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Research Article

Students' Perception of the Use of Card Readers in Nigeria's Presidential Elections

Francis. A. Ikenga

Department of Political Science, Delta State University, Abraka, Nigeria
Email: faikenga@gmail.com

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Abstract
Nigeria has long grappled with electoral irregularities undermining the integrity of its democratic process. In response to these challenges, efforts to transition to an electronic voting system have gained traction. This study explores the perceptions of Delta State University students regarding the utilization of electronic card readers during Nigeria's presidential elections, aiming to shed light on the efficacy and challenges of this electoral innovation. Drawing on previous research, this study contextualizes Nigeria's electoral landscape, highlighting deficiencies in probity, accountability, and transparency that have plagued traditional paper ballot voting. The introduction of permanent voter cards (PVCs) and electronic card readers (CR) represent a significant step towards addressing these shortcomings. However, concerns persist regarding electoral fraud and political participation, prompting an investigation into the perceived impact of electronic voting among students. The objectives of the study include assessing students' views on the extent to which electronic card readers have exposed electoral fraud, evaluating their perceptions of the card reader's influence on political participation, and identifying potential challenges in its implementation. Hypotheses are formulated to test the relationships between the electronic voting model, electoral fraud, and political participation. The study's significance lies in its contribution to understanding the dynamics of electoral integrity and the role of technology in bolstering democratic processes. By examining students' perspectives, it offers insights into the broader public sentiment towards electronic voting in Nigeria. The findings are expected to inform policy discussions and electoral reforms aimed at enhancing trust, transparency, and accountability in the Nigerian electoral system.
Keywords: Electoral Integrity, Electronic Voting, Perception, Electoral Fraud, Political Participation, Card Reader, Democratic Process.

Introduction

Since attaining independence Nigeria has ardently pursued the establishment of a trustworthy electoral system owing to the irregularities that marred previous elections. The deficiency in probity, accountability, transparency, and trust within the government has significantly contributed to the low voter turnout during elections (Omezue-Nnali, 2020). The overdue transition to an electronic electoral model is imperative given the enormous human and material resources within the nation (Omezue-Nnali, 2020). This transition has been exemplified by the recent introduction and utilization of the 'permanent' voters card (PVC) alongside an electronic card reader for the verification of voter accreditation. Nigeria's electoral landscape encompasses approximately 120,000 polling units, with a voting population estimated between 56 million and 62 million (Eniola, 2015). The prevalence of a flawed electoral system serves as a catalyst for unhealthy political rivalries among power contenders, consequently escalating into electoral violence (Ebirim, 2014). Such electoral inadequacies breed a cycle of violence, eroding public trust and confidence in the democratic process (Alemika, 2011).

Political opportunists and certain biased electoral officials exploit the vulnerabilities of the traditional voting system to perpetrate electoral frauds, further exacerbating electoral misfortunes (Idike, 2014; Odusote, 2014). This scenario illustrates the surge in violence, including fatalities and injuries (Ajayi, 2006; Alemika, 2011). It is evident that the prevalent traditional paper ballot voting system lacks fundamental attributes of credible elections such as transparency, accountability, and fairness (Alemika, 2011), rendering it susceptible to human errors and manipulation (Ebirim, 2014). Despite its shortcomings, the traditional

system holds promise in addressing many electoral challenges. In developing countries, particularly in Sub-Saharan Africa, elections have historically been plagued by gross irregularities, resulting in widespread loss of lives and properties (Suberu, 2007; Elekwa, 2008). Consequently, electronic voting, facilitated by PVCs and E-card readers, is perceived as a remedy to past horrors, offering the prospects of free, fair, transparent, convenient, and confidential elections, along with expeditious results processing (Brown, 2005). Historical precedents abound with instances of manipulated elections aimed at influencing outcomes which makes the design of an effective voting system, whether electronic or traditional an imperative that should take this into cognizance. The electronic card reader system, for instance, ensures voter accreditation and reconciles the number of voters with collated results, bolstering the integrity of the electoral process. Consequently, it is imperative to acknowledge the need for an enhanced democratic process in Nigeria, characterized by trust, probity, transparency, and accountability in governance. Hence, this study endeavors to scrutinize students' perceptions regarding the utilization of electronic card readers during the 2015, 2019, and 2023 presidential elections in Nigeria.

Statement of the Problem

Elections are universally recognized as fundamental pillars of democracy worldwide, with voting serving as a vital electoral mechanism crucial for maintaining democratic systems within any society. Voting empowers the populace to select their leaders and express their preferences regarding governance. Elections in numerous developed nations with robust democratic frameworks have progressively embraced electronic voting systems. In these countries, the outcomes of such elections are typically regarded as transparent, equitable, and trustworthy. The Independent National Electoral Commission (INEC) of Nigeria has expressed its intent to adopt electronic voting methods, evident in the introduction of permanent voter cards (PVCs) and electronic card readers. This strategic move by INEC stems from allegations of bias leveled against the electoral body by various political parties, particularly concerning allegations of facilitating election rigging, notably during the 2007 and 2011 general elections (Omezue-Nnali, 2020).

Objective of the Study

The main purpose of this study is to examine the perception of students of Delta State University, Abraka on the use of electronic card readers during Nigeria's presidential elections and subsequent elections in Nigeria.

The specific objectives for the study are to:

1) Examine the perception of students on the extent to which card readers have exposed electoral fraud in Nigeria.
2) Assess the perception of students on the impact of card reader on political participation in the electoral process.
3) Assess the problems to be encountered in the use of card readers in the Nigerian electoral process.

Hypothesis

1) There is no significant relationship between the electronic voting model and electoral fraud.
2) There is no significant relationship between electronic voting model and political participation.

Conceptual Review

Electronic Voting

Electronic voting, often referred to as e-voting, is a modern approach to casting and counting votes in elections using electronic systems. It involves the use of various technologies such as computers, the internet, and specialized software to facilitate the voting process. This method has gained significant attention due to its potential to streamline elections, increase voter accessibility, and enhance the efficiency and accuracy of vote counting. However, it also raises concerns about security, privacy, and the integrity of the electoral process. One of the key advantages of electronic voting is its ability to overcome geographical barriers, allowing voters to cast their ballots remotely from any location with internet access. This can significantly increase voter turnout by eliminating the need for physical presence at polling stations, particularly for individuals with mobility issues or those residing in remote areas (Osinakachukwu and Jawan, 2011).

Additionally, e-voting systems can offer features such as multilingual interfaces and accessibility options for individuals with disabilities, further promoting inclusivity in the electoral process (Odusote, 2014). Furthermore, electronic voting has the potential to expedite the vote-counting process and provide more accurate results compared to traditional paper-based methods. Automated tabulation reduces the likelihood of human error and eliminates the need for manual recounts, thus minimizing the time required to declare

election outcomes (Llewellyn *et al.,* 2021). Real-time monitoring of voting trends and instant dissemination of results can also enhance transparency and public trust in the electoral process (Parker and Webster, 2020). However, despite its benefits, electronic voting systems face various challenges, particularly regarding security and privacy. Concerns about the vulnerability of e-voting systems to cyber-attacks and manipulation have prompted calls for robust cyber security measures to safeguard against potential threats (Fernández *et al.,* 2021). Ensuring the integrity and confidentiality of voter data is essential to protect against unauthorized access and manipulation of election results (Gorantla *et al.,* 2022). Moreover, electronic voting raises questions about the transparency and verifiability of the voting process. Critics argue that the lack of a paper trail in some e-voting systems makes it difficult to audit and verify the accuracy of election results, raising doubts about the legitimacy of outcomes (Mercuri, 2019). Implementing measures such as voter-verified paper audit trails (VVPATs) can address these concerns by providing a physical record of each vote cast, which can be used for manual recounts and verification purposes (Shah *et al.,* 2020). Although electronic voting has the potential to revolutionize democratic processes by increasing voter accessibility, improving efficiency, and enhancing transparency, it is however crucial to address concerns related to security, privacy, and the verifiability of election results.

Card Reader

Ensuring the integrity and transparency of elections is crucial for upholding democratic principles. In recent years, technological advancements have offered innovative solutions to enhance the electoral process. One such advancement is the implementation of a Voters' Card Reader (VCR), designed to authenticate voters and prevent electoral fraud. The primary function of the VCR is to verify the identity of voters before they are allowed to cast their ballots. This is achieved through a multifaceted authentication mechanism incorporating biometric and cryptographic techniques. Biometric authentication, such as fingerprint scanning or facial recognition, ensures that only registered voters can access the voting system (Saud *et al.,* 2020). Additionally, cryptographic protocols can be employed to secure the transmission of voter data and prevent tampering or manipulation (Abo-Hammour *et al.,* 2019). The design of the VCR's user interface is critical to its usability and accessibility. A user-friendly interface with clear instructions and intuitive navigation promotes inclusivity and facilitates smooth voting processes. Research suggests that incorporating features such as multilingual support and audio instructions can improve accessibility for voters with diverse linguistic backgrounds or disabilities (Khan *et al.,* 2021). Moreover, ensuring compatibility with assistive technologies, such as screen readers or braille displays, enhances the VCR's accessibility for all voters. However seamless integration with existing Electoral Management Systems (EMS) is essential for the successful deployment of the VCR within electoral infrastructure. The VCR should be interoperable with EMS databases to facilitate real-time voter verification and synchronization of electoral data (Khan *et al.,* 2020).

Electoral Act

The Electoral Act is a fundamental legal framework governing the conduct of elections in many democratic nations. It encompasses regulations and procedures that ensure fairness, transparency, and integrity throughout the electoral process. This paper aims to provide a conceptual overview of the Electoral Act, focusing on its key components, functions, and significance in democratic governance. The Electoral Act typically comprises several key components, each serving specific purposes in the electoral process. Firstly, it outlines the procedures for voter registration, establishing criteria for eligibility and mechanisms for registration (Lawson and Merrell, 2021). Secondly, it delineates the process of candidate nomination, including requirements for candidacy, submission deadlines, and validation procedures (Sadanandan, 2019). Thirdly, the Act specifies the conduct of campaigning activities, setting limits on campaign financing, advertising regulations, and guidelines for fair campaigning practices (Hassan and Nelson, 2022). Moreover, the Electoral Act addresses the organization and administration of elections, detailing the roles and responsibilities of electoral management bodies, such as the electoral commission, in overseeing the electoral process (Holbrook and Semetko, 2020). It also encompasses provisions for the conduct of voting, including the establishment of polling stations, ballot design, voting methods, and procedures for counting and tabulating votes (Norris, 2020). Additionally, the Act may include provisions for electoral dispute resolution, outlining mechanisms for addressing complaints, challenges, and irregularities that may arise during elections (Lopez-Guerra, 2021).

Functions and Significance of the Electoral Act

The Electoral Act serves several crucial functions in democratic governance. Firstly, it ensures the protection of citizens' right to vote by establishing clear procedures for voter registration and participation (Hassan and Nelson, 2022). Secondly, it promotes electoral integrity by setting standards for fair and transparent

elections, thereby enhancing public trust and confidence in the electoral process (Lawson and Merrell, 2021). Thirdly, the Act facilitates the orderly conduct of elections, providing guidance to electoral authorities, candidates, and voters on their respective roles and responsibilities (Sadanandan, 2019). Furthermore, the Electoral Act plays a vital role in safeguarding democracy by preventing electoral fraud, manipulation, and irregularities through its stringent regulations and enforcement mechanisms (Holbrook and Semetko, 2020). It also promotes political accountability by requiring transparency in campaign financing and expenditure, thus reducing the influence of money in politics (Norris, 2020). Overall, the Electoral Act serves as a cornerstone of democratic governance, ensuring the legitimacy and credibility of electoral processes in modern democracies (Lopez-Guerra, 2021). The Electoral Act constitutes a comprehensive legal framework that regulates the conduct of elections in democratic societies. Through its key components, functions, and significance, the Act plays a pivotal role in upholding democratic principles, protecting citizens' rights, and ensuring the integrity and credibility of electoral processes. As democracies continue to evolve, the Electoral Act remains indispensable in promoting free, fair, and transparent elections, thereby strengthening the foundations of democratic governance.

Literature Review

Overview of Elections in Nigeria

Violence has become part of the political culture in Nigeria such that all elections since independence are virtually violence ridden. Nigeria has conducted eight general elections since independence in 1960. The elections were held in 1964, 1979, 1983, 1993, 1999 and 2003, 2007, 2011 and the recently held 2015 election. Each of these electoral processes was significantly tainted by different forms of electoral violence or violence linked to party politics and the conduct of elections. Consequently, a significant challenge in administering Nigeria's electoral system is addressing the prevention of pre-, during-, and post-election violence (Suberu, 2007). The prevalent culture of corruption resulting from the inefficiency of security agencies underscores the necessity for reforms within the security sector (Ikenga and Agah, 2020). Without substantial efforts to address these issues, they have the potential to escalate and reach alarming proportions, posing a threat not only to the democratic process in Nigeria but also to the broader national development agenda (Idike, 2014). Through involvement in electoral violence and manipulation, young people contribute to the erosion of trust in the system, thereby undermining ongoing efforts to establish Nigeria as a fully democratic nation for the collective welfare (Obayelu, 2007; Ejumudo and ikenga, 2015). Consequently, this negatively affects the social and economic prosperity of the country and fosters disparities or occurrences of structural violence (Ojie, 2006).

Electoral Process

Elekwa (2008) explains that the electoral process spans from the provision of voter education to the dissolution of the National Assembly. Additionally, Elekwa (2008), affirms that the different stages of the electoral process comprise:

a) Delimitation of voters.
b) Registration of voters.
c) Notice of elections.
d) Nomination of candidates.
e) Election campaigns.
f) Declaration of election results and completion of the cycle of tribunal sittings.
g) Participation of other organizations.
h) Resolution of electoral conflicts arising from the participation of other organizations, individuals, or groups (Ezeani, 2004).

Electoral malpractices encompass unlawful actions committed by government officials responsible for election conduct, political parties, groups, or individuals with intentions to unduly influence election outcomes in favor of specific candidates (Ezeani, 2004). In Nigeria, electronic voting, plastic voters' cards, and electronic card readers have been introduced. Voting stands at the core of the electoral process in a democratic system of governance. It marks the initial step in the democratic process, and the consolidation of democratic governance is contingent upon it (Ajayi, 2006). The efficacy of the voting method and the precision of the vote counter are pivotal factors determining the system's ability and capacity to accurately reflect voters' preferences (Iwu, 2008). E-voting denotes elections involving electronic means, at least in the casting of votes (Brown, 2005). This system offers increased efficiency, anonymity, scalability, speed, auditability, and accuracy, all of which are essential characteristics of a robust electoral system (Iwu, 2008). The implementation of permanent voters' cards (PVCs) containing biometric data and voter verification through card readers has been in the works since 2011. This initiative acknowledges the imperative of

ongoing efforts to curb fraud, fostering growing confidence among Nigerians in the fairness of elections. The PVC holds comprehensive data to verify the cardholder's identity against their registration information (Jega, 2012). The Independent National Electoral Commission (INEC) defines PVC as a voting card embedded with a chip containing biometric data, including a photograph and fingerprints of registered voters. Additionally, card readers are handheld electronic devices used to authenticate PVCs and their rightful owners during elections (Omezue-Nnali, 2020; Nigeria Civil Society Situation Room, 2015). According to Osinakachukwu and Jawan (2011), the adoption of card readers enhances the credibility of the electoral process due to its benefits.

Card Readers and Exposure of Electoral Fraud in Nigeria

This great optimistic about the 2015 presidential election was as the result of the faith the electorates have on the use of electronic card readers introduced by INEC to help to reduce fraudulent practices carried out by political parties in distorting election results (Ezeani, 2004). The criteria to be formulated encompass accuracy, democracy, convenience, flexibility, privacy, verifiability, and mobility (Ebirim, 2014). The use of electronic card readers, like other devices used for electronic voting, was introduced by the independent electoral commission (INEC) as a means to check mate fraud in the election process which according to the commission will go a long way to reduce the fraud which often mars election in Nigeria (Iyayi, 2004). While reviewing the presidential election won by the candidate of his party, the All Progressive Congress (APC), the director, electoral planning and monitoring of the APC presidential campaign council, Theodore Ekechi, said "the use of the smart card removed the chances of manipulating the process, thus, reducing the level of electoral fraud in the 2015 electoral process" (Ogunbamowo, 2021).

According to Jega (2012), one of the reason why politicians are attacking him is because they know that the card reader machines will help to address all those irregularities starting from the accreditation of voters at all the polling units, however with the use of card readers in the 2015 general election, Sweeney (2015), noted that the fraudulent practice of political parties in the country has been minimized as they cannot manipulate election figure above the number accredited by the electronic card readers. Only those entitled to cast ballot will be allowed to receive a ballot to cast. Through this process, the means of manipulating results (increasing the number of voters) was check mated in the 2015 general election (Jega, 2015) outcome of election through card readers in the electoral process in the developing countries particularly the Sub-Sahara Africa and Africa in general election had been marred by gross irregularities leading to wanton destruction of lives and properties (Iyayi, 2004; Ikenga and Agah, 2020). The electronic card readers like other forms of e-voting of the past as it promise free, fair, transparent and convenient election as well as the speedy processing of results (Iwu, 2005). Despite the pocket of challenges concerning its use which included possible battery failures to power the device and timelines, issue in verifying PVC holders and how many voters could be covered within the accreditation process, Nigerians were generally optimistic that the readers would positively impact the voting process (Sweeney, 20l5). Adoyi (2015) in the daily post revealed that the Akwa Ibom State INEC returning officer, Prof. James Ekpoke, had declared Udom Emmanuel of the People Democratic Party (PDP) winner of the April 11 governorship election in the state. The use of electronic card read has revealed obvious rigging as the total number of votes could not be reconciled with the number of accredited voters (Adoyi, 2015).

The potential future role of electronic card readers (e-voting) in Nigeria's electoral procedures is under scrutiny. Nigeria marked a decade of democracy on May 29, 2009. However, the occasion was met with mixed feelings among Nigerians, as many deemed it unworthy of celebration due to the inherent flaws in our electoral system. The political and electioneering landscape in Nigeria is rife with numerous irregularities, including ballot box theft, ballot box stuffing, political violence, the utilization of political thugs to intimidate opposing candidates, and the presence of a weak Electoral Act. These challenges largely stem from the reliance on manual electoral processes in Nigeria, which often yield dubious electoral outcomes (Nart, 2015). According to Attoh and Okeke (2019), given that corrupt public officers continues to benefit from the prevailing accountable system: There is little confidence in the ability of state created institutions to provide solutions to the plethora of maladies plaguing the Nigerian political landscape (Agah and lkenga, 2023). Accordingly, Attoh and Okeke (2019) explain that the Nigeria's political landscape is riddled with deep-seated historical problems that have persisted despite five decades of statehood. Many of these issues trace back to pre-independence times and have continued to perpetuate themselves through entrenched and sustained cycles of dysfunction. In light of this, Iwu (2008) suggested that Nigerians generally exhibit a lack of enthusiasm towards e-voting due to ingrained political attitudes. As equity and fairness are fundamental to a healthy democracy, the implementation of a real-time e-voting system could potentially engender satisfaction among citizens. Such a system would promote transparency, rendering ill-intentioned politicians

less capable of manipulating election outcomes. Consequently, policies and programs oriented towards the welfare of the people would likely be prioritized (Jega, 2012).

The 2022 Electoral Act and Provisions for Electronic Transmission of Results

The Independent National Electoral Commission (INEC), responsible for conducting elections in Nigeria, introduced the electronic transmission of election results. Its establishment is legally grounded in Section 153(1)(f) of the Constitution of the Federal Republic of Nigeria 1999 (CFRN), providing legitimacy to its existence. INEC is endowed with various powers under Section 153(2) of the CFRN 1999, enumerated in item 15 of part 1 to the 3rd Schedule. These powers encompass tasks such as election oversight, political party registration, and monitoring of election campaigns, among others. Additionally, INEC is mandated to fulfill responsibilities and exercise powers conferred by the National Assembly's Act. In tandem with its authority, the National Assembly passed the Electoral Act of 2022, ratified by the president on February 25, 2022. Section 160(1) of the CFRN 1999 empowers INEC to formulate regulations for its operations, independent of presidential approval, acknowledging the potential impact presidential control could have on its autonomy. This provision is unique, ensuring the validity of INEC's regulations without presidential oversight. The Electoral Act 2022 further acknowledges this autonomy, as outlined in Section 148, leaving certain actions to INEC's discretion. This authority culminated in the creation of the INEC regulations and guidelines for the conduct of election, 2022.

The INEC regulation further underscores its authority in determining the conduct of elections, as evidenced by Clause 38, which introduces the electronic transmission of election results. This regulation, considered subsidiary legislation, originates from the primary legislative role of the legislature, which delegated its authority to the electoral body. Thus, any violation of the regulation by those under its purview constitutes illegality, as the regulation carries equivalent legal weight and authority as the empowering law. The significance of referencing the Electoral Act 2022 lies in the understanding that electronic voting would be ineffective if election results are not transmitted in real time, thereby compromising the integrity of the electoral process. However, the language of Clause 38, introducing electronic transmission of results, is somewhat ambiguous, particularly given Nigeria's nascent technological status. The clause's wording, "Electronically transmit or transfer," implies that while technology integration into the electoral process is intended, if not feasible, an alternative mode of transfer must be utilized. The use of 'or' suggests the presence of an alternative method. This interpretation was affirmed by the Supreme Court's ruling in a case involving Bola Ahmed Tinubu and other presidential aspirants contesting the election results.

Theoretical Framework

Modernization theory is a socio-economic development theory that emerged in the mid-20th century, primarily as a response to the challenges of economic underdevelopment and social instability in post-colonial countries. It posits that societies progress through a series of stages, moving from traditional agrarian economies to modern industrialized ones, with accompanying changes in social, political, and cultural institutions. Modernization theory gained prominence in the 1950s and 1960s, particularly in Western academia and policy circles. It was a product of the post-World War II era, where the United States and other Western nations were heavily involved in reconstruction efforts and had a vested interest in the development of newly independent nations. Scholars such as Walt Rostow, David McClelland, and Talcott Parsons contributed significantly to the formulation and popularization of modernization theory (Rostow, 1960; McClelland, 1961; Parson, 1966). One major strength of this perspective is that it provided a structured framework for understanding and promoting development, offering a roadmap for transitioning from traditional to modern societies. And by highlighting the importance of industrialization and technological advancement, modernization theory underscored the significance of economic and technological growth in achieving societal progress. Critiques are however of the opinion that the theory's emphasis on linear stages of development has been challenged as overly simplistic and deterministic, failing to account for the diverse paths to modernity and the possibility of regression, and also ignoring peculiar cultural contexts.

In the context of Nigeria's migration to electronic voting through the introduction of permanent voter cards (PVCs) and card readers, modernization theory can offer insights into the motivations and implications of this transition. This aligns with the precepts of modernization theory that suggests that societies advance through the adoption of modern technologies. Nigeria's move towards electronic voting with the introduction of PVCs aligns with this notion. Electronic voting is perceived as a more efficient and transparent method compared to traditional paper-based systems, reflecting Nigeria's aspiration to embrace technological advancements in its electoral process. Also modernization theory emphasizes the importance

of institutions in facilitating development. To this end the introduction of PVCs represents an institutional reform aimed at improving the credibility and integrity of Nigeria's electoral system. By implementing electronic voting, Nigeria seeks to strengthen its democratic institutions and enhance public trust in the electoral process. Modernization theory suggests that modernization leads to the consolidation of democratic values and practices, and in the Nigerian context, the adoption of electronic voting through PVCs is viewed as a step towards consolidating democracy by ensuring free, fair, and transparent elections. By leveraging technology to streamline the voting process and minimize electoral fraud, Nigeria aims to promote democratic governance and political stability. Modernization theory underscores the idea that economic development and social change are interconnected. The introduction of electronic voting through PVCs signifies a broader socio-political transformation within Nigerian society. It reflects a shift towards greater political participation, as electronic voting can potentially increase voter turnout and engagement among citizens, especially the younger population familiar with digital technologies. Modernization theory also highlights the role of globalization in shaping the development trajectories of nations. As such Nigeria's adoption of electronic voting tends to align with global trends towards digitization and modernization of electoral systems. By embracing electronic voting technology, Nigeria aims to align its electoral practices with international standards and demonstrate its commitment to democratic norms on the global stage.

Research Method

The methodology of this study is the survey method which is essentially a cross sectional research design that entails obtaining data from the field and analyzing them descriptively, as well as conducting a t-test analysis. Data for this analysis and questions were drawn based on Nigeria's general elections held in 2015, 2019, and 2023. Since the proclamation of Nigeria's independence, the general elections in Nigeria took place in 1964, 1979, 1983, 1999, 2003, 2007, 2011, 2015, 2019 and 2023. Data on the elections in Nigeria are drawn from survey questions based on the 2015 to 2023, with the aim of analyzing electoral processes at the present time across the six geopolitical zones in Nigeria. Election data from 1959 up to 2011 do not capture the essence of this study as it is bereft of the nucleus of information for the purposes of this study; therefore they were not taken into consideration.

Results and Discussion

Table 1. Electronic voting and institutionalization of democracy.

Respective category	Adamawa state	%	Anambra state	%	Delta state	%	FCT	%	Lagos state	%	Kaduna state	%	Total	%
SA	12	3.69	9	2.77	15	4.62	19	5.85	9	2.77	8	2.46	72	3.69
A	15	4.62	14	4.31	8	2.46	24	7.38	32	9.85	19	3.08	103	5.28
SD	176	54.15	148	45.54	162	49.85	93	28.62	126	38.77	109	33.54	814	41.74
D	95	29.23	132	40.62	128	39.38	176	54.15	137	42.15	153	47.08	821	42.10
ND	27	8.31	22	6.77	12	3.69	13	4.00	21	6.46	45	13.85	140	7.18
Total	325	100	325	100	325	100	325	100	325	100	325	100	1950	100
Source: Fieldwork, 2019.														

Table 2. Electronic voting and curbing electoral fraud.

Respective category	Adamawa state	%	Anambra state	%	Delta state	%	FCT	%	Lagos state	%	Kaduna state	%	Total	%
SA	37	11.38	17	5.23	23	7.08	19	5.85	28	8.62	9	2.77	133	6.82
A	51	15.69	32	9.85	17	5.23	32	9.85	41	12.62	43	13.23	216	11.08
SD	154	47.38	118	36.31	138	42.46	183	56.31	149	45.85	196	60.31	938	48.10
D	67	20.62	137	42.15	146	44.92	87	26.77	88	27.08	74	22.77	599	30.72
ND	16	4.92	21	6.46	1	0.31	4	1.23	19	5.85	3	0.92	64	3.28
Total	325	100	325	100	325	100	325	100	325	100	325	100	1950	100
Source: Fieldwork, 2019.														

Table 3. Electronic voting and political participation.

Respective category	Adamawa state	%	Anambra state	%	Delta state	%	FCT	%	Lagos state	%	Kaduna state	%	Total	%
SA	42	12.92	34	10.46	21	6.46	21	6.46	39	12.00	32	9.85	189	9.69
A	37	11.38	19	5.85	15	4.62	32	9.85	24	7.38	13	4.00	140	7.18
SD	144	44.31	122	37.54	163	50.15	143	44.00	138	42.46	176	54.15	886	45.44
D	77	23.69	118	36.31	119	36.62	114	35.08	97	29.85	89	27.38	614	31.49
ND	25	7.89	32	9.85	7	2.15	15	4.62	27	8.31	15	4.62	121	6.21
Total	325	100	325	100	325	100	325	100	325	100	325	100	1950	100
Source: Fieldwork, 2019.														

Table 4. Electronic voting and future elections in Nigeria.

Respective category	Adamawa state	%	Anambra state	%	Delta state	%	FCT	%	Lagos state	%	Kaduna state	%	Total	%
SA	29	8.92	19	5.85	28	8.62	16	4.92	11	3.38	31	9.54	134	6.87
A	36	11.08	31	9.54	17	5.23	51	15.69	34	10.46	15	4.62	184	9.44
SD	138	42.46	148	45.54	162	49.85	97	29.85	146	44.92	87	26.77	778	39.90
D	95	29.23	115	35.38	97	29.85	143	44.00	118	36.31	147	45.23	715	36.67
ND	27	8.31	12	3.69	21	6.46	18	5.54	16	4.92	45	13.85	139	7.13
Total	325	100	325	100	325	100	325	100	325	100	325	100	1950	100
Source: Fieldwork, 2019.														

Table 5. (Hypothesis 1) test of significance between the electronic voting and electoral fraud.

T-test: paired two sample for means		
	Variable 1	**Variable 2**
Mean	19.998	20
Variance	402.0211	359.3414
Observations	5	5
Pearson correlation	0.926394	-
Hypothesized mean difference	0	-
df	4	-
t stat	-0.00059	-
P(T<=t) one-tail	0.499778	-
t Critical one-tail	2.131847	-
P(T<=t) two-tail	0.999556	-
t Critical two-tail	2.776445	-

Table 6. (Hypothesis 2) test of significance between electronic voting and political participation.

T-test: paired two sample for means		
	Variable 1	**Variable 2**
Mean	19.998	20.002
Variance	402.0211	310.0066
Observations	5	5
Pearson correlation	0.949391	-
Hypothesized mean difference	0	-
df	4	-
t stat	-0.00139	-
P(T<=t) one-tail	0.499481	-
t Critical one-tail	2.131847	-
P(T<=t) two-tail	0.998961	-
t Critical two-tail	2.776445	-

Hypothesis 1 of this study tests the significant relationship between the impacts of electronic voting and electoral fraud. To test this hypothesis, computed indexes of the main constructs (electronic voting and institutionalization of democracy) were correlated and a test of hypotheses was conducted using the Excel spreadsheet to determine the p-value. In rejecting or accepting the hypotheses, we reject the null hypotheses if the p-value is less than or equal to 0.05 and if the p-value is greater than or equal to 0.05 we accept. The results revealed a positive relationship since

P(T<=t) one-tail: 0.499778

There is a significant relationship between the use of electronic voting (card readers) and electoral fraud since p-value is less than 0.05. Thus the null hypothesis is rejected and alternate hypotheses accepted since the p-value is less than 0.05 level of significance.

Hypothesis 2 of this study tests the significant relationship between the impacts of electronic voting and political participation. To test this hypothesis, computed indexes of the main constructs (electronic voting and institutionalization of democracy) were correlated and a test of hypotheses was conducted using the Excel spreadsheet to determine the p-value. In rejecting or accepting the hypotheses, we reject the null hypotheses if the p-value is less than or equal to 0.05 and if the p-value is greater than or equal to 0.05 we accept. The results revealed a positive relationship since

P(T<=t) one-tail: 0.499481

There is a significant relationship between the use of electronic voting (card readers) and participation since p-value is less than 0.05. Thus the null hypothesis is rejected and alternate hypotheses accepted since the p-value is less than 0.05 level of significance.

Benefits and Challenges of Electronic Voting

The benefits beneath the application of e-voting according to Smartmatic (2014) are as follows: It is auditable, transparent, secure and accurate; faster results and build trust can increase engagement and turnout; and increases accessibility. It might be necessary to x-ray some of the requirements of e-voting spelt out by Smartmatic (2014). These are the leading possibilities in the acquisition or adaptation of e-voting in any country. According to him, why e-voting needs to be acquired is censored by the fact that:

Table 7. Problems and prospects of e-voting.

Problems	Prospects
Risk of data breaches. The VCR must adhere to stringent data protection standards and encryption protocols to safeguard sensitive information.	E-voting still retains a measure of attraction for the electoral process in Nigeria. It is strongly believed that e-voting can facilitate the process of free and fair elections in Nigeria.
The absence of a voter-verifiable paper audit trail (VVPAT) necessary for providing an independent external check on accuracy and also acting as a back-up system. The result of an electronic voting machine can hardly be recounted manually as in the paper system.	Electronic voting system are held to mitigate the problem of over and under voting or informal voting and are thought to address early problems associated with ballot marking devices, especially the potential ambiguity regarding an elector's intention.
The electronic voting system presents serious sociological problems as with any new technology. With low level of literacy and erratic power supply, the application of the electronic voting system will be vulnerable to scammers, manipulators and fraudulent individuals, and also voter assistance for the illiterate voters and people with disability will surely violate their right to secrecy of ballot.	Ability to be configured to assist people with visual or physical impairment, followed closely by their ability to allow electors in remote areas to participate in an electoral event without the need to travel great distances.
Reports of delays and challenges in the authentication of finger prints, resorting to manual for validation of voter's cards, which is a serious sign of failure of the smart card readers.	Prospects for real-time transmission of results that will galvanize trust and confidence in the electoral process.
Adapted with modifications from Eze and Iwundu (2018).	

According to statements made by Mr. Kayode Idowu, the spokesperson of INEC, there may have been instances where film obstructed the lens of the card readers, hindering the reading of biometric data from the PVCs presented by voters for scanning. Acknowledging this issue, the spokesperson affirmed that the commission had taken note of these challenges and would make necessary adjustments in subsequent elections to enhance the credibility and acceptance of the electoral process (Nart, 2015). Additionally, the reports of the election observers highlighted that Prof. Attahiru Jega, the INEC chairman, consistently assured that the utilization of card readers would significantly deter election rigging in the country's electoral process. Despite this assurance, a considerable portion of accreditation was conducted manually due to glitches experienced in the functionality of the card readers. The report explained that despite imperfect functionality, the presence of the card reader system still contributed to enhancing the credibility of the electoral process, countering allegations primarily from individuals with fraudulent intentions (Nart, 2015). Furthermore, Beattie *et al.,* (2020) noted that one of the challenges encountered with e-card usage was the lack of preparedness among Nigerians in using e-card readers, compounded by the prevalent level of illiteracy in the country, which impacted the innovation of the electoral process. Despite the successes observed with the use of card readers, Nart (2015) observed that technical issues persisted. Upholding the privacy and security of voter data remains crucial to maintaining public trust in the electoral process. VCRs must adhere to stringent data protection standards and encryption protocols to safeguard sensitive information (Eniola*,* 2015; Ikenga, 2020). Additionally, implementing robust cyber security measures, such as firewalls and intrusion detection systems, can help mitigate the risk of unauthorized access or data breaches (Beattie *et al.,* 2020). Regular security audits and updates are essential to address emerging threats and vulnerabilities in the VCR's software and hardware components.

Summary

Electronic Voting Mechanism and Nigeria's 2015 Presidential Elections: A student perception analysis presents an insightful examination of students' viewpoints regarding the introduction of electronic card readers in the electoral process. The study delineated five research questions addressing the core issues, each of which was thoroughly explored and answered. Data collected were subjected to analysis employing the percentage method and t-test analysis.

The analysis yielded the following findings:

- ✓ Students predominantly perceived that electronic card readers have significantly exposed electoral fraud in Nigeria.
- ✓ There was a widespread perception among students that the use of electronic card readers in the 2015 presidential election had a notably positive impact on the electoral process.
- ✓ Students largely believed that electronic card readers positively influenced the outcome of the 2015 presidential electoral process.
- ✓ There was a prevailing perception among students regarding the future viability of electronic card readers in Nigeria's electoral processes.
- ✓ Students acknowledged a few challenges encountered in the use of card readers during the electoral process in Nigeria, notably the country's low literacy levels and unpreparedness to adopt the technology.

Conclusion

Drawing from the study's outcomes, the subsequent conclusions were drawn:

- ✓ The deployment of electronic card readers, as perceived by Nigerians, brought to light instances of electoral fraud in Nigeria.
- ✓ The incorporation of electronic card readers during the 2015 presidential election in Nigeria exerted a beneficial influence on the electoral process.
- ✓ The utilization of electronic card readers significantly contributed to the favorable outcomes of the 2015 presidential electoral process.
- ✓ The integration of electronic card readers holds promise for future application within Nigeria's electoral framework.
- ✓ The implementation of card readers encountered minimal issues during Nigeria's electoral process.

Recommendations

The nation has experienced ineffective political leadership due to flawed elections, forsaking electoral standards crucial for ensuring uniformity, reliability, consistency, accuracy, and overall professionalism in electoral processes in Nigeria. Generally speaking, e-voting could prove to be a feasible solution for Nigeria under conditions of robust confidence in government and officials, widespread data network penetration among the populace, and challenges such as slow counting speeds and limited accessibility to elections,

particularly in areas with low voter turnout. However, despite prevailing challenges, the adoption of e-voting should not be undertaken on an experimental basis within Nigeria's electoral framework. Hence, it is recommended that there should be attendant political education preceding the adoption of the e-voting technology. Access to modern information and communication facilities become fundamentally democratized to educate illiterate electorates on the use of electronics in voting.

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