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# The Role of Card Readers in the Conduct of 2019 General Elections in Gombe State: A Study of INEC Office, Gombe, Nigeria

# Peran Alat Pembaca Kartu dalam Penyelenggaraan Pemilu Umum 2019 di Negara Bagian Gombe: Studi pada Kantor INEC, Gombe, Nigeria

**Matthew Funsho Bello**[*1], **Blessing Hanuti Hassan** [2]
[1&2]Department of Public Administration, Faculty of Arts and Social Sciences, Gombe State University, Gombe, Nigeria
*Corresponding author: matthewfbello@gsu.edu.ng

## Abstract

This study examined the effectiveness of smart card readers in ensuring credible electoral processes during the 2019 general elections in Gombe State, using the Independent National Electoral Commission (INEC) office as the unit of analysis. The research was guided by four specific objectives and one hypothesis. The target population comprised all 207 INEC staff members within the Gombe Local Government Area of Gombe State, from which a sample of 180 respondents was selected. Data for the study were obtained from both primary and secondary sources. The primary data were collected using a structured questionnaire, while the analysis employed descriptive statistics, arithmetic mean, and standard deviation. To test the hypothesis, the chi-square statistical method was applied. The results revealed a calculated chi-square value (x-cal) of 2.71, exceeding the tabulated chi-square value (x-tab) of 2.69 at the specified level of significance ($p = 2.71 > 2.69$), indicating a statistically significant outcome. The findings suggest that smart card readers contributed to the reliability of the 2019 general elections in Gombe State, Nigeria. Moreover, the study aligns with evidence from other countries where the adoption of smart card reader technology has enhanced electoral integrity. Consequently, the study recommends that residents of Gombe State—and Nigerians more broadly—adopt smart card readers across all tiers of electoral administration. Furthermore, it is advised that INEC and its ad hoc staff receive comprehensive training to address the operational challenges experienced during the 2019 elections.

**Keywords**: Card reader, INEC Nigeria, Gombe state, Gombe local government, Nigerian 2019 general elections.

## Abstrak

Penelitian ini mengkaji peran pembaca kartu (card reader) dalam memastikan keandalan pemilu pada Pemilu 2019 di Provinsi Gombe, dengan lokus kantor INEC sebagai unit analisis. Empat tujuan dan satu hipotesis dirumuskan untuk memandu penelitian ini. Populasi penelitian terdiri dari 207 pekerja INEC di Kabupaten Gombe, Provinsi Gombe, dengan sampel berjumlah 180 responden. Sumber data yang digunakan

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mencakup data primer dan sekunder. Data primer dikumpulkan melalui kuesioner, dan analisis dilakukan menggunakan statistik deskriptif, termasuk rata-rata aritmatika dan standart deviasi. Untuk menguji hipotesis, digunakan statistik inferensial berupa uji chi-square. Hasil penelitian menunjukkan nilai chi-square yang signifikan sebesar 2,71 (chi-square hitung, x-cal) dibandingkan dengan nilai chi-square tabel sebesar 2,69 (x-tab), dengan p = 2,71 > 2,69. Penelitian ini menyimpulkan bahwa penggunaan pembaca kartu (smart card reader) berkontribusi pada keandalan Pemilu 2019 di Provinsi Gombe, Nigeria. Selain itu, penelitian ini menunjukkan bahwa beberapa negara telah mengalami peningkatan signifikan dalam proses pemilu setelah mengadopsi teknologi pembaca kartu pintar. Penelitian ini merekomendasikan agar masyarakat Provinsi Gombe, dan warga Nigeria pada umumnya, mengadopsi pembaca kartu pintar untuk semua tingkat administrasi pemilu. Selain itu, untuk mengatasi tantangan yang dihadapi selama Pemilu 2019, disarankan agar INEC dan staf ad hoc menerima pelatihan yang memadai dalam penggunaan pembaca kartu pintar.

**Kata kunci**: Pembaca kartu, INEC Nigeria, Negara Bagian Gombe, pemerintah lokal Gombe, Pemilu Nigeria 2019.

## Introduction

An electorate refers to a body of individuals legally entitled to vote in an election, regardless of the specific procedures involved (Santon, 2018). Through the electoral process, this electorate selects representatives to serve in an assembly or to act on its behalf in the governance and administration of public affairs. Elections thus serve as a fundamental mechanism for political participation, often representing the only form of engagement for a majority of citizens. They foster a sense of belonging and accountability by enabling individuals to influence governmental actions. As such, elections can be understood as organized processes through which eligible members of society select individuals to occupy public office. The core purpose of an electoral system is to provide citizens with the right and opportunity to choose and communicate with their representatives.

Elections also function as a means by which registered political parties nominate candidates for public office. Given the inherent nature of political plurality and opposition, elections are essential to the functioning of any democratic system. In the case of Nigeria, democratic governance was initially practiced following its independence, beginning in the period from 1960 to 1966. However, this democratic trajectory was interrupted by military intervention, which persisted until 1979, when civilian rule was restored under President Olusegun Obasanjo. A subsequent military

takeover in 1983 again disrupted democratic processes. Nevertheless, Nigeria began a gradual return to democratic governance, culminating in a series of general elections held in 1999, 2003, 2007, 2011, and 2015. These general elections, conducted across the federation, determine occupants of elective positions at both federal and state levels (The Electoral Institute, 2015).

During the 2019 federal elections, the use of card readers introduced a degree of legitimacy and transparency to Nigeria's political process (Okonji, 2021). When the Independent National Electoral Commission (INEC) initially announced the deployment of card readers for the general elections scheduled for March 28 and April 11, 2015, the decision was met with widespread resistance, particularly from politicians. Critics argued that the card reader devices should have undergone thorough testing prior to the general elections to ensure their reliability. They also contended that Nigeria had not yet reached a sufficient level of technological advancement to warrant the untested use of such devices in a national election.

The strong public opposition to the proposed deployment of card readers nearly deterred INEC from their intended use. Nevertheless, INEC maintained confidence in the capacity of modern technology to deliver prompt and credible results. Despite the challenges, it proceeded with the implementation, driven by the broader objective of reforming Nigeria's electoral system and moving away from entrenched malpractices such as multiple thumb-printing of ballots and the theft of ballot boxes (Vanguard, 2015).

Under the leadership of Prof. Attahiru Jega, the newly constituted Independent National Electoral Commission (INEC) introduced a series of technology-driven reforms ahead of the 2015 general elections. These reforms included the deployment of advanced fingerprint identification systems and biometric voter registration. The 1999 Constitution (as amended) confers upon INEC the authority to organize, conduct, and supervise all national and state elections within the Federal Republic of Nigeria. In recent years, the application of biometric technologies has gained traction across African electoral systems. As noted by Piccolino (2015), at least 25 Sub-Saharan African countries—such as Sierra Leone, the Democratic Republic of the Congo, Zambia, Malawi, Rwanda, Senegal, Somaliland, Mali, Togo, and Ghana—have adopted biometric voter registration.

During Nigeria's 2011 general elections, automated fingerprint identification systems were used to eliminate duplicate registrations; however, these systems lacked the capacity to verify voters' identities at polling stations (Piccolino, 2015). To address this shortcoming, INEC introduced the Permanent Voter's Card (PVC) and the Smart Card Reader (SCR) technology to enable on-site authentication of voters. The SCR represented a significant innovation in biometric verification and was a critical, albeit contentious, feature of the 2015 elections. Other African nations such as Ghana, Kenya, and Somaliland have similarly adopted biometric verification technologies. Such systems are particularly valuable in contexts where reliable paper-based population identification mechanisms are absent or underdeveloped (Gelb & Decker, 2021).

Although perfection is unattainable, INEC's insistence on utilizing card reader machines was widely commended by technology experts both within Nigeria and internationally. Many observers regarded this initiative as a major milestone in enhancing transparency in Nigeria's electoral process. In view of its demonstrated efficacy, stakeholders have advocated for the continued application of card readers in subsequent elections to strengthen electoral credibility. Additionally, public acceptance of the technology has been encouraged, reflecting its growing legitimacy and perceived effectiveness.

In a strategic move to challenge the hegemony and political dominance of the People's Democratic Party (PDP), four major opposition parties—the All Nigeria Peoples Party (ANPP), the Action Congress of Nigeria (ACN), the Congress for Progressive Change (CPC), and the All Progressives Grand Alliance (APGA)—merged to form the All Progressives Congress (APC). This coalition marked a significant political development, setting the stage for the 2019 presidential election, which was widely anticipated to be one of the most fiercely contested in Nigeria's electoral history. According to Omotola (2022), the election ultimately emerged as the focal point of national political discourse, significantly shaping public opinion and influencing governmental decisions.

In the lead-up to the 2015 general elections, the Independent National Electoral Commission (INEC)—mandated by the amended 1999 Constitution of the Federal Republic of Nigeria to manage electoral processes—undertook several technology-based reforms under the leadership of Prof. Mahmud Yakubu. These reforms included

the deployment of the Advanced Fingerprint Identification System (AFIS) and the establishment of a Biometric Register of Voters.

Despite INEC's assurance regarding the effectiveness of the newly introduced card reader devices, several technical challenges emerged during the 2019 general elections, which were initially regarded as potentially the most credible in the nation's history. For example, during the presidential and National Assembly elections held on March 28, card readers malfunctioned at numerous polling units, leading to extended delays in the accreditation process. While the devices functioned effectively in some locations, recurrent issues included random biometric capture failures, rapid battery depletion, inability to read fingerprints, and the rejection of Permanent Voter Cards (PVCs). In several cases, INEC ad hoc staff were required to leave their designated polling stations to reconfigure the devices at the INEC office. As a contingency, INEC authorized the use of incident forms to enable manual accreditation. However, this directive often arrived too late to be implemented effectively across affected areas, necessitating the postponement of voting to the following day in numerous polling units.

In response to the persistent problem of electoral malpractice observed in previous general elections, INEC introduced card readers during the 2015 elections with the aim of enhancing electoral credibility through transparency, fairness, and trust. Accordingly, this study investigates the role of card readers in promoting credible elections during the 2019 general elections in Gombe State, with specific attention to the operations of the INEC Office in Gombe, Nigeria.

**Statement of the Problem**

Although the Independent National Electoral Commission (INEC) repeatedly promised that the device would not cause any issues during that year's elections, reports from various parts of the country indicated that voters were delayed and dissatisfied as a result of the Smart Card Reader's malfunction. The first introduction of the card reader took place during the 2015 election. Voters who were lawfully registered, held Permanent Voter Cards (PVCs), and then cast ballots on Election Day were registered and authenticated using the device. The card reader was designed to improve voting integrity and discourage multiple voting, as only officially accredited and verified PVC

holders are permitted to cast votes. It was marketed by INEC as a means of combating electoral fraud. The card readers are also set up to function with specified polling locations.

PVCs were therefore not allowed in more than one polling place. For instance, voting did not begin until 11:10 am in Shamaki Idi Nakaka Gombe State's Polling Unit 023 because smart card readers malfunctioned. Similar circumstances prevailed at Polling Unit 034, Wuro Shi'e, Kofar Jauro Gombe State, where voting was not allowed to start until 11:30 a.m. In light of the aforementioned, the study seeks to answer the following questions: Why was Card Readers (CR) used in the 2019 General Elections by Gombe State? Did the use of Card Readers (CR) in the 2019 Gombe State General Elections ensure the legality of the election? What challenges did the Card Reader (CR) pose during the 2019 general elections in Gombe State? What are the possible solutions to the challenges that Gombe State's Card Readers (CR) present during the 2019 General Elections?

**Objective of the Study**

The primary objective of this study is to examine how card readers operate in conducting valid elections in Gombe State during the 2019 General Elections, with a focus on INEC Office Gombe. However, the study seeks to achieve the following objectives:

a. to ascertain the justification for Gombe State's use of Card Readers (RC) in the general elections of 2019.
b. To assess the legitimacy of the Card Reader (CR) in the 2019 general elections in Gombe State.
c. to find out about the challenges that Gombe State's Card Reader (CR) presented during the 2019 General Elections.
d. to make suggestions for solutions to the problems with the use of Card Readers in Gombe State during the 2019 General Elections.

## Research Hypothesis

The following hypothesis will serve as the basis for the investigation.

$H_0$: There is insufficient confidence in the use of Card Readers (CR) in the general elections in Gombe State in 2019.

## Literature Review

### Concept of Election

Voters choose representatives through elections to represent them in an assembly or to act as their representatives in order to administer or govern. The electorate is a group of people who are legally allowed to vote in any election, regardless of the procedure (Santon, 2018). Elections, which give the bare minimum of political participation—and may be the sole act of participation for the great majority of the governed—create a sense of belonging and accountability for governmental acts. Elections can be seen as structured procedures in which representatives are chosen for public office by a portion or all of a society's recognized members. Giving the public the opportunity and right to choose and communicate with their representatives is, thus, the goal of an electoral system.

Elections are a systematic method for the public or citizens to select representatives for public office by following an election process that is guided, organized, administered, and supervised by the authorized electoral authority. Selecting a candidate to represent a country's population in parliament or other government positions is another aspect of it. Accordingly, it is a process by which people choose their representatives, voice their preferences for laws and initiatives, and eventually grant a government the authority to rule (Dunne, 2022).

In the realm of politics, elections are regarded as the most important democratic occasion that enables a smooth handover of power. By voting for or against the ruling party or leader, the ballot revolution allows the public to express their views and respond to governmental decisions. Nigerian elections have been a political endeavour filled with challenges, victories, and disappointments. Nigeria's general elections are usually accompanied by a number of connected challenges, including apprehensions, worries, uncertainties, intimidations, excessive spending, bribery, corruption, rigging, misbehaviour, irregularities, logistical problems, and more (Sule, 2018). Nigeria has

been holding general elections since 1959 in an effort to get ready for democratic independence. Nigeria witnessed three failed republics between 1960 and 1999. The Fourth Republic began on May 29, 1999, when the military government of General Abdulsalami Abubakar turned over power to the civilian government of Olusegun Obasanjo. Despite several challenges, Nigeria has been riding the waves of the democratic experiment since 1999 (Falola & Heaton, 2015). From 1999 to 2019, Nigeria had six consecutive general elections and 20 years of remarkable democratic governance for the first time in its history (Sule, 2019).

To be considered democratic, an election system must provide for an equal electorate and the ability for that voter to make a meaningful and important decision without fear of intimidation or coercion (Eminue, 2015). Essentially, an election will be deemed democratic and hence outstanding if it is free, fair, and independent of any kind of favouritism. Therefore, the outcomes of the voting process reveal a somewhat uncomfortable "state" that has aroused serious worries, even if Nigerian elections are seen as a means of managing the government. According to Duru (2022), Nigeria's electoral process has really earned a bad reputation for using dishonest practices since achieving independence. This situation has caused many to see Nigerian elections as an illusion or as a straightforward "selection"—selection in the sense that the electorates are excluded from the entire system - because elections are held whether or not the people participates properly.

The system's operation indicates that the democratic spirit has been completely neglected and misused. As a result, the outcomes have consistently been slanted in favour of the candidates with the most influence. Given our democratic system, this is unfair and dishonourable. Informing the public that the leaders will be "selected" may deter them from standing in line in the scorching sun. Allowing people to vote and then turning everything upside down is the most serious treachery that must be confronted. Elections have a role in determining periodic assessments of the acceptance and popularity of parties and candidates. They also provide credibility to public office holders and conduct periodic assessments of public office holders and political parties. In this sense, elections enhance good governance and accountability (Okolie, 2019). Elections play a crucial role in any democracy. Nigeria saw general elections in 1999, 2003, 2007, 2011, 2015, and 2019 as a result of its return to democratic governance and

political involvement. General elections are held across the entire federation for elective federal and state seats (The Electoral Institute, 2019).

**The Idea of a Card Reader**

The smart card reader is viewed from a variety of angles. As a result, experts cannot agree on a single meaning of the term. Nonetheless, efforts will be made to enhance understanding of the notion. The smart card reader is made to read information from the integrated chip of an INEC-issued permanent voter's card in order to confirm the legitimacy of the PVC and the identification of the intended voter.

This is done by comparing the biometrics recorded on the PVC with those obtained from the voter on the spot (Engineering Network Team, 2015). A technological device called the Smart Card Reader (SCR) is used on election days to confirm and attest to the validity of a permanent voter card (PVC), which holds the personal data of potential voters. The technology used by the SCR is called cryptography, or secret writing, and is typically used in machines that need to carry out protected tasks. Its 1.2GHz single core frequency, Android 4.2.2 operating system, and incredibly low power consumption are among of its unique qualities (Ibrahim & Makama, 2015). A few seconds after the card is placed into the system, INEC's smart card reader really displays the card bearer's photo to verify the voter's identity before they cast their ballots. This device aims to eliminate multiple voting and uphold the idea of one man, one vote. Chigozie & Ibrahim (2015) state that the Permanent Voters Card (PVC) must be put into the SCR for the smart card reader to function. After confirming the card's authenticity, the computer will display the bearer's photo in a few seconds. The next step is to cross-reference the bearer's fingerprints to confirm that the card truly belongs to the person holding it.

The card reader emerged as the most debated and pivotal matter during Nigeria's 2019 general elections. The smart card reader played an essential role in the 2019 general elections. Initially implemented in Nigeria's electoral process, it represented one of the most ground-breaking technologies employed during the 2019 general elections. In previous electoral cycles, numerous stakeholders in the Nigerian political landscape engaged in a concerted endeavour to seize governmental authority. A number of these participants have partaken in various electoral malpractices, such as multiple voting,

impersonations, manipulation, and the falsification of results, resulting in legal repercussions, electoral disputes, and instances of violence.

Card readers, which are handheld electronic devices, serve a pivotal role in elections by improving the processes of voter verification, authentication, and accreditation. On Election Day, this electronic device serves the purpose of authenticating and validating the Permanent Voter Card (PVC) issued by INEC. The smartphone employs encryption technology characterized by remarkably low power consumption, features a single core frequency of 1.2GHz, and operates on the Android 4.2.2 software platform (INEC, 2019). To put it differently, the INEC card reader functions by juxtaposing the biometrics captured from the voter at the polling location with those stored on the PVC. It is engineered to extract data from the embedded chip of the INEC-issued permanent voter's card, thereby facilitating the verification of both the PVC's authenticity and the identity of the prospective voter (Engineering Network Team, 2015). Given its capacity to execute the previously mentioned functions, monitor the registration of each voter at the polling station, and transmit the data to a central database server through a Global System for Mobile (GSM) network, the card reader holds significant importance at this juncture in the nation's electoral history (Engineering Network Team, 2019).

During the 2015 general elections, INEC implemented a technology-based tool to prevent electoral fraud, ensure transparency and accountability, authenticate and verify voters, reduce election-related litigation, audit polling station results across the federation, avoid electoral fraud, and prevent electoral fraud. Others include strengthening Nigeria's democratic and electoral process, lowering electoral disputes, increasing public confidence in the election, conducting various statistical analyses of voting demographics for planning and research purposes, and ensuring a free and fair election (Okolie, 2019).

The smart card reader sparked controversy among stakeholders in the 2019 general elections, both prior to, during, and following the polls, despite its commendable objectives. Proponents of the innovation perceive it as a concerted attempt to ensure a free and fair election, while critics contend that INEC lacks the legal authority and ability to use the card reader (Policy and Legal Advocacy Centre, 2019). While the opponents believed that the card reader was designed specifically to help one

political party win the general election in Nigeria's particular circumstances, the device's supporters believed that the card reader process could prevent or reduce rigging because there wouldn't be multiple voting (Peters, 2019).

Peters (2019) argues that the card reader was likely designed to assist a predetermined election winner by restricting voter participation, thereby disadvantaging other parties and securing victory for a favored party or the Independent National Electoral Commission (INEC). Opinions also differ on how the card reader should be set up and if a faith-based bank should be used to send money for the production of permanent voter cards. The sociopolitical grounds against the usage of the card reader could not be proven. The assertion that the card readers were manufactured to promote a certain political party was shown to be completely false both before and after the elections. After this unsubstantiated allegation led to the invasion and destruction of the APC Data Centre in Lagos, the Department for State Security (DSS) detained the card reader provider. The DSS quietly apologized to the APC after failing to discover any evidence, and then released the card reader supplier.

**Making Voter Verification Using the Card Reader**

In an attempt to increase the legitimacy and transparency of the polling process, the Commission has introduced the use of card readers to enhance voter verification (Manual for Election Officials, 2016). Voter impersonation is prevented by employing the card reader to authenticate the voter's biometrics. The card reader has facilitated a new advancement in Nigeria's election process: the INEC Voters' Authentication System (IVAS) (Engineering Network Team, 2015).

**The IVAS**

IVAS is the abbreviation for the INEC Voters' Authentication System. The purpose of this initiative is to electronically authenticate voters on Election Day. It runs Android 4.2.2 and has a single core frequency of 1.2GHz. It employs the ARM Dual Core CortexA7 CPU, which uses extremely little power. IVAS supports both touch and keyboard input. It has the ability to read contactless cards and show the data on the LCD screen. It protects data by supporting a secure access module card. The Secure Access Module (SAM) card improves the cryptographic efficiency and security of the device.

It is frequently utilized in devices that require secure transactions, such as payment terminals. A SAM can exist as a SIM card inserted into a reader's SAM slot or as a fixed integrated circuit.

**Using the Card Reader**

a. To be accredited, voters need to bring their PVC to the polling station (PU).
b. The Assistant Presiding Officer 1 (APO 1) of the PU shall scan the voter's card and fingerprint;
c. The two fingerprints will be compared by the scanner; if they match, the card is the bearer's; if not, the opposite is true;
d. The scanner will save the scanned card's Voter Identification Number (VIN) and authentication status;
e. It takes less than 10 seconds to authenticate voters;
f. The gadget will prominently display the total number of authentications with a single button press (Engineering Network Team, 2015).

**Setting Up the Card Reader**

a. Verify that the battery is inserted into the battery compartment of the device appropriately.
b. To charge, plug the device's Mini USB connector into the charger's standard USB port using a USB cable. The red signal on the card reader will gradually flash while charging. When the battery is fully charged, the indicator turns green.
c. When inserting the provided SAM card into one of the two SAM card holders, ensure that the pin and the probe make perfect contact (Okolie, 2019).

**Turning the Device On**

a. To turn the device on or off, hold down the power button for three seconds. Verify that the battery is properly inserted and charged before turning the device on.
b. If the battery is low, the red indicator will blink. Please charge the battery as soon as you can in these circumstances.

When the device is turned on, the authentication screen appears, asking the user to enter their name and password. It should be noted that the power button is also pressed whenever the device hibernates during the LOG IN SCREEN. The two types of users are "Admin" and "User". Every user has a certain position within the system. The "Admin" is allowed to set up the device, add or remove users, and provide support as needed, while the "User," who is the APO 1, is only allowed to authenticate the PVC by reading it with the device and asking voters to place their fingerprint on the Fingerprint window to verify ownership of the PVC. The user can log into the system by clicking the LOGIN button after entering the correct username and password. Pressing the HELP button brings up instructions on how to operate the device. For the first login, "User" is the default username and "123" is the default password. This can be changed. Clicking the LOGIN button brings up the Dashboard (Engineering Network Team, 2015).

**The Role of Card Readers in Credible Elections**

According to a critical examination of the election, the use of card reader technology gave criminal politicians more fear while boosting public trust and confidence in the democratic process. The public trusts elections based on their integrity and credibility, and the 2019 presidential election appears to have both (Ebhomele, 2019). The majority of Nigerians had the belief that their votes would be acknowledged post-election and that their rights would be upheld in subsequent elections. This has enhanced the legitimacy of Nigeria's democratic process compared to the past. By preventing politicians from tampering with ballot boxes, illicitly filling them with votes, and reducing instances of multiple voting at polling stations—practices that constituted electoral fraud and malpractice, detrimental to the Nigerian political system—the machine undeniably curtailed undemocratic actions by certain politicians at polling locations.

Coincidentally, lawsuits were reduced to the barest minimum compared to the past, when every election result was contested before the election tribunal. Most of the candidates who lost the 2015 general elections decided not to challenge the outcome. A few of the front-runners who lost the election accepted their defeat and congratulated the winners. For instance, the APC's Muhammadu Buhari won the presidential election,

and the PDP's Goodluck Ebele Jonathan presidential candidate congratulated him. Meanwhile, the APC's candidate for the House of Representatives in the federal constituency of Ishielu and Ezza North congratulated the PDP's candidate for the House of Representatives on winning the election. During the governor's and assembly elections, this attitude was prevalent in every state in the federation.

Additionally, there were hardly any violent occurrences or electoral disagreements because the card reader made the election seem legitimate and transparent (Odiakose, 2015). The excessive and pointless belittling and humiliating between the winners and losers drastically decreased during the previous election campaign. The card reader's moderate degree of electoral fraud reduced tensions between the political gladiators and election violence. It also strengthened Nigeria's democratic institutions and increased Nigeria's democratic ability, which compelled Nigerians to learn the information needed to hold free, fair, and genuine elections in order to advance our democratic process and protect our standing abroad.

Recall that previous Nigerian elections were tainted by fervent efforts to usurp political power by some political contenders or individuals with vested interests in the electoral process of the nation. Certain actors have participated in electoral malpractices such as multiple voting, impersonation, manipulation, and result falsification, resulting in legal challenges, electoral conflicts, and violence (International Foundation for Electoral System 2015). Political fraud undermines citizens' trust in the political process, hindering the advancement of a more profound electoral democracy. The integrity of any democratic society is jeopardized if individuals lack faith in the fairness, correctness, transparency, and fundamental integrity of the electoral process (Alvarez & Hall, 2018).

Lopez-Pinter (2010) asserts that electoral fraud enables a party or candidate to assume office contrary to the electorate's wishes, resulting in significant political consequences. This undermines the democratic process and typically results in election chaos, political instability, and insecurity. In 2000, mass uprisings led to the collapse of the governments of Cote d'Ivoire, Peru, and Serbia due to rigged elections. Similarly, after widespread fraud was discovered during the 2004 "Orange Revolution" in Ukraine, the presidential elections were completely rescheduled (Lopez-Pinter, 2010).

Efforts are currently being made globally to modify the voting process and reduce this undemocratic activity because of the negative repercussions of election malpractice. One strategy to combat election malpractices is the incorporation of information and communication technology into the voting process. In the 2015 general election, card readers—the most innovative technology development in Nigeria's voting system—were introduced as a result of this assumption.

**Challenges in Using Card Readers**

Critics denounced the utilization of card readers in the 2019 presidential election due to the proximity of over sixty-eight million Nigerian ballots. Given that the system was an untested technology in Nigerian elections, it was recommended that INEC exclude it from the 2019 presidential, national assembly, gubernatorial, and State House of Assembly elections.

No comparable benchmarks existed to assess its effectiveness, efficiency, and reliability; thus, this argument appeared valid, as INEC had not implemented it in any past elections, including the gubernatorial elections in states such as Osun and Anambra before 2019. To address the problem of the untested card reader, INEC swiftly executed a test of the device on March 7, 2019, which was 21 days before the election, in twelve states, encompassing 225 polling stations and 358 voting points throughout the federation. Several card readers encountered operational difficulties during the test run. Nevertheless, INEC pledged to address the matter. This trial run occurred subsequent to the postponement of the main elections. In summary, without testing the device, INEC may have conducted the general elections; however, this would have been futile as the issue identified during the trial was not rectified as assured.

Nigerians sought the use of the method in the local government or governorship elections prior to the 2015 national election, in addition to the test run. Consequently, the needs of Nigerians were not met by INEC's ineffective ad hoc or emergency trial system. The device did not work successfully and efficiently in many polling stations, especially during the national assembly and presidential elections, despite INEC's assurance that the card readers' issues would be resolved during the test run. Many Nigerians were ignorant, especially those who voted in rural areas. Many of them had never seen or heard of the card reader until Election Day. There were a lot of

misunderstandings about the machine. Some voters thought the card reader was a voting device. Due to the absence of information, how it was transmitted, and the electorate's ignorance of the card reader, the ignorant voter and the INEC ad hoc staff engaged in various ineffective behaviours and negative interpersonal interactions.

Furthermore, there was a lack of training for the INEC and ad hoc workers involved in the poll. The majority of presiding officers and deputy presiding officers were not given enough training on how to use the card readers since you cannot perform if you are not properly informed. Actually, a number of them contributed to the equipment problem. In fact, there were not enough real-world examples of how the reader would function as expected because a class of fifty trainees would sometimes be assigned one or two card readers. The opportunity to use the equipment was denied to many of the learners. In certain cases, the trained individuals were replaced by those who were not proficient in using the card reader. Due to all of these causes, the machine was handled carelessly throughout the election, to the extent that the protective film on certain card readers was left on, which occasionally prevented the device from recognizing thumbprints.

Additionally, a card reader problem occurred during the election. Some of the backup equipment did not function properly on Election Day, despite INEC having backup equipment in case the card reader failed. Several card readers were inoperative due to depleted battery life, blank displays, and the Subscriber Identification Module (SIM) card not being activated within the device. Certain INEC officials ascribed the fault of the card readers on INEC engineers who were incapable of interpreting the integrated security system of the card readers, as reported by Vanguard (2019). Reports indicate that the security code on the card reader is designed to update the voting date and time. An official stated that once the cards were rescheduled from February 14 to March 28, certain card readers had not been reset (Vanguard, 2019).

Nevertheless, some of the devices had difficulties with PVC authentication and biometric data verification of the voters in the voting booths. Voter authentication and biometric data verification were part of the accreditation process for the election. Due to the inability to verify several of the PVCs that INEC provided, several eligible voters were not allowed to cast ballots in the elections. Some voters' authorised cards included biometric information that was slow to authenticate, especially fingerprints, while

others had biometric information that could not be verified after several attempts. In Borno State, for instance, card scanners at most polling places validated and confirmed the biometric data on 10% of eligible voters' cards (Odiakose, 2019). The gadget's failure to capture fingerprints was ascribed to the oily or unclean fingertips of several voters. Customers typically needed to wipe their hands on the ground to guarantee the device recognized their fingerprints (Osorio, 2019).

At the peak of the election, Prof. Mahmud Yakubu, the then-chairman of the Independent National Electoral Commission (INEC), modified the regulations and permitted manual accreditation in regions where the card readers malfunctioned during the presidential and national assembly elections, following the disenfranchisement of millions of dissatisfied voters who had departed due to the extensive failures of the card reader. Nevertheless, the previously mentioned chairman's comments seemed to have eased certification in many locations. Although it remains inadequately examined, this declaration may have unintentionally facilitated electoral fraud (Amenaghawon, 2019). The competition's regulations were altered mid-event due to the machine's inefficiency, which is exceedingly unjust.

**The Structure of Concepts**

The study focused on the role of card readers in conducting a reliable poll in Gombe State during the 2019 General Elections, using INEC Office Gombe as the unit of analysis. This study, which highlights the significance of CR in organizing a legitimate election, is based on the rational choice theory and decision making theory.

**Decision-Making Theory**

When states address specific issues or problems that have emerged in the country, they are influenced by a variety of factors, according to Richard Snyder's 1948 Decision Making Theory. A state's decision to vote in favour, against, or not is influenced by these factors. The leaders' opinions on the subject at hand and their degree of interest in the formulated challenge are two examples of these deciding elements. The underlying assumption is that a country's decision on a given issue is influenced by the character and perspective of its leader. In the 2019 general election, President Muhammadu Buhari's administration allowed the use of card readers because he is a

democracy who respects public opinion. The INEC chief did this because he thought card readers would lead to a transparent, credible, free, and fair election in Nigeria.

Without taking into account the potential outcomes of the election in which he was directly involved, he let INEC chairman Professor Mahmud Yakubu to conduct the vote using a novel technological instrument known as a card reader for the first time in the country. In reaction to the MPLA-UNITA conflict, the Nigerian government, under the leadership of Tafawa Belewa, decided not to send any armed forces to Angola. But after taking office, Murtala Mohamed sent armed forces to the MPLA government to defend Congo against the UNITA rebels, who were purportedly backed by South Africa and other Western countries.

**The Rational Choice Theory**

In his 1957 work "An Economic Theory of Democracy," Anthony Downs put out the economic explanation for voting behaviour known as rational choice theory. It is an attempt to explain election activity under the assumption that all voter choices are rational, self-serving, and carried out in accordance with the utility principle of action maximization. According to this theory, voters are more interested in the actual actions of the government than in the beliefs of political parties. The hypothesis states that if people think voting is important and that there are more benefits than drawbacks, they are more likely to cast a ballot. This suggests that people are more likely to vote if they think their vote will make a difference. In other words, voters believe their vote will make a big difference, which is the basis for their decision to cast a ballot. Scepticism about the power of voting to change anything leads to apathy.

**Research Methods**

**Collecting and Examining Information**

Data for the study came from both primary and secondary sources. Descriptive statistics were employed to examine the primary source, which was mostly a questionnaire, using the Statistical Package for the Social Sciences (SPSS). Chi-square was used to test the hypothesis using inferential statistics. The secondary sources were the printed documents. The study's population consists of all 207 INEC workers at the

Gombe State INEC Office. The study's sample size consisted of 180 respondents that were selected using the judgmental sampling technique.

**Data Presentation**

**Table 1** Respondents' Opinion on the reasons for Use of Card Reader (RC) in 2019 General Elections in Gombe State

| Variables | Responses | | | | | | |
|---|---|---|---|---|---|---|---|
| **Items** | **SA** | **A** | **D** | **SD** | **N** | **Mean** | **Std. Dev.** |
| It is the best method for preventing electoral fraud | 96 | 37 | 34 | 13 | 180 | 3.20 | 0.99 |
| It made Nigerians more confident in the process | 66 | 39 | 45 | 30 | 180 | 3.20 | 0.99 |
| Not using it could have caused another delay | 42 | 63 | 31 | 44 | 180 | 2.57 | 1.09 |
| It would be against the constitution's requirements to postpone the elections any more | 105 | 41 | 22 | 12 | 180 | 3.33 | .93 |
| People wanted it | 72 | 33 | 42 | 33 | 180 | 2.80 | 1.16 |
| It has been used and shown to be successful in various countries | 33 | 72 | 40 | 35 | 180 | 2.57 | 1.00 |
| This has worked out well | 33 | 54 | 32 | 61 | 180 | 2.33 | 1.13 |

Source: Field Work (2024)

All respondents evaluated the items, on average, over the 2.50 level, as indicated in Table 1 above. They concur that the card reader is the most efficacious method to avert electoral malpractices (3.22), that it will enhance Nigerians' confidence in the electoral process (3.20), that its absence could result in election postponements (2.57), that additional delays would contravene constitutional provisions (3.32), that there is public demand for it (2.80), that it has been implemented successfully in other nations (2.57), and that it has demonstrated its effectiveness (2.32). This indicates that INEC have a legitimate rationale for employing card readers in the 2019 elections.

**Table 2** Respondents' Views of the 2019 Gombe State General Elections' Credibility in Relation to Card Reader (CR) Use

| Variables | Responses | | | | | | |
|---|---|---|---|---|---|---|---|
| **Items** | **SA** | **A** | **D** | **SD** | **N** | **Mean** | **Std. Dev.** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Voters who were lawfully registered were registered and authenticated using the gadget | 69 | 44 | 42 | 25 | 180 | 2.87 | 1.09 |
| The card reader was promoted by INEC as an anti-electoral fraud | 66 | 39 | 45 | 30 | 180 | 2.78 | 1.12 |
| The device was designed to increase the integrity of the voting process | 102 | 38 | 20 | 20 | 180 | 3.23 | 1.03 |
| By restricting voting to PVC holders who have received the appropriate accreditation and confirmation, you may avoid repeated voting | 96 | 36 | 32 | 16 | 180 | 3.18 | 1.02 |
| Additionally, the card readers were configured to operate with designated polling locations. | 97 | 33 | 30 | 20 | 180 | 3.15 | 1.06 |
| It brought legitimacy and transparency to Nigeria's electoral process. | 60 | 45 | 39 | 36 | 180 | 2.7167 | 1.13 |

Source: Field Work (2024)

Participants in Table 2 concur that this device was utilized to register and authenticate properly registered voters, yielding a mean rating of 2.87. Moreover, the introduction of the card reader aimed to enhance voting integrity (3.23), deter multiple voting (as only duly accredited and verified PVC holders could participate) (3.18), configure card readers for designated polling locations (3.15), and augment transparency and credibility within Nigeria's electoral process (2.72). INEC also promoted the card reader as a mechanism to combat electoral fraud (2.78). This indicates that card readers would guarantee authenticity for the 2019 general elections in Gombe State, Nigeria.

**Table 3** Respondents' Perceptions on the Challenges Associated with the Use of the Card Reader (CR) in the 2019 General Elections in Gombe State

| **Variables** | **Responses** | | | | | | |
|---|---|---|---|---|---|---|---|
| **Items** | **SA** | **A** | **D** | **SD** | **N** | **Mean** | **Std. Dev.** |
| Potential issues with the device's battery | 29 | 76 | 40 | 35 | 180 | 2.55 | 0.98 |
| Delays in the verification of PVC holders | 27 | 53 | 36 | 64 | 180 | 2.54 | 1.09 |
| A significant number of voters may participate in | 57 | 48 | 46 | 29 | 180 | 2.74 | 1.07 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| the accreditation procedure. | | | | | | | |
| Due to the card readers' inability to access names beginning with the letters A through E, voters were eventually barred from casting ballots | 55 | 44 | 47 | 34 | 180 | 2.67 | 1.10 |
| The failure to acquire biometrics from the fingertips | 90 | 38 | 26 | 26 | 180 | 3.07 | 1.10 |
| Strange capturing | 23 | 82 | 40 | 35 | 180 | 2.52 | 0.94 |

Source: Field Work (2024)

Table 3 shows the challenges faced by smart card readers in Gombe State, Nigeria, during the 2019 general election. Every respondent agrees that there may have been battery issues that prevented card readers from operating during the election (2.56), delays in verifying PVC holders (2.54), the potential for a large number of voters to be covered during the accreditation process (2.73), irregular capturing (3.07), the inability to capture biometrics from finger tips (2.52), and the card readers' inability to access voter names beginning with the letters A through E, which ultimately prevented them from casting ballots (2.67). This suggests that utilizing card readers during elections has problems.

**Table 4** Respondents' thoughts on possible solutions to the challenges faced during the 2019 Gombe State general elections when utilizing Card Readers (CR)

| **Variables** | **Responses** | | | | | | |
|---|---|---|---|---|---|---|---|
| **Items** | **SA** | **A** | **D** | **SD** | **N** | **Mean** | **Std. Dev.** |
| Verify that the bare minimum of system requirements are met | 49 | 38 | 20 | 73 | 180 | 2.55 | 1.26 |
| In Device Manager, check the reader's status | 61 | 50 | 27 | 42 | 180 | 2.72 | 1.16 |
| Experiment with several USB ports | 58 | 61 | 33 | 27 | 179 | 2.84 | 1.04 |
| Change the drive letters | 65 | 52 | 47 | 15 | 179 | 2.93 | 0.98 |
| Check to see if the drive letter appears on your memory card | 54 | 39 | 51 | 35 | 179 | 2.63 | 1.11 |
| Configure Card Recovery on your computer | 87 | 44 | 24 | 24 | 179 | 3.08 | 1.07 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Keep the memory card in place when taking and viewing pictures | 84 | 39 | 36 | 20 | 179 | 3.04 | 1.05 |
| Don't swap out the memory card while the camera is active. | 88 | 41 | 30 | 20 | 179 | 3.10 | 1.04 |
| When the battery is low, stop shooting and viewing new pictures | 54 | 45 | 44 | 36 | 179 | 2.65 | 1.11 |
| Think about inserting a different card | 50 | 42 | 17 | 70 | 179 | 2.50 | 1.26 |

Source: Field Work (2024)

The average scores for each item in Table 4 exceeded 2.50. Respondents said that card reader difficulties for the 2019 Gombe State general election can be addressed using the following available options: Verify compliance with the minimal system requirements (2.55); assess the reader's status in Device Manager (2.72); utilize other USB ports (2.84); modify the drive letters (2.93); ensure the memory card is recognized as a drive letter (2.63); Install Card Recovery on your computer (version 3.08); Refrain from removing the memory card during the capture and viewing of photographs.

**Test of Hypotheses**

$H_0$: There is no legality to the use of Card Readers (CR) in the 2019 Gombe State General Elections.

**Table 5:**Chi-square Results on the Use of Smart Card Readers and the Validity of the 2019 General Elections in Gombe State

| Variable | X | X-cal | X-tab | Df | Remarks |
|---|---|---|---|---|---|
| Smart Card Reader | 3.2 | 2.71 | 2.69 | 9 | Significant |
| Credibility | 3.17 | | | | |

*Significant at 0.05

Source: Field Work (2024)

Table 5 presents the chi-square result pertaining to election credibility. The chi-square calculated (X-cal) and tabulated (X-tab) values with nine degrees of freedom were 2.71 and 2.69, respectively (p=2.71>2.69). This implies that smart card readers are dependable for holding the 2019 general elections in Nigeria's Gombe State. It has been proven that the usage of Smart Card Readers (SCR) in the 2019 Gombe State general elections is not credible.

**Examination of the Findings**

The essay asserts that INEC possesses a legitimate rationale for employing card readers in the execution of the 2019 elections in Gombe State, Nigeria. The results of this study align with the research on the Analysis of Electronic Voting Systems in Various Countries undertaken by Sanjay and Ekta (2011) at the University of Mullana, India. The paper asserts that smart card readers eradicate the potential for fraudulent and erroneous ballots, which frequently serve as the principal sources of disputes and election petitions. It greatly expedites the vote-counting process in comparison to the conventional method. Furthermore, the smart card drastically reduces the quantity of paper needed, saving numerous trees and making the process eco-friendly. Printing expenses are almost avoided because just one sheet of ballot paper is required at each polling place.

The outcomes of the 2019 general elections in Gombe State, Nigeria, demonstrate that card readers enhance legitimacy. This outcome parallels a report by Dr. Ekumen Emmanuel regarding the Card Reader Experience, published in Thisday Newspaper on April 23, 2015. The research indicates that INEC's implementation of card reader technology during the 2015 general elections demonstrated its capability to conduct legitimate elections with few grievances. The introduction of card readers has significantly diminished election fraud, encompassing duplicate registrations and multiple voting. The card readers facilitated the prevention of fraud throughout the accreditation process by verifying that cardholders' actual identities matched the information on their permanent voter's cards (PVCs).

The findings also demonstrated that irregular capturing and card readers' inability to gather biometrics from the fingertips prevented voters from casting ballots since they were unable to access voter names that began with the letters A through E. This suggests that there were problems with the way card readers were used when voting. This result is also in line with Alebiosu's (2015) examination of the challenges faced by smart card readers in the 2015 Nigerian general elections. After a test run in twelve federation states, INEC promised to fix the card readers' issues, but Alebiosu pointed out that the device did not work well in many polling stations during the 2015 general elections, especially during the presidential and national assembly elections. The card reader was not widely known among the electorate. Many Nigerians were

unaware of the gadget, especially those who cast ballots in remote areas. Many members of these groups had never seen or heard of the card reader before Election Day. During the election process, these groups of people were not aware of the card reader's purpose. Numerous misconceptions existed regarding the gadget. Certain voters believed the card reader functioned as a voting apparatus. Inadequate information transmission and insufficient voter education regarding the card reader resulted in tense interpersonal relations and uncooperative attitudes among some illiterate voters and election officials.

The INEC and ad hoc personnel received insufficient training on the utilization of the card reader. The majority of presiding officers and assistant presiding officers at the polling station lacked adequate training in the utilization and management of the card reader. Due to the frequent congestion and inadequacy of INEC's training facilities, the majority of trainees did not have adequate instruction on the utilization of the card reader. The card reader's operational mechanics were insufficiently shown with actual examples. In specific instances, two card readers were allocated to a class of one hundred learners. A significant number of trainees were prohibited from utilizing the machinery. In other instances, trained personnel were substituted with inexperienced workers who could not operate the equipment properly. These considerations resulted in improper handling of the card reader during the election, to the point that the protective film remained on certain devices, inhibiting their ability to recognize thumbprints under specified conditions.

Card reader issues were also observed during the surveys. A couple of the devices malfunctioned on Election Day. INEC does, however, have contingency procedures in case the card reader malfunctions. Meanwhile, some of the backup was also inoperable. For instance, none of the five and seventeen card readers that were installed for the PDP presidential candidate at the Bayelsa State polling station functioned. The card reader at the polling booth for the APC's vice presidential candidate was also malfunctioning. A large number of smart card readers were not intelligent enough to function properly. Some card readers were not functioning because of low battery life, blank screens, and the Subscriber Identification Module (SIM) card not being activated in the device. According to Ekumen (2015), some INEC officials blamed INEC engineers for the card readers' malfunction since they couldn't figure out

how to decode the built-in security mechanism. Reports state that the security code on the card reader is meant to update the voting time and date.

Furthermore, the findings demonstrated that issues with card readers during elections could be resolved by ensuring that the minimum system requirements are fulfilled, examining the reader's status in Device Manager, experimenting with different USB ports, altering the drive letters, and confirming that the memory card can function as a drive letter. This finding is supported by Alebiosu's (2015) research at Federal University Wukari, Nigeria, on smart card readers and the 2015 Nigerian general elections.

## Conclusion

Technological advancements have resulted in a consistent enhancement of the voting process in Nigeria, especially in Gombe State. An instance of incremental development is the progressive substitution of manual voter registration with smart card readers. The implementation of smart card reader technology has significantly enhanced the state's electoral system. INEC is utilizing technology due to electoral malpractices in previous elections that resulted in poor governance, particularly in Gombe State.

The following suggestions are derived from the study's findings:

a. All Nigerians should accept the use of smart card readers during the electoral process.
b. Ad hoc staff and INEC should be adequately trained in the use of smart card readers in order to overcome the challenges faced in the 2019 general elections in Gombe State and the country as a whole.
c. INEC should require that smart card readers be operated by qualified personnel. Election officials should not be replaced by politicians during an election.
d. Enough electricity should be available at every polling place in the state and the country to power the smart card batteries.
b. Voters should receive adequate instruction on how to use smart card readers.

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**Authors' Contributions**

All authors have contributed to the final manuscript. The contribution of all authors: conceptualization, methodology, formal analysis, writing original draft preparatin, writing review and editing. All authors have read and agreed to the published version of the manuscript.

**Conflict of Interest**

All authors have no conflict of interest related to this study.

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**References**

Alvarez, R. & Hall, T. (2018). The Anatomy of the APC and PDP. Today. Retrieved from http://www.thisdaylive.com/articles/the-anatomyof-apc-and-pdp-2 Retrieved on June 20, 2024.

Banire (2015). The Policy and Legal Advocacy Centre expresses concerns about the general elections being postponed. Retrieved from http://placng.org/legist/concernsover-postponement-of-the-general-elections Retrieved on June 20, 2024

Centre for Policy and Legal Advocacy (2015). Accessed June 16, 2015. Elections and Technology, Electoral Knowledge Network, http://aceproject.org/ace-en/topics/et/et10

Chigozie, T. & Ibrahim, Y. (2015). Recounting the Card Reader Experience. ThisDay Newspaper, April 23, 2015.

Dunne, M. (2022). *An Overview of Comparative Politics and Governance*. Palagrave, Macmillan.

Duru, W. (2022). *Electronic Elections: The Advantages and Dangers of Digital Democracy*. Princeton. Princeton University Press.

Ebhomele, O. (2019). *An Introduction to Political Science*. Calabar: Cats Publishers.

Eminue, V. B. (2015). Electrons without Elections: A Viewpoint on 2003/2007 Electrons. *Bassey Andah's Journal*, Vol. 1, pp. 155-163.

Falana, O. (2019). Opinion: Are Card Readers Unlawful under Nigerian Elections Law? http://thewillnigeria.com/news/opinion-illegality-orotherwise-of-card-readers-in-Nigerianelectoraljurisprudence/ Accessed on June 18.

Falola, T. & Heaton, Y. (2015). Freedom and Custom, Lecture Series, Royal Institutes of Philosophy, 181–196.

Foundation for the International Electoral System (2015). Election Fraud and the Future of Nigerian Elections, 1999-2003 Elections and Democratic Consolidation in Nigeria, National Association of Political Science, Lagos.

Gelb, T. & Decker, E. (2021). Recounting the Card Reader Experience. ThisDay Newspaper, April 23, 2015.

Ibrahim, K. & Makama, T. (2015). Credible Government and Elections: A Panacea for Settling Conflicts in Nigeria. *Africa's Journal of Governance and Sustainable Development*. Vol. 2 No. 2. pp. 146-151.

John I. P.. (2019). Democracy and Democratic Shortcomings. Fifty Years Later: Federalism and Democracy in Nigeria, edited by J. Elaigwu, I. Jos: Institute of Governance and Social Research

López-Pintor, R. (2010) A Foundational Conceptual Model for Assessing Election Fraud in Developing Nations. International Foundation for Electoral Systems (IFES), Electoral Fraud White Paper Series. January, Washington, D.C.

Network for Team Engineering (2015). The Advantages of the INEC Card Reader in the 2015 elections. available through the go.engineerng.net/m blog post?id=6404812%3ABlogPost%3A10334 Retrieved was obtained on June 7 2024.

Oderemi, C. (2015). Biometric Voting Technology and the General Elections in Nigeria in 2015. Presented as a Paper at the Two-Day National Conference on "The 2015 General Elections in Nigeria: The Real Issues" held on July 27 and 28, 2015 by the Electoral Institute.

Odiakose, M. (2015). "INEC and the Use of Card Readers," The Nigerian Pilot. Retrieved on June 27, 2024. at http://nigerianpilot.com/inec-and-use-of-card-readers

Okolie, E. (2019). Cultural Perspectives on Card Readers. The Front. http://www.vanguardngr.com/2015/03/cardreaders-lessons-from-other-lands

Okonji, T. (2021). Credible Government and Elections: A Panacea for Settling Conflicts in Nigeria. *Africa's Journal of Governance and Sustainable Development*. Vol. 2 No. 2. pp. 146-151.

Omotola, O. (2022). *An Introduction to Political Science*. Calabar: Cats Publishers.

Omotola, T. (2015). Money Politics and Vote Buying Threaten Democratic Administration in the Makurdi Local Government Area of Benue State. *International Journal of Public Administration Research and Management* (IJPAMR), Vol. 2 No. 5. pp. 65-73..

Piccolino, J. C. (2015). *Election Procedures and Nigerian Democracy*, Calabar: Baaj Intanafrmal Company.

Sanjay, K. & Ekta, W. (2019). Analysis of Electronic Voting Systems in Various Countries. Computer Engineering and Information Technology Departments, M. M. University, Mullana (Ambala), India.

Santon, E. A. (2018). Smart Card Readers and the General Elections in Nigeria in 2019. Department of Political Science. Federal University of Nigeria, Wukari.

Sule, W. (2018). Analysis of Electronic Voting Systems in Various Countries. The World Gazetteer, Department of Computer Engineering and Department of Information Technology, M. M. University, Mullana (Ambala), India, National Population Commission Abuja, 2007.

The Electoral Institute (2015). The Electoral Act of 2010 (modified). Abuja: Federal Government Printers.