THE CHALLENGES AND PROSPECTS OF THE USE OF BVAS IN NIGERIA ELECTORAL PROCESS

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ABSTRACT
Nigeria's electoral process has long been challenged by issues of transparency, identity fraud, and multiple voting, which undermine public trust in democracy. To address these concerns, the adoption of a robust voter authentication system is crucial. This study examines the implementation of Biometric Voter Authentication Systems (BVAS) as a solution to enhance the credibility, security, and efficiency of elections in Nigeria. Using a qualitative approach, the research analyses existing literature, case studies from other countries, and reports on Nigeria's electoral process to assess the effectiveness of BVAS. Findings indicate that BVAS significantly reduces identity fraud, minimises multiple voting, and improves the accuracy of voter verification. The system strengthens electoral integrity, thereby fostering greater public confidence in election outcomes. The adoption of BVAS aligns with international best practices and has the potential to reinforce democratic institutions in Nigeria by ensuring a more transparent and accountable electoral process. To maximise its impact, nationwide deployment, voter education, adequate training for election officials, and a strong legal framework are recommended. This study contributes to the discourse on electoral reforms in Nigeria by providing empirical evidence on the benefits of biometric voter authentication. Its findings offer valuable insights for policymakers, electoral bodies, and researchers interested in improving election credibility. Implementing BVAS is a crucial step toward an accountable and fraud-free electoral system, ensuring accurate voter identification, reducing electoral malpractices, and strengthening Nigeria's democracy.

Keywords: Biometric Verification, Electoral System, Nigeria, Voter Authentication, Electoral Integrity.

1. INTRODUCTION

Democracy is widely recognised as the most prevalent system of governance across the world, with elections serving as a fundamental mechanism for ensuring the legitimacy, fairness, and transparency of leadership selection. A credible electoral process is essential for upholding democratic values, as it fosters public trust and ensures that governments derive their authority from the will of the people. Electoral procedures typically include voter registration, voting, result collation, and the final announcement of election outcomes. The success of an election is determined by its adherence to principles of freedom, fairness, transparency, and credibility.

In Nigeria, the electoral process has evolved over time. During the early years of the Fourth Republic, which commenced in 1999, elections were conducted manually. However, this system was fraught with numerous challenges, including electoral fraud, vote manipulation, ballot box snatching, underage voting, and violence. These issues have consistently undermined the credibility of Nigeria's elections, leading to widespread public distrust and political instability.

To address these challenges, the introduction of electronic voting has been proposed as a viable solution. Electronic voting systems have the potential to enhance electoral integrity by minimising human interference, reducing errors, and curbing fraudulent activities. Additionally, transitioning to electronic voting would result in significant cost reductions by eliminating expenses associated with the production of ballot papers, transportation of election materials, and various logistical processes. These financial savings could be redirected toward other essential needs of the Nigerian population, ultimately contributing to national development.

As Nigeria continues to seek improvements in its electoral system, the adoption of modern voting technologies, including Biometric Voter Authentication Systems (BVAS) and electronic voting machines, presents an opportunity to enhance electoral credibility and efficiency. By leveraging technological advancements, Nigeria can align its electoral process with international best practices, fostering greater confidence in its democratic institutions.

2. THE NEED FOR BIMODAL VOTERS' ACCREDITATION SYSTEM (BVAS)

The advent of technology has revolutionised the world and is progressively motivating innovative individuals to explore novel approaches for enhancing social services. The impact of technology has led to substantial progress in crucial sectors such as health, agriculture, and electricity, effectively transforming various facets of human life into a digital realm. Due to the significant impact of technology on all sectors of the Nigerian economy, there is a strong demand among Nigerians to utilise digital technology in order to enhance the country's democratic governance through the implementation of e-voting platforms.[1]

Nigeria's democratic trajectory has witnessed unforeseen deviations since 1999, due to the tumultuous response of both victors and vanquished to the outcome of every election. Given the country's anticipated population of 200 million individuals spread out across 774 local government districts, it is necessary to digitise the voting process. In order to facilitate the promotion of elections that are characterised by freedom, transparency, and credibility, technology can be employed to facilitate processes such as voter registration, casting and collation of ballots, as well as the transmission and release of election results. By utilising such technology, the country would be proudly utilising technology developed by Nigerians to effectively handle elections, thereby establishing a strong and long-lasting democratic culture.

E-voting is a method of conducting elections that uses electronic technology to facilitate the casting, counting, and transmission of ballots. This process involves the use of electronic devices to transmit the election results from polling centres to the central office of the electoral management body. The process entails the utilisation of electronic voting machines (EVMs) positioned in polling stations to establish a trustworthy and unobstructed voting system. The National Information Technology Development Agency (NITDA) has made it a priority to ensure that the Independent National Electoral Commission (INEC) uses

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[1] *Eya, N.* Electoral Process, Electoral Malpractices, Electoral Violence. Enugu, Sages Publication Nigeria Limited

technology effectively during the entire electoral process. This is to ensure that elections are well-organised and widely accepted throughout the country. The assent given by former President Muhammadu Buhari to the Electoral Act Amendment Bill has opened the way for the Independent National Electoral Commission (INEC) to completely computerise the electoral administration system by utilising digital technologies. Buhari stated that the Bill has noteworthy and praiseworthy aspects that have the potential to bring about significant changes in Nigerian elections by incorporating new technological advancements.

2.1 History of E-Voting in Nigeria and BVAS in Nigeria Case Study, Anambra State

In order to fully comprehend and value the implementation of BVAS in the 2021 Anambra State gubernatorial election, it is crucial that we examine the inception of e-voting in Nigeria. This is because, since the restoration of democratic governance in 1999, there have been significant advancements in technology. Particularly, starting from 2011, various crucial technologies or devices have been introduced before the adoption of BVAS for the 2021 election in Anambra State. The undeniable necessity for Nigerians to achieve a free, fair, and trustworthy election in order to maintain democracy resulted in the implementation of biometric registration during the 2011 election and the utilisation of the Electronic Card Reader Machine (ECRM) in the 2015 and 2019 elections. This electronic voting system is anticipated to diminish instances of political violence and the filing of post-election petitions. The use of ECRM was first adopted and employed by INEC during the 2015 general elections, which were widely acclaimed to be the most credible and transparent election conducted in the country since the return to democratic government twenty-two years ago. It was observed that in the quest to minimise election fraud and rigging, in 2015, INEC introduced smart card readers for the verification of voters and voting cards. This technological progression, to an extent, gave credence to the credibility of the 2015 election, as many judged it as the freest and fairest election the commission has conducted since the country returned to civilian rule in 1999. By that, Nigeria joined no fewer than 25 African countries like Sierra Leone, the Democratic Republic of Congo, Zambia, Malawi, Rwanda, Senegal, Somalia, Mali, Togo, and Ghana that have already held elections employing technology-compliant techniques like biometric voter registers and electronic card readers.

INEC adopted the E-voting method as a solution to the excessively expensive elections held in the country, among other reasons. Electronic voting is far more cost-effective compared to manual elections, which incur trillions of naira in expenses for the nation throughout each election period. For instance, in manual elections, ballot papers are produced for every election, resulting in recurring expenses. Every election, regardless of whether it is for the presidency, local government, governorship, or senate, necessitates the production of new ballot papers. If there is a rerun, additional ballot papers will be printed. By implementing E-elections, the process of printing and transporting millions of electoral ballots and purchasing voting boxes would become unnecessary. Electronic Voting Machines (EVMs) are utilised until they reach the end of their operational lifespan. Depending on their longevity, they may be utilised for a duration of 10 to 20 years. [2]

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[2] Oyemike, Ikechukwu, (2023), 2023 General Election: All You Need to Know About The BVAS. Nigeria Info. <www.nigeriainfo.fm/news/hompagelagos/2023-general-election-all-you-need-to-know-about-the-bvas/> accessed 29/11/2023

The implementation of card readers in Nigeria's election system had a profound impact on the entire political process by significantly reducing the ability of politicians to manipulate the will of the voters for their personal gain. The implementation of card readers has significantly mitigated instances of election fraud, bolstered voter turnout, diminished electoral violence and vote buying, enhanced the transparency of electoral procedures, bolstered the legitimacy of governments at various levels, and reduced the financial burden of elections. The utilisation of electronic voting machines, as demonstrated in the 2018 Kaduna local government election, highlighted the technology's ability to reduce expenses and provide a trustworthy and transparent voting system in the nation. Furthermore, the advancement of voting technology has improved Nigeria's democratic process by replacing the obsolete paper-based voting system, which relied on unreliable records, with the more accurate Electronic Voting System (EVS) and Electronic Voters. [3]

INEC declared in 2020 its intention to implement electronic voting using electronic voting machines in significant elections, beginning with the Anambra State gubernatorial election on November 6, 2021. Despite INEC's inability to implement electronic voting machines in the state, the successful execution of local government elections in Kaduna State using electronic voting and the approval of the E-transmission of election results by the National Assembly indicate that the country will soon transition to electronic voting for all major elections. Undoubtedly, this will enhance the whole political process by making it more challenging, transparent, and inclusive.

In addition to implementing biometric registration in the 2011 election and the Electronic Card Reader Machine (ECRM) in the 2015 election, INEC has also introduced other technologies such as the Direct Data Capturing (DDC) machine, INEC Voter Enrolment Device (IVED), and Bi-modal Voters Accreditation System (BVAS) over the years.

These technologies were implemented to ensure the transparency, credibility, and integrity of elections and electoral procedures. Although BVAS was initially used in its trial phase during the Isoko South State Constituency Bye-election in Delta State on September 11, 2021, it was in the 2021 Anambra gubernatorial election that BVAS was fully implemented and utilized in all polling units across the state to guarantee a democratic, impartial, trustworthy, and open election process. The recent election marked a significant milestone as the Independent National Electoral Commission employed the BVAS device for the first time. Additionally, the commission implemented an internet transmission system, enabling polling unit workers to instantly upload results to the INEC results portal. According to Ewepu (2021), the BVAS was utilised in the authentication of voters in 95% of polling stations in Anambra State.

3. BIMODAL VOTERS ACCREDITATION SYSTEM (BVAS)

Since the restoration of democracy in 1999, Nigerians have strongly desired elections that are characterised by transparency, freedom, fairness, and reliability. INEC has consistently utilised technological tools to enhance electoral processes, moving away from traditional

[3] *Babalola, A,* The E-Voting System Vis-a-Vis Nigeria's Electoral Challanges. http//vangaurdngr.com/2021/12/ the-e-voting- system-vi-a-vis-nigerias-electoral-challanges/

manual methods. In 2016, voter registration, accreditation, and result transmission were digitised with the implementation of several systems such as the Electronic Voters Register (EVR), Automatic Fingerprints Identification System (AFIS), Smart Card Reader (SCR), and the Bimodal Voter Accreditation System (BVAS). The Independent National Electoral Commission (INEC) employed the Biometric Voter Authentication System (BVAS) to enhance the credibility and transparency of Nigerian elections. Despite the existence of this technology for some time, it was initially implemented and evaluated on September 10, 2021, during the Isoko South Constituency by-election in Delta State. Subsequently, it was employed in the Anambra State gubernatorial election held on November 6, 2021, as well as in the governorship elections in Ekiti and Osun.

The Bimodal Voter Accreditation System is an electronic gadget designed to scan Permanent Voter Cards (PVCs) and authenticate the voter by analysing their fingerprints and face features. BVAS is additionally employed to transmit an instantaneous image of the outcome document at polling stations to the INEC website, allowing the public to access it if they are logged into the portal. One of the challenges encountered throughout the voting process is the discrepancies that arise between Polling Units (PUs) and result collation centres. Occasionally, the outcomes are seized, altered, or even obliterated. Consequently, INEC contemplated utilising BVAS technology to directly transmit results from the PUs. This approach minimises human error and the resulting delays in collation. Additionally, it enhances the accuracy, transparency, and reliability of the result-collation process.

The BVAS is an improved version of the Z-Pad, known for its ability to combine the key aspects of these systems, including voter enrolment, voter accreditation, and results interface capabilities, into a single device. In theory, this should eradicate the loopholes that allow for analogue manipulation of numbers in elections. The voter accreditation capacity integrates fingerprint, iris, and facial recognition technology with the aim of eliminating uncertainty in voter identity and certification.[4] In order to prevent unauthorised access, the application necessitates frequent software upgrades and reliable high-speed internet access, specifically requiring 4G technology for convenient downloading. The necessity of implementing Biometric Voter Authentication Systems (BVAS) in Nigeria's electoral system is rooted in the goals of improving precision, minimising fraudulent activities, and guaranteeing equitable elections. BVAS achieves these objectives by confirming voters' identities using biometric data, hence promoting transparency and credibility in the electoral process.

3.1 Advantages of BVAS

Implementing Biometric Voter Authentication Systems (BVAS) in Nigeria's voting system is crucial for multiple reasons. The BVAS technology has the ability to improve the honesty, clarity, and effectiveness of the electoral process by solving long-standing issues that have affected the country's democratic elections.

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[4] Inspiring confidence in the BVAS and electronic transmission of election results: Seven urgent actions for INEC https://www.thecable.ng/inspiring-confidence-in-the-bvas-and-electronic-transmission-of-election-results-seven-urgent-actions-for-inec/amp<accessed12-11-2023>

(i) BVAS ensures a more secure electoral environment by authenticating voters through unique biometric identifiers such as fingerprints or facial recognition. This minimises the risk of identity theft, multiple voting, and other fraudulent activities that have marred past elections in Nigeria. By linking voters to their biometric data, BVAS helps establish a robust and reliable voter verification system.

(ii) BVAS can contribute to the creation of a more accurate and up-to-date voter registry. The traditional methods of maintaining voter rolls often result in inaccuracies, such as duplicate registrations and deceased individuals remaining on the list. BVAS allows for real-time verification, updating the voter database and reducing the chances of electoral malpractices associated with inaccurate voter information.

(iii) BVAS streamlines the voter verification process, reducing the time required for polling and counting. This, in turn, can lead to a more timely announcement of election results, fostering public confidence in the electoral system. Quick and accurate results also contribute to the overall credibility of the electoral process, discouraging disputes and post-election controversies.

(iv) The use of BVAS promotes inclusivity in the electoral process. Biometric technology can provide an accessible means of identification for voters with disabilities, ensuring that all citizens, regardless of physical limitations, have the opportunity to participate in the democratic process. This aligns with the principles of universal suffrage and equal representation.

(v) The implementation of BVAS also facilitates the auditing of election results. The digital nature of biometric data allows for easier monitoring and analysis, enabling relevant authorities to conduct post-election reviews more effectively. This auditability serves as a deterrent to electoral fraud, as it increases the likelihood of identifying and penalising those who attempt to manipulate the electoral outcome.

The imperative of using BVAS in Nigeria's electoral system is rooted in its potential to address longstanding issues, enhance security, and streamline the democratic process. While challenges exist, the benefits, including increased accuracy, efficiency, and inclusivity, far outweigh the drawbacks. By embracing BVAS, Nigeria can take a significant step towards fostering a more transparent, credible, and participatory democratic electoral system.

3.2 Challenges of BVAS

Although the utilisation of Biometric Voter Authentication Systems (BVAS) in Nigeria's electoral system has numerous benefits, it is essential to take into account the potential drawbacks associated with its necessary deployment. BVAS is an Artificial Intelligence-based technological solution that relies on the quality of both the data's age and the training received by the algorithms. Implementing this technology on the necessary scale for reliable election administration in Nigeria is difficult due to its tarnished reputation and the withdrawal of many of its pioneers. During the Anambra election, it was evident that voters who had recently registered in INEC's Continuing Voter Registration (CVR) were easily validated due to the up-to-date nature of their features. Nevertheless, elderly voters or voters with PVCs that were issued some years ago commonly encountered significant difficulties

throughout the accreditation process, primarily due to changes in their physical appearance since the time of data acquisition. As a consequence, it is possible that thousands of individuals have been deprived of their right to vote. This gives rise to valid inquiries regarding both the origin of the algorithms and their training.[5]

Some of its disadvantages include[6]:

(i) Technological Infrastructure Challenges: Nigeria faces infrastructural challenges, particularly in remote or less developed areas. Implementing BVAS requires a robust technological infrastructure, and the lack of it in certain regions may lead to disparities in access and hinder the effectiveness of the system.

(ii) Cost Implications: The deployment of BVAS involves significant costs related to technology acquisition, maintenance, and training. For a country with economic constraints, allocating resources for BVAS implementation might strain the budget, potentially diverting funds from other essential areas.

(iii) Cybersecurity Risks: BVAS systems are susceptible to cyber threats, including hacking and data breaches. If not adequately protected, voter information may be compromised, leading to concerns about privacy and the security of sensitive data. Rigorous cybersecurity measures are essential to mitigate these risks.

(iv) Voter Education and Awareness: Introducing BVAS requires a comprehensive voter education program to familiarise citizens with the new technology. Lack of awareness or understanding among voters may result in confusion, longer waiting times at polling stations, and potential disenfranchisement.

(v) Potential Exclusion of Certain Groups: - Biometric technology may face challenges in accurately capturing the biometric data of certain demographic groups, such as the elderly or those with disabilities. This could inadvertently lead to the exclusion of specific segments of the population from the electoral process.

(vi) Sustaining and Dependability Issue: BVAS systems necessitate routine maintenance to guarantee their dependability. Power outages, technical malfunctions, or insufficient maintenance can interrupt the voting process, resulting in delays and undermining public trust in the electoral system. The Anambra ballot clearly demonstrated significant deficiencies in human agency. It was evident that numerous electoral and presiding officers lacked sufficient training in the BVAS. INEC could argue that they experienced inevitable shortcomings in the withdrawal of trained election officials due to the attrition caused by the widely publicised pre-election violence. That explanation is unlikely to be effective in Ekiti and Osun.

(vii) Biometric technologies are not perfect and carry a risk of producing false positives (incorrectly accepting unauthorised individuals) or false negatives

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5 Okonji, Emma, (2023), Nigerians Urge INEC to Use BVAS for voter Accreditation, Uploading of Results in Saturday's Eelection. THIS DAY. https//www.thisdaylive.com/index.php/2023/11/09

6 Digitalizing Elections in Nigeria: Pros, Cons and ImplicationsAdvocacy for Policy and Innovation (API) <https://ng.linkedin.com/company/advocacy-for-policy-and-innovation-api?trk=article-ssr-frontend-pulse_publisher-author-card> accessed 2023

(incorrectly rejecting eligible voters). This creates the possibility of disagreements and objections to the outcome of the election.

(viii) Reliance on External elements: BVAS systems may rely on external elements, such as internet access and electrical availability. Any interruptions in these systems could hinder the seamless operation of the technology during elections. In Dunukofia, a region in Anambra state, the majority of the area is serviced by 3G networks. However, in order to access the 4G Network and download BVAS updates, many presiding officers had to seek assistance from local motorcycle suppliers to transport them to other communities.

(ix) Resistance to Change: The introduction of a new electoral technology may encounter opposition from multiple stakeholders, such as political parties, election authorities, and the general public. The resistance may originate from scepticism, apprehension towards technology, or concerns regarding the potential manipulation of the system.

While BVAS presents a promising solution to enhance the electoral process in Nigeria, it is essential to carefully address these disadvantages to ensure a successful and inclusive implementation. Mitigating these challenges requires a holistic approach that involves technological readiness, cybersecurity measures, public awareness campaigns, and considerations for the diverse demographics of the Nigerian population.

3.3 Concept of E-Voting and BVAS

Since Nigeria gained independence, the use of manual voting has been shown to be completely ineffective, leading to electoral violence and the loss of human lives during every election cycle. Over the course of many years, the act of manipulating elections has significantly weakened the core principle of democracy in the nation, causing the population to lose faith in the idea of a democracy where they may actively participate. The primary objective of any voting system is to ascertain the voter's intention and effectively communicate it to the vote tabulator.

The efficiency of the voting mechanism and the accuracy of the vote counter are critical factors of the system's ability and capability to accurately detect the voters' wishes (Iwu, 2008). The better technology, inherent in the e-voting process, appears to be the system's ability and capability to accurately detect the voter's purpose. Odinakalu maintains that the BVAS technology, “theoretically should eliminate the gaps that enable analogue manipulation of numbers in elections. The voter accreditation capability combines fingerprint and facial recognition supposedly to eliminate guesswork in voter identification and accreditation.”

Moreover, BVAS is employed to promptly transmit a complete and up-to-date image of the result sheet from polling units to the INEC portal, allowing the public to view it upon logging into the portal. The electronic voting system, sometimes referred to as e-voting, is a technological advancement that electronically determines people's collective intent by allowing them to cast ballots using barcodes. Using an electronic system is thought to ensure the security of votes and ultimately enable the chosen candidates of the electorate to win during elections. Electronic voting is a comprehensive process that involves the electronic casting, counting, and transmission of votes. The term "voting" can encompass both the act of

casting votes and the process of counting them, or it can just refer to the counting operation. E-voting technology encompasses many systems, such as punched cards, optical scanned voting systems, specialised voting booths or kiosks, and self-contained direct recording electronic voting machines. E-voting can also encompass the transmission of ballots and votes via telephones, personal computers, or the internet. In 2021, the Nigerian election management authority initiated the use of BVAS during the Isoko South seat bye-election in Delta State. Subsequently, BVAS was implemented and effectively utilised at the local government election in Kaduna State. Furthermore, BVAS was initially employed in a statewide election in Anambra State in November 2021. Despite the limited success of the idea, caused by BVAS's failure to collect voters in certain circumstances, it showcased significant potential. Due to the system's need for time to establish itself, INEC will have limited additional opportunities.

The deployment of e-voting/BVAS may have its shortcomings as experienced in the concluded 2023 elections, but there seems to be hope on the horizon as many bigwig politicians and political heavy lost elections due to the deployment of BVAS. The deployment of technologies in the 2023 elections brought about a number of improvements, though some schools of thought felt that the technologies, especially BVAS, failed the country despite its achievements.[7] It is on record that for the first time, some sitting governors in the country lost elections in the manner that they did. The improvement associated with the deployment of the technologies, especially BVAS, was seen in Lagos, where, for the first time since 1999, Asiwaju Bola Tinubu lost an election to a party considered to be small. For the same reason, a number of sitting governors failed in their attempts to become Senators in the 10th National Assembly.

BVAS technology is considered to be a solution to the following election malpractices:

- Falsification of the number of accredited voters at the polling unit
- Falsification of votes at the polling unit
- Collation of false results
- Mutilation of results
- Computational errors
- Swapping of results sheets
- Forging of result sheets
- Obtaining a declaration and result involuntarily
- Making a declaration and return while collation is still in progress
- Poor record-keeping

The adoption of BVAS and strict adherence to the 2022 electoral act was considered a solution and way out of election irregularities and INEC's failure to conduct transparent and credible elections by the majority of Nigerian voters, civil society organisations, and stakeholders. "Nigerians, including technology experts who spoke, advised INEC to ensure that all election results are uploaded through BVAS to the INEC portal, to avoid a repeat of

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[7] The Guardian Newspaper Editorial. http//guardiuan.ng/opinion/bvas-inec-and-electoral-intergrity/<accessed 29/11/2023>

manual collation of election results, as witnessed in the presidential and National Assembly elections" (THIS DAY, 2023).

4. THE IMPERATIVE OF THE USE OF BVAS IN NIGERIA'S ELECTORAL SYSTEM

The imperative and importance of implementing Biometric Verification and Authentication Systems (BVAS) in Nigeria's electoral system are paramount. BVAS serves as a critical tool in addressing electoral challenges by enhancing the accuracy and integrity of voter identification processes. In Nigeria, where concerns about identity fraud and multiple voting instances persist, BVAS can significantly mitigate these issues.[8]

By linking voter registration with biometric data, BVAS ensures a more secure and reliable authentication process, reducing the likelihood of impersonation or manipulation. This not only bolsters public trust in the electoral system but also promotes fair and transparent elections. Additionally, BVAS can streamline the voter verification process, leading to more efficient and timely elections. The adoption of BVAS aligns with global trends in leveraging technology to safeguard electoral processes. As Nigeria aims for credible and accountable elections, integrating BVAS stands as a crucial step towards achieving these objectives, ultimately reinforcing the foundation of a robust and trustworthy democratic system.[9]

In an interview, a spokesperson of the PDP Presidential Campaign team, Daniel Bwala, pointed his finger at the ruling party in the following words:

> Those who are going against BVAS, I must say, are members of the APC. No members of the PDP would be campaigning for that. The whole gambit of an election is that whatever that is decided at the polling unit should be final. With the introduction of BVAS and their server system, particularly the BVAS, it means anyone whose name you see on the register of voters is the person that will eventually cast its vote on the Election Day. It cures election fraud and with the real time transmission of results, one can be assured that manipulating election results while moving from the polling unit to the Ward or LGA will no longer be there. Any human being that is against this is against national security and interest and such kind of human beings should be banished and cast into fire. And usually, politicians who do that are those that don't have confidence that they will win the election. As a political party and a spokesman for the presidential campaign of Atiku Abubakar, we welcome the idea of the amendment of the Electoral Act and all other provisions in this regard. Therefore, anything that will be against the progress made so far in our electoral processes, we are against it. It is a primitive and medieval age thing to kick against BVAS.

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8 https://www.thisdaylive.com/index.php/2023/02/13/of-bvas-technology-elections-and-democracy/

9 E Abu-Shanab and M Knight and H Refai H, 'E-Voting Systems: A Tool for E-Democracy',*Management Research and Practice* (2010) 2(3)

The APC spokesperson, Felix Morka, also told the interviewer that the party has confidence in the electoral process. “The All Progressives Congress (APC) has confidence in INEC’s capacity to conduct next year’s general election in compliance with the Electoral Act and its own guidelines,” he said.

4.1 Improvements on BVAS

Although the spokesperson for APC and PDP established trust in BVAS, it is pertinent to note that in order to increase the trust quotient in the BVAS, INEC should implement the following actions as a matter of urgency:

- Optimising BVAS software enhances the efficiency of delivering electoral services, which in turn fosters public trust. It is necessary to modify and upgrade the BVAS software in order to enhance voter accreditation and picture quality. The iOS should be updated to incorporate a functionality that allows the camera to identify and focus on specific objects of interest, such as the complete result sheet. Furthermore, the portal should incorporate a PDF compression script to facilitate the downloading of election results.
- INEC should electronically transmit and publish voter accreditation data on the BVAS. This includes transmitting and publishing the number of accredited voters on the results viewing site, in addition to the transmission of polling unit-level results. The BVAS retains the count of authorised voters; although, the recorded information is not electronically communicated or made available on the BVAS portal. Transmitting the number of accredited voters electronically aligns with Section 64(4)(5)(6) of the Electoral Act 2022. This section states that the number of accredited voters, as recorded and transmitted directly from the polling unit, must be taken into account during the collation and announcement of results.
- Submit and send the ward collation results (Form EC8B) on the BVAS platform: In order to enhance the clarity of the collation process, it is necessary to post the Form EC8B, which is the Ward collation result sheet, to the BVA Sportal once the collation at the ward level is completed. This acts as supervision for the process of combining ward-level election results, which is the most vulnerable part of the election results value chain. By uploading the compiled results sheet, people and stakeholders will be able to easily monitor and track the process of collecting and organising the data.
- Enhance the computational capacity of the BVAS: INEC reports that the BVAS has been utilised in 105 elections, including 16,694,461 registered voters, from its initial implementation in the 2020 Nasarawa Central bye-election. A total of 32,935 results sheets (Form EC8A) were submitted from polling stations located in both rural and urban areas, including those in communities impacted by security concerns. A total of 530,538 results sheets (Form EC8A) will be submitted on the BVAS portal for the upcoming 2023 Presidential and National Assembly election. This will be the inaugural occasion on which the portal will handle such a substantial amount of results data. Hence, INEC should enhance the bandwidth, RAM capacity, and storage capability of its servers to augment the processing capability of the BVAS portal and guarantee public availability of the results published on the portal. The BVAS should

be set to handle multiple requests in order to accommodate the high volume of traffic on election day.[10]

- The electoral commission in Kenya is required to conduct penetration testing and simulated exercises to assess and validate technology at least sixty days prior to a general election. The Electoral Act of Nigeria does not contain a comparable clause. However, INEC has already carried out simulation exercises for the BVAS. Although the 105 elections may be seen as simulated activities for the BVAS, the huge amount of information exchange, data processing, and transmission that takes place during the general election is unparalleled in comparison to those elections. Penetration testing and simulation exercises are necessary to evaluate the strength, effectiveness, security, and capability of INEC servers and devices prior to their deployment for the general election. Prior to deployment, it is essential to conduct comprehensive and inclusive pre-deployment tests that incorporate stakeholder input and public participation. Disseminating the results of the test/exercises will garner public backing for the BVAS, while facilitating chances for autonomous verification and audits of electoral technology will be crucial in instilling public trust. Although the BVAS has not experienced any successful cyberattacks so far, the public would need reassurances regarding the longevity, reliability, and strength of INEC's technological defence system.[11]
- Revise the methodology for teaching election officials on electoral technology: The recent implementation of the BVAS has revealed a correlation between the competence of the election workers and the effective management of the device, and the accuracy and reliability of the results sheets uploaded on the results viewing portal. The recent Election Results Analysis Dashboard (ERAD) report revealed that BVAS received inadequately recorded photographs of results sheets, as well as incorrect or incomplete forms. INEC should allocate substantial resources to the training of polling unit staff, specifically emphasising the transmission of results, accurate accounting of ballot papers, and the utilisation of the BVAS for collecting polling unit results. It is imperative that all poll officials entrusted with the task of operating the Biometric Voter Authentication System (BVAS) undertake practical simulation sessions with the BVAS prior to the day of the election. Predictably, this policy move will tackle the deficiencies in capability.[12]
- Implement formal documentation for reporting the annulment of election outcomes at the individual voting location: Presently, election workers provide handwritten reports on paper sheets to document instances of result cancellations at the polling stations. In order to maintain uniformity, lucidity, and openness, INEC should implement a document similar to Form E40G for the purpose of reporting the annulment of

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10 Odinkalu, Aslem, Chidi, (2021) Election: Let's talk about BVAS. www.icirnigeria.org/election-lets-talk-about-bvas/

11 Iwu, M.M. Electronic Voting and the Future of Electoral System in Nigeria. (2006). The Nigerian Electoral Journal, 2 (1) 1-29

12 Gerlach, F. (2009). Seven Principles for Secure E-voting. Communication of the ACM, Vol.52, no. 2

election results at the polling unit. This measure would prevent the submission of irrelevant documents to the BVAS system or the use of handwritten letters.

5.0 CONCLUSION AND RECOMMENDATIONS

In conclusion, the imperative of utilising Biometric Voter Authentication Systems (BVAS) in Nigeria's electoral system is paramount. BVAS enhances the integrity of elections by ensuring accurate voter identification, reducing fraud, and fostering a transparent democratic process. The technology minimises instances of multiple voting and impersonation, bolstering the credibility of election outcomes. Additionally, BVAS promotes inclusivity by streamlining the registration process, making it more accessible to eligible voters. Its implementation is crucial for instilling public confidence in the electoral process, thereby strengthening the foundation of democracy in Nigeria. As technology evolves, embracing BVAS becomes not just a choice but a necessity for fair and accountable elections. The following recommendations are therefore proposed:

(1) Enhanced Voter Verification: Implementing Biometric Voter Authentication Systems (BVAS) in Nigeria's electoral system ensures a more robust and secure method of verifying voters, reducing the risk of identity fraud.
(2) Improved Electoral Integrity: BVAS contributes to the integrity of elections by minimising the chances of multiple voting or impersonation, fostering a more transparent and trustworthy electoral process.
(3) Accurate Voter Registration: BVAS aids in creating a precise voter registry by capturing unique biometric data, reducing inaccuracies and ensuring that only eligible voters are registered.
(4) Efficient Election Day Operations: The use of BVAS streamlines the check-in process on election day, reducing wait times and potential logistical issues, leading to a more efficient and timely voting experience.
(5) Enhanced Data Security: BVAS helps safeguard voter data, protecting it from unauthorised access or manipulation, thereby ensuring the confidentiality and privacy of citizens participating in the electoral process.
(6) Increased Public Confidence: The implementation of BVAS in Nigeria's electoral system can boost public confidence in the fairness and credibility of elections, fostering a positive perception of the democratic process.