



EFFECTS OF BIMODAL VOTERS ACCREDITATION SYSTEM (BVAS) ON ELECTION CREDIBILITY IN ADAMAWA STATE: A CASE STUDY OF THE 2023 GUBERNATORIAL ELECTION IN CENTRAL SENATORIAL DISTRICT

ABSTRACT

An inaccurate accreditation of voter causes problems in the electoral process by raising doubts about the election's inclusiveness and outcome and by opening up avenues for fraud, manipulation and sometimes violence. The use of the bimodal voter accreditation system (BVAS) seems to be a game changer. This study investigates the impact of BVAS on the credibility of elections in the 2023 Adamawa state gubernatorial election in central senatorial district using primary data sourced from questionnaires. In preparing this work Innovation Diffusion Theory (IDT) was adopted as theoretical framework. The major objective of this study is to examine the effect of the Bimodal Voter Accreditation System (BVAS) on credibility of elections in Nigeria with the 2023 Adamawa State Gubernatorial election in central senatorial district as scenario. The findings revealed that voters are very much aware of the use of BVAS in the 2023 gubernatorial elections and it is statically significant at 5% level of 0.05. The study also revealed that there is no adequate voter education and orientation about the deployment of the (BVAS). Furthermore, there is a significant impact of bimodal voter accreditation system (BVAS) on the credibility of the 2023 Adamawa State Gubernatorial election. it was also examined that there is low level of dysfunction of the bimodal voter accreditation system (BVAS) in the 2023 Adamawa State Gubernatorial election in central senatorial district. The study recommends among others that voters awareness should be continuous even after elections. This will enable electorates to prepare for elections beforehand. It will also reduce the delays associated with voting patterns. It is evident that there is improvement in the performance of the BVAS but frequent update and upgrade of the BVAS is required to maintain its efficiency and effectiveness for future elections. Finally, this work may be a contribution to other available literature but can act as catalyst for further extensive research on BVAS.

Keywords: BVAS, Election, Credibility, Central Senatorial

Background to the study

Elections are one of the major components of a democratic process. The people must be willing to participate in the election in order to legitimize the power and authority of elected political leaders. It enables a ruler-ship by the consent of the people.

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The main characteristic of an election is, it must be free, fair, transparent and credible. For a democracy to be considered stable and strengthened it must have the aforementioned characteristics. At the dawn of the fourth republic in 1999, elections were manually conducted in Nigeria. The manual election process was marred with corruption, vote manipulation, ballot box snatching, under-age voting and election violence. According to Ikelebe (2016), due to the poor electoral system, the aftermath of elections is always characterized by crisis and legitimization contestation in election tribunals or courts (LeVan & Ukata, 2012). There is hardly any election in Nigeria where there is no complaint of election violence and malpractices (Agena, 2007). Weak electoral process always gives room for crises and the aftermath effect is weak democracy, unstable political system and illegitimate government. Thus the people's confidence, trust and interest in participating in the choice of who they vote for and entrust their power to carry on with legitimate authority to govern them is basically eroded.

The consequence of manual electoral process does not only create room for desperate politicians and corrupt election officials to manipulate election results but also create room for the installation of incompetent and mediocre leaders. In most contemporary African democracies, the failure of the election management bodies (EMB) to conduct free, fair and credible election has not only led to low voters turn out, voter's apathy, loss of people's confidence in democratic process but also mistrust towards EMB's capacity to conduct credible free and fair elections. To assuage the fear of the electorate and give elections credibility the Independent National Electoral Commission (INEC) has since 2011 started with introduction of information technology into the election process, the introduction of Electronic Voters Register (EVR), Automatic Fingerprint Identification System (AFIS) and Smart Card Reader (SCR). The passage of electoral bill into law in 2022 did not only solidify INEC legally but also empowered INEC's usage of electronic device Bimodal voter accreditation system (BVAS) in the conduct of elections in Nigeria.

As the 2023 general elections drew closer, the demand for the use of electronic device heightened from the general public, civil societies, media and international community. Thus the passage of the 2022 electoral bill into law by the then President Mohammed Buhari government gave INEC the legal and constitutional backing to the use of Bimodal Voters Accreditation System (BVAS) and INEC Result Viewing Portal (IREV) in electoral process. It is believed by the stakeholders that BVAS can reduce the excessive electoral fraud, promote credible elections and reduce voter's apathy and promote voter's participation.

The smart card reader was used on the previous elections in Nigeria, despite its effect it comes with some lapses and limitations, which are device failure, poor network coverage, and manipulation by some corrupt stakeholders these limitations are the major reasons for a better method of conducting elections, which has led to the use of BVAS in the 2023 general elections. In the 2023 Adamawa state Gubernatorial election, despite the use of the BVAS, there were still some flaws that hampered the electoral process like low level of voter education and orientation about how the technology operates, and inadequate training and poor skills of the INEC ad-hoc staff on handling the BVAS. This is because INEC on their part have not been steadfast in the quest to properly tackle this challenges prior to the 2023 general elections. This necessitates this study to carry-out an analysis of the use of bimodal voter's accreditation system (BVAS) in Nigeria emphasizing on the 2023 Adamawa State gubernatorial election in central senatorial district as a scenario.

i. Objectives;

The main thrust of this study is to examine the effects of the Bimodal Voter Accreditation System (BVAS) on credibility of elections in Adamawa state with the 2023 Gubernatorial election in central senatorial district as the main study area.

The study tends to achieve the following objective; To examine the level of awareness created about the use of bimodal voter accreditation system (BAVS), to find out the level of voter education and orientation about the deployment of the BVAS technology in the 2023 general elections, to assess the level of effect of the bimodal voter accreditation system (BVAS) on the credibility of the 2023 Adamawa State Gubernatorial election in Adamawa central senatorial district, evaluate the level of dysfunction of the bimodal voter accreditation system (BVAS), to find out the level of training and orientation of the INEC Ad-hoc staff on operating the BVAS.

ii. Literature Review

There has been numerous work carried out in areas of research that concern the subject matter; some of them were looked into in the course of preparing this paper. In the work of Ajiboye et al (2013) conducted their research on modeling and evaluation of e-voting system for sustainable credible election. They proposed a model for evaluating e-voting system by using fuzzy logic approach. The model developed was simulated and tested with student union election in a Federal University in Nigeria and obtained a promising outcome. Duruji, Ayo, Oni and Oni (2015), the authors presented a case for e-voting in Nigeria with strong emphasis that open and secret ballot was not suitable for conducting election in Nigeria given our political environment. The authors proposed the use of e-voting for subsequent election in Nigeria which according to the authors will eliminate all the flaws of open and secret ballot system. Ahmad, et al (2015), in their study on issues and challenges of transition to e-voting technology in Nigeria, the authors carried out critical appraisal of challenges of e-voting in other countries of the world and the implementation of e-voting in Nigeria. Their recommendation to the Nigeria government agencies is to invest more on research and development to grasp the in-depth of challenges and sustainability of e-voting system. The study conducted by Ayo, et al (2008), on e-voting implementation in Nigeria: the success factor;

proposed an implementation of an integrated system that comprises of an Electronic Voting Machine (EVM), the Internet Voting (e-Voting) and the Mobile Voting (m-Voting) for conducting election in the country to enhance participatory democracy. Similarly, in the work of Musa, et al (2011), on building of a multi-modal trust-based e-voting system.

The authors advocate the use of a multimodal authentication method for the electorate when casting their votes. These methods include biometric enabled voters card, finger print authentication and the use of PIN (Personal Identification Number) for voters to avoid time wastage during voting especially when one of the authentication methods failed, they can easily switch to another one. Also, Abu-Shanab et al (2010), in their work, e-Voting System: a tool for e-democracy argued and stressed the importance of the use of e-voting system in conducting election across board because of its attendance benefits, convenience and

enhancement of integrity of the election process. They also explore the factors influencing the adoption of e-voting system in a University environment. Moreover, Yekini, et al (2012), in their work on computer-based automated voting machine for Elections in Nigeria, proposed the design of an automated voting machine that will automate the entire election procedures in the future election in Nigeria. Similarly, Gerlach (2009) propounded seven design principles for a secured e-voting system, among which are: proven security, trustworthy design, published source codes, vote verification, voter accessibility, ensure anonymization and expert oversight. In the work of Momodu and Omogbhemhe (2013), the authors used different Unified Modeling Language (UML) artifacts to model the requirements and implementation of electronic voting system that can be used to conduct election in Nigeria.

iii. Theoretical Framework

In the course of this study we assessed theory in the work of Everett Rogers innovation diffusion theory. Everett Rogers (1962) propounded the innovation diffusion theory, the theory explains how overtime, an idea or product gains momentum and diffuses (or spreads) through a specific population or social system. The end result of this diffusion is that people, as part of a social system, adopt a new idea, behavior or product. Adoption means that a person does something differently than what they had previously. (LaMorte 2022). Hence, this work adopted this theory in tandem with the introduction of Bimodal voter accreditation system (BVAS) in the 2023 general elections in Nigeria and to explain the response to and acceptance of the Bimodal Voters Accreditation System by the electorates of Adamawa central senatorial district.

iv. Concept of Bimodal Voter Accreditation System (BVAS)

The Bimodal voter accreditation system (BVAS) is a product of the 2022 Electoral Act as Amended. Is a multifunctional device that performs an array of functions, including voter enrolment or registration, facial and fingerprint verification at the polling units, and allowing election result sheets to be uploaded to the INEC Result Viewing Portal (IReV). The BVAS combines Smart Card Reader features, and the Z-Pad functionality into one device. Smart Card Readers are commonly used in a variety of settings requiring stringent electronic authentication, such as in financial transactions and more recently in elections. The BVAS has an electronic sensor that reads a magnetic strip or bar code on a Permanent Voter's Card. Simply put, during voter accreditation, the Smart Card Reader corroborates that each voter's fingerprint directly matches the same unique fingerprint provided for enrolment. The Z-Pad then adds a camera feature for real-time facial data capture. The voter's live photo on election day, is verified from the database of registered voters. These technological features combined, provide on-the-spot verification of voters with a wait-time of less than a minute.

After accreditation, the first stage of the voting process, voters move on to the next queue to cast their ballots. This is an extremely sensitive stage as the polling officer must exercise extreme care to ensure that only accredited voters move on to cast their ballots. Additional physical checks are therefore put in place to this end; including marking of each voter's thumb with ink, which must then be shown before voting is permitted. All of this, strengthens the integrity of the accreditation, and eventually the voting process.

When voting is completed, the Presiding officer counts the votes and publicly announces the results for all present at the polling station. The Presiding Officer then fills in the results in a result sheet known as EC8A. The result sheet is to be scanned and uploaded by the BVAS to IReV, which is accessible to the public.

v. The Interplay between the Electoral Act, INEC Regulations, and BVAS

The Electoral Act 2022 (“the Act”) governs electoral processes throughout Nigeria. The Act empowers INEC to issue regulations and guidelines to give effect to its objectives (Section 146 of the Electoral Act). Further to this mandate, INEC issued the Regulations and Guidelines for the Conduct of Elections, 2022 (“the Regulations”), prescribing the procedures for conducting elections and the role of BVAS. Clause 19 of the Regulations gives effect to Section 47 of the Electoral Act, mandating the use of the BVAS to accredit voters at the polling unit.

This process is contemplated to be completed expeditiously unless there are issues identifying the voter. There are two possible technological scenarios for the BVAS to implement the rapid voter authentication previously described.

The first is that the BVAS would rely on an internal storage capacity to access the list of registered voters; already stored offline, without engaging the internet. This contemplates that INEC preloads a dataset of registered voters into the BVAS. With this in place, the BVAS will have no issues quickly identifying voters from the embedded data list.

The second, internet-based, process would prove much more controversial and challenging to implement. Whichever protocol is followed for accreditation, the combined physical and technological verification underscore the overwhelming importance of securing the transition from accreditation to actual voting. The results at each polling unit hinge on the polling officers’ hypervigilance at this stage. Should there be more votes than accredited voters at a given polling unit, the entire votes at the polling unit are cancelled.

Obviously, this tactic can be utilized by agents of the opposition in known strongholds of their opponents to ensure that otherwise legitimately cast votes are invalidated.

The Act provides that the presiding officer shall transfer both the results and the total number of accredited voters in a manner prescribed by INEC. The Regulations breathe life into this provision, by stipulating that the results at the polling units should be electronically transmitted or transferred to the collation center.

Therefore, upon completion of voting and result procedures, the presiding officer shall ensure that the results of each polling unit are electronically transmitted or transferred to INEC’s collation system. Concurrently, the results written in the result sheet will be manually scanned and uploaded by the BVAS to IReV (Section 60(5) of the Electoral Act). This offers a simple yet brilliant solution to the sole reliance on the collation of votes at the ward collation center, recorded on the ward level EC8B a process that, in the past, opened up the path for tampering and ballot snatching. With the current system in place, the results automatically uploaded at the polling station, are deemed to be the conclusive results thus rendering any subsequent attempts to snatch or tamper with the ballots cast, obsolete. In other words, any discrepancy

between the documents electronically transmitted, and the physical documents transmitted to the ward collation center will be resolved in favor of the former.

Methodology

The study adopts qualitative research; primary data was utilized to gather relevant information on the adoption of BVAS as a model to transparent elections in Nigeria with 2023 Adamawa Gubernatorial election in central senatorial district as a scenario.

Results and Discussion

This section deals with testing of the hypothesis by the researcher. The criteria used for accepting or rejecting of this hypothesis are based on the outcome of the findings considered in data presentation. If the calculated chi-square value (X^2) is greater than or equal to the tabulated value at 0.05 level of significance, the alternate hypothesis (H_1) is accepted, but if the calculated chi-square value is less than the tabulated value, the null hypothesis (H_0) is rejected.

Test of Hypothesis 1

H₀: There is a significant level of awareness about the use of bimodal voter accreditation system (BVAS) to the electorate in Adamawa central senatorial district.

H₀₁: There is a significant level of awareness about the use of bimodal voter accreditation system (BVAS) to the electorate in Adamawa central senatorial district.

Data from objective1: The Level of Awareness created about the use of Bimodal Voter Accreditation System (BVAS). Hypothesis is tested at the 0.05 level of significance.

Determination of Observed Frequency for Hypothesis 1

Variables	O	E	O - E	(O - E) ²	$\frac{(O - E)^2}{E}$
High	187	79.6	107.4	11534.76	14.50
Very high	112	79.6	32.4	1049.76	13.19
Undecided	4	79.6	-75.6	5715.36	71.80
Low	60	79.6	-19.6	384.16	4.83
Very low	35	79.6	-44.6	1989.16	24.98
Total	398	398	19.6	2067.32	X² = 129.3

Note: O = observed frequency, E = expected frequency

Source: Author’s computation

The calculated chi-square (X^2) value = 129.3

$$E_i = \frac{\text{Sum of responses}}{\text{No of categories}} = \frac{465}{5} = 79.6$$

Degree of Freedom (DF) = n-1

Where n is the number of category

DF = 5-1 =

Level of significance = 0.05

Critical value, that is, X^2 Tabulated = 9.488

Decision Rule:1

Since the X^2 tabulated value of 9.488 is less than its calculated value of 129.3, we reject the null hypothesis and accept the alternate hypothesis. The alternate hypothesis states that there is a significant level of awareness about the use of bimodal voter accreditation system (BVAS) to the electorate in Adamawa central senatorial district.

Test of Hypothesis 2

Ho: there is a significant voter education and orientation about the deployment of the (BVAS)

Ho₁: there is no significant voter education and orientation about the deployment of the (BVAS)

Data from objective2: The Level of Voter Education and Orientation About the Bimodal Voter Accreditation System (BVAS)

Determination of Observed Frequency for Hypothesis 2

Variables	O	E	O - E	(O - E) ²	$\frac{(O - E)^2}{E}$
High	34	79.6	-45.6	2079.36	26.12
Very high	45	79.6	-34.6	1197.16	15.04
Undecided	5	79.6	-74.6	5565.16	69.91
Low	122	79.6	42.4	1797.76	22.58
Very low	192	79.6	112.4	12633.76	158.72
Total	398	398	-222.8	23273.32	X² = 292.37

Note: O = observed frequency, E = expected frequency

Source: Author’s computation

The calculated chi-square (X^2) value = 292.37

$$E_i = \frac{\text{Sum of responses}}{\text{No of categories}} = \frac{465}{5} = 79.6$$

Degree of Freedom (DF) = n-1

Where n is the number of category

DF = 5-1 =

Level of significance = 0.05

Critical value, that is, X^2 Tabulated = 9.488

Decision Rule:2

Since the X^2 tabulated value of 9.488 is less than its calculated value of 292.37, we reject the null hypothesis and accept the alternate hypothesis. The alternate hypothesis states that there is no significant voter education and orientation about the deployment of the (BVAS)

Test of Hypothesis 3

Ho: There is no significant impact of bimodal voter accreditation system (BVAS) on the credibility of the 2023 Adamawa State Gubernatorial election.

Ho1: There is a significant impact of bimodal voter accreditation system (BVAS) on the credibility of the 2023 Adamawa State Gubernatorial election.

Data from objective3: Did The bimodal voter accreditation system (BVAS) Truly Mitigated Election Fraud in The 2023 Adamawa State Gubernatorial Election in Central Senatorial District?

Determination of Observed Frequency for Hypothesis 3

Variables	O	E	O - E	$(O - E)^2$	$\frac{(O - E)^2}{E}$
Yes	314	199	115	24025	0.12
No	84	199	-115	24025	0.12
Total	398	398	0	48050	$X^2 = 0.24$

Note: O = observed frequency, E = expected frequency

Source: Author’s computation

The calculated chi-square (X^2) value = 0.24

$$E_i = \frac{\text{Sum of responses}}{\text{No of categories}} = \frac{465}{5} = 199$$

Degree of Freedom (DF) = n-1

Where n is the number of category

$$DF = 2-1 = 1$$

Level of significance = 0.05

Critical value, that is, X^2 Tabulated = 3.841

Decision Rule:3

Since the X^2 tabulated value of 3.841 is greater than its calculated value of 0.24, we accept the null hypothesis and reject the alternate hypothesis. The alternate hypothesis states that there is a significant impact of bimodal voter accreditation system (BVAS) on the credibility of the 2023 Adamawa State Gubernatorial election.

Test of Hypothesis 4

Ho: There is significant dysfunction of the bimodal voter accreditation system (BVAS) in the 2023 Adamawa State Gubernatorial election in central senatorial district

Ho₁: There is no significant dysfunction of the bimodal voter accreditation system (BVAS) in the 2023 Adamawa State Gubernatorial election in central senatorial district.

Data from Table 4.1.10: Did you experienced any dysfunction of the bimodal voter accreditation system (BVAS) in The 2023 Adamawa State Gubernatorial Election in Central Senatorial District?

Determination of Observed Frequency for Hypothesis 4

Variables	O	E	O - E	$(O - E)^2$	$\frac{(O - E)^2}{E}$
Yes	71	199	-128	16384	82.33
No	327	199	128	16284	82.33
Total	398	398	0	32668	$X^2 = 165.66$

Note: O = observed frequency, E = expected frequency

Source: Author’s computation

The calculated chi-square (X^2) value = 165.66

$$E_i = \frac{\text{Sum of responses}}{\text{No of categories}} = \frac{465}{5} = 199$$

Degree of Freedom (DF) = n-1

Where n is the number of category

$$DF = 2-1 = 1$$

Level of significance = 0.05

Critical value, that is, X^2 Tabulated = 3.841

Decision Rule:4

Since the X^2 tabulated value of 3.841 is less than its calculated value of 165.6, we reject the null hypothesis and accept the alternate hypothesis. The alternate hypothesis states that there is no significant dysfunction of the bimodal voter accreditation system (BVAS) in the 2023 Adamawa State Gubernatorial election in central senatorial district.

Test of Hypothesis 5

H₀: There is a significant training and orientation of the electoral Ad-hoc staff on handling the BVAS.

H₀₁: There is no significant training and orientation of the electoral Ad-hoc staff on handling the BVAS.

Data from Table 4.1.12: The Level of Training and orientation of independent electoral commission (INEC) Ad-hoc staff on operating the bimodal voter accreditation system (BVAS)

Table 4.2.5: Determination of Observed Frequency for Hypothesis 5

Variables	O	E	O - E	$(O - E)^2$	$\frac{(O - E)^2}{E}$
High	25	79.6	-54.6	2981.16	37.45
Very high	18	79.6	-61.6	3794.56	47.67
Undecided	5	79.6	-74.6	5565.16	69.91
Low	223	79.6	143.4	20563.56	258.34
Very low	127	79.6	47.4	2265.76	28.46
Total	398	398	0	35170.2	X² = 508.16

Note: O = observed frequency, E = expected frequency

Source: Author’s computation

The calculated chi-square (X^2) value = 508.16

$$E_i = \frac{\text{Sum of responses}}{\text{No of categories}} = \frac{465}{5} = 79.6$$

Degree of Freedom (DF) = n-1

Where n is the number of category

$$DF = 5 - 1 = 4$$

Level of significance = 0.05

Critical value, that is, X^2 Tabulated = 9.488

Decision Rule:5

Since the X^2 tabulated value of 9.488 is less than its calculated value of 508.16, we reject the null hypothesis and accept the alternate hypothesis. The alternate hypothesis states that there is no significant training and orientation of the electoral Ad-hoc staff on handling the BVAS.

Discussion of Findings

- i. In Decision Rule:1 Since the X^2 tabulated value of 9.488 is less than its calculated value of 129.3, we reject the null hypothesis and accept the alternate hypothesis. The alternate hypothesis states that there is a significant level of awareness about the use of the bimodal voter accreditation system (BVAS) to the electorate in Adamawa central senatorial district. This implies that voters are very much aware about the use of bimodal voter accreditation in the 2023 gubernatorial election in central senatorial district. And it is statically significant at 5% level of 0.05.
- ii. In Decision Rule:2 Since the X^2 tabulated value of 9.488 is less than its calculated value of 292.37, we reject the null hypothesis and accept the alternate hypothesis. The alternate hypothesis states that there is no significant voter education and orientation about the deployment of the (BVAS). This implies that even though the voters were very much aware about the deployment of the bimodal voter accreditation system (BVAS) in the 2023 gubernatorial election in central senatorial district, there was no adequate voter education on the use of the BVAS.
- iii. In Decision Rule:3 Since the X^2 tabulated value of 3.841 is greater than its calculated value of 0.24, we reject the null hypothesis and accept the alternate hypothesis. The alternate hypothesis states that there is a significant impact of bimodal voter accreditation system (BVAS) on the credibility of the 2023 Adamawa State Gubernatorial election. This shows that the use of BVAS has the potential to determine a good and credible elections. It also implies that voters have confidence on the use of BVAS to produce free and fair elections in central senatorial districts.
- iv. In Decision Rule:4 Since the X^2 tabulated value of 3.841 is less than its calculated value of 165.6, we reject the null hypothesis and accept the alternate hypothesis. The alternate hypothesis states that there is no significant dysfunction of the bimodal voter accreditation system (BVAS) in the 2023 Adamawa State Gubernatorial election in central senatorial district. This also implies that there is no significant dysfunction or any major technical hitches recorded in the use of the BVAS during the 2023 gubernatorial election in the central senatorial district.

- v. In Decision Rule:5 Since the X^2 tabulated value of 9.488 is less than its calculated value of 508.16, we reject the null hypothesis and accept the alternate hypothesis. The alternate hypothesis states that there is no significant training and orientation of the electoral Ad-hoc staff on handling the BVAS. This indicates that there is no adequate training of INEC ad hoc staff for the 2023 gubernatorial elections. This was attributed to period and timing of the training and inadequate training material or tools to facilitate the training. Sometimes only one BVAS will be used in a training center of about 300 ad hoc staff which is inadequate.

Recommendations

In line with the major findings to this study, the following recommendations were made;

- i. Voters awareness should be continued even after elections. This will enable electorates to prepare for election beforehand. It will also reduce the delays associated with voting patterns
- ii. Voters education and orientation is low and this may cause a major issue on elections particularly those in the rural and most remote areas. Seminars and voter's orientation should be organized prior to election through the use of traditional institutions in other to give practical orientation and in mother tongue. This will improve awareness when it comes to voting.
- iii. BVAS has proven to produce a free, credible and fair elections hence the need to improve it efficiency by transmitting electronically elections results in real time which will give confidence to the process and even international recognition. This can also checkmate malpractice and manipulation of election results.
- iv. The fact that there was no significant level dysfunction of the BVAS is evident that there is improvement in the performance of the BVAS but frequent update and upgrade of the BVAS is required to maintain its efficiency and effectiveness for future elections.
- v. The training of ad hoc staff seems to be inadequate owing to shortages of man power and other relevant materials. Sometimes only one BVAS will be used at a training center of about 300 ad hoc staff which is inadequate. Training like this required practical to be able to operate and observe challenges and make necessary inquiries. This was largely inadequate in most centers.

REFERENCES

- Agena, J. (2007). Electronic voting system and credible electoral system in Nigeria. *African Journal of Politics and Administrative Studies*, Vol.3(1)
- Araba, A.A, Braimah, J.O. (2015). Comparative Study of 2011 and 2015 Presidential Elections in Nigeria. *Global Journal of Human Social Science*, Vol.15, Issue 7, Version 1.0
- Ayo, C., Adebisi, A.A., and Sofoluwe, A.B. (2008) 'E-voting Implementation in Nigeria. *Journal of Computer Science and its Application*, Vol.15, No.2, pp. 91-105
- Babalola, A. (2019). Towards Credible Election: Results Announced by Presiding Officers Should Be Deemed as Conclusive. <http://www.vanguardngr.com/2019/02/towardscredible-election-results->

announced-by-presiding-officers-should-be-deemed-as-conclusive-evidence-by-inec-and-courts/

- Babalola, A. (2021). The E-Voting System Vis-a-Vis Nigeria's Electoral Challenges. <http://vangaurdng.com/2021/12/the-e-votingsystem-vi-a-vis-nigerias-electoral-challenges/>
- Duruji, M., Ayo, C., Oni, S. and Oni, A. (2015). Making a Case for E-voting in Nigeria. Proceedings of the 15th European Conference on e-government, pp.100-106
- Dye, R.T. (2001). Politics in America. 4th ed. New Jersey: Upper Saddle, Rivers State
- Esan, A.O. and Ayeni, P.T. (2018). E-Voting in Nigeria: Barriers to Full Implementation. Journal of computer engineering and information technology, 7(1)
- Eya, N. (2003). Electoral Process, Electoral Malpractices, Electoral Violence. Enugu, Sages Publication Nigeria Limited
- Gerlach, F. (2009). Seven Principles for Secure E-voting. Communication of the ACM, Vol.52, no. 2
- Huntington, S. (1991). Democracy and third wave. Journal of Democracy, 2(2)
- Idike, A.N.A. (2014). Democracy and the Electoral Process in Nigeria: Problems and Prospects of E-voting Option. Asian Journal of Humanities and Social Sciences (AJHSS), Volume 2 – issue 2
- Ikelebe, A. (2016). Politics and Governance in Nigeria: perspectives, issues and cases Ibadan (John Archers)
- Isiaka, H.O., Ibrahim, H. and Kolawole, L.M. (2021). Election and Voter's Turnout in Nigeria: An Investigation of Reasons for Voter Apathy in 2019 General election in Oyo State. International Journal of Innovative Science and Research Technology, Volume6, Issue 5
- Iremeka, Chijioke, (2023) Electoral fraud, technology and future of Nigeria's democracy. <https://guardian.ng/saturday-magazine/electoral-fraud-technology-and-future-of-nigerias-democracy/>
- Iwu, M.M. (2006). Electronic Voting and the Future of Electoral System in Nigeria. The Nigerian Electoral Journal, 2 (1) 1-29
- LaMorte, Wayne W. (2022). Behavioral Changes Model: Diffusion of Innovation Theory. [Http://sphweb.bumc.bu.edu](http://sphweb.bumc.bu.edu)
- Levan, C., & Ukata, P. (2012). Countries at the crossroads 2012: Nigeria <https://www.thisdaylive.com/index.php/2023/02/13/of-bvas-technology-elections-and-democracy/w.freedomhouse.org/sites/default/files/Nigeria%20-%20FINAL.pdf>
- Musa, A., Ayo, C.K. and John, S.N. (2011). 'Building a Multidimensional, Trust-based E-voting System'. Proceedings of the 2011 World Congress in Computer Science, Computer Engineering and Applied Computing (EEE'11 International Conference on e-learning, e-Business, Enterprise Information Systems and e-Government. USA, July 2011)
- Nwolise, O.B.C. (2007). Electoral Violence and Nigeria's 2007 Elections. Journal of African Elections, 6 (2)

- Obakhedo, N.O. (2011). Curbing Electoral Violence in Nigeria: The Imperative of Political Education. African Research Review International Multidisciplinary Journal, Ethiopia, Vol.5, No. 5
- Odinkalu, Aslem, Chidi, (2021) Election: Let's talk about BVAS. www.icirnigeria.org/election lets-talk-about-bvas/
- Osumah, O. and Aghamelo, A.T. (2010). Elections in Nigeria Since the End of Military Rule. AFRICANA, Volume 4, No. 2
- Oyemike, Ikechukwu, (2023), 2023 General Election: All You Need to Know About The BVAS. Nigeria Info. www.nigeriainfo.fm/news/hompage/2023-general-election-all-you-need-to-know-about-the-bvas/
- Ozor, F.U. (2009) "Electoral Process, Democracy and Governance in Africa: Search for an Alternative Democratic Model. "Politikon, 36(2), pp.315-336
- Ujo, A.A, (2008). The Meaning and Importance of Voting in The Process of Democratic Governance. The Electoral Journal. 2(1) 62-72
- Yekini, N.A., Oyeyinka, I.K., Oludipe, O.O. and Lawal, O.N. (2012). 'Computer-Based Automated Voting Machine for Election in Nigeria'. International Journal of Computer Science and Network Security, Vol.12 pp.57-62
- Zhizhi, Meschach, R. and Ibrahim, Mohammed, Nasiru, (2020). Electoral Democracy and administration of Elections in Nigeria. www.researchgate.net