitive information data provided for use to EMBs that is being accessible to unauthorized sources such as hacking of voters, databases, intrusion into party or candidate's websites etc. (Recall the hacking of Democratic Party's website in the USA and Clinton's emails in 2016).

These malicious online actors are it Local, regional and transnational, in the context of elections are a serious threat in the flow of information (Think of Russia's and China's role in the United State etc.).

Data mining for targeted campaigning and advertising (dark-ads) to influence election outcomes. (Consider Facebook's breaches of its user's data during the 2016 elections in the USA; Cambridge's Analytical move to undermine Nigerian elections, etc.).

Data or equipment jamming: where there is a deliberate attempt to disrupt the smooth operations of technological devices or interfere with voter details and their ability to vote on election days. (Consider the failure of Smart Card Readers at polling stations in Nigeria in recent elections).

Securing e-Processes Experts agree that there is a pertinent need for coherent legal policies or frameworks that guide infrastructure and data security matters in elections.

Global best practices for protecting technological infrastructure and data can be found in documents of the Centre for Internet Security (CIS, 2018); the EU's (2018) Compendium on Cybersecurity of Election Technology; the UN's General Assembly Guidelines; National Democratic Institute (NDI); etc.

However, these diversely formulated guidelines have no integrated format for implementation, including in terms of contextual applications. Thus, the Council of Europe (2017) recommends that EMBs must assume specific responsibility for securing electronic voting systems in their contexts.

The existing Cybercrime Act of 2015 speaks to the prohibition of the activities of perpetrators of cybercrime, promotion of Cybersecurity, and ensuring that critical national infrastructure on information is protected. While this is commendable, securing data and infrastructure associated with elections present both long-standing and novel complexities to EMBs. Consequently, Nigeria requires a robust and comprehensive legal framework devoted to the protection of electronic processes directly linked to elections.

This must be continually updated to meet up with changing patterns of malicious actors, fraud, etc. while being measured against global best practices. This, however, can only be achieved through the political will, commitment, and honesty of relevant stakeholders to want to protect the integrity of electronic election systems, both presently and in the future.

2.2.4 Use of Electronic Devices in other Countries with Reference to India

Countries capability requires Medium and long-term trends in the use of electronic devices in the conduct of election, with due consideration given to the efficiency, sustainability, maintenance and overall impact on the electoral process over time.

The introduction of electronic devices has greatly shaped the development of electoral processes globally. For instance, the planning of electoral phases has been made more sophisticated, in terms of the cost of organizing elections. The award of contracts to international firms for electronic devices, tools, equipment, hard and soft wares are now part of the new reality.

A comparative study on the use of electronic devices in elections in many Countries' electoral cycles, and their experience in terms of efficiency, sustainability, maintenance and the impact on

the electoral process reveal both positive and negative impacts. This research work X-ray some Countries capability and experiences to identify the fundamental principles to be considered. Ensuring the integrity of the electoral process in promoting confidence and trust. In relations with the efficient and sustainable adoption and adaptation of electronic devices in the conduct of elections in Nigeria.

According to Parreno (2017), “The Philippines has used electronic devices in elections for the past 20 years and the first fully automated national elections took place in 2010. A country of over 7,000 islands and 54 million voters this poses major challenges for the Commission for Elections (COMELEC).

The significance of establishing a rigorous legal framework were evidence based on the introduction of new electronic devices into the electoral process. COMELEC has had to deal with several legal challenges in recent years. This led the country to establish an Independent Technology Assessment Committee to get buy-in from and gain the confidence of all stakeholders”.

However, introduction of electronic devices was adapted to the level of development of the country and could not resolve the deficit of confidence in the electoral system among or between stakeholders. For instance, even though it is often perceived as a silver bullet, biometric devices are costly and cannot resolve all the problems related to the conduct of election

Brazil has used various electronic devices at different stages of the electoral process for nearly 20 years. An election in Brazil involves slightly more than 144 million eligible voters, nearly 500,000 candidates and 2.4 million electoral officials. The slow manual process and the high number of mistakes linked to human intervention are among the reasons why the country turned to electronic devices. This automation, which has included the introduction of electronic voting machines and biometrics to identify voters, was achieved progressively. To plan for the introduction of electronic devices, the Electoral Commission conducted a cost-benefit analysis and choose a solution developed in Brazil. The use of a tailor-made, internally developed solution allowed the EMB to safeguard against electoral fraud. The software and devices developed were adapted to the specific legislative and contextual needs of the country. Despite all these advantages, challenges remain

regarding the confidence of the public in the technologies used during elections, especially in terms of the security of the process” De Sa Alves (2017).

According to Sangaré (2017),” In Mali, the challenges related to establishing a voter register were resolved through the implementation of a reliable civil registration system. In 2003, the Government of Mali initiated a modernization of the civil registration database through the implementation of a unique identification: the Numéro d’Identification Nationale (NINA) card. This became a voter ID card in 2013, following the development of a biometric file that contained a photograph and the digitalized fingerprints of all voters. Despite certain weaknesses about security, deterioration and even data capture errors, the NINA card helped to enhance the credibility of elections. Biometric data contributed to an improvement in several phases of the electoral process, most notably the eradication of duplicates from the register and compliance with the maximum number of (500) voters per polling station”

Improvements are planned for the next electoral cycle, which illustrates the need to assess the systems introduced to make necessary adjustments. Cabo Verde introduced legislative provisions on the use of electronic devices, especially concerning voter registration, the conduct of elections and the transmission of election results, while also conducting civic education programs for its citizens. In 2008, following criticism of the quality of the computerized voter register, the National Electoral Commission began work on the biometric registration of voters and the creation of a national database.

This considerably reduced mistakes in the identification of voters and helped to lend credibility to the voter register. However, the high cost of maintaining the machines and updating the software remains a challenge. Since 1999, legislation has provided for the use of electronic voting and the biometric identification of voters at polling stations, but these modalities have not yet been introduced. The basic requirements for the successful introduction of these electronic devices, such as consensus-building among stakeholders, have not yet been met.

Decision-making on the adoption of new electronic devices in the electoral process requires expert Feasibility study, needs and security assessments. The evaluation of other factors in making an informed decision is very apt.

Morin (2017). Argued that “In some countries, electronic devices were introduced without conducting a feasibility study, which sometimes led to reduced confidence in the electoral process. The polling place process enhancement project in Canada is a case that illustrates the importance of each step in the decision-making process.

The first step was to analyze and assess the efficiency of the existing voting system. This analysis showed perceived inefficiencies in the polling stations, with voters unhappy about long waiting times to cast their ballots and poll workers complaining about difficult working conditions”.

The next step was to identify needs and the objectives to be achieved through any new solution, before assessing the efficiency of the options under consideration. This analysis aimed to ensure that the planned electronic devices option would be the best solution for reducing waiting times and improving the working conditions of polling staff.

Consulting stakeholders is also an important step in the decision-making process to obtain buy-in. In Canada, parliament was consulted to seek its approval and allow it to make adaptations where necessary Karine, (2017).

In 2014, Namibia was the first African country to conduct elections using electronic voting device. The introduction of electronic voting was preceded both by a feasibility study and a field visit to India to assess their experience of electronic voting. Furthermore, different consultations conducted over 10 years facilitated the buy-in from and enhanced the confidence of stakeholder.

Indeed, without stakeholders’ confidence in the electronic devices, automation of the voting process would pose additional challenges for the EMB. In addition, investing time in testing prototypes can prove useful when the time comes to make proposals for legislation. These tests allow for adjustments to be made before final legislation is submitted.

Throughout this process, the proper training of electoral officials, extensive programs of voter education and contingency planning were key requirements for the successful implementation of electronic voting. In Namibia, the use of a voter-verified paper audit trail (**VVPAT**) is currently under consideration to enable a full audit of election results” Freyer (2017).

The Canada experience illustrates that the electronic devices procurement process should be put in place once the initial research and feasibility studies have been conducted. The understanding

of electronic devices and software provided by vendors can significantly help EMBs improve the conduct of elections.

In newer democracies, however, there has been a proliferation of vendors offering electronic devices solutions for electoral processes. EMBs should be careful in identifying the challenges they are tackling and the improvements they are seeking to make to properly adapt the appropriate devices that will not jeopardise the intended outcomes.

Many factors such as legal framework, technical expertise, stakeholders' understanding need to be considered in the choice of electronic devices and vendors. In order not to compromise the independence, integrity, neutrality of EMBs and the expected outcomes.

The Electronic Voting Machines was developed in India by Indians which means (ownership) it is used to facilitate easy voting processes and counting. While the innovation of the machines is to save the cost of paper and printing etc. and also to get the result within three to four hours, thereby reducing a lot of manual exercises involved in conventional counting patterns.

The Electronics Corporation of India Limited (ECIL) and Bharat Electronics Corporation of India Limited (BEL), developed these machines to provide a full safeguard for ensuring secrecy of the ballot, against tampering, ensuring rapid poll processes and instant release of results.

The Indian Parliament amended the Representation of People Act, 1951, in March, and 1989, introduced Section 61 (A) in the said Act, which provided for the recording of votes by the voting machines in a manner as may be prescribed and adopted in every constituency by the Election Commission of India.

Pursuant to the above clause, the India Central parliament further amended the Conduct of Election Rules, 1961, by inserting a new Chapter, Chapter II [Rules 49(a) to 49(x)] for the facilitation of the use of Electronic Voting Machines.

The Commission at the commencement and adoption of the use of the Voting Machines made arrangements to ensure the availability of an adequate number of EVMs for the smooth conduct of elections and issued a set of instructions concerning the First Level Check of EVMs that will be used in Elections in the States.

The First Level Check of EVMs were usually done in the presence of representatives of political parties alongside randomization. EVMs are kept in the district storage center and will be randomized by the District Election Officer (DEO) in the presence of the representatives of the recognized political parties.

Before any Elections are carried out candidates or their agents/representatives are allowed to check and satisfy the functionality of the EVMs.

The EVMs are prepared for the poll in every constituency by the Returning Officer and the ballot unit officers, ballot papers are fitted to the EVMs, then the EVMs are again be randomized to decide the actual polling stations in which they will ultimately be used. The final Stage randomization are carried out under the watch of Observers, Candidates or their Election Agents.

In 2013, a new device called Voter Verifiable Paper Audit Trail (VVPAT) was added to the EVMs to restore voter's confidence. A printer is attached to the EVM and kept in the Voting Compartment which automatically prints the Serial. Numbers, Name and Symbol of the candidate's political party for whom a voter has voted. This printed slip remains displayed for 7 seconds under a transparent window and gets cut automatically and falls into a drop box which remains sealed.

Matdata (voter): Matdata App is used for Voters' facilitation of enrollment in Electoral Roll through EPIC Number or Name by downloading the app on his/her mobile phone. He or She can also locate Polling Station on Google Map and all nearby Polling Stations near the location of the citizen, which can be seen on the GPS enabled mobile.

Matdata (polling): Matdata App is used for Poll Day Monitoring like Poll events, reaching Parties, Polling Station Image, Votes Cast, Voters Images etc. This application has offline features in case of non-connectivity of a network. (Election Commission of India 2019)

All data captured offline is synchronized into the centralized server as soon as the person using the app enters into the coverage area. With this app, one can find out Voter Turnout (VT), gender-wise and age-wise. Improvement of quality of image in the roll can also be done through this app and one can get the recent colour photograph of the voter against old/bad quality photograph in the roll.

Mamadhan (redressal): This application enables the people or political parties to lodge their complaints on the platform. The mobile app enables people to submit complaints with photographs or videos on the common platform. SMS response is sent to complainant on receipt or lodgment of the complaint. Complainants can track the status and view online through the Android App.

Suvidha (convenience): As part of the election campaign, the political parties and candidates are required to obtain permissions for meetings, rallies, vehicles, loudspeakers, temporary party office, helipad and helicopter landing etc. The previous system for granting permission was based on traditional manual processing which involved obtaining consent from various authorities.

This was time consuming and nontransparent. In the earlier it was a Single Window System, there was no system for proper monitoring, which lead to complaints of delay and bias in granting of permissions.

This, at times, lead to allegations against the election-related officers. The ‘Suvidha’ software provided standard forms of applying for different permissions. It also allows for a checklist showing the mandatory and optional documents required for different permissions.

This made the task of the person applying and accepting the application simple and transparent. This also ensured that the chance of rejecting an application was minimal. At the time of applying the mobile number of the applicant is mandatorily collected and email is collected on an optional basis. As soon as the application was accepted an SMS acknowledgement is sent to the applicant giving the application number, date and time of receipt. The application number can be used to track the status on the website. All permission were mandated to be given within 24 hours.

ugam (easy): This application is used for the management of vehicles on election activities, right from the requisition of vehicles to its payment or release.

The app is used for the issuance of requisition letters for vehicles, capturing of vehicle details and address, phone number including bank details of Owner & Driver, generation of the logbook, online entry of payment, transfer of vehicles from one district to another district, generation of payment

Cvigil' app: This is be used by citizens for posting their complaints directly with photographs and videos can be uploaded. The app is in the public domain. It is being extensively used, helps a long way in increasing confidence, fairness and transparency of the election process.

Elecon: The Elecon application is used for creating a database of Police, Polling personnel and appointment letters. It is also for sending SMS regarding deputation or training, tagging of patrolling personnel, generation of application for postal ballot, formation of polling staff or police after randomization, for sending polling personnel and police force from one district to another district etc.

Sms poll monitoring: Is primarily used for information collection of various types through SMS from Presiding Officer to Sector Officer, the app is for tracking, collecting information regarding various poll events before Election- day to the end of the poll.

It is an 'Event-based management system from the time of commencement to the time of deposition of election material. It is also for monitoring Events of predetermined nature (e.g. Polling party dispatched, arrival etc.) or of non-predetermined nature (e.g. Incidents of violence). Information regarding all types of such events are received into the system by SMS and district-wise reports are auto-generated regarding every event on a timely basis.

E-counting: Use of online E-Counting software for uploading table-wise, candidate-wise votes polled from the counting hall are done. While from Android app on the mobile phone one can view the trend of counting of results. Electronic Tracking Software (ETS) is used for tracking the availability and movement of (EVMs).

Use of webcasting at polling stations: The emergence of Information Technology has touched all aspects of human activities and is playing a determining role in all major sectors. It has afforded an important role in transparency and efficiency in the conduct of election in India.

In this context, webcasting has been introduced for election-day monitoring. Webcasting is a process where the entire Election- day activities are captured as a video file, and streamed live, for viewing at selected locations. (Election Commission of India 2019)

None of the above (nota) options: In a landmark judgment for voters dated 27th September, 2013 in Writ Petition (C) No. 161 of 2004, the Supreme Court ruled that there should be a "None of the

Above” (NOTA) option on the ballot papers and EVMs. The Court mandated the Commission to implement it ‘either in a phased manner or at a time with the assistance of Government of India. That on the Balloting Unit, below the name of the last candidate, there will be a button for NOTA option so that electors who do not want to vote for any of the candidates can exercise their (NOTA) option.

Finally, the Commission must take all steps to educate voters and all other stakeholders and to train all field level officials including the polling staff about the NOTA option. Similarly, NOTA provision should also be there for the Postal Ballots. (Election Commission of India 2019).

2.2.5. INEC and Electronic Devices in 2020 Governorship Election in Edo State.

The introduction and deployment of INEC Result Viewing (**IRV**), is an effort to improve its deployment of technology in conducting elections, a new innovation that is to ensure that Nigerians view results from the various polling units in a timely manner, and the introduction of the **Zip** and **Z-file** for capturing polling units Form EC8A were remarkable developments by the Independent National Electoral Commission (INEC).

According to Guardian online (2020) “Since 1999 Fourth Republic return to democratic rule in Nigeria, hardly has any election held, be it general or an off-cycle poll, been adjudged to be free, fair and credible.

From the responses of the Edo State electorates, the Independent National Electoral Commission (INEC), the election observers, as well as civil society groups, the 2020 Edo gubernatorial election appears to have gone down in history as one Election that had some ingredients of fairness and credibility.

Barely 48 hours after the Edo 2020 Governorship Election was concluded, had positive comments resonated across the country, all pointing to the fact that the election was a huge improvement of the country’s electoral process, and a step in the right direction”.

According to kalu, (2020) the spokesperson of, the Coalition of Accredited Civil Society Domestic Observers (CACSDO) and the INEC’s accredited observers for Edo State governorship election, in its remarks at a press briefing in Benin City, “said the conduct of the election demonstrated that

the electoral process has improved in the country and the result of the election declared by the INEC reflects the wish of the people”.

The very much talked about efforts of the INEC, was as a result of the role technology played silently and the very critical key role in ensuring a credible and transparent election, especially at the contentious stage of collation of election results.

To the INEC Result Viewing (IRV) initiative, the real-time posting of election results, which entails the posting and uploading photographs of PDF versions of forms EC8A results at the polling units, EC8B all results at ward level (VP), EC60, 40H from polling units to the platform.

For a long time, elections’ results management has always been shrouded in secrecy, and the introduction of the IRV by the electoral body was a welcome development”.

In acknowledging the efforts of INEC, by the 2020 Edo State Governorship Elect, Mr Godwin Obaseki, in an interview on the News bulletin program of Channels Television, noted that INEC needs to embark on strategic Technological advancement, so that the country would for once put behind it the jinx of flawed elections.

The Coordinator of the Situation Room and coalition of Civil Society Organizations (CSOs) spoke at a press conference in Abuja, commended INEC’s trial of the portal where voters could view electoral unit results within a few hours of voting (Guardian Online 2020).

Ito do opined that “INEC is on the part of revolutionizing the entire results management regime in our elections with the introduction of the results viewing portal. In previous elections, INEC had always insisted that polling officials must use the form EC 60E to post polling unit results for the public to see. This was the practice before the results viewing portal was introduced. Introducing the portal has furthered to deepen the transparency of the Election results process; it addresses two key concerns in the results management process. They are Citizen’s access to polling units and collation centres at the ward level. YIAGA Africa (2020).

The Centre for Democracy and Development (CDD) West Africa chief also expressed his views that “using the Edo election as a baseline, INEC has considerably made conscious efforts to ensure

that election results are at the fingertips of Nigerians and all those interested in the nation's democratic process.

The only option to deliver a free, fair, and credible election lies in the use of technology, which will make the process seamless with little human manipulation interference. This should be given legal backing by the National Assembly amending relevant sections of the 1999 Constitution and the enactment of the Electoral Act.” (Centre for Democracy and Development: West Africa Fashola (2020) former governors of Lagos State, affirmed, “That the use of the Z-pad was the best thing that has happened to the electoral process in Nigeria thus far. We all should know that the process of uploading results is sequenced. So, once a result is uploaded, it queues on the portal and drops one after another” Guardian newspaper (2020) .

Electronic device is not full proof, we must naturally expect some delay especially when it involves networks and the strength of these networks is also dictated by other factors. In that regard, INEC should continue to improve on it. The 8th National Assembly made frantic efforts to enact amendments to the Constitution and have the electoral bill passed, now the current 9th assembly has recently passed the 2021 Electoral Bill and transmitted same to the president Mohammandu Buhari for accent.

The gap in knowledge that this study seek to fill is the reliability and sustainability of electronic devices in the conduct of elections in the electoral process in Nigeria.

2.2.6. Theoretical Framework

Theories are formulated by researchers to explain, predict and understand phenomena. In some cases, to challenge and add to the body of existing knowledge within the threshold of critical bounding assumptions. Therefore, the theoretical framework employed in this research is the diffusion of innovations theory, which explain the theory that supports and validate the research study.

What is certain in some recent bodies of knowledge is that introduction of electronic devices in the conduct of elections have brought about changes in the electoral process.

According to advocator of the Diffusion of Innovation (DOI) theory Rogers (1962), says there are four main interacting elements of the concept: innovation, communicate through certain channels,

over time and among members of a social system. Which helps to explain how, over time, an idea or initiatives gains momentum and diffuses (or spreads) through a specific population or social system. The end result of this diffusion is that people, as part of a political system, adopt a new idea, behavior, or concept. Adoption means for one to do something differently than what they had previously i.e., buy-in or use a new initiative, acquire and perform a new behavior, etc. The key to adoption is that the person must perceive the idea, behavior, or initiative as new or innovative. Adoption of a new idea, behavior, or innovation does not happen simultaneously in a political system; rather it is a process whereby some people are more apt to adopt the innovation than others.

The pattern a political system adopts an innovation, and how diffusion is accomplished, is dependent on awareness of the need for an innovation, decision to adopt (or reject) the innovation, initial use of the innovation to test it, and continued use of the innovation. There are five main factors that influence adoption of an innovation, and each of these factors is at play to a different extent.

1. Relative Advantage. The degree to which an innovation is seen as better than the idea, program, or idea it replaces.
2. Compatibility. How consistent the innovation is with the values, experiences, and needs of the potential adopters.
3. Complexity. How difficult the innovation is to understand and/or use.
4. Usability. The extent to which the innovation can be tested or experimented with before a commitment to adopt is made.
5. Observability. The extent to which the innovation provides tangible results.

There are several limitations of Diffusion of Innovation Theory, which include the following:

-Most of the evidence for this theory, including the adopter categories, more often than not don't originate from the public and it was not developed to explicitly apply to adoption of new behaviors.

-It does not foster a participatory approach to adoption of a public policies.

=It works better with adoption of behaviors rather than cessation or prevention of behaviors.

-It doesn't take into account an individual's resources or social support to adopt the new behavior or innovation.

This theory has been used successfully in many fields including communication, agriculture, public health, criminal justice, social work, and marketing. In public health, Diffusion of Innovation Theory is used to accelerate the adoption of important public health programs that typically aim to change the behavior of a social system. Singer (2019)

The research and practice paradigm known as the diffusion of innovations offers a ready set of concepts and approaches that can be used to explain receptivity to political policies and practices by individuals and organizations. Diffusion principles can also be operationalized to accelerate the rate of adoption and broaden the reach of political innovation.

This theory is most appropriate in explaining the nature of change in the conduct of election in Nigeria. Considering the many challenges faced by EMB (INEC) in conducting credible election and process outcomes, the use of electronic devices in the conduct of Election as an instrument of change is of mutual benefit to all stakeholders.

Finally, the reasons new electronic devices in the conduct of election in Edo State are cogently discussed argued, for clarity and understanding of the role electronic devices played, the 2020 Governorship Election in Edo State was reviewed, the Edo State Election.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter covers the methodology used to achieve the objectives of the study. It includes discussion on the research design, population of the study, sample size and sampling techniques, sources of data collection, instrument and method of data collection, the validity of the instrument, reliability of instrument with data analysis and finally the presentation techniques.

3.1 Research Design

Survey design was adopted, and questionnaire were used to collect opinions and people preferences about the issues raised in the questions. The choice of the survey design was as a result of its capacity to elicit inferences and gather data within a limited time. A descriptive survey was used to present the data collected. While the hypotheses were tested using the statistical chi-square tool.

3.2 Population of Study

The population of the study comprises three Local Government Areas namely; Ikpoba-Okha, Ovia South West and Uhunmwonde, with a population size of 631901 (According to National Population Census 2010). The targets population were men, women, boys and girls of voting age.

3.3 Sample Size and Sampling Techniques

The probability method of simple random sampling was applied to three Local Government Areas, Ikpoba-Okha, Ovia South West and Uhunmwonde to ensure representativeness and provide information on the role of electronic devices in the conduct of election from registered voters, of the three Local Government Areas Edo state.

The population of study was drawn from the ten (10) wards each of the three selected Local Government Areas of Edo State.

The sample size of this study was determined by the use of Taro Yamane’s technique. According to Yamane (1973) sample technique obtain a consideration of 95% confidence level with a tolerable 5% sample error level.

Table 3.A: Table Showing the Population Size Distribution of the Selected Three LGAs as derived from (NPC-2010)

Population of the Three LGAs		LGAs Randomly Selected	
Ikpoba-Okha	372, 080	Ikpoba-Okha	372, 080
Ovia South West	138,072	Ovia South west	138, 072
Uhunmwonde	121,749	Uhunmwonde	121, 749
Total	631901	631,901	

Data sourced From National Population Commission (2010)

The sample size of the study was drawn from the population study of 372,080 for Ikpoba-Okha LGA, 138,072 for Ovia South West LGA and 121749 for Uhunmwonde LGA respectively.

The Taro Yamane’s sample size computation technique is calculated thus;

$$n = \frac{N}{1 + N(e)^2}$$

Where

n= Sample size

N= population of study

e= Tolerable error of 5% i.e. 0.05

Ikpoba-Okha LGA:

$$= \frac{372,080}{1 + 372,080 (0.05)}$$

$$= \frac{372,080}{372,081 \times (0.0025)}$$

$$= \frac{930.2}{372081}$$

$$= \frac{930.2}{400}$$

Ovia South West LGA :

$$= \frac{138,072}{1 + 138072 (0.05)}$$

$$= \frac{138073 \times (0.0025)}{345.1}$$

$$= \frac{138073}{345.1}$$

$$= \frac{345.1}{400}$$

Uhunmwonde LGA:

$$\begin{aligned}
&= \frac{121749}{1 + 121749(0.05)} \\
&= \frac{121749}{121750 \times (0.0025)} \\
&= \frac{304.3}{400}
\end{aligned}$$

Table 3.A. 1. Table Showing the Population of Study Distribution of the Selected Three LGAs as derived from (NPC-2010), and the derived Sample Size of Each LGA.

Population of the Three LGAs	LGAs Randomly Selected	Sample Size
Ikpoba-Okha 372, 080	Ikpoba-Okha 372, 080	400
Ovia South West 138,072	Ovia South west 138, 072	400
Uhunmwonde 121,749	Uhunmwonde 121, 749	400
Total 631901	631,901	1200

Data sourced From National Population Commission (2010)

3.4 Sources of Data

The textual statistical data for this research study was derived from two sources; primary and secondary. The primary data was elicited through a well-structured questionnaire and oral interviews from the sample respondents and the secondary data were drawn from related extant literature such as textbooks, journals newspapers and the internet respectively.

3.5 Instrument and Method of Data Collection

The instrument of data collection for this research project is the good design questionnaire which is crafted in three (3) sections. Section A entails the demographic of the respondents, section B are questions that test the knowledge of the respondents on the subject matters, while section C contains structured questions that probe into existing data on the role of Technology in the Election Administration in Nigeria and the 2020 governorship Election in Edo State. The questionnaires were administered by the researcher directly to the target sample respondents, for ease of retrieval.

3.6 Validity of the Instrument

The questionnaire for this research project was developed by the researcher, the content of the instrument was validated by the project supervisor after careful scrutiny. The questionnaire was approved and suitable to elicit the required information for the research study.

3.7 Reliability of the Instrument

Owing to the quantitative nature of the research study and to enable the instrument used, give credence to the findings of the study. A reliability experimental study was conducted online in my Edo political Whatapps platform members, whose Local Governments of origins cut across the three LGAs; Ikpoba-Okha, Ovia South West and Uhumwonde respectively. Which was aimed at ascertaining the reliability of the questionnaire.

The Cronbach's Alpha was utilized in the experimental trial hence it was reused as it is to determine the coefficient of internal stability and the reliability of the instrument. A reliability coefficient of 0.6 to 0.7 will indicate an acceptable instrument to be used for the research study.

3.8 Data Analysis and Presentation Techniques

The data obtained were analysed using simple percentages and chi-square. While method of data presentation will be the contingency table for ease of analysis. To determine their proportions, the simple percentage will be used and the hypothesis that would be derived from the proposition will be tested using the chi-square.

The chi-square, symbolized by X^2 , is a non-parametric test that can be used whenever we wish to examine whether or not the frequencies which have been empirically obtained e.g., through

random sampling) differ significantly from those which would be expected under a certain set of theoretical assumptions. The assumption includes:

1. The subjects or respondents in the sample must be randomly and independently selected.
2. Each observation must qualify for one only one category in the classification scheme (i.e. the attributes of the variables must be mutually exclusive and
3. The sample size must be relatively large (i.e., not less than 30 (Uyi-Ekpen Ogbeide (1996).

The chi-square has two computational formulas:

$$1. \chi^2 = \frac{n(ad-bc)^2}{(a+b)(c+d)(a+c)(b+d)}$$

Where a,b,c,d,= observed frequencies.

This formula is strictly restricted to a 2 x 2 table.

$$2. \chi^2 = \frac{\sum \frac{1}{f_0 - f_e}}{f_e}$$

Where f_0 = observed frequencies

f_e = expected frequencies.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

This chapter specifically deals with the presentation of data, hypotheses testing and retrospective analysis, using data obtained through questionnaires from appropriate answers by respondents. While in the process an ethnographic retrospective study was carried out and analysed.

4.0.1 Data Presentation and Analysis

A total of one thousand two hundred (1200) structured questionnaires were administered to respective respondents in the three local Government Areas (LGAs) namely; Ikpoba-Okha, Ovia South West and Uhumwonde LGAS in Edo State. Of the one thousand two hundred (1200) questionnaires that were administered to respondent Four hundred and eighty-five (485) were retrieved, while seven hundred and fifteen (715) were never retrieved from respondents.

Table 4.0.1 Summary of the Total Questionnaires Administered Returned, Unreturned and Percentage

Local Government Areas (LGAs)	Figures Questionnaires Administered	Questionnaires Returned	Questionnaires Unreturned	Percentage (%) Returned
Ikpoba-Okha	400	206	194	51%
Ovia South West	400	131	269	13%
Uhumwonde	400	148	252	14%
Total	1200	485	715	79%

Field survey (2021)

Interpretation: The table above explains how the One thousand two hundred (1200) questionnaires were distributed to the three LGAs in Edo State. A total of four hundred questionnaires each to Ikpoba-Okha LGA, Ovia South West LGA residents and Uhumwonde LGA residents. Through the ward level. The returned questionnaires and percentage analysis stood at viz; Ikpoba-Okha LGA: two hundred and six questionnaires (206) representing (51%), Ovia South West LGA: one hundred and thirty-one (131) representing (13%), While Uhumwonde LGA: one hundred and forty-eight (148) representing (14%) respectively.

Structure of the Questionnaire.

SECTION A

Table 4.1 Sex Based Distribution of Respondents

Sex	Respondents by Sex	Percentage (%) of Sex
Male	324	66
Female	161	33
Total	485	99

Field survey (2021)

Interpretation: Table 4.1 shows that sex data distribution of three hundred and twenty-four (324) of the sampled size were male which represent sixty-six percent (66%) and one hundred and sixty-one (161) of the sampled size representing thirty-three (33%) were Female.

Table 4.2 Age Based Distribution of Respondents

Age	Number of Respondents	Percentage (%)
18 – 31	135	28
32 – 51	215	44
52- 61	103	21
62 & above	32	6
	485	99

Field survey (2021)

Interpretation: Table 4.2 shows of the respondents were the age distribution of one hundred and thirty-five (135) were in age brackets of (18 – 31) representing twenty-eight (28%) Percent of the sampled size. A total of two hundred and fifteen (215) were in the age bracket of (32 – 51) representing forty-four (44%) percent of the sampled size, respondents in the age bracket (52 – 61) were One hundred and three (103) representing twenty-one (21%) percent of the sampled size and the respondents in the age bracket of sixty-two and above were thirty-two (32) representing just six (6%) of the sampled size.

Table 4.3 Marital Status Distribution of Respondents

Marital Status	Number of Respondents	Percentage (%)
Single	215	44
Married	189	38
Others	81	16

Total	485	98
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Field Survey (2021)

Interpretation: Table 4.3 reveal that a total of two hundred and fifteen (215) of the respondents representing forty- four (44) percent of the sampled size were single and one hundred and eighty-nine (189) of the respondents representing thirty- eight (38) percent of the sampled size were Married. While eighty (81) one respondent representing sixteen (16) percent of the sampled size are in the other category.

Table 4.4 Educational Status Distribution of Respondents

Educational Status	Number of Respondents	Percentage (%)
Primary	11	2
Secondary	151	31
Tertiary	323	66
Total	485	99

Field Survey (2021)

Interpretation: Table 4.4 above indicate that the respondents with primary school certificate educational status were eleven (11) representing two percent (2%) of the sampled size. One hundred and fifty-one (151) respondents possess the secondary school certificate representing Thirty- one (31%) percent, while the respondents with tertiary certificates were three hundred and twenty-three (323) representing sixty- six (66%) percent of the sampled size.

Table 4.5 Religious Based Distribution of Respondents

Religion	Number of Respondents	Percentage (%)
Christianity	391	80.6
Muslim	70	14
African Tradition Religion	24	4.9
Total	485	99.5

Field Survey (2021)

Interpretation: Table 4.5 revealed that three hundred and ninety-one (391) representing eighty-point - six percent (80.6%) of the respondents are Christian, seventy (70) representing fourteen Percent (14%) are Muslim. While twenty-four (24) representing four-point nine percent (4.9%) respondents are African Traditional Religious worshipers.

Table 4.6 Occupational Status Distribution of Respondents

Occupation	Number of Respondents	Percentage (%)
Students	135	27.8
Artisans	121	24.9
Politician	114	23.5
Civil Servant	52	10.7
Others	63	12.9
Total	485	99.8

Field Survey (2021)

Interpretation: Table 4.6 above reveal that one hundred and thirty-five (135) representing twenty-seven-point eight percent of the sampled size were students. One hundred and twenty-one (121) representing twenty-four point nine (24.9%) were artisans. One hundred and fourteen (114) representing twenty-three point five (23.5%) were politicians, Fifty-two (52) representing ten point seven (10.7%) are civil servants. While sixty-three (63) representing twelve point nine (12.9%) belong to other professions.

Table 4.7 Local Government Area Residence Distribution of Respondents

LGAs	Number of Respondents	Percentage (%)
Ikpoba-Okha	206	98%
Ovia South West	131	93%
Uhunwonde	148	98%
Total	485	97%

Field Survey (2021)

Interpretation: Table 4.7 data reveal that two hundred and six (206) representing ninety-eight percent of the sampled size lives and reside at Ikpoba-Okha LGA, one hundred and thirty-one (131) representing ninety-three percent (93%) lives and reside ay Ovia South West LGA. While one hundred and forty-eight (148) representing (98%) of the sampled size lives and resides at Uhunmwonde LGA of Edo State respectively.

SECTION B

Respondent's Knowledge;

Table 4.8 Have you heard of electronic devices in the conduct of election?

Response	Frequency	Percentage (%)
Yes	476	98.1
No	9	1.8
Total	485	99.9

Field Survey (2021)

Interpretation: Table 4.8 shows that four hundred and seventy-six (476) representing Ninety-eight-point-one (98.1%) percent of total respondents have heard of electronic devices in the conduct of election. While nine (9) representing one point eight percent (1.8%) of the sampled size have not heard of electronic devices in the conduct of election at all.

Table 4.9 Election Administrator of National and States in Nigeria is INEC?

Response	Frequency	Percentage (%)
Yes	485	100
No	0	0
Total	485	100

Field Survey (2021)

Interpretation: Table 4.9 indicates that the four hundred and eighty-five (485) representing (100%) are aware that INEC is the election administrator for National and state Elections in Nigeria.

Table 4.10. How did you hear of electronic devices in the conduct of election?

Response	Frequency	Percentage (%)
From the internet	115	23.7
Radio/TV/ Newspaper	217	44.7
Friends/ Relations	96	19.7
Others	57	11.7
Total	485	98.8

Field Survey (2021)

Interpretation: The above table reveal that one hundred and fifteen (115) representing (23.7%) respondents heard about Technology in electronic devices in the conduct of election from the internets, two hundred and seventeen (217) representing (44.7%) respondents heard about electronic devices in the conduct of election from Television, Radio and Newspapers. Ninety-six (96) representing (19.7%) respondents heard from friends and relatives. While fifty-seven (57) representing (11.7%) respondents heard from other sources.

Table 4.11. Do you have a permanent voter's card?

Response	Frequency	Percentage (%)
Yes	473	97.5
No	12	2.4
Total	485	99.9

Field Survey (2021)

Interpretation: Table 4.11 indicates that four hundred and seventy-three (473) representing ninety-seven-point five percent (97.5%) of the respondents have permanent voter's card, while only twelve (12) representing two-point four percent (2.4%) do not have the permanent voter's card of the sampled size.

Table 4.12. Have you heard of election before?

Response	Frequency	Percentage (%)
Yes	485	100
No	0	0
Total	485	100

Field Survey (2021)

Interpretation: Table 4.12 revealed that the entire four hundred and eighty-five (485) representing one hundred percent (100%) have heard of Election before.

Table 4.13. Did you vote in the 2020 Governorship Election in Edo State?

Response	Frequency	Percentage (%)
Yes	471	97.1
No	14	2.8
Total	485	99.9

Interpretation: Table 4.13 above shows that four hundred and seventy-one (471) representing ninety-seven point one percent (97.1) of the respondents voted in the 2020 Governorship Election in Edo State, while fourteen (14) representing two point eight percent (2.8) sampled respondents did not vote in the 2020 Governorship Election in Edo State.

SECTION C

(A) **Hypothesis:** Electronic devices has improved conduct of election in Nigeria.

(B) **Hypothesis:** Deployment of electronic devices in the conduct of election has its Challenges.

SECTION D.

Table 4. 14. Electronic devices has a role in the conduct of election.

Response	Frequency	Percentage (%)
Strongly Agree	365	75.2
Agree	111	22.8
Undecided	7	1.4
Disagree	2	0.4
Strongly Disagree	0	0
Total	485	99.8

Field Survey (2021)

Interpretation: Table 4.14 above shows that three hundred and sixty-five (365) representing seventy-five-point two percent (75%) of the respondents strongly agree that electronic devices have a role in the conduct of election, one hundred and eleven (111) representing twenty-two-point eight percent (22.8%) agree. With seven (7) representing one point four (1.4%) respondents undecided and two respondent (2) representing zero-point four (0.4%) Percent disagreeing that electronic device have no role in the conduct of elections in Nigeria.

Table 4.15. Electronic devices have improved conduct of election in Nigeria.

Response	Frequency	Percentage (%)
Strongly Agree	366	75.4
Agree	110	22.6
Undecided	2	0.4
Disagree	5	1.0
Strongly Disagree	2	0.4
Total	485	99.8

Field Survey (2021)

Interpretation: Table 4.15 above shows that three hundred and sixty-six (366) respondents representing seventy-five-point-four (75.4%) percent of the sampled size strongly agreed that electronic devices have improve conduct of election in Nigeria, one hundred and ten (110) respondents representing twenty-two-point six (22.6%) percent agreed that electronic devices has improved the conduct of election, two (2) representing zero point four (0.4%) are undecided. Five (5) respondents representing one point zero (1.0%) disagreed. While two (2) respondents representing zero point four (0.4%) strongly disagreed.

Table 4.16. Deployment of electronic devices in the conduct of election has its Challenges.

Response	Frequency	Percentage (%)
Strongly Agree	360	74.2
Agree	118	24.3
Undecided	0	0
Disagree	7	1.4
Strongly Disagree	0	0
Total	485	99.9

Field Survey (2021)

Interpretation: Table 1.16. Revealed that three hundred and sixty (360) respondents representing seventy-four point two (74.2%) strongly agreed that deployment of electronic devices in the conduct of election has its challenges, one hundred and eighteen (118) respondents representing

twenty-four-point three percent (24.3%) of the sampled respondents agreed and seven (7) respondents representing one point four percent (1.4%) disagreed that deployment of electronic devices in the conduct of election has its challenges.

Table 4.17. Electronic devices have consolidated democracy in the Nigeria fourth republic.

Response	Frequency	Percentage (%)
Strongly Agree	362	74.6
Agree	117	24.1
Undecided	0	0
Disagree	6	1.2
Strongly Disagree	0	0
Total	485	99.9

Field Survey (2021)

Interpretation: Table 4.17 indicates that three hundred and sixty-two respondents (362) representing seventy-four point six (74.6%) of the sampled size strongly agreed that electronic devices has consolidated democracy in the Nigeria Fourth Republic and one hundred and seventeen respondents agreed. While six respondents (6) representing one point two percent (1.2%) of the sampled size disagreed.

Table 4.18. The use of electronic devices in the conduct of election has instilled citizen's confidence in the electoral process in Nigeria.

Response	Frequency	Percentage (%)
Strongly Agree	384	79.1
Agree	56	11.5
Undecided	40	8.2
Disagree	5	1.0
Strongly Disagree	0	0
Total	485	

Field Survey (2021)

Interpretation: Table 4.18, above reveal that three hundred and eighty-four (384) representing seventy-nine-point one percent (79.1%) of the respondents strongly agreed that the use of electronic devices in the conduct of election have instilled citizen’s confidence in the Electoral process in Nigeria, fifty-six (56) representing eleven point five (11.5%) respondents agreed and forty (40) respondents representing eight point two (8.2%) are undecided. While five respondents (5) representing (1.0%) of the sampled size disagreed.

Table 4.19. The 2020 Edo State Governorship election was free and fair.

Response	Frequency	Percentage (%)
Strongly Agree	367	75.6
Agree	110	22.6
Undecided	4	0.8
Disagree	2	0.4
Strongly Disagree	2	0.4
Total	485	99.8

Field Survey (2021)

Interpretation: Table 4.19. Above indicates that three hundred and sixty-seven (367) representing seventy-five point six (75.6%) respondents of the sampled population size strongly agreed that the 2020 Edo State Governorship election was free and fair, one hundred and ten respondents (110) representing twenty-two point six (22.6%) of the sampled size agreed. Four respondents (4) representing zero point eight (0.8%) are undecided. Two respondents (2) representing zero point four (0.4%) disagreed. While two Respondents (2) representing zero point four (0.4%) strongly disagreed.

Table 4.20. The 2020 Edo State Governorship election was adjudged electronic device improved Election.

Response	Frequency	Percentage (%)
Strongly Agree	421	86.8
Agree	45	9.2
Undecided	14	2.8

Disagree	5	1.0
Strongly Disagree	0	0
Total	485	99.8

Field Survey (2021)

Interpretation: Table 4.20, above shows that four hundred and twenty-one (421) representing eight-six point eight (86.8%) respondents strongly agreed that the 2020 Edo State Governorship Election was adjudged Technology improved Election. Forty-five (45) representing nine-point-two percent (9.2%) of the respondents agreed. Fourteen (14) representing two point eight (2.8%) of the respondents are undecided. While five (5) representing one point zero (1.0%) of the respondents disagreed.

Table 4.21. The reforms made by the Independent National Electoral Commission (INEC) pre-2020 Edo State Governorship election made it a reference point.

Response	Frequency	Percentage (%)
Strongly Agree	400	82.4
Agree	81	16.7
Undecided	4	0.8
Disagree	0	0
Strongly Disagree	0	0
Total	485	99.9

Field Survey (2021)

Interpretation: Table 4.21, shows that four hundred (400) representing eighty-two point four (82.4%) respondents strongly agreed that the reforms made by the Independent National Electoral Commission (INEC) pre-2020 Edo State Governorship election made it a reference point. Eighty-one (81) representing sixteen point seven (16.7%) of the respondents agreed. While four (4) representing zero point eight (0.8%) were undecided.

Table 4.22. Electronic devices reduced election results manipulation in the 2020 Edo State Governorship election.

Response	Frequency	Percentage (%)
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Strongly Agree	412	84.9
Agree	69	14.2
Undecided	0	0
Disagree	4	0.8
Strongly Disagree	0	0
Total	485	99.9

Field Survey (2021)

Interpretation: Table 4.22 indicates that four hundred and twelve respondents (412) representing eighty-four-point nine percent (84.9%) of the sampled population size strongly agreed that electronic devices reduced election results manipulation in the 2020 Edo State Governorship election. Sixty-nine (69) representing fourteen-point two percent (14.2%) of the sampled respondents agreed. While four (4) representing zero-point eight percent (0.8%) disagreed.

Table 4.23. The Election outcome reflected the wish of the citizens due to the role of electronic devices.

Response	Frequency	Percentage (%)
Strongly Agree	345	71.1
Agree	22	4.5
Undecided	18	3.7
Disagree	100	20.6
Strongly Disagree	0	0
Total	485	99.9

Field Survey (2021)

Interpretation: Table 4.23, above shows that three hundred and forty-five (345) representing seventy-one point one (71.1%) respondents of the sampled size strongly agreed that the election outcome reflected the wish of the citizens due to the role of electronic devices. Twenty-two (22) representing four-point-five (4.5%) percent of the respondents agreed. Eighteen (18) representing three-point seven percent (3.7%) were undecided and one hundred respondents (100) representing twenty-point six percent (20.6%) disagreed.

Table 4.24. Electronic devices in the conduct of election have its positive and negative impacts.

Response	Frequency	Percentage (%)
Strongly Agree	0	0
Agree	485	100
Undecided	0	0
Disagree	0	0
Strongly Disagree	0	0
Total	485	100

Field Survey (2021)

Interpretation: Table 4.24, indicates that all four hundred and eighty-five (485) representing (100%) respondents agreed that electronic devices in the conduct of election has its positive and negative impacts.

Table 4.25. Electronic devices Ownership is critical to sustenance of use in the conduct of election.

Response	Frequency	Percentage (%)
Strongly Agree	200	41.2
Agree	281	57.9
Undecided	4	0.8
Disagree	0	0
Strongly Disagree	0	0
Total	485	99.9

Field Survey (2021)

Interpretation: Table 4.25, above confirmed that two hundred respondents (200) representing forty-one point two (41.2%) strongly agreed that electronic devices Ownership is critical to sustenance of the use in the conduct of election. Two hundred and eighty-one (281) representing fifty-seven point nine (57.9%) agreed. While four (4) representing zero-point eight (0.8%) percent were undecided.

Table 4.26. Citizens Education on the use of electronic devices in the conduct of election will increase political participation.

Response	Frequency	Percentage (%)
Strongly Agree	317	65.3
Agree	164	33.8
Undecided	4	0.8
Disagree	0	0
Strongly Disagree	0	0
Total	485	99.9

Field Survey (2021)

Interpretation: Table 4.26, shows that three hundred and seventeen respondents (317) representing sixty-five-point three (65.3%) percent strongly agreed that Citizens Education on the use of electronic devices will increase political participation and one hundred sixty-four (164) representing thirty-three point eight (33.8%) agreed. While four (4) representing zero point eight (0.8%) were undecided.

Table 4.27. Legal framework to back the use of electronic devices in the conduct of election will strengthen democracy.

Response	Frequency	Percentage (%)
Strongly Agree	379	78.1
Agree	106	21.8
Undecided	0	0
Disagree	0	0
Strongly Disagree	0	0
Total	485	99.9

Field Survey (2021)

Interpretation: Table 4.27, above shows that three hundred and seventy-nine (379) representing seventy-eight point one (78.1%) respondents of the sampled size, strongly

agreed that Legal framework to back the use of electronic devices in the conduct of election will strengthen democracy. While one hundred and six (106) representing twenty-one-point eight percent (21.8%) respondents of the sampled population agreed.

Table 4.28. Nigeria Infrastructure supports the use of electronic devices in the conduct of election.

Response	Frequency	Percentage (%)
Strongly Agree	210	43.2
Agree	111	22.8
Undecided	92	18.9
Disagree	14	2.8
Strongly Disagree	58	11.9
Total	485	99.6

Field Survey (2021)

Interpretation: Table 4.28, data indicates that two hundred and ten respondents (210) representing forty-three-point two percent (43.2%) of the sampled size, strongly agreed that Nigeria Infrastructure supports the use of electronic devices in the conduct of election. One hundred and eleven (111) respondents representing twenty-two point eight (22.8%) agreed, ninety-two (92) respondents representing eighteen-point nine percent of the sampled size were undecided and fourteen (14) respondents representing two-point eight percent (2.8%) disagreed. While fifty-eight (58) respondents representing eleven point nine strongly disagreed.

Table 4.29. The proposed Electoral Amendment Bill will uphold the use of electronic devices in the conduct of election in Nigeria.

Response	Frequency	Percentage (%)
Strongly Agree	366	75.4
Agree	119	24.5
Undecided	0	0

Disagree	0	0
Strongly Disagree	0	0
Total	485	99.9

Field Survey (2021)

Interpretation: Table 4.29, above reveal that three hundred and sixty-six respondents (366) representing seventy-five-point four percent (75.4%) of the sampled size strongly agreed, that the proposed Electoral Amendment Bill will uphold the use of electronic devices in the conduct of elections in Nigeria. While one hundred and nineteen respondents (119) representing Twenty-four-point five percent (24.5%) of the sampled population

Table 4.30. Election Stakeholders have a role to Play in the deployment of electronic devices in the conduct of election.

Response	Frequency	Percentage (%)
Strongly Agree	12	2.4
Agree	377	77.7
Undecided	89	18.3
Disagree	7	1.4
Strongly Disagree	0	0
Total	485	99.8

Field Survey (2021)

Interpretation: Table 4.30, data reveal that twelve respondents (12) representing two-point Four percent strongly agreed that Election Stakeholders have a role to Play in the Deployment electronic devices in the conduct of election. Three hundred and seventy-seven Respondents (377) representing seventy-seven-point seven percent (77.7%) of the sampled size agreed and eighty-nine respondents (89) representing eighteen-point three percent (18.3%) were undecided. While seven (7) respondents representing one point four (1.4%) Disagree.

Table 4.31. INEC Result viewing (IRV) initiative made significant deference, when compared to previous elections in Edo State.

Response	Frequency	Percentage (%)
Strongly Agree	476	98.1
Agree	9	1.8
Undecided	0	0
Disagree	0	0
Strongly Disagree	0	0
Total	485	99.9

Field Survey (2021)

Interpretation: Table 4.31, above shows that four hundred and seventy-six respondents (476) Representing ninety-eight-point one percent (98.1%) strongly agreed that INEC Result Viewing (IRV) initiative made significant deference, when compared to previous Elections in Edo State. While nine (9) respondents representing one point eight percent (1.8%) of the Sampled population agreed.

Table 4.32. Election results management have all before the 2020 Edo State election been prone to collation manipulations and fraud.

Response	Frequency	Percentage (%)
Strongly Agree	228	47.0
Agree	239	49.2
Undecided	18	3.7
Disagree	0	0
Strongly Disagree	0	0
Total	485	99.9

Field Survey (2021)

Interpretation: Table 4. 32 above indicates that two hundred and twenty-eight (228) respondents representing forty-seven-point zero percent (47.0%) of the sampled size strongly agreed that, election Results management have all before the 2020 Edo State Election been Prone to collation manipulations and fraud. two hundred and thirty-nine (239) representing forty nine-point-two

percent (49.2%) respondents of the sampled size agreed. While eighteen (18) respondents representing three-point seven percent (3.7%) of the sampled size were undecided

Table 4.33. Edo State election was a baseline in INEC efforts to ensure that election results are at the fingertips of the electorates.

Response	Frequency	Percentage (%)
Strongly Agree	311	64.1
Agree	174	35.8
Undecided	0	0
Disagree	0	0
Strongly Disagree	0	0
Total	485	99.9

Field Survey (2021)

Interpretation: Table 4.33 shows that three hundred and eleven (311) respondents representing sixty-four point one (64.1%) strongly agreed that, Edo election was a baseline in INEC efforts to ensure that election results are at the fingertips of the Electorates. While One hundred and seventy-four (174) representing (thirty-five point eight (35.8%) Respondents agreed

Table 4.34. Electronic devices are not full proof, we must naturally expect some hitches, it has its Weaknesses.

Response	Frequency	Percentage (%)
Strongly Agree	109	22.4
Agree	376	77.5
Undecided	0	0
Disagree	0	0
Strongly Disagree	0	0
Total	485	99.9

Field Survey (2021)

Interpretation: Table 4.34 above shows that one hundred and nine (109) representing twenty two-point four percent of the sampled respondents strongly agreed that electronic devices

is, is not full proof, we must naturally expect some hitches, it has its Weaknesses. While three hundred and seventy-six (376) respondents representing seventy-seven-point five percent (77.5%) of the sampled size agreed.

Table 4.35. The main reasons for electronic devices are for speed, accuracy, effectiveness and minimize fraud and manipulation.

Response	Frequency	Percentage (%)
Strongly Agree	102	21.0
Agree	307	63.2
Undecided	72	14.8
Disagree	4	0.8
Strongly Disagree	0	0
Total	485	99.8

Field Survey (2021)

Interpretation: Table 4.35 reveal that one hundred and two (102) respondents representing twenty-one-point zero percent (21.0%) of the sampled size strongly agreed that, the main reasons for electronic devices is for speed, accuracy, effectiveness and minimize fraud and manipulation. And three hundred and seven (307) respondents representing sixty-three-point two percent (63.2%) respondents agreed, seventy-two (72) representing fourteen-point eight percent of the sampled size were undecided. While four (4) respondents representing zero point eight (0.8%) respondents disagreed.

Table 4.36. The only way of delivering a free, fair, and credible election lies in applying electronic devices in the process with little seamless human manipulator interference.

Response	Frequency	Percentage (%)
Strongly Agree	267	55.0
Agree	145	29.8
Undecided	17	3.5
Disagree	56	11.5
Strongly Disagree	0	0

Total	485	99.8
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Field Survey (2021)

Interpretation: Table 4.36 above indicates that two hundred and sixty-seven (267) respondents representing fifty-five-point zero percent of the sampled population strongly agreed that, the only way of delivering a free, fair, and credible election lies in applying electronic devices, in the process with little seamless human manipulator interference. One hundred and forty-five (145) respondents representing twenty-nine-point eight percent (29.8%) agreed and seventeen (17) respondents representing three-point five percent (3.5%) of the sampled size were undecided. While fifty-six (56) respondents representing eleven-point five percent (11.5%) disagreed.

Table 4.37. The introduction of electronic devices has greatly shaped the development of electoral processes globally.

Response	Frequency	Percentage (%)
Strongly Agree	123	25.3
Agree	356	73.4
Undecided	4	0.8
Disagree	2	0.4
Strongly Disagree	0	99.9
Total	485	

Field Survey (2021)

Interpretation: Table 4.37 reveal that one hundred and twenty-three (123) respondents representing twenty-five-point three percent (25.3%) of the sampled size strongly agreed that, the introduction of electronic devices has greatly shaped the development of electoral processes globally. Three hundred and fifty-six (356) respondents representing seventy-three-point four percent (73.4%) of the sampled population agreed. And four (4) respondents representing zero-point eight percent (0.8%) were undecided. While two (2) representing zero-point four percent (0.4%) respondents disagreed.

Table 4.38. Cybersecurity and relentless weaponisation of digital technologies (cyber-attack) Is a threat to Democracy?

Response	Frequency	Percentage (%)
Strongly Agree	327	67.4
Agree	158	32.5
Undecided	0	0
Disagree	0	0
Strongly Disagree	0	0
Total	485	99.9

Field Survey (2021)

Interpretation: Table 4.38 above shows that three hundred and twenty-seven (327) respondents representing sixty-seven-point four percent (67.4%) of the sampled size strongly agreed that, Cybersecurity and relentless weaponisation of digital technologies (cyber-attack) is a threat to Democracy. While one hundred and fifty-eight (158) respondents representing thirty-two point five percent (32.5%) of the sampled population agreed.

Table 4.39. Securing e-Processes Experts agree that there is a need for legal backing or Frameworks to guide infrastructure and data security matters in elections.

Response	Frequency	Percentage (%)
Strongly Agree	281	57.9
Agree	204	42.0
Undecided	0	0
Disagree	0	0
Strongly Disagree	0	0
Total	485	99.9

Field Survey (2021)

Interpretation: Table 4.39. Indicates that two hundred and eighty-one (281) respondents representing fifty-seven-point nine percent (57.9%) strongly agreed that, securing e-Processes Experts agree that there is a need for legal backing or Frameworks to guide infrastructure and data security matters in elections. While two hundred and four (204) representing forty-two-point zero percent (42.0%) of the sampled population agreed.

Table 4.40. Voter Verified Paper Audit Trail (VVPAT) currently under consideration to

Enable a full audit of election results will create trust in mind of voters.

Response	Frequency	Percentage (%)
Strongly Agree	141	29.0
Agree	249	51.3
Undecided	53	10.9
Disagree	42	8.6
Strongly Disagree	0	0
Total	485	99.8

Field Survey (2021)

Interpretation: Table 4.40 shows that one hundred and forty-one (141) respondents representing twenty-nine-point zero percent (29.0%) of the sampled size strongly agreed that, Voter Verified Paper Audit Trail (VVPAT) currently under consideration to enable a full audit of election results will as it will create trust in mind of voters.

Two hundred and forty-nine (249) respondents representing fifty-one-point three percent 53.3%) agreed and fifty-three (53) representing ten-point nine percent (10.9%) respondents were undecided. While forty-two (42) representing eight-point six percent (8.6%) respondents disagreed.

Table 4.41. The health of the election administrators of a Country determines the health of It's Nation democracy.

Response	Frequency	Percentage (%)
Strongly Agree	19	3.9
Agree	466	96.0
Undecided	0	0
Disagree	0	0
Strongly Disagree	0	0
Total	485	99.9

Field Survey (2021)

Interpretation: Table 4.41 revealed that nineteen respondents (19) representing three-point nine percent (3.9%) strongly agreed that, the health of the election administrators of a Country

determines the health of Its Nation Democracy. While four hundred and sixty-six (466) representing ninety-six-point zero percent (96.0%) respondents of the sampled population agreed.

4.2 Hypothesis Testing

4.2.1 Hypothesis One:

H1o: The deployment of electronic devices has not improved the conduct of elections in Nigeria.

H1r: The deployment of electronic devices has improved the conduct of elections in Nigeria.

Statement 15: Electronic devices has improved conduct of Elections in Nigeria.

Table 4.42 Opinions on the Deployment of electronic devices in the conduct of election by Gender

Electronic device and Conduct of Election	Gender		Total
	Male	Female	
Agreed	311	113	424
Disagreed	13	48	61
Total	324	161	485

Field Survey (2021)

Calculation of Expected Frequencies (f_e)

$$\text{Cell: } a = (a + b) (a + c) / n = (424) (324) / 485 = 283.25$$

$$b = (b + a) (b + d) / n = (424) (161) / 485 = 140.75$$

$$c = (c + d) (c + a) / n = (61) (324) / 485 = 40.75$$

$$d = (d + c) (d + b) / n = (61) (161) / 485 = 20.75$$

Computation of Chi Square (X^2).

Cell	f_0	F_e	$f_0 - f_e$	$(f_0 - f_e)^2$	$(f_0 - f_e)^2 / f_e$
A	311	283.25	27.75	770.06	2.7187
B	113	140.75	-27.75	770.06	5.4711
C	13	40.75	-27.75	770.06	18.8972
D	48	20.25	27.75	770.06	38.0277
				X^2	65.1147

Degree of Freedom (df)

$df = (r - 1) (c - 1)$, where r = number of rows; c = number of columns.

NB: from the table of data:

$$r = 2$$

$$C = 2$$

$$df = (2 - 1) (2 - 1) = 1 \times 1 = 1$$

Research Decision:

$$\text{Calculated } X^2 = 65.1142$$

$$\text{Critical } X^2 = 6.64 \text{ (from } X^2 \text{ table)}$$

$$\text{Sampling Error} = 0.01$$

Research Result:

$$\text{Calculated } X^2 > \text{Critical } X^2 @ \text{ sampling Error } 0.01$$

Data are statistically significant @ 1% sampling error. An association exists between the variables.

This means that we should reject H_0 and accept H_R .

Interpretation (Statistical Inference)

- 1) There is an association between electronic devices and conduct of election and the respondent's gender. This statement confirms H_R .
- 2) The probability that the sample was drawn from a population in which there no association between electronic devices and conduct of election and respondent's gender is less than one in hundred. That is, the association between electronic devices and conduct of election and respondent's gender found in the sample is representative of the entire population from which the sample was more than 99% of the time.

YULES Q (Q)

This measures the degree of association between the variables

$$Q = (ad - bc) / (ad + bc)$$

$$= (311 \times 48) - (113 \times 13) / (311 \times 48) + (113 \times 13)$$

$$= (14928 - 1469) / (14928 + 1469)$$

$$= 13459 / 16397$$

$$= 0.820$$

Interpretation:

In other to determine the extent of relationship, the Yule's Q (0.820) was calculated and discovered that there is a moderate positive relationship between the variables.

Policy Implication of Study:

The ruling class of the government of the Federal Republic of Nigeria should mobilise the political will to support the full deployment of electronic devices in the conduct of election and give legislative backing to its usage in the three phases of the electoral cycles (Pre-election, election - day and Post- election Activities). This is because signing the 2021 Electoral Amendment Bill into law will give INEC the needed independence to manage the electoral process, instill confidence and trust in the election outcome.

4.3.2 Hypothesis Two:

H20 The challenges of deployment of electronic devices have not hindered its use in the conduct of election.

H2r: The challenges of deployment of electronic devices have hindered its use in the Election

Statement 16: Deployment of electronic devices in the conduct of election has its Challenges in Nigeria.

Table 4.43 Opinions on the Challenges of Deployment of electronic devices in the conduct of election in Nigeria.

Challenges of electronic devices in the conduct of election	Gender		Total
	Male	Female	
Agreed	256	128	384
Disagreed	68	33	101
Total	324	161	485

Field Survey (2021)

Calculation of Expected Frequencies (f_e)

Cell: $a = (a + b) (a + c) / n = (384) (324) / 485 = 256.53$

$b = (b + a) (b + d) / n = (384) (161) / 485 = 127.47$

$c = (c + d) (c + a) / n = (101) (324) / 485 = 67.47$

$d = (d + c) (d + b) / n (101) (161) / 485 = 33.53$

Computation of Chi Square

Cell	f_0	Fe	$f_0 - fe$	$(f_0 - fe)^2$	$(f_0 - fe)^2 / fe$
A	256	256.53	-0.53	0.2809	0.001095
B	128	127.47	-0.53	0.2809	0.002204
C	68	67.47	0.53	0.2809	0.003096
D	33	33.53	-0.53	0.2809	0.008376
				X ²	0.014771

Degree of Freedom (df)

$df = (r - 1)(c - 1)$, where r = number of rows; c = number of columns.

NB: from the table of data:

$$r = 2$$

$$c = 2$$

$$df = (2 - 1)(2 - 1) = 1 \times 1 = 1$$

Research Decision:

Calculated $X^2 = 0.014771$

Critical $X^2 = 6.64$ (from X^2 table)

Sampling Error = 0.01

Research Result:

Calculated $X^2 < \text{Critical } X^2$ @ sampling Error 0.01

Data are statistically significant @ 1% sampling error. An association exists between the variables.

This means that we should reject H_R and accept H_0 .

Interpretation (Statistical Inference)

- 1) There is an association between the Challenges of electronic devices and the conduct of election and the respondent's gender. This statement confirms H_0 .
- 2) The probability that the sample was drawn from a population in which there no association between the Challenges of electronic devices and the conduct of election and respondent's gender is less than one in hundred. That is, the association between the Challenges of electronic devices and conduct of election and respondent's gender found in the sample is representative of the entire population from which the sample was more than 99% of the time.

YULES Q (Q)

This measures the degree of association between the variables

$$\begin{aligned} Q &= (ad - bc) / (ad + bc) \\ &= (256 \times 33) - (128 \times 68) / (256 \times 33) + (128 \times 68) \\ &= (8448 - 8704) / (8448 + 8704) \\ &= -256 / 17152 \\ &= -0.012 \end{aligned}$$

Interpretation:

In order to determine the extent of relationship, the Yule's Q (-0.012) was calculated and discovered that there is a moderate negative relationship between the variables.

Policy Implication of Study:

The Federal Republic of Nigeria should improve on the EGDI Intracasternal to support the full deployment of electronic devices in the conduct of election by strengthening inter-sector synergy. And proper social education on maintenance of basic Infrastructure that will enhance wider coverage of deployment of electronic devices in the three phases of the electoral cycles (Pre-Election, Election - Day and Post- Election Activities). This is because synergy of all critical stakeholders will greatly improve the electoral process and trust in the Election outcome.

4.3 Discussion of Findings

This research study was carried out to examine independent national electoral commission and use of electronic devices in the conduct of election in Nigeria; a focus on the 2020 governorship election in Edo state. The diffusion of innovation theory was used to interrogate and retrospective analysis of impact of deployment electronic devices in the conduct of election in Nigeria.

The theory gave an explication and credence to INEC change policy to electronic devices deployment in the conduct of election particularly in the 2020 Edo State Governorship election, which justified the success recorded. Hence the subsequent elections conducted by INEC followed a pattern that stimulated the renewed clamor for electronic devices in the conduct of elections in Nigeria. Besides, the research study was proficient using the well-structured questionnaire.

Two probabilistic statements about the relationship or association of the variables (hypotheses) were formulated and tested using the Chi Square.

Hypothesis One, confirmed the research Hypothesis; electronic devices has improved conduct of election in Nigeria.

In order to measure the degree of association between the variables, the Yule's Q was calculated and revealed that, the Yule's $Q = (0.820)$ was discovered that there is a moderate positive relationship between the variables. While Hypothesis Two; the challenges of deployment of electronic devices have not hindered its use in the conduct of election. It was observed that an association exists between the variables. This means that H_R was rejected and H_0 accepted. In order to determine the extent of relationship, the Yule's $Q (-0.012)$ was calculated and discovered that there is a moderate negative relationship between the variables.

Finally, the research questions that guided the study were carefully answered by the respondents in the following manners in the questionnaire:

Research Question One: Do electronic devices have a role in the conduct of election?

Following the revealed analysis of data in Table 4.14 shows that large number or percentage equaling more than half of the respondents, three hundred and sixty-five (365) representing seventy-five-point two percent (75.2 %) of the respondents strongly agree that electronic devices has a role in the conduct of election, one hundred and eleven (111) representing twenty-two-point eight percent (22.8%) agree. respectively with seven (7) representing one point four (1.4%) respondents undecided and two respondent (2) representing zero-point four (0.4%) Percent disagreeing that electronic device has no role in the conduct of election in Nigeria. This shows that electronic devices have a role in the conduct of election, as it will improve elections in terms of speed, minimize error, result manipulations, fraud rigging etc. This confirms the different accretions made to support the use of electronic devices in the conduct of election by experts and scholars. Thus, there are very obvious needs for the adoption and adaptation of electronic devices in the conduct of election in Nigeria.

Research Question Two: The use of electronic devices in the conduct of election have instilled citizen's confidence in the electoral process in Nigeria.

The respondent's answers to this question speaks reality. Table 4.18 and Table 4.20 indicates that electronic devices have greatly influenced the perception of electorates and instilled citizen's confidence in the electoral process where in table analysis of data shows that three hundred and eighty-four (384) representing seventy-nine-point one percent (79.1%) of the respondents strongly agreed that the use of electronic devices in the conduct of election have instilled citizen's confidence in the electoral process in Nigeria. While fifty-six (56) representing eleven point five

(11.5%) respondents agreed and forty (40) respondents representing eight point two (8.2%) are undecided. A low number or percentage of five respondents (5) representing (1.0%) of the sampled size disagreed. This corroborates existing research carried out by Makama, et al (2013).

Other findings revealed in table 4.20 in respect of devices studies influence on citizen's confidence was the outcome of the 2020 Edo State Governorship election.

Table 2.20 shows that four hundred and twenty-one (421) representing eight-six point eight (86.8%) respondents strongly agreed that the 2020 Edo State Governorship election was adjudged electronic devices improved election. Forty-five (45) representing nine-point two percent (9.2%) of the respondents agreed. Fourteen (14) representing two point eight (2.8%) of the respondents are undecided. While five (5) representing one point zero (1.0%) of the respondents disagreed. Thus, Itodo (2020) opined that "INEC is on the part of revolutionizing the entire results management regime in our elections with the introduction of the results viewing portal.

Research Question Three: Are there challenges and prospects with electronic devices in the conduct of election in Nigeria? The data analysis in table 4.16. Revealed that three hundred and sixty (360) respondents representing seventy-four point two (74.2%) strongly agreed that the use of electronic devices has its challenges and prospect, one hundred one eighteen (118) respondents representing twenty-four-point three percent (24.3%) of the sampled respondents agreed.

Research Question Four: Has electronic devices consolidated Nigeria's democracy in the fourth republic? Table 4.17 indicates that three hundred and sixty-two respondents (362) representing seventy-four point six (74.6%) of the sampled size strongly agreed that electronic devices have consolidated democracy in the Nigeria fourth republic and one hundred and seventeen respondents agreed. However, six respondents (6) representing one point two percent (1.2%) of the sampled size disagreed.

Oral Interviews

This section contains mainly oral interviews of key stakeholders and scholars on their opinion what gave INEC the leverages or laws to deploy the use of electronic devices in the conduct of election in Nigeria.

Question: If there is any law in Nigeria that gives backing to INEC to deploy Technology in Election Administration?

Answer: According to Omoregie SAN, (2021) “My straight answer is yes, it just that it is an inferior law, inferior in the sense that it is subordinate first to the Constitution. Which does not expressly provide for Technology and of course also subordinate to the extant Electoral Act.

Which does not also provide for the use of Technology, what you have is that both the Constitution as well as the Electoral Act permit INEC to make regulations for the purpose of conduct of Elections.

In pursuant to that part that have been confer on INEC, INEC came up with Electoral guidelines which allows for the use of the Card reader (CR) for the purpose of accreditation before Election takes place.

So, to that extent you have a situation where only the guidelines which is inferior law that recognizes Elect Electronic use of the card reader. It has been improved on now with the introduction of the fresh BIVAS.

All gear towards ensuring that the accreditation process is improved upon. Beyond that there is not much infusion of Technology in the law on Election process.

For instance, collation of results and so on and so forth are still in the realm of the guidelines.

On the 2020 governorship Election in Edo State, generally speaking there is no doubt that some of the action taken so far by INEC is to try to improve or they constitutes improvement in the process.

What many people are complaining about is that INEC is still very on the Peripheral.

That at this stage of Electoral process, INEC is still dealing with accreditation, collation, announcement and uploading of result that are not formally entrenched in the legislation, our Constitution or the extant subordinate legislation”.

Question: Are there laws in Nigeria supporting the use of Technology in Election Administration?

Answer: Ngara (2021) opined that; “there is no any law that expressly empower INEC on the use of electronic means in Election, but however there are also relevant sections of the Electoral Act to conduct Election that grant INEC the power to issue guidelines on how to carry out Election.

And by that power INEC also have the leverage to introduce certain innovations that they deem fit to conduct Election.

I think that is this aspect INEC has held on to in introducing some of these innovations, such as the Card reader, biometrics Voter’s registration etc.

Apart from that, there is no any power expressly granting INEC to use Technology also based on that provision of the INEC has not contradicted any law by introducing these innovations in the Electoral process.

Perhaps that explains why there has not been any litigations to those effects”.

Question: on the Electoral Amendment bill that is with the President for accent, what is your opinion?

Answer: “As far as I am concern it has not acquired the status of a law yet, but I have observed several Election in Nigeria I know INEC have been trying the Technology of transmitting Election results via electronic.

In the absence of the law INEC cannot adapt it as a “de jure” or tool for collation or transmission of results. Otherwise, INEC have tried it in several Elections what remains now is for the Bill to be accented to for it to become a law so that it cannot be challenged in the court of law”.

Question: Several Technologies have been deployed in Nigeria Election Administration What in your own opinion gave INEC the leverage?

Answer: According to Abiola; (2021) “well not everything you have to put law to support. Some years back, most of our banks were using analogue in their transaction. That is, they used card for recording manually the operation.

That time there were no ATM, no POS, but today there are ATMs, there are POS and so on. There no laws empowering the banks to use ATMs, to use computers for day-to-day operations these are innovations.

I think as a country, we don't have to legalese almost everything. Once there are policies that can move us forward, we should adopt it.

That we want to use card reader or other innovations should be accepted provide it done in good faith. The problem we have as Nigerians is that we don't trust ourselves, we suspect everything, and we don't do that to other thing in other sectors.

Now when we go to the hospital and we are told to go through a machine to screen or scan us we obey, we don't ask of the law. Do we? No, we don't ask of the law that empower the hospital to use such machines. Not every Technology that require law before it can be used.

Question: On the 2021 Electoral amendment bill that is before the President should it be sited this research work?

Answer: "the essence of a research work is to publish the truth, we are not saying you should go for data mining, say it as it is. On the issue of the bill, there are procedures for translating a bill to an Act until that procedure is completed it not yet an act, so let status- quo remain".

CHAPTER FIVE

SUMMARY, RECOMMENDATIONS AND CONCLUSION

This is the final chapter and it specifically deals with the summary, conclusion and recommendations with attached appendixes.

5.1 Summary

The study examines independent national electoral commission and use of electronic devices in the conduct of election in Nigeria; a focus on the 2020 governorship election in Edo state. The study also interrogated the trends and trajectory of electronic devices application across some countries around the globe including Nigeria with particular interest in their challenges and prospects. The renewed efforts of INEC and other critical stakeholders in ensuring the deployment of electronic devices in the conduct of election, to advance the Nigeria electoral process, especially in the fourth republic is novel.

The clamor for the deployment of electronic devices in elections were aimed at addressing the age long problem of conducting free, fair and credible elections in Nigeria. Deployment, adoption and adaptation of electronic devices using the diffusion of innovation theory framework as discussed became expedient due to the repugnance nature of the Nigerian elections.

The objective of this research is to retrospectively trace independent national electoral commission and use of electronic devices in the conduct of election in Nigeria; a focus on the 2020 governorship election in Edo state.

Academically, the study scrutinizes the reliability and sustainability of electronic devices in the conduct of election, and chronicled the electronic devices deployed in the conduct of the 2020 Governorship election in Edo State. Then evaluated the roles, challenges of electronic devices in the conduct of election and to contribute to the extant literature or body of knowledge on election matters in Nigeria.

After a careful study and the empirical revelation of the study, the under stated Hypotheses were tested:

1. **H¹_o**: The deployment of electronic devices has not improved the conduct of elections in Nigeria.

H¹_r: The deployment of electronic devices has improved the conduct of elections in Nigeria.

2. **H²₀** The challenges of deployment of electronic devices has not hindered its use in the conduct of election.

H²_r: The challenges of deployment electronic devices have hindered its use in the conduct of Election.

In furtherance, the research study gave answers to the under listed research questions:

1. Do electronic devices play a role in contemporary conduct of election?
2. Will the use of electronic devices in the conduct of Elections instilled citizen's confidence in the electoral process in Nigeria?
3. Are there challenges and prospects with electronic devices in the conduct of election in Nigeria?
4. Has electronic devices consolidated Nigeria's democracy in the fourth republic?

5.2 Recommendations

The research has carefully analysed the data and the findings from respondents and arrived at the reality that there is prospects of electronic devices in conducting elections in Nigeria.

Hence the following recommendations are here proposed;

- Strengthen democratic Research institutions such as National Institutes for Legislative and Democratic Studies to provide leadership road map and the needed critical mass that will advance the Nigeria Democracy.
- To sign in into law the 2021 Electoral Amendment Bill to give legislative backing to deployment of electronic devices in the conduct of election and to protect and provide security for election and election matters in Nigeria.
- Create or develop infrastructure and home-grown devices to support election process that will reduce cost of procurement of election tools, equipment's for monitoring and supporting Pre- election, election –day logistics and post-election activities as done in India.
- Adopt and adapt devices that amenable to periodic update and not one-off thing electronic devices in order to stimulate steady capacity growth and ownership.

- Stimulate public private ownership in election financing of electronic devices adoption and adaptation in Nigeria

Conclusion

Based on the results of this research, it is expedient to state that there is need for the use of electronic devices in the conduct of elections as it has always been, centered on a lot of controversies, this development is adduced to the Nigerian political trajectory which could be traced to the failure to conduct free, fair and credible elections from 1964, resulting in the crisis that has continued to trail the Nigerian electoral process.

The yearning's for credible election that is devoid of rigging, manipulation of results with the desire for electoral outcomes to meet the wishes of the electorates or citizens, have culminated in a growing agitation for the introduction and use of information and communications technologies (ICTs) in the conduct of elections in Nigeria. It is an indisputable fact that credible elections are the cornerstone of an ideal democracy, but conducting free and fair elections is a very difficult task. Hence the electoral process should be enhanced with devices that create efficiency, speed and stimulates citizen's trust

Suggestion for Further Studies

This research study is restricted to the use of electronic devices in conducting elections, its novel ability in capable of influencing the electoral process in Nigeria. In this study limitations are abounded therefore I employ other researchers to focus on other areas of attention.

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APPENDIXES

National Institute of Legislative and Democratic Studies / University of Benin Abuja.

Masters in Election and Party Politics (MEPP).

Dear Respondent,

I am a postgraduate student of the National Institute of Legislative and Democratic Studies (NILDS) Abuja currently conducting research titled: **INDEPENDENT NATIONAL ELECTORAL COMMISSION AND USE OF ELECTRONIC DEVICES IN THE CONDUCT OF ELECTION IN NIGERIA: A FOCUS ON THE 2020 GOVERNORSHIP ELECTION IN EDO STATE**. The information that is being requested here is strictly for academic purpose and as such any information supplied will be treated with utmost confidentiality.

You are not obliged to write your name on the questionnaire.

I sincerely appreciate your cooperation, understanding and the prompt responses.

Yours Sincerely.

QUESTIONNAIRE

INDEPENDENT NATIONAL ELECTORAL COMMISSION AND USE OF ELECTRONIC DEVICES IN THE CONDUCT OF ELECTION IN NIGERIA: A FOCUS ON THE 2020 GOVERNORSHIP ELECTION IN EDO STATE.

SECTION A

Instruction;

Kindly tick the box [] in your preferred responses.

1. Gender: Male [] Female []
2. Age: 18- 31 [] 32- 51 [] 52-61 [] 62 & above [].
3. Marital Status: Single [] Married [] Others [].
4. Educational Qualification: Primary School Certificate [] Secondary School Certificate [] Tertiary Certificate [].
5. Religion: Christian [] Islam [] African Traditional Religion [].
6. Occupation: Student [] Artisans [] Politician [] Civil Servant [] Others [].
7. Local Government of
Residence.....

SECTION B

Respondent's Knowledge;

8. Have you heard of electronic devices in election Administration? Yes [] No [].
9. Election Administrator of National and States in Nigeria is INEC? Yes [] No []
10. How did you hear of electronic devices for the conduct of elections? From the internet []
Radio/TV/ Newspaper [] Friends/ Relations [] Others []
11. Do you have a permanent voter's card? Yes [] No []
12. Have you heard of election before? Yes [] No []
13. Did you vote in the 2020 Governorship election in Edo State? Yes [] No [].

SECTION C

(C) Hypothesis: Electronic devices has improved conduct of election in Nigeria.

Gender: **Male** [] Agreed [] Disagreed [] **Female** [] Agreed [] Disagreed []

(D) Hypothesis: Deployment of electronic devices in the conduct has its Challenges.

Gender: **Male** [] Agreed [] Disagreed [] **Female** [] Agreed [] Disagreed []

SECTION D

KEY: SA: Strongly Agree **A:** Agree **UD:** Undecided **D:** Disagree **SD:** Strongly Disagree

	ITEM	SA	A	UD	D	SD
14	Electronic devices play a role in the conduct of elections.					
15	Electronic devices have improved conduct of election in Nigeria.					
16	Deployment of electronic devices in the conduct of elections has its Challenges.					
17	Electronic devices have consolidated democracy in the Nigeria Fourth Republic.					
18	The use of electronic devices in the conduct of election have instilled citizen’s confidence in the Electoral process in Nigeria.					
19	The 2020 Edo State Governorship election was free and fair.					
20	The 2020 Edo State Governorship election was adjudged Technology improved Election.					
21	The reforms made by the Independent National Electoral Commission (INEC) pre-2020 Edo State Governorship election made it a reference point.					

22	Electronic devices reduced Election Results Manipulation in the 2020 Edo State Governorship Election.					
23	The Edo election outcome reflected the wish of the citizens due to the role of electronic devices.					
24	Electronic devices in the conduct of election have its positive and negative impacts					
25	Electronic devices Ownership is critical to sustenance of the usage in Election Administration.					
26	Citizens Education on the use of electronic devices will increase political participation.					
27	Legal framework to back the use of electronic devices in the conduct of election will strengthen democracy.					
28	Nigeria Infrastructure supports the use of Technology in Election Administration.					
29	The proposed Electoral Amendment Bill will uphold the use of electronic devices in the conduct of election in Nigeria.					
30	Election Stakeholders have a role to Play in the deployment electronic devices in conducting elections					
31	INEC Result viewing (IRV) initiative made significant deference, when compared to previous Elections in Edo State.					
		SA	A	UD	D	SD

32	Election Results management have all before the 2020 Edo State election been prone to collation manipulations and fraud.					
33	Edo election was a baseline in INEC efforts to ensure that election results are at the fingertips of the Electorates					
34	Electronic devices is, is not full proof, we must naturally expect some hitches, it has it weaknesses					
35	The main reasons for electronic devices is for speed, accuracy, effectiveness and minimize fraud and manipulation					
36	The only way of delivering a free, fair, and credible election lies in applying electronic devices, the process with little seamless human manipulator interference.					
37	The introduction of electronic devices has greatly shaped the development of electoral processes globally.					
38	Cybersecurity and relentless weaponisation of digital technologies (cyber-attacks) is threat to Democracy.					
39	Securing e-Processes Experts agree that there is a need for legal backing or frameworks to guide infrastructure and data security matters in elections.					
40	Voter Verified Paper Audit Trail (VVPAT) currently under consideration to enable a full audit of election results will create trust in mind of voters.					

41	The health of the Election Administrators of a Country determines the health of its Nation Democracy.					
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