

**THE EFFECT OF ICT ON THE 2015 AND 2019 PRESIDENTIAL
ELECTIONS IN FCT: CASE OF BWARI AREA COUNCIL**

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DECLARATION

I, Igbinosa OGBEIDE-IHAMA with matriculation number PG/NLS/1900104, hereby declare that this dissertation titled: The Effect of ICT on the 2015 and 2019 Presidential Elections in the FCT: Case of Bwari Area Council is an outcome of my research efforts carried out in the school of Post-Graduate Studies at the National Institute For Legislative and Democratic Studies/University of Benin under the supervision and guidance of Prof. James Nda Jacob. Available records at my disposal reveal that this research work has not been previously presented anywhere as a prerequisite for the award of any degree. Where references were made to other related literary works, they were duly acknowledged.

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CERTIFICATION

This is to certify that this dissertation titled **THE EFFECT OF ICT ON THE 2015 AND 2019 PRESIDENTIAL ELECTIONS IN THE FCT: CASE OF BWARI AREA COUNCIL** was carried out by Igbinoso OGBEIDE-IHAMA and has been read and approved for the award of Masters in Elections and Party Politics for National Institute For Democratic and Legislative Studies/ University of Benin.

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DEDICATION

I humbly dedicate this research project to God Almighty, my Creator and strong Pillar. He has been my source of strength in all my life's endeavors and on His wings only have I soared.

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LIST OF ABBREVIATIONS

Abbreviations	Meaning
AFIS:	Automated Fingerprint Identification System
ANT:	Actor-Network Theory
BVN:	Banks Verification Numbers
CCP:	Context, Content and Process
CVI:	Content Validity Index
CVR:	Continuous Voters Registration
DDCM:	Direct Data Capture Machines
EMB:	Elections Monitoring Body
EVR:	Electronic Voters' Register
FCT:	Federal Capital Territory
HDD:	Hard Disk Drive
ICT:	Information Communication Technology
INEC:	Independent National Electoral Commission
IT:	Information and Technology
IVAS:	INEC Voters Identification System
OMR:	Optical Magnetic Recognition
PU:	Polling Unit
PVC:	Permanent Voters Card
RA:	Registration Area
SCR:	Smart Card Reader
TRAC:	Election Transparency Administration and Collation
TVC:	Temporary Voters Card
VIN:	Voter Identification Number

ABSTRACT

In Nigeria's current electioneering process, Information Communication Technology (ICT) has taken the centre stage in the conducts of elections. Hence, this study examined the effects of ICT on the 2015 and 2019 Presidential elections in Bwari Area Council, with special reference to the use of Biometric Card Reader.

Contextualist Theory was adopted as the theoretical framework for the study. The research design adopted a mixed of quantitative and qualitative methods, using key informant interviews and questionnaire administration. Primary data was sourced through the administration of closed-ended questionnaire and structured interview from the target respondents in Bwari Area Council. A total of 399 respondents were sampled out of which 315 useable data was generated. SPSS version of Statistics was used to analyse the data.

Overall, findings from the study indicated that the introduction of technological innovation through the use of a biometric card readers in the 2015 and 2019 elections in Bwari Area Council has minimized electoral fraud and manipulation which has been a constant challenge to previous elections; implying that there was a significant positive effect of ICT on the outcome of the General elections in 2015 and 2019. However, despite the successes recorded with the application of ICT, there were observed flaws that bedeviled the election, as the findings further revealed, in some cases, the biometric card readers failed to read and authenticate the finger print of some eligible voters and therefore disenfranchising some eligible voters in Bwari Area Council.

Hence there is need for INEC to braze up to its responsibility by perfecting the operations of the Biometric Card Readers and other ICT gadgets in subsequent elections. INEC should also develop its staff on the efficient use of ICT during elections in order to enhance free, fair and credible elections in the future.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Information communication Technology (ICT) refers to the use of computer software and hardware to process data and information for both private and public use. In today's globalized world, Information Communication Technology (ICT) has taken the centre stage as nothing can be effectively organized and executed with greater success without its use. Research reveals that the usage of ICT in the conduct of elections has eliminated the incidents of multiple registrations, which had been one of the main political tools for rigging elections by unscrupulous and savage elements (Ejikemajombo, 2015). Elections Monitoring Bodies (EMBs) in several countries, including Nigeria are now keying into the use of ICT in their election management because of the need to have credible, free and fair elections. The use of electronic technology (or machine) in election management is called electronic voting (e-voting). Several types of electronic technology have been adopted into the electoral process by EMBs.

Elections in Nigeria (federal, state, or local government area elections) cover a wide area of geographical land mass. This area of land is inhabited by people with different living environments and with a varying literacy and educational level among the electorates. These people of course have different access to technology. According to Unwuchola, Adinlewa&Udeh, (2017), the emergence of information and communication technologies (ICTs) which in turn gave birth to social networking sites had thus brought another paradigm shift in electioneering process. Hence it is appropriate to categorize electorates based on their access to ICT and voting electronic technologies. Electronic voting in which physical supervision is carried out by EMBs or representative of government. That is a situation in which the electronic voting devices are located at the polling units; and this requires internet

(or ICT) services because data/information are shared or transferred in real time with any network. In the opinion of Afriyie (2012), ICTs cover any product that receives, stores, retrieves, manipulates or transmits information electronically in a digital form such as personal computers, digital television, email, robots, etc.

Ogidan, Adekola, Emmanuel & Okogun (2017), describes ICT as any technology that powers or enables the storage, processing and information flow within an organization. Since the use of ICT and electronic technology in election management has been adopted in Nigerian electoral process, it is expected of the electorates to be able to recognize and identify the electronic voting devices and their functions. These electronic-voting devices must be made available by the independent Electoral Commission (INEC) at the various registration centres and/or polling units depending on the level or stage. The e-voting system in Nigeria has not been fully automated to the level of online voting providing internet services for connectable household devices and remote locations. It is presently limited to e-voting in which there is physical supervision by INEC representatives. That is electronic voting systems are located at the various polling stations in the area where election is held.

The Nigerian youth are ICT savvy and if given the opportunity, will develop more suitable technology that could be used to solve the perennial electoral conundrum. Elections in Nigeria are usually marred with electoral malpractice and accompanied by violence, intimidation and sometimes, loss of lives and properties. Thus, the chances of this process producing credible leaders have become very doubtful. Abubakar, (2011), explain that the ICT sector has not only grown over the years but has become a catalyst in addressing the needs and interests of low-income communities in developing countries.

In addressing the issue of transparency of election which is fundamental to democracy, there is need for orientation geared towards a well-informed electorate, enhancing institutional policies and processes through instituting complete information and communication

technology process, such as biometric technology, (Musa-Atufe, 2018). While it may seem like the mainstream media (television, radio and newspaper) are already playing the role of informing and educating the electorate and even enhancing election processes for years, it did not engage and involve the participation of the youthful electorates who are the predominant users of the social media which has revolutionized the media industry.

It is imperative to state that the platforms of ICT strengthen the capacity of individuals, aid liberated communication and mobilization, and reinforce civil society. It enables citizens to report news, expose wrongdoing, express opinions, mobilize protest, monitor elections, scrutinize government, deepen participation, and expand the horizons of freedom (Diamond, 2010). The advent and development of e-registration has bridged the gap between people and culture, penetrating all levels of society, influencing the socio-economic and political sectors of each country, eroding old practices and models, hence establishing new ones. In fact, the exposure of Nigerians to global happenings especially to western democracies through advanced information technology has raised their expectations and demands on their leaders and governance in general.

1.2 Statement of the Research Problem

Although, Nigeria is yet to meet up with international standard for the provision of viable, successful and generally accepted electoral system of democracy due to lack of full adoption of ICT in Nigeria's election, however, it is believed that its full adoption in Nigeria would improve election management in the country. The irregularities and widespread violence that occur during and after election occasions by rigging and election malpractices is a serious issue of great concern to the election management body, government and other stakeholders. These challenges especially with regards to 2015 and 2019 general elections, reflect deep structural and systemic problems of the Nigerian states in the management of elections.

In order to address these electoral anomalies, Information Communication Technology (ICT) and electronic voting has been employed in the electoral processes mostly in developed democracies, (Abubakar, 2012). Although, research reveals that the usage of ICT in elections has eliminated the incidents of multiple registrations, which had been one of the main political tools for rigging elections by unscrupulous and savage elements (Ameen, 2021), the adoption of ICT and electronic technology into the electoral process in 2015 and 2019 general elections, still suffers some setbacks occasioned by poor or erratic power supply, malfunctioning, unskilled personnel, mass illiteracy, and election fraud using electronic voting.

However, many research studies have been presented in literature based on the use of ICT and electronic voting in election management (Olokodana, 2019; Ameen, 2021; Omotayo and Adekunle, 2021). Amongst these, only few have considered the use of computer in election process in Nigeria with focus on rural areas (see Nnamani, 2021; Fatai, 2020). As found in these studies, Nigeria, like many other African countries, is still confronted with a myriad of socio-economic and political problems ranging from gigantic corruption, disproportionate poverty, massive unemployment, insecurity and general underdevelopment, (Akindele, 2011).

These problems, many believe, are centered on political leadership which is largely determined by election process and its outcome, especially in transiting from one government to another. There is no gainsaying that inadequate biometric technology has drastically increased incidences of electoral malpractices in 2015 and 2019 general elections such as: ballot stuffing, result sheet mutilation, manipulations, over-voting, alteration of result sheets, and hijacking of ballot boxes in the history of Nigeria elections, (Ajanaku, 2015).

The Independent National Electoral Commission (INEC) has not used enough innovative approaches to improve the country's election management and conduct. Lilleker & Koc-

Michalska, (2012), elections in Nigeria and the nature of the electronic registration process are usually fraught with sectarian conflicts between ethnic groups and the multivariate religions that exist thereby exposing the process to violence and fraud which consequently have led to perennial leadership failures.

These aforementioned challenges lend credence to negative reports from some election observers in both 2015 and 2019 general elections. Therefore, attaining a credible electoral process in Nigeria requires the re-examination of the structural and systemic challenges of ICT which constitute a major challenge. It is believed that the full implementation of the required electronic voting system in Nigeria would improve election management in the country thereby meeting up with international standard.

1.3 Research Questions

Originating from the foregoing problems, the following research questions are designed.

- (i) What are the effects of ICT on the 2015 and 2019 Presidential elections in Bwari Area Council of FCT?
- (ii) How effective was the biometric card reader in the 2015 and 2019 Presidential elections in Bwari Area Council of FCT?
- (iii) What are the lessons learned from the application of ICT in the conduct of 2015 and 2019 Presidential elections in Bwari Area Council of FCT?

1.4 Research Objectives

The broad objective of the study is to evaluate the application of ICT on Nigeria's 2015 and 2019 Presidential elections in Bwari Area Council, FCT. The specific objectives are to:

- (i) Examine the effects of ICT on the 2015 and 2019 Presidential elections in Bwari Area Council of FCT
- (ii) Investigate the effectiveness of the biometric card reader in the 2015 and 2019 Presidential elections in Bwari Area Council of FCT
- (iii) Draw lessons from the application of ICT in the conduct of 2015 and 2019 Presidential elections in Bwari Area Council, FCT.

1.5 Significance of the Study

This study is borne out of the fact that many review have been carried out on information communication technology on Nigeria's presidential elections in 2015 and 2019. This information of elections will contribute to knowledge of the researchers as well as provide much needed information to the electorates. The outcomes of this study would be useful to the Independent National Electoral Commission (INEC) as they search for ways to improve their performance by conducting more acceptable, credible, free and fair elections.

This study will serve as an eye opener to policy makers in Nigeria on the importance of electronic voting and why it is being used in elections. It will enable them to give appropriate orientation to stakeholders on how electronic voting can aid in the conduct of credible, free and fair elections. In this regard the information communication technology will be utilized effectively.

It will help voters from different places to generate ideas and solution to problems based on the best way to run capacity building electoral activities in order to achieve desired goals and objectives. It will equally be useful to large corporations, universities, commissions and to the government. It will also help researchers to know more about information communication technology as a tool for improving participation.

This study is necessary due to the worrisome occurrence of non-utilization of information communication technology opportunities toward achieving smooth presidential elections. Considering the attention currently being given information communication technology, it is expedient to make use of sophisticated facilities.

Efficient utilization and integration of direct data capture machine would enhance transparency from INEC officials all over the country. Moreover, the finding of this study

will help the INEC to appraise their performance in achieving the set goals of the commission.

Admittedly, it will also help the INEC officials to provide enabling environment where e-registration will be taken place. Also, at the same time provide the needed materials to the staff for their utilization. The study will equally unravel the power behind the optimal utilization of information communication technology in achieving free and fair elections.

Lastly, the empirical findings of this study will significantly create awareness of the impact of information communication technology on Nigeria's presidential elections. It will be of great value to students as a point of reference and will equally form the basis for the further research study.

1.6 Scope of Study

This study focuses on the application of ICT on Nigeria's 2015 and 2019 Presidential elections in Bwari Area Council, FCT. Essentially the study was designed to examine only registered voters in Bwari Area of FCT who participated in the 2015 and 2019 Presidential elections. This time frame is chosen because it represents the most recent general elections in Nigeria. As revealed by INEC (2019), Bwari Area Council has about 485,144 population distributed across the ten electoral wards of the Area Council namely: Bwari Central, Byazhin, Dutse, Igu, Kawu, Kubwa, Kuduru, Shere, Ushafa, and Usuma.

1.7 Operational Definition of Terms

Information Communication Technology: involves sharing of information through a medium using electronic device. On the other hand, an electronic voting technology is a device or gadget that can function in isolation or as a standalone without internet service but will give greater efficiency, credibility and transparency if connected to the internet so that data/information can be shared in real time.

Presidential Election: This is the voting into office the candidate for the presidential position through voters. Electoral commission will collate, count and announce the winner.

Electronic Voting: entails combining electronic voters register and smart card readers with election result devices that would be self-auditing and fully equipped with real time facilities. Electronic voting is a type of voting in which voters are required to use electronic device to make and record their ballot choice.

Biometric Technology: This is capturing voters' bio data through a machine; it enhances the polling environment, and makes the electoral commission more robust and efficient.

Direct Data Capture Machine: A computer system for capturing and storing voters' information, scanner for taking fingerprints of registrants; camera for taking pictures; back up batteries to forestall power failure, External Hard Disk Drive (HDD) for data backup and printer for printing Temporary Voters Card (TVC).

Electronic Registration: This is the registration of voters electronically; it is essential to pilot the electronic registration or gadgets by the electoral commission so as to build confidence in their performance.

Free and Fair Election: It has also been proven to be more efficient and reliable in achieving credible, free and fair elections. The proper management of election in Nigeria so as to have viable and transparent elections has been an issue of serious concern to election authority and stakeholders.

Participation: This is embracing the platform to mobilize their citizens and candidates towards active participation in the political process. Equally refers to the various mechanisms through which members of the public express their political views and exercise their influence on the political processes including the assessment of those they have selected or elected to represent them at various governmental rungs.

Transparency: This requires greater care and transparency to nurture it to full grown and developed democracy with strong democratic intuition and structure.

Easy Collation: It gives credibility to result collation by transmitting results in real time process. This is done electronically; it will save collation officers the risk of travelling in the dead of the night to get results submitted for final collation.

1.8 Organization of the Study

Accordingly, the body of this study is divided into five(5) main chapters, the first chapter is the introduction which consists of the background to the study, the statement of problem, research questions and objectives of the study, propositions, significance, scope and limitation of the study and the organization of the study. Chapter two present the literature review and the theoretical framework. Chapter three will focus on the research methodology including the population of the study, sample size determination, sampling technique, source of data, method of data analysis, reliability, validity of the instrument and ethical consideration Then chapter four focused on the data analysis and interpretation. Finally, chapter five provided the summary, conclusion and the recommendations of the research work.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

This chapter addresses some conventional understanding of Information Communications Technology (ICT) with theoretical paradigms in order to contextualize the research findings. The research reviews literature related to electronic voting, biometrics technology, direct data capture machine and E-registration under ICT, while free and fair elections, participation, transparency and easy collation were reviewed under Nigeria's Presidential Elections. The expedient areas that will also be reviewed are theoretical and empirical aspects of literature review. This chapter will conclude with gap in literature.

2.1 Conceptual Review

2.1.1 The Concept of Information Communication Technology

Statistics Canada, (2008) opines that information and communication technology is a field of work and study that includes technologies such as the desktop and laptop computers, software, peripherals, and connections to internet primarily for information processing and communications functions. This conceptualization points to the fact that ICT involves the use of computer software and hardware to process information for both private and public use. Yonck, (2010), in this context, the use of information and communication technologies in elections has become pertinent since the manual method is fraud-ridden and practically becoming clumsy for government to manage. Therefore, in order to control the atrocious level of electoral fraud, information communication technology has become an important tool for electoral management in Nigeria.

The importance of Information and Communication Technology in human societies can never be relegated. According to Kroeker, (2010), the use of information and communication technologies in recent times has become inevitable and fundamental to operations and activities of organizations and societies. The benefits of ICT in organizations and society include the capacity to reshape and reformulate, restructure and revitalize organizations internally and their interactions with other organizations and individuals within the networks in which they lay. This conceptualization points to the fact that ICT involves the use of computer software and hardware to process information for both private and public use (Adesola& John, 2014). The use of ICT and electronic technology is due to the fact that elections in many countries especially in developing countries like Nigeria lack credibility,

this because the electoral process are marred by rigging and violence (Adeleke, 2014). As a result of this, many electoral reforms have sprung up in recent time in order to curtail or eliminate the inadequacy and weakness encountered in election management.

In the words of Shively (2005), electoral politics in Nigeria tends to bring out sectarian conflict between tribes and regions of different religions and the difficult logistics together with the passion of hostility that an election awakens, leave the process open to violence and fraud. Today, information and communication technology (ICT) has broken down all known national barriers to the extent that whatever that happens in one country will immediately reverberate around the world in a matter of minutes. This has inadvertently raised the bar in the way and manner politics and administration were hitherto handled.

Since Barak Obama broke the world record in the history of ICTs uses for political purpose during the 2008 United States Presidential elections. Many nations and politicians around the world have continued to use ICT in the political system, which cannot be overstated, (Kerevel, 2009). It is a veritable tool for deepening and enhancing representative democracy. It is significant in ensuring an effective and inclusive electoral system. However, its acquisition and applications are not without challenges especially that of low-level telephone penetration and uneven access which appear to be insurmountable. In line with the above, this study focuses on the relevance of information and communication technology in enhancing democracy in Nigeria with a focus on the electoral process.

2.1.2 Electronic Voting

Electronic voting and election management refer to the use of electronic devices or technologies for the organization, administration, and execution of electoral tasks so as to improve and automate the entire election process. Statistics Canada, (2008), opines that information and communication technology is a field of work and study that includes technologies such as the desktop and laptop computers, software, peripherals, and connections to internet primarily for information processing and communications functions.

Although, it was reported that Nigeria is yet to meet up with international standard for the provision of viable, successful and generally accepted electoral system of democracy due to lack of full implementation of the required electronic voting system in the county.

Also, card readers with biometric authentication technology which has been widely employed in view to achieving transparent results are subject to high-level electoral fraud because of human control. Thus, the desired result is yet to be achieved. It then presented a framework that consists of different electronic voting systems in a way that conforms to the Nigerian electoral system so build confidence and trust in electoral process. In order to reduce or eliminate the irregularities that have marred the traditional voting system, the election management body decided to employ electronic voting system for proper conduct of general elections in 2015 and 2019.

This, it was believed, would make the election more transparent, reliable, credible, free and fair. However, it uses in the conduction of election mostly in rural areas suffers some setbacks despite the fact that the application of this technology has somewhat improved confidence in the voting system.

2.1.3 Biometric Technology

Applications of Information and Communications Technology (ICT)-driven innovations are profound in the electoral cycle. Among them, biometric technology is currently sweeping across developing countries, (Ntemana&Olatokun, 2012). It is, however, only poorly adopted among rural voters. These interactions combine to produce specific modalities that shape voting behaviour and general political culture. It is important to establish the extent to which such factors combine to redefine or reconstruct rural voters' encounters with Information and Communications Technology (ICT)-driven biometrics, and consequently determine electoral outcomes. These circumstances shed some small light on rural voters' electoral assertiveness, and their general behaviour during election time.

Whereas rural voters originally tend to exhibit a less instinctive drive for electoral participation, their apolitical dispositions are particularly informed by certain fundamental social realities including negative perceptions and/or increasing apprehension about biometric technology systems, the non-availability of proper infrastructure, and the significant distance between polling stations and their dwellings (Aisha, Anita, Charu&Hiteshyadav, 2012). Mutual suspicion and fear, contextual discrimination, and feelings of political intrusion and endangerment over ethnic heritage affect the perception of rural voters when it comes to biometric technology. This is what largely constitutes the poor adaption of rural voters to biometric systems.

Since local dwellers are characteristically bonded by strong socio-economic, cultural, and historical facts or myths (Onyima&Iwuoha 2015), for instance, this belief tends to define or recreate their specific and peculiar voting behaviours. While policymakers and public analysts are yet trapped in the fulcrum of policy goals, such as expanding the benefits and reliability of biometric technology and ICT infrastructure generally, specific social dynamics – ones that have been less rigorously identified continue to interact negatively with the purposes and goals of biometric technology and of other ICT systems drafted in for the better conducting of elections.

However, in a bid to improving the conduct of elections in Nigeria after the 2011 general elections, INEC introduced technological innovations. These included a biometric PVC and card reader machine used to verify the authenticity of the PVC and also carry out a verification of the intending voter by matching the biometrics obtained from the voter on the spot with the ones stored on the PVC. The card reader is designed to read biometric information in the embedded chip of the PVC. It displays voters' names and facial images, and authenticates their fingerprints. Although technology does not offer solution to all forms

of electoral malpractice, the use of the SCRs made it more difficult to brazenly rig the 2015 General Elections.

On March 7, 2015, INEC test-ran the reliability of the biometric technology in 225 out of the total 120,000 polling units and 358 out of the 155,000 voting centres that were used for the elections (Idowu, 2015). The test-run of the device took place in 12 states namely: Rivers and Delta (South-South), Kano and Kebbi (North-West), Anambra and Ebonyi (South East), Ekiti and Lagos (South West), Bauchi and Taraba (North East) as well as Niger and Nasarawa (North Central). While acknowledging the challenges of the device in confirming fingerprints, the Commission expressed satisfaction that the basic duty of the card reader to authenticate the genuineness of PVCs was in almost all cases achieved.

2.1.4 Direct Data Capture Machine

The procurement of the Direct Data Capture Machines (DDCM) for the registration of prospective voters introduced some level of credibility to the system. DDCM was introduced to eliminate double registration, double voting and other electoral malpractices. Meanwhile, the build-up to the 2007 general election marked the beginning of a new era in the history of Nigeria electoral system, (Ntemana&Olatokun, 2012). The DDCM components include: It was recorded that 13,000 integrated data capture systems were deployed by INEC for the 2006 voters registration exercise, 22,000 Direct Data Capturing (DDC) machines, and 18,000 devices for revalidation of voters register for electorates thereby giving enough room for the registration of over 61 million voters with 40,000 DDCs on the whole (with data and the printer units accessories) at the end of the exercise.

Research revealed that the adoption of DDC technology with manual back-up for the revalidation of voters' register made the exercise more transparent, speedy and less cumbersome (Narasimhaiah 2008). Registration of voters was conducted for 81 days due to limited supply of DDCMs to the states. Also, it is believed that the development of an

electronic voters register was a giant stride in eliminating double registration and double voting in the history of Nigeria electoral system. Moreover, the conduct of the 2011 general elections was domestically and internationally acclaimed to be credible and a great leap forward from the previous experiences since the 4th Republic (Adeleke, 2014). The search light of INEC under the leadership of Prof. AttahiruJega in 2010 was focused on the registration of voters as it then existed, which was discovered to have fallen far short of the level of credibility required for the conduct of free and fair elections.

The new Commission took the view that an entirely new register of voters was the irreducible minimum for free, fair and credible elections (Adeleke, 2014), INEC was able to procure and deploy over 132,000 direct data capture machines (DDCMs)-one per 119,973 polling units (PUs) and each of the 8,809 Registration Areas (RAs), with a provision for some contingencies. The registration exercise was conducted for 21 days. A more effective Automated Fingerprint Identification System (AFIS) was applied to rid the register of multiple registrants while an Electronic Voters' Register (EVR) was generated which was used for the 2011 general election. No technology was used for collation of results. Electronic mail was used to transmit results from local government and state offices to national headquarter in Abuja.

2.1.5 E-registration of Nigerian Voters

The methods used in registration of voters and conducting elections in Nigeria from 1999 to 2017 ranges from the use of typewriters to Direct Data Capture Machine (DDCM), Electronic Voters' Register (EVR), Smart Card Reader (SCR) and e-collation. The steps taken by Gen. AbdulsalamiAbubakar after the death of Gen. SaniAbacha in June 1998 paved the way for the historic 1999 general election in Nigeria. Registration of voters was done manually. Registrant details were written with pen on a form provided by INEC, (Policy and Legal Advocacy Centre, 2012). The filled forms were collected and eventually used for the 1999

general election. There was neither any database of voters nor any technology introduced to minimize double registrations; thus the 1999 election registers' credibility was questionable and was very far from reality.

The foundation of any election process is a credible Voters Register. The Voters Register is the basis for determining who is eligible to vote and who is not on Election Day. While the Manual Register of Voters used in the 1988 and 1999 elections served its purpose, it has become outdated with the passage of time (Aisha, Anita, Charu&Hiteshyadav, 2012). The 2003 election witnessed a technological leap with the introduction of Optical Magnetic Recognition (OMR) forms. While still retaining the manual approach as back up, INEC incorporated computerization, using the Optical Mark Recognition (OMR) technology. This involves the compilation on the form EC.1A of the names and particulars of all prospective voters (also known as Prospective Registrants) who present themselves physically for registration at the Registration Centers.

The information so obtained is then transferred and shaded on computer readable OMR Forms, which were later, scanned into database on completion of field operation, and processed to produce the Register of Voters. Each OMR Form has a unique number, which is assigned to the registered voter who is then issued with a new Temporary Voters Card (TVC) bearing the same number and his/her particulars including his/her thumbprint (Aisha, Anita, Charu&Hiteshyadav, 2012). It is observed that as years pass by, INEC gets more sophisticated with its technologies. For the registration of voters, it started in 1999 with the capture of only basic details of voters.

In 2003, it added finger prints which were done on paper forms. It went fully electronic in 2006 with the introduction of biometrics (pictures and fingerprints) which gave technology/birth to the popular Electronic Voters Register (EVR). In 2011, INEC introduced Automated Fingerprints Identification System (AFIS) to detect and to minimize cases of

multiple registrations, (Afriyie, 2012). In 2015, an improved AFIS was further used to clean the register. Business rule was also applied in 2015 which allowed for the capture of minimum of two fingers as the criteria for inclusion of any voter in the electronic register. It is believed that with the use of a licensed AFIS, INEC would be able to eradicate or reduce to the barest minimum cases of multiple registrations.

2.2 2015 and 2019 Nigerian Presidential Elections

Nigerian presidential Election has become a *sine qua non* for the survival of liberal-representative democracy because it offers the people the platform by which they choose their leaders. Hence, there can be elections without democracy, but there cannot be democracy without elections (Mömkes, 2013). Presidential elections involve a set of activities leading to the selection of person(s) out of many to serve in position of authority. Elections are viable instruments for fine-tuning the workings of democracy and consummating representative government, and being a means of leadership turn-over; elections are the most frequent ways through which citizens interact with government (Obiyan&Afolabi, 2013). 2015 general election marked a new era in the deployment of sophisticated Information Communication technologies in the history of Nigeria elections in addition to existing technologies.

Elections that are credible, free, and fair promote citizen participation in governance by allowing citizens to choose or reject leaders based on their performance in fulfilling the social contract (Jega, 2014); and bestow on governments the legitimate authority to initiate and implement policies on the one hand, while also empowering citizens to hold governments accountable on the other. Stakeholders in several other democracies have since harnessed the utility of ICTs platforms in their electoral process, and Nigeria, despite structural challenges, is not exempted. The social media was first used in a remarkable way in the 2011 elections (Policy and Legal Advocacy Centre, 2012), especially by President Goodluck Jonathan, who

used his Facebook account to garner country-wide support. Ever since, stakeholders' use of ICTs platforms for election-related activity has risen (Shehu Musa Yar'Adua Foundation, 2012).

As Agbaje and Adejumobi (2006) have noted, elections are an expression of the people's sovereign will, helping to confer legitimacy on political leadership. Akindele (2011), however, notes that elections are not just what happens on Election Day, but are subsumed in a process which encompasses activities before, during and after elections. It includes the legal and constitutional framework of elections, the registration of political parties, party campaigns, the activities of the electronic and print media in terms of access; campaign financing, the activities of the security agencies and the government in power.

It includes the authenticity and genuineness of the voters register, it includes the independence or lack of it of electoral agencies and organs. It includes the liberalism or otherwise of the political process in the country and the independence of adjudicating bodies on elections, (Adesola & John 2014). There is also the revolutionary impact of the social media on election and voters' awareness with more engaging and participatory conversations through various social platforms that have helped to shape public opinions and reposition elections not only in Nigeria.

2.2.1 Free and Fair Election

Democratic societies are founded on the principles of elections and on opinion expression capabilities as observable in most political transitions. Most sovereign nations are governed by pure democratic ideals, in which citizens express their right to choose a leader to whom they believe their nation's destiny can be entrusted through the conduct of a free and fair election (Ahmed & Usman 2015). However, election management bodies around the world have employed a number of innovative approaches, some of which are now considered best practice to improve the management and conduct of elections. Electoral reforms that have

been instituted include the use of information and communication technology, adoption of more transparent and inclusive processes, professionalization of the organization, amendments to legal framework and improvement of relationships with external stakeholders.

It is believed that the full implementation of the required electronic voting system in Nigeria would improve free and fair election management in the country thereby meeting up with international electoral standard. As a result of these efforts, the past several years has seen the varying successes of a number of election management bodies in recent times have recorded a great deal of success in the manner by which they prepare, organize, administer and conduct elections (Jega 2014). A major factor of the representative government is periodic election. It, however, must be noted that the processes of credible, free and fair election are as relevant as the election itself.

Election and its processes include all activities before, during and after. A noteworthy example of a process that affects election credibility is the internal democracy within the political parties that produce the different candidates, (Alausa, Wasiu&Akingbade 2017). It has been observed over time that “Godfathers” single-handedly impose the candidates that would contest during party primaries as against majority vote thereby promoting strife and division among party members. This has sometimes led to anti-party activities, rebellion and dissidence among political party members. While this factor may seem unlikely to affect the overall process, it is, however, important to note that every undemocratic procedure compromise election credibility and its outcome eventually.

2.2.2 Participation

Election, as the central component and the minimum necessary requirement for representative democracy, remains the only legitimate instrument for leadership turnover. It is a core aspect that requires the active involvement of citizens. However, beyond elections, the flowering of

democratic practice depends largely on the active participation of the people through different forms of political activities such as in the electoral process. One of the areas in which this active participation of the people has been enhanced, world over, is in the use of Information and Communication Technologies (ICTs) platforms, Kuye, Coker, Ogundeinde & Coker (2013). Being an instrument of political socialization and means of political education, ICTs have galvanized massive citizen awareness and enhanced liberal values of individualism. In Nigeria, however, ICTs uses have met with mixed successes.

It is very germane to highlight the fact that representative democracy enhances and emboldens political participation. Political participation involves such activities like political discourse, campaigns, party rallies, voter registration, casting of ballots, writing and signing of petitions, attending protests and taking part in civil disobedience, joining interest groups that engage in lobbying, political advocacy, observing and reporting cases of violation of the electoral process such as rigging, intimidation, violence, monetary inducements, underage voting, etc, (Uzedhe & Okhaifoh, 2016). It encompasses the citizen's involvement in the acts, events or activities that influence the selection and the actions taken by political representatives.

An important aspect of election is participation as its product, as noted above, it functions with authority and the cardinal objective of leadership is to provide participation for governance, therefore, the need to emphasize the existing link between election and leadership is very paramount, more so, leadership has majorly been indicated as one of the main factors responsible for the failure of government in Nigeria. ICTs facilitate efficient administration, citizen services, transparency, accountability and formal political participation (e-governance), and also provide the means for social movements, activist groupings or minority groups to engage with these processes on a global level (Association for Progressive Communications, 2009). In recognition of this, is that the extent to which a

leader is able to achieve his mandate is dependent upon support from citizens. Thus, failure is imminent when popular support is absent.

2.2.3 Transparency

Manual and electronic collations are done simultaneously. The electronic platform automatically sums up votes which serve as check and balance for the manual collation. Results were transmitted in real time which has drastically reduced incidence of manipulations at collation centres. Although, in Nigerian elections, gadgets are not used effectively due to lack of proper training and the issues of non-transparency that trailed 2007 general election, (Sabo, Siti, Abdullah &Rozita 2015). No technology was used for accreditation of voters, voting, sorting, counting and collation of results. A great technological improvement is also observed in result collation and transmission. Though INEC has not fully implemented the use of technologies for collation due to lack of legal framework, the introduction of e-collation support platform has further added credence to INEC transparency.

The use of ICT in elections promotes transparency which enhances the legitimacy of the government. Since citizens are aware of the process involved and they know the resultant effect of their activities, it is not an overstatement that they will be willing to participate and trust the process. Reduced Electoral Litigations: The application of ICT in the electoral process reduces the incidences of electoral litigations that often characterize the Nigerian electoral process. However, ICT can simplify the process through the use of one-time applications that enhances performance, transparency and relative perfections in the electoral process, (Ntemana&Olatokun, 2012).

Cheeseman, Lynch and Willis (2018) concur on the consolidating benefits of digital technology and its implications for African elections. They maintain that the use of biometric

technology in elections. This is achieved by generating greater clarity and transparency regarding election outcomes. However, the authors remain silent on the specific implications of biometric technology within rural environments. Whether the use of biometric technology in the conducting of elections in such geographical areas has enhanced electoral outcomes especially by increasing voter participation has therefore remained less understood.

On the same footing on transparency, Professor AttahiruJega, former chairman of the Independent National Electoral Commission (INEC), who oversaw the introduction of biometric voting technology in Nigeria, affirms: We have made rigging impossible for them (electoral fraudsters) as there is no way the total number of votes cast at the polling unit could exceed the number of accredited persons, adopted (Ntemana&Olatokun, 2012). Such discrepancy in figures will be immediately spotted. This technology made it impossible for any corrupt electoral officer to connive with any politician to pad-up results. The card reader machines will help us to address all those irregularities, starting from the accreditation of voters at all the polling units.

2.2.4 Easy Collation

The present electoral policy has been criticized for only granting a partial use of technology to the process. A greater measure of the electoral exercise is still manually carried out or resorted to too often, for example, voting, collation and transmission of results. The Electoral Act 2010 did not provide a specific guideline on the role of ICT in election; instead, it contains a number of sections that made references to the use of electronic media. This view was expressed by Policy and Legal Advocacy Centre (2012) when it explained that the Act is mindful of the opportunities provided by the electronic media. This could explain the views expressed by National Democratic Institute (2015), that technology can be used to readily create spaces and opportunities for citizens to express their voices, but making these voices

politically stronger and the spaces more meaningful is a harder challenge that is political and not technological in nature.

Automated Fingerprints Identification System (AFIS) and Smart Card Reader (SCR) have reduced the incidence of multiple registrations and multiple voting to the barest minimum while the introduction of e-collation support platform has drastically reduced incidence of manipulations at collation centres because results are transmitted in real time. The advantages of electoral technology of previous elections (2015 and 2019) are as follow: it was faster to create; it was more accurate than previous manual method; register can be updated on continual basis; special features were added for security such as the thumbprints. The limitations of technology include the following: absence of photograph of voters; absence of robust database of voters and inability to develop an electronic register, (Ntemana&Olatokun, 2012). No technology was used for accreditation of voters, voting, sorting and counting, collation and transmission of results. The importance of Information and Communication Technology in human societies can never be relegated. According to Kroeker and Yonck, the uses of information and communication technologies in recent times have become inevitable and fundamental to collation operations.

2.3 Independent National Electoral Commission (INEC)

In Nigeria, several names have been established at various times to organize elections. Currently, the Independent National Electoral Commission (INEC) is responsible for election administration, save for elections into local government councils (FRN, 1999). Over the years, though, the independence and capacity of INEC to conduct credible elections have been questioned (Agbaje&Adejumobi, 2006). This view has been corroborated by Jinadu (2011), when he argues that one of the problems confronting Nigeria in her bid to engender confidence in the electoral process is how to design and ensure an efficient, effective, and politically nonpartisan election management body.

An e-collation website was developed by INEC for collation and transmission of polling units' results; although it was not used for the general election due to technical problems. E-collation was eventually used in the Kogi State governorship election in 2015 as support to the manual collation. INEC ICT staffs were deployed to collate and transmit results electronically while it's been collated on paper by the collation officers. All the elections that were conducted in 2016 which include: Rivers State parliamentary rerun, Kogi State gubernatorial rerun, Edo State, Bayelsa State and Ondo State gubernatorial elections, Rivers State parliamentary rerun as well as Osun State senatorial bye election conducted in 2017 witnessed the use of E-collation as support to the manual collation (Igboechesi, 2019).

The usage of ICT was seen as a very pertinent one, as it was expected to eliminate, primarily the case of multiple registration, which had been one of the main political tools for rigging elections. This unique technique was employed to capture mass involvement in governance and empowerment of the teeming electorates to participate in the electoral processes. The innovation was largely welcomed by Nigerians because it was meant to showcase governance in Nigeria with the fundamental challenge to excel.

2.4 Empirical Review

In a study by Chris and Violet, (2020) titled "The Relevance of Information and Communication Technology in Enhancing Representative Democracy in Nigeria".The study examines the concept of representative democracy and election as its foundational hallmark. It focuses on election in Nigeria and the role of information and communication Technology (ICT). Elections in Nigeria and the nature of the electoral process are usually fraught with sectarian conflicts between ethnic groups and the multivariate religions that exist thereby exposing the process to violence and fraud which consequently have led to perennial leadership failures. This paper therefore, aims to x-ray the role and relevance of ICT in affecting the outcomes of elections in Nigeria. In particular, it seeks to examine how the

deployment of advanced technology in the form of introduction of card readers and permanent voters' card (PVC) can enhance the electoral process and management. There is also the revolutionary impact of the social media on election and voters' awareness with more engaging and participatory conversations through various social platforms that have helped to shape public opinions and reposition elections not only in Nigeria but also in other climes. Communication and diffusionist theories are adopted as the theoretical framework. The findings reveal that innovation in the management of elections especially by introducing ICT will lead to minimal electoral fraud and more credible elections that will be acceptable to both the contestants, electorate and the international community.

In a study by Ayeni and Esan, (2018) titled "The Impact of ICT in the Conduct of Elections in Nigeria". There is no gainsaying that technology has drastically reduced incidences of electoral malpractices such as: ballot stuffing, result sheet mutilation, manipulations, over voting, alteration of result sheets and hijacking of ballot boxes in the history of Nigeria elections. The Independent National Electoral Commission (INEC) has employed a number of innovative approaches to improve the management and 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. Therefore, this study examines the impact of these technologies and the effect they have on election activities in Nigeria from 1999 general election to 2017. Results show that the introduction of these technologies: 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 support platform has drastically reduced incidence of result manipulation at collation centres.

Ejikeme (2020) argued that the organization and conduct of free, fair and credible elections had been a perennial problem facing Nigeria since her independence. Political instability,

electoral malpractices, post-election violence, arson, killing of political opponents and litigations characterized the polity. Information and communication technology was introduced in election administration in Nigeria to curb excessive electoral fraud to the barest minimum and foster credible elections. A survey research design was adopted to elicit information from the electorates on the performance of INEC in administering the 2015 general elections using biometric card reader and the customized permanent voter card, to ascertain whether the technological devices minimized electoral malpractices and enthroned free, fair, and credible elections in Nigeria. The study also established the challenges INEC faced in administering the elections. The instrument used to glean information from the respondents was questionnaire. Qualitative method of data collection was also used to elicit data from documentary evidence of secondary sources. Quantitative method of analysis was employed.

Aishatu and Muhammadou, (2019) postulates that “Investigating the Implementation of ICT Tool to Electoral Process in Nigeria”. The study is aimed at understanding the implementation of Information Communication Technology (ICT) tool to electoral process and its challenges in Nigeria using actor-network theory (ANT) as a lens. Moment of translation of ANT was applied to gain an insight of the phenomenon. Empirical data was used for the analysis in the context of social behavior between human and non-human actors following inductive research approach. Case study methodology was carried out at Independent National Electoral Commission (INEC). The methods of data collection were through interview, participant observation and reviewing organizational documents. Challenges of the Smart Card Reader (SCR) in Nigeria’s electoral process are highlighted. Results of the study indicated that the challenges in implementation of the SCR emanated from the heterogeneous actors “human and non-human”, which lack synchrony during the process. Apart from the success of the card reader during accreditation, there was inadequate

manpower training by INEC body and insufficient ICT infrastructure that weakened the ANT process.

Adesola and Susan (2019) in their work titled “Social Media Usage and Impacts on the 2019 General Elections in Nigeria”. There have been controversial opinions on the role of the social media in elections. Some scholars have argued that the social media creates the platform for all to be part of democratic governance through public opinions, while others think otherwise. This study investigated the usage and impact of social media on the 2019 general elections. The study adopts primary and secondary methods of data collection. Findings from the study revealed that social media was used to inform and mobilize voters by various stakeholders during the 2019 elections. Also, findings indicated that the social media has the potential to add value to subsequent elections in Nigeria.

In a study by Iwuoha, (2018), titled “ICT and Elections in Nigeria: Rural Dynamics of Biometric Voting Technology Adoption”. Applications of Information and Communications Technology (ICT)-driven innovations are profound in the electoral cycle. Among them, biometric technology is currently sweeping across developing countries. It is, however, only poorly adopted among rural voters. Does the use of biometric technology in the conduct of elections reconstruct rural voters’ behaviour, amid prevailing social challenges? The links between these realities and their consequences are currently less understood, and lacking in supporting literature. They study argue that the public perception of biometric technology, the availability of proper infrastructure, and the distance between polling stations and the dwellings of rural voters all affect the latter’s level of adoption of biometric technology. These interactions combine to produce specific modalities that shape voting behaviour and general political culture. They study elicit primary data from voters in Nigeria’s remote villages, so as to predict the implications and consequences of glossing over the dimensions and magnitude of the biometric technology adaptation challenge by policymakers. They study

conclude by reflecting on how these interplays and interactions create “spatial differentials” in electoral outcomes/credibility, and proffer possible strategies for institutional intervention. Larry, (2015), examines the powers and responsibilities of the Independent National Electoral Commission (INEC), in the conducts of elections in Nigeria; particularly, that of the 2015 general election. Content Analytical Approach was adopted and David Easton’s Systems theory was used as theoretical foundation. Despite the general acceptance of the 2015 presidential election as free, fair and transparent, there were observed flaws that bedeviled the election. However, it was indeed, an improvement on past elections in Nigeria. The study recommends amongst others; that INEC needs to be truly independent in all ramifications to discharge its duties impartially so as to ensure credible elections and enthrone sustainable democracy in the country; the new government should tackle the issues of corruption, security, unemployment and poverty frontally. Instead of dissipating energies chasing those who have defrauded the country in the past, the administration should embark on aggressive reconciliation, reconstruction and rehabilitation of hitherto aggrieved factions; ensure institutional and human capacity development because, development itself, would raise its own armies to fight corruption.

In a study by Temitayo and Oludare, (2020), Election, as the central component and the minimum necessary requirement for representative democracy, remains the only legitimate instrument for leadership turnover. It is a core aspect that requires the active involvement of citizens. However, beyond elections, the flowering of democratic practice depends largely on the active participation of the people through different forms of political activities such as in the electoral process. One of the areas in which this active participation of the people has been enhanced, world over, is in the use of Information and Communication Technologies (ICTs) platforms. Being an instrument of political socialisation and means of political education, ICTs have galvanised massive citizen awareness and enhanced liberal values of

individualism. In Nigeria, however, ICTs use have met with mixed successes. With focus on the 2015 general elections, the paper empirically appraises the use of ICTs platforms by the Independent National Electoral Commission, political parties, the media and accredited election observers as major stakeholders in the electoral process. It determines and compares the utility of the ICTs platforms, especially the social media and web pages, as used by these stakeholders in carrying out their duties, and the impact of such platforms on performance, credibility and the overall conduct of the elections. The paper also explores prospects ahead of future elections.

In a study by Michael and Emmanuel, (2020) on “ICT and Electoral Management: The Need for Forensic Investigation in Electoral Process in Nigeria”. Two of the contentious problems generating crisis at election years in Nigeria has been the issue of multiple registration and multiple voting. These were discovered at the 2007 Governorship Elections in Ekiti and Osun States. These two forms of electoral malpractices were subject of litigations for years after the election and led to upturning of electoral victory of elected governors when the forensic experts tendered evidences before Electoral Petition Tribunals and later confirmed by Appeal Court. This paper therefore argued that though a step was taken by INEC in 2011 elections to guard against multiple registrations by introducing data capturing machine. This however, is not fool-proof. There are still cases of collusion by INEC Officials to frustrate efforts to guide against multiple registrations and consequently, multiple voting.

The position of the study therefore is that, instead of waiting for years to prove cases of multiple registrations and voting by forensic experts hired by the political parties and their candidates, the Electoral Act can be amended to accommodate forensic investigation by finger-print experts before the declaration of election results. The investigation will however be determined by the type and scope of the election. The forensic investigation will also save the nation credibility crisis and non-violent conduct of election. The device will sort out the

wheat from chaff in term of multiple voting. The study which traces history of electoral crisis in Nigeria and adopted documentary method concluded that it is only this technological/ICT device that can discourage multiple registration and voting. This will enhance electorate confidence in the electoral process and non-violent conduct of elections.

In a study by Njoku, Amaefule, Nwandu and Jibiri, (2018), titled “Application of ICT and Electronic Technology in Election Management: Challenges in Rural Areas in South-Eastern Nigeria”. This study has presented the applications of Information Communication Technology and election management. The study has reviewed several challenges and bottleneck encountered in the electoral democratic system in Nigeria election. During the study, the use of electronic technology adoption in the electoral process has actually reduced human involvement in election process; this is due to irregularities and incessant increase in violence among electorates, party agents and other stakeholders.

The relevance of the study is to address the integration of ICT as well as electronic digital devices in carryout electrons in Nigeria. The research was conducted in the rural areas of the South-Eastern Nigeria States, it was discovered that about 60% of the respondent stated that the use of electronic technology in the deployment to rural areas has inadequate trained personnel in effective handling of the gadgets, issues on the use of card reader malfunctioning was also sported out. It was recommended that the electoral bodies should sensitized, make adequate available of electronic devices for efficient and effective election management in Nigeria.

In a study by Assibong and Oshanisi, (2018), titled “The Role of Information and Communication Technology (ICT) in the 2015 Presidential Election of Nigeria”. The use of ICT in elections has been attracting a lot of interests in the country and has been a subject for discussion in various media during the past years after elections. The study-based method of voting during elections in Nigeria comes with a lot of problems such as delay in voting,

multiple voting, result manipulations, invalid votes and delay in declaring results. This paper investigated the feasibility of ICT implementation in Nigeria by assessing the role played by ICT in the 2015 elections. It relied on documentary method for the generation of data. Using the diffusion of innovation theory, the research concluded that ICT has reinforced the legitimacy of Nigerians in the democratic process as majority after the elections believed that their votes counted and as such their will could be respected in future elections. Thus, it is recommended that the innovation of ICT shouldn't only be welcomed but also incorporated into the Nigeria's electoral system as a lasting solution to electoral fraud. The Electoral Act, 2010 (as amended) should be amended to include the use of the card reader for biometric verification of voters for the purpose of accreditation in future elections.

2.5 Gaps in Literature

Having x-rayed what the above mentioned scholars such as Chris and Violet (2020), Ayeni an Esan (2018), Ejikeme (2020), Aishatu&Muhammadou (2019), Adesola& Susan (2019), Iwuoha (2018) and several others have written, we noted that these scholars have not satisfactorily and systematically addressed in the extant literature the Impact of Information Communication Technology on Nigeria's Presidential Elections within the period of study necessitates further research. Among the gaps which are crucial to this research are the mixed findings regarding the effect of information communication technology on Nigeria's presidential election particularly between 2015 and 2019 elections.

This study therefore contributes to the empirical literature by investigating the effect of ICT on the 2015 and 2019 Presidential elections in Bwari Area Council, FCT. In particular, it also assess the effectiveness of biometric technology during the 2015 and 2019 presidential elections.

2.6 Theoretical Framework

Different theories have been used to explain the effect of ICT on the electioneering process. However, this study adopts the Contextualist Approach as the theoretical framework to examine the effect of ICT on the 2015 and 2019 Presidential elections in Bwari Area Council, FCT. Contextualist approach was propounded by Pettigrew (Pettigrew, 1990, 1987, 1985) and has gathered much attention among Information and Technology (IT) scholars (Augustsson et al., 2010; Ngwenyama, 1998). The adoption of this framework is motivated by two motives. Firstly, according to Pandey (2015), Contextualist Approach as a theoretical approach has the backing of major scholars in the technology and information environment. Secondly, it can boast of a firm foundation whereby all major pillars in organizational framework and direction can stand especially one like the EMB (Pandey, 2015).

In all the different views of acknowledging contextualism, according to Diniz and Pozzebon (2012) all the IT studies reviewed are tilted towards one direction. The Contextualist Approach provides researcher with a wide range of features (Stockdale et al., 2006; Symons, 1991). According to Symons (1991) as cited by Aavik (2015:10) “by breaking it into a number of elements – purpose (why), subject (what), timeframe (when), methodologies (how) and people (who) – allowing the researcher to recognize a wide scope of interrelated factors”. The Contextualist Approach in its capacity and influence gives the researcher a broader scope in terms of analysis as it regards man and its interactions with its environmental strata (Aavik, 2015; Stockdale et al., 2006).

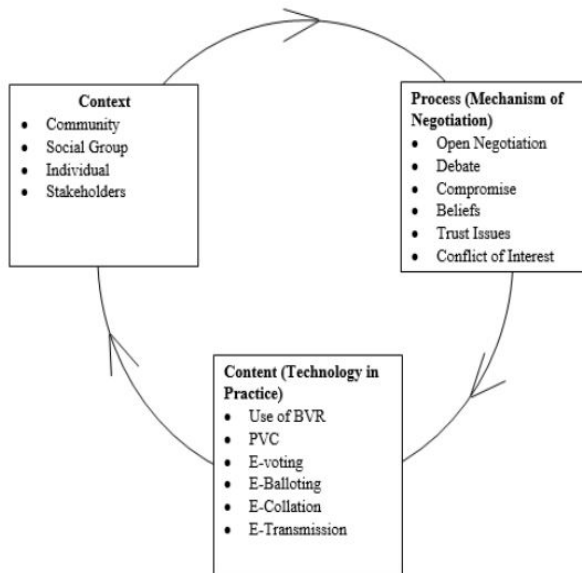


Figure 1: Contextualist Approach Framework Circle. Source: Author

The context dimension of the Contextualist Approach framework connotes the various interactions that occurs in the environment of the new technology engagement and its utility (Pozzebon&Diniz, 2012). The context variation of the Contextualist Approach can be articulated in different format and scope which involve the analysis of ecological issues and frameworks, incidents and features to organizational progress and performance and also the issue of human personal activities in terms of economic, social and political behavior as it affects the organization and its core institution (Pollitt, 2013; Self et al., 2007; Miller et al., 1988; Symons, 1991).

Thus, an insight and evaluation of the both the internal and external contextual environment is key to affecting the adoption and successful implementation of new ideals and changes particularly in the area of technology (Stockdale et al., 2006 and Aavik, 2015). Thus, the application of Contextualist Approach as a theoretical approach to examine the effect of technology in Nigeria’s 2015 and 2019 Nigeria’s Presidential elections is key to addressing the research objectives.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter discusses the research methodology employed in this study and the nature of the data utilized. Thus, the research methodology include: Research Design; Population of Study; Sample Size Determination; Instrument of Data Collection and Method of Data Analysis.

3.1 Research design

The research design adopts a mixed of quantitative and qualitative methods, including key informant interviews and questionnaire administration. This method was considered appropriate because it helps to describe, analyze and interpret conditions that characterized the application of ICT on Nigeria's 2015 and 2019 Presidential elections in Bwari Area Council, FCT.

3.2 Population of study

The study is targeted at the ten (10) electoral wards of Bwari Area Council namely: Bwari Central, Byazhin, Dutse, Igu, Kawu, Kubwa, Kuduru, Shere, Ushafa, and Usuma. Essentially the study was designed to examine only registered voters in Bwari Area of FCT who participated in the 2015 and 2019 Presidential elections. As revealed by INCE (2019), Bwari Area Council has about 485,144 population distributed across the ten (10) electoral wards with 160,000 registered voters as at 2019 general elections. Thus, the population of the study include all registered voters in Bwari Area Council.

3.3 Sample Size Determination

The Slovin's (1960) formula was used to calculate the sample size (n) given the population size (N) and a Margin of Error (e). The formula is stated as thus;

$$n = \frac{N}{1+Ne^2}$$

Where: n is the sample size, N is the number of registered voter in Bwari Area Council, (in this case, $N = 160,000$), e (0.05 level) is the Margin of Error. This was employed for two reasons; first, is to ensure that the sample is large enough to represent the population such that the sampling statistic will be the same with the population parameter and to make sure that each voter is truly represented in the population. Thus, the sample size for the study is calculated as follow:

$$n = \frac{160000}{1 + 160000(0.05^2)} = 399$$

Thus, a total number of 399 electorates in Bwari Area Council were randomly sampled.

3.4 Sampling Technique

Simple random technique was adopted for this study because it gives each electorate an equal chance of being selected and eliminates arbitrary or biased selection of sample elements. Given the total number of electorates in Bwari Area Council, a total number of 399 questionnaires were administered, of which 345 were properly filled and retrieved. However, out of the 345 retrieved questionnaires, a total of 30 respondents neither voted in the 2015 Presidential election (13 respondents) nor in the 2019 Presidential election (17 respondents); while a total of 54 questionnaires were not returned by respondents due to personal challenges. Therefore, the analysis for the study was based on 315 retrieved questionnaires, comprising of respondents who actually voted in both 2015 and 2019 Presidential election, while a total of 84 questionnaires comprising of those that were not returned and those who did not vote in 2015 and 2019 presidential elections were declared invalid.

3.5 Source of Data

The study made use of primary data for its analysis. Basically, data was sourced through the administration of the constructed questionnaire to the target respondents in Bwari Area Council who participated in both the 2015 and 2019 Presidential elections. The study also complemented the primary data through the review of secondary sources of data such as; relevant books, journals, committee manuals, national assembly briefs.

3.6 Research Instrument

The study made use of closed-ended questionnaire and structured interview. The use of mixed method allows the researcher to compensate for the weakness of one single approach. The essence of using these two complementary approaches is to enhance the validity and reliability of the result.

3.7 Method of data analysis

Data were entered, coded and analyzed using Statistical Package for Social Sciences (SPSS). Frequencies, tables, percentages and charts were generated and cross-tabulations were also utilized appropriately. The study also transcribed and analyzed the information elicited from the structured interviews.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATIONS

This chapter contains the presentation of the bio-data and the analysis of data collected through questionnaire administration and structured interviews. Deductions or findings were drawn in line with the objectives stated in chapter one. The field data were analysed using data triangulation, where the data collected through questionnaires; interviews were collectively presented analysed and interpreted. Importantly, it is noteworthy to state that the same survey instrument was adopted and analysed for 2015 and 2019 Presidential elections.

4.1 Bio Data and Socio-Demographics of Respondents

Table 4.1: Distribution of Respondents by Sex

Sex	Frequency	Percentage
Male	182	57.8
Female	133	42.2
Total	315	100

Source: Field Work, November 2021

Table 4.1 shows the sex distribution of respondents. The sex distribution of the respondents indicates that out of 315 respondents, 182 representing 57.2% were male, while 133 respondents representing 42.2% were female. This means that male respondents to the survey were slightly higher than female.

Table 4.2: Age Demography of Respondents

Age	Frequency	Percentage
18-28	83	26.3
29-39	86	27.3
40-49	96	30.4
50 and above	50	15.9
Total	315	100

Source: Field Work, November 2021

Table 4.2 shows the age bracket of the respondents. From the above, 83 of the respondents representing 26.3% were between age 18-28 years. While 86 of respondents which represent 27.3% were between ages 29-39 years, 96 of the respondents representing 30.4% were between ages 40-49 years and 50 of the respondents representing 15.9% were between age 51 and above. This implies respondents aged 40-59 years constituted the highest respondents to the survey, while aged 50 and above were the least sampled.

Table 4.3: Educational Qualification of the Respondents

Education qualification	Frequency	Percentage
No formal education	43	13.7
1 st school leaving	69	21.9
SSCE	60	19.0
NCE/OND	60	19.0
HND/B.Sc and Above	83	26.3
Total	315	100

Source: Field Work, November 2021

Table 4.3 shows the distribution of respondents by education qualification. The table indicates that 69 of respondents representing 21.9% had first school leaving certificate, 83 of respondents representing 26.3% were holders of ‘O’ level certificates, 60 of respondents representing 19.0% were holders of NCE/OND certificate, 60 of respondents representing 19.0% hold HND/B.Sc and above. In addition, 43 respondents representing 13.7% had no formal education. The above analysis shows that majority of respondents hold HND/B.Sc and above; followed by respondents who hold 1st school leaving. However, the dominant of respondents with HND/B.Sc and above and respondents with SSCE and NCE/OND indicates that majority of the respondents could understand the phenomenon surrounding the conduct of the 2015 and 2019 Presidential elections and hence provide reliable findings as it concerns the impact of card reading machine in Bwari Area Council.

Table 4.4: Occupation of Respondents

Occupation	Frequency	Percentage
Business	102	32.3
Students	83	6.3
Farmers	19	10.8
Civil servant	96	30.4
Others	15	4.7
Total	315	100

Source: Field Work, November 2021

Table 4.4 shows the distribution of respondents by occupation, the table indicates that 102 of respondents representing 32.3% were business men /women, 83 of respondents representing 26.3% were students, 19 of respondents representing 6.3 % were farmers, 96 of respondents representing 30.4% were civil servant, while 15 of the respondents representing 4.7% were engaged in other professions.

Table 4.5: Marital Status of Respondents

Marital status	Frequency	Percentage
Married	145	46.0
Widow	28	8.9
Divorce	10	3.1
Single	132	41.9
Total	315	100

Source: Field Work, November 2021

Table 4.5 shows the distribution of respondents by marital status. The table indicates that 145 of respondents representing 46.0% were married, 28 of respondents representing 8.9% were widows, 10 of respondents representing 3.1% were divorce and 132 of representing 41.9% were single.

4.2: Data Analysis, interpretation and Evaluation of Interview Responses

This chapter contains the analysis of results and discussion of findings. However, the presentation, analysis and discussion of findings were carried out in accordance with the objectives of the study outlined in chapter one. Importantly, it is noteworthy to state that the same survey instruments were adopted and analysed for 2015 and 2019 Presidential elections.

Table 4.6: Summary of Sampled Questionnaires

Response	Frequency	Percentage	Remark
Total number of un-retrieved questionnaires	54	13.5	Invalid
Total number of completed questionnaires retrieved from respondents who did not vote in 2015 and 2019 elections	30	7.5	Invalid
Total number of completed questionnaires retrieved from respondents who voted in 2015 and 2019 elections	315	78.9	Valid
Total	399	100	

Source: Field Work, November 2021

Table 4.6 shows the summary of sampled questionnaires. As highlighted in the table, a total of 399 questionnaires, of which 54 representing 13.5% were not retrieved, 30 questionnaires representing 7.5% were filled by respondents who did not participate in both the 2015 and 2019 Presidential elections and hence declared invalid; as the study examined only respondents who voted in the 2015 and 2019 Presidential elections. In this wise, 315 of the questionnaires representing 78.9% response rate were considered valid and analysed.

Table 4.7: Would you Support the use of Card Reader Machine in Subsequent Elections in Nigeria

Response	Frequency	Percentage
Yes	305	96.8
No	5	1.6
Don't know	5	1.6
Total	315	100

Source: Field Work, November 2021

Table 4.7 shows the distribution of respondents view on the use of card reader machine in subsequent elections in Nigeria. The table indicates that 96.8% respondents support the use of card reading machine in subsequent elections in Nigeria. Only 1.6% respondents were against the use of card reading machine in subsequent elections in Nigeria. Also 1.6% respondents indicate don't know.

Majority of the interviewees and respondents further opined that the card reading machine was introduced to eliminate or at least reduce electoral fraud; reduce incidence of inflating number of votes cast; curtail fake and multiple registration of voters; avoid registration and voting by proxy, etc. Again, there was a consensus among respondents that electoral malpractices and electoral violence has been the greatest bane of Nigeria's repeated attempts at democratization; arguing that the issues bordering on electoral malpractice informed the introduction of the card reading machine by the INEC, and should be supported

Table 4.8: Role of the Card Reader in 2015 and 2019 General Elections

Response	Frequency	Percentage
Yes	305	96.9
No	5	1.6
Don't know	5	1.6
Total	315	100

Source: Field Work, November 2021

Table 4.8 shows the distribution of respondents on role card reading machine played in 2015 and 2019 general elections. The table indicates that 96.9% respondents are of the opinion that card reading machine played a vital role in 2015 and 2019 general elections, while 1.6% respondents disagreed with the opinion. Also 1.6% respondents indicate don't know. To corroborate this finding, one of the interviewees, Foluke (2021) narrated thus:

The use of card reading in the conduct of 2015 and 2019 general election was appreciable, because it keeps all records of verified votes as well as unverified voters; also, it transmits the collated information to a central data system. The card reading machine allows the auditing of polling units result sheet and determine whether accreditation figures have been altered or not. The introduction of card reading machine also eliminates the use of temporary voters card (TVC) and reads the permanent voters card issued by INEC. The design of smart card reader also made it possible to authenticate the identity of a voter through finger print. This came to be against the background that manual accreditation and collation of election result had failed Nigerians severally, it's a welcome development despite its failure in some places.

However, another of the interviewees, Yakubu (2021) expressed his views on challenges experienced in the 2015 and 2019 presidential elections:

Authentication of Voter's fingerprints was more difficult for some voters, as it took a much longer time, while it failed entirely in certain cases especially in the rural area. And if a voter's PVC had read and it is an evident that he/she is the legitimate owner of the card, but the fingerprints cannot be authenticated because (he/she doesn't have fingers), the Presiding Officer of the voting point will complete an incident form and the voter will be accredited to vote. Party Agents and Observers would be there to witness to this.

From the foregoing analysis, it is deduced that majority of respondents were of the opinion that card reading machine played a role in 2015 and 2019 general election.

Table 4.9: Card Reading Machine and Reduction of Electoral Malpractice

Response	Frequency	Percentage
Yes	295	93.6
No	15	4.8
Don't know	5	1.6
Total	315	100

Source: Field Work, November 2021

Table 4.9 shows the distribution of respondents on opinion that card reading machine reduced electoral malpractice in Bwari Area Council. The table indicates that 93.6% respondents were of the opinion that card reading machine reduced electoral malpractice in Bwari Area Council, while 4.8% respondents opined otherwise that card reading machine did not reduce electoral malpractices in Bwari Area Council, also 1.6% respondents indicate don't know. The finding here agrees with proposition 2 (two): that card reading machine reduced electoral malpractice in the Area Council. Ezekiel (2021) narrated thus:

Since the return of democracy in 1999, Nigeria has experienced five electioneering processes and never a time have we had it so satisfactory like the last general election. The integrity of 2015 and 2019 general elections which based on use of card reading machine deployment was a new development in our electoral processes. This has brought fairness, accuracy, openness, and integrity to our electoral processes. Also, public faith has been resorted and a lot of Nigerians now believed that their votes have been counted for the very first time unlike previous elections before 2015 and 2019.

Corroborating the aforementioned findings, another of the interviewees, Abdulahi (2021) gave his opinion on challenges experienced:

There were some cases where the card reading machine fails to read and authenticate the finger print of some eligible voters and nothing was done to solve such problem. This disenfranchised a lot of eligible voters in the rural area and had a negative effect on the number of votes count it also discouraged some voters to participate in electoral process.

The table analysis and interviewee's opinion therefore indicated that, majority of respondents were on opinion that use of card reading machine brought the act of electoral malpractice to the minimal, it shows that INEC was transparent in the conduct of the elections.

Table 4.10: Perception about how Card Reading machine affected Voters Behaviour

Response	Frequency	Percentage
Yes	295	93.6
No	15	4.8
Don't know	5	1.6
Total	315	100

Source: Field Work, November 2021

Table 4.10 shows the distribution of respondents on the efficiency of card reading machine policy initiatives in 2015 and 2019 general election. The table indicates that 93.6% respondents believe on the efficiency of card reading machine policy initiatives in 2015 general election. On the contrary, only 4.8% respondents are of the opinion that the use of card reading machine policy initiatives was inefficiently in 2015 and 2019 general election. Also 1.6% respondents indicate don't know.

In this wise, Tanko (2021) expressed his view on on the efficiency of card reading machine policy initiative. He narrated thus:

Card reading policy initiatives made it possible for people's votes to count, also it is recommended in any future elections. The policy has reduced electoral fraud such as inflation of numbers of voters at various polling across the country. It will also reduce election litigations because most candidates that lost election in 2015 general election didn't challenge the outcome due to positive innovation of card reading machine. Election conflicts and violence could also be things of the past as witnessed after 2015 and 2019 general election when political gladiators quickly embraced themselves and allow the will of the people to prevail. As an electorate, card reading policy initiative is a welcome development, but the country still lacks political will and poor education background to meet up with the international standard. Lack of financial autonomy by INEC indeed affects their ability of been independent.

In addition to the views expressed above, one of the interviewees, Sunday (2021) also shares his experience on challenges encountered in some parts of the Bwari Area Council during 2015 and 2019 General Election

Some voters in Bwari Area Council were not properly educated by the INEC on how of the card reading machines operates, and some operators of the machines lacked the requisite expertise, this led to delays during the polls. Despite the low voter's turnout in some locality, Bwari Area Council recorded cases of late accreditation and voting due to late arrival of ballot materials in some PUs. Some of the card readers could not function optimally because they are not properly charged, and no provision was made for a backup battery. There were some cases in Shere ward, where some voters volunteered to bring their generator to power the card reading machine. Meanwhile, from record, INEC rated Bwari Area Council among the Area councils that recorded up to 95% success rate in PVCs collection.

However, based on the response of most of the respondents in the above table, it could be deduced that the efficiency and general acceptability of the elections result was attributed to the use of card reading machine.

Table 4.11: Card Reading Machine and Positive Outcome of Election

Response	Frequency	Percentage
Yes	295	93.6
No	15	4.8
Don't know	5	1.6
Total	315	100

Source: Field Work, November 2021

Table 4.11 shows the distribution of respondents view on relationship between card reading machine and outcome of 2015 and 2019 general elections in Bwari Area Council. The table indicates that 93.6% respondents are of the opinion that there is a relationship between card reading machine and outcome of 2015 general election in Bwari Area Council, while 4.8% respondents are of the opinion that there is no relationship between card reading machine and outcome of 2015 general election in Bwari Area council also 1.6% respondents indicate don't know. This finding is in line with proposition 4(four): that there is a nexus between the use of card reading machine and positive outcome of 2015 and 2019 General Election. However, Bulus (2021) narrated thus:

There was a relationship between the use of card reading machine and outcome of 2015 and 2019 general election in Nigeria, because difficulties were adequately resolved, technical supports were duly provided to INEC staff. The outcome of 2015 general election would have been adjudged to be most free, fair, smooth election and it have a fastest means of collating electoral result in the Nigerian history, compared to the 2019 general election.

In furtherance to the above, Ilia (2021) narrated his thought:

The use of card reading machine was first introduced and implemented in 2015 and the outcome was very successful because it was violent free, there was no loss of life and properties in most places before, during and after election. The loser peacefully accepts defeat and embrace peace. This was also the case in the 2019 general elections.

From the analyses, most of the respondents are of the opinion that there is a relationship between card reading machine and outcome of 2015 and 2019 general elections.

Table 4.12: The 2015 and 2019 General Election was Free, Fair and Credible

Response	Frequency	Percentage
Yes	280	88.9
No	20	6.3
Don't know	15	4.8
Total	315	100

Source: Field Work, November 2021

Table 4.13 shows the distribution of respondents on notion that 2015 and 2019 general elections were free, fair and credible. The table indicates that 88.9% respondents are of the opinion that 2015 and 2019 general elections were free, fair and credible, while 6.3% of respondents opposed the opinion by saying that 2015 general election was not free, fair and credible, also 4.8% respondents indicate don't know. This finding is in line with proposition 4(four): that there is a nexus between the use of card reading machine and positive outcome of 2015 and 2019 General Election. Joshua (2021), however maintained that;

The turnout on the Election Day reflects the success because a significant number of registered voters came out for voting. Despite the challenges recorded in some PUs, the INEC ensured that all eligible voters present at the pulling units were accredited and voted, so long as they exercise patient and wait.

Similarly, Ibrahim (2021) narrated his thought:

The international observers adjudged that report on outcome of 2015 and 2019 General Election was totally differs from report of previous elections in the country. They believe that there was a positive paradigm shift in our electoral process which was commendable by the international communities.

It could be deduced from the analysis that there is a consensus among the electorates that the election was credible, and there is a general acceptance with the outcome of the elections among the electorates and political stakeholders.

Table 4.13: Card Reading Machine and Democratic Consolidation

Response	Frequency	Percentage
Yes	280	88.9
No	20	6.3
Don't know	15	4.8
Total	315	100

Source: Field Work, November 2021

Table 4.13 shows the distribution of respondent on opinion that use of card reading machine had strengthened the democratic process in Nigeria. The table indicates that 88.9% respondents are of the opinion that use of card reading strengthened democratic process in Nigeria. While 6.3% respondents opposed the opinion that card reading did not strengthen democratic process in Nigeria, 4.8% respondents were undecided. This finding is in line with proposition 5(five): that card reading machine paved way to democratic consolidation in Nigeria. Monday (2021) narrated thus:

Smooth transition of power from one government to another, stands as the ends that justified the means in every democratic process. To achieve this, government must avoid of any form of irregularities and unfairness. The use of card reading machine, reduced tensions among political gladiators and electorate in 2015 and 2019, it strengthens democratic institution and boost Nigeria democratic consolidation.

Some interviewees, Henry and Manzo (2021) shared their experience on 2015 and 2019 General Election in Bwari Area Council: The stated as follows:

The opinion of the masses determines the actions of every government in democratic system, because voting is an inalienable power and right of the citizen to control, support or oppose any government that fails to carry out its civic duties on behalf of the citizen.

However, based on the response of most of the respondents in the above table, we can deduce that democratic consolidation was achieved through the implementation of card reading machine policy initiative.

4.3 Discussion of Major Findings

From the relevant data presented and analysed above on the Effect of ICT on the 2015 and 2019 Presidential Elections in Bwari Area Council, the following deductions or findings can be drawn. First majority of the respondents opined that the turnout on election day reflects success because a large number of registered voters were able to cast their votes after being captured by the Biometric Card reader Machine. Some of the respondents interviewed also expressed that despite the difficulties encountered in some PUs, the INEC ensured that all eligible voters present at the polling units were accredited and voted, as long as they waited patiently. From the above findings it could be inferred that incorporating information and communication technology (ICT) into the Nigerian electoral system has truly modernized the system and improved election management in the country.

The study also found that the use of Electronic Voters Registers (EVR), Automatic Fingerprint Identification Systems (AFIS), and Smart Card Readers (SCR) has reduced the occurrence of multiple registration and multiple voting to a bare minimum. As a result, the use of information and communication technology in Nigerian election management has

reduced excessive electoral fraud to a bare minimum, fostering credible elections and lending credibility to INEC transparency.

Finding of the study further indicated that the introduction of technological innovation through the use of a biometric voter's register, permanent voter's cards and biometric card readers in the 2015 and 2019 electoral process has minimized electoral fraud and manipulation which has been a constant challenge to the electoral process since 1999. These technologies no doubt have enhanced the credibility and legitimacy of the electoral process. Although technical hitches were encountered in the application of the technology, the incidence of bribery and monetisation of the electoral process abated.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

This study evaluated the application of ICT on Nigeria's 2015 and 2019 Presidential elections in Bwari Area Council with special reference to the use of Biometric Card Reader during the elections. Though, INEC deployment of card reading machine was to improve the electoral process and deepen democratic process in Nigeria and also to curtail electoral malpractices at minimal level. However, from the views of the respondents and interviewees, it was clear that the impact of card reading machine was not underestimated. The efficiency and general acceptance of the result indicated that, there was a significant positive relationship between card reading machine and outcome of the General election; giving rise to democratic consolidation in the Nigeria at large. As a result, the findings of this study revealed a positive effect of electronic voting on free and fair elections in Nigeria's. Implying the adoption of Incorporating ICT, especially the Biometric Card Reader into the Nigerian electoral system has truly modernized the system and improved election management in the country.

The study also revealed that the implementation of Electronic Voters Registers (EVR), Automatic Fingerprint Identification Systems (AFIS), and Smart Card Readers (SCR) has reduced the incidence of multiple registration and multiple voting to a bare minimum, while the implementation of an e-collation support platform has drastically reduced the incidence of manipulations at collation centers because results are transmitted in real time. As a result, the use of information and communication technology in election management in Nigeria has reduced excessive electoral fraud to a bare minimum, fostering credible elections, and lending credence to INEC transparency.

5.2 Conclusion

This study analyzed the impact of information communication technology on Nigeria's presidential elections in 2015 and 2019. It acknowledges that elections are inevitable in modern representative government. They typify the democratic process; hence, the abolition of elections is often interpreted as the abolition of democracy. Elections are so clearly cling to the growth and development of representative democratic government that they are now generally held to be the single most important indicator of the presence or absence of such government. It is on the basis of this premise that Nigeria upon her return to civil rule in 1999 placed great emphasis on holding regular elections. But the significant feature of democratic elections is that elections are credible, free and fair as the whole idea of democratic self-government is incompatible with electoral farces.

However, this study reveals the electoral system in Nigeria had failed to meet the benchmark of a democratic election over the years. Since the return to civil rule in 1999, elections had been characterized by ineffective administration at all stages and levels before, during and after, resulting in discredited outcomes. This was due in large to the weak institutionalization of the primary agencies of electoral administration, particularly INEC and Nigerian political parties. INEC was deficient of institutional, administrative and financial autonomy with attendant lack of professionalism and recurrent political interference. In addition, the desperation of many Nigerian politicians to win at all cost had compromised election administration in the country. The procedures for organizing and counting the votes were generally not transparent. Consequently, many eligible voters had become politically apathetic not because they do not want to participate; they believed their votes would not count.

Nevertheless, the study found that the introduction of card reading machine had rekindled the confidence of many Nigerian voters in INEC and Nigeria's elections. Reports from many

accredited media organizations as well as international observers attest to the fact that the elections were peaceful and credible. Although the technology experienced some glitches in its functionality, it largely accounted for the significant drop in the volume of election petitions filed by aggrieved candidates and political parties. This is because of the use of the device for organizing authentication of PVCs, accreditation of voters and counting vote's validation of the total votes cast by using the machine.

5.3 Recommendations

Based on the objectives revealed by this study, the following recommendations are offered:

- i. INEC should undertake a critical training of INEC officials on useful application of the technology to avoid the shortcomings of smart card readers in subsequent elections in Nigeria. Furthermore, there should be rigorous education and sensitization on the benefits of biometric technology by the political elites and all major stakeholders. INEC must also continue to undertake structural and policy reforms which are not only supportive of the credible electoral process but also reinforces the efficient performance of the biometric technology in Nigeria. The sustainability of the credibility and legitimacy of the electoral process cannot be institutionalized without the autonomy of the electoral body, and the consequence of this for democratic consolidation in Nigeria.
- ii. Biometric Card Reader was revealed to have a positive effect on both the 2015 and 2019 Presidential elections in Bwari Area Council, hence INEC should maintain the usage of the card readers in all subsequent elections. Despite the hiccups associated with the use of the machines, it is very important that their usage be improved upon and maintained in all subsequent elections.
- iii. INEC should embark on full implementation of Biometric Card Readers other technology-based approach to elections administrations. To achieve this, INEC should

test-run this technology-based approach on smaller off-cycle elections in some states before the main deployment of ICT in the next Presidential elections.

- iv. As the study found, some of the respondents were revealed to lack basic knowledge and understanding of the Biometric card reader. Hence, there is the need for INEC to increase public education and awareness, and to enhance the training of INEC staff on the correct use of technology and its implications for the quality of elections and overall credibility of the electoral process in Nigeria.
- v. As the respondents in Bwari Area Council opined, many of the challenges faced with Biometric card readers in capturing voters in 2015 elections had also emerged during the 2019 general. Hence there is need for INEC to braze up to its responsibility by perfecting the operations of the Biometric card readers and other ICT gadgets in subsequent elections.

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APPENDICES A.

S/N	NAMES OF INTERVIWEES	POSITION/PORTFOLIO	DATE
1	Rev Ezekiel Gbanzu	ECWA Good news church Kukwaba, Kubwa	11/11/2021
2	Rev Fr Henry OkekeEsq	All saint catholic church DutseAlhaji	11/11/2021
3	MallamTankoFenu	Traditional ruler Kubwa community	13/12/2021
4	Mallam Ibrahim Yaro	Sabwaya of Bwari, traditional ruler Bwari community	13/12/2021
5	MrManzoBulus	Political adviser on media and publicity	20/11/2021
6	Honorable Sunday Samuel	Councilor representing Ushafa ward	27/11/2021
7	Honorable Joshua Ishaku	Councilor representing Dutse ward	27/11/2021
8	Honorable Bulus Thomas	Councilor representing Shere ward	27/11/2021
9	Honorable Ilia Baraw	Councilor representing Bwari central ward	27/11/2021
10	Honorable Monday Azachie	Councilor representing Kawu ward	27/11/2021
11	MrYakubuMuhammed	Senior technical officer, INEC Bwari branch	18/11/2021
12	MrsFoluke Lydia	Admin officer, INEC Bwari branch	18/12/2021
13	MrAbdulahiYahaya	Senior executive officer, INEC Bwari branch	18/11/2021

Appendix B

NATIONAL INSTITUTE OF LEGISLATIVE AND DEMOCRATIC STUDIES (NILDS)/UNIVERSITY OF BENIN (UNIBEN)

Introduction

IgbinosaOgbeide-Ihama (PG/NLS1900104)

This is to certify that the above named person is a post-graduate (MEPP) student of the above department and institution. He is currently conducting a research on Assessingof The Impact of Information Communication Technology on Nigeria's Presidential Elections in 2015 and 2019, which forms part of the requirement for the award of Masters in Elections and Party Politics. Any information obtained from you will be used solely for this research purpose.

SECTION A: Bio Data

1. Gender: (a)Male[](b)Female []
2. Age: (a) 18-28 [] (b) 29-39[] (c)40-49[] (d)50- above []
3. Educational qualification: (a) first school leaving certificate[] (b)SSCE[] (c) NCE/OND[] (d)degree and above[] (e) illiterate[]
4. Occupation: (a)business[] (b)student[] (c)politician[] (d)civil servant[]
5. Marital status: (a) married[] (b) widow [] (c)divorce[] (d) single[]

6. Residential Area: (a) Abaji area council [] (b)Gwagwalada area council []
(c) Kuje area council [] (d)Bwari area council [] (e) ABUJA municipal
area council [] (f) Kwali area council []

**SECTION B: STRUCTURES PUT IN PLACE TO ENHANCE THE USE
OF CARD READING MACHINE IN ABUJA**

7. Are you a registered voter in Bwari area council? 1.Yes[] 2.No[]
8. Do you have a voter's card? 1. Yes [] 2. No[]
9. Did you participate in 2015 and 2019 general elections? 1.Yes[]2.No[]
- 10.Do you agree that card reading machine played a role in 2015 and 2019
general elections? 1.Yes[] 2.No[]
11. In your opinion, did card reading machine reduce electoral malpractices
in Bwari area council F.C.T Abuja? 1. Yes [] 2. No[]
12. As an electorate, would you consider the card reading machine as
efficient in 2015 and 2019 General Elections? 1.Yes[] 2.No[]
13. In your opinion, were the 2015 and 2019 general elections credible, free
and fair? 1.Yes[] 2.No[]
- 14.Is there a relationship between card reading machine and outcome of
2015and 2019 general elections in Bwari area council? 1.Yes[] 2.No[]
15. Would you encourage / support the use of card reading machine in
subsequent election in Nigeria? 1.Yes [] 2No[]

16. Do you agree that the use of card reading machine has strengthening democratic process in Nigeria? 1.Yes[] 2.No[]

SECTION C: GENERAL COMMENT

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Appendix C

INTERVIEW QUESTIONS

Introduction

IgbinosaOgbeide-Ihama(PG/NLS1900104),

This is to certify that the above-named person is a post-graduate (MEPP) student of the above department and institution. He is currently conducting a research on AssessingTheImpact of Information Communication Technology on Nigeria’s Presidential Elections in 2015 and 2019, Nigeria which forms part of the requirement for the award of Master in Elections and Party Politics. Any information obtained from you will be used solely for this research purpose.

BIO-DATA:

1. Please, may I know your name sir/ma?
2. May I know your educational qualification?
3. May I know your occupation, the office you occupy or have occupied and other necessarily portfolios?

**INTERVIEW GUIDE FOR POLITICIANS, TRADITIONAL AND
RELIGIOUS HEADS, AND ACADEMICIANS**

4. How would you describe previous elections in Bwari Area Council of FCT Abuja?
5. What are the factors that militate against the conduct of credible elections Bwari Area Council of FCT Abuja?
6. What are the factors that lead to the introduction of card reading machine in the 2015 and 2019 general elections?
7. What role has the political parties played in enhancing the credibility of elections in Bwari Area Council of FCT Abuja?
8. What role has the traditional rulers played in enhancing the conduct of credible elections in Bwari Area Council of FCT Abuja?
9. How has the leadership of the church helped in enhancing the conduct of credible elections in Bwari Area Council of FCT Abuja?

10. Do you think Nigerians, particularly those in Bwari Area Council of FCT Abuja, were well informed on the proper use of the card readers?
11. Do you think INEC delivered up to expectation in terms of the production and distribution of the PVCs to electorates in Bwari Area Council of FCT Abuja?
12. Do you think the handlers of the card readers were adequately trained?
13. In your view, were the electronic card readers adequately supplied in Bwari Area Council of FCT Abuja?
14. Did the card readers perform optimally in Bwari Area Council of FCT Abuja?
15. How would you describe the outcome of the 2015 and 2019 general elections in relation to past general elections in Bwari Area Council of FCT Abuja?
16. Was the card reader machine of any significance in enhancing the credibility of the 2015 general elections in Bwari Area Council FCT Abuja?
17. What were the challenges encountered in the use of the electronic card readers in the 2015 and 2019 general elections in Bwari Area Council of FCT Abuja?

INTERVIEW GUIDE FOR INEC OFFICIALS IN BWARI AREA COUNCIL

1. Please, what is your name sir/ma?
2. How long have you worked with the Commission?
3. What position do you occupy?
4. How many general elections have you been involved in?
5. Have you been involved in any election within Bwari Area Council FCT Abuja?
6. How would you describe past general elections in Bwari Area Council FCT Abuja?
7. What factors do you think constitute a challenge to the conduct of credible elections in Bwari Area Council FCT Abuja?
8. What has INEC done to address these challenges?
9. What factors lead to the introduction of card reading machine in the 2015 general elections?
10. How would you rate the success level of the PVCs distribution in Bwari Area Council FCT Abuja?
11. What structures did the Commission put on ground to enhance the smooth use of the card readers?

12.How would you rate the impact of the card readers in accrediting voters for the 2015 and 2019 general elections in Bwari Area Council FCT Abuja?

13.How significant were the card readers in improving the credibility of the 2015 and 2019 general elections?

14.What were the challenges encountered in the use of the electronic device in Bwari Area Council FCT Abuja, and what is the Commission doing to overcome these challenges in future elections?