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## The Use of Technology in Elections in Africa

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## **Abstract**

Several elections conducted across Africa have been characteristically marred by different forms of malpractices and in an attempt to checkmate this trend, technology innovations have gradually become significant in electoral cycles. This paper aims to identify the different types of technology adopted in recent elections across Africa and the problems associated with the use of these technological devices in election management and processes. Drawing lessons from different countries, this paper argues that if properly implemented the use of technology can improve the integrity of the electoral processes and enhance the democratic legitimacy of electoral outcomes. However, peculiar measures must be undertaken in order to fully realise the potency of technology in a manner that combats the risks associated with the use of technology in the electoral process.

## Introduction

The right to vote and participate in the political process is a quintessential feature of any democratic society.<sup>1</sup> This right is shaped by the objective to get individuals involved in decision making which affects their interest; thereby, allowing everyone to participate in creating a society which in turn fulfils one's interest.<sup>2</sup> The right to vote forms the foundation for a representative democratic process. At present, virtually all international human rights instruments agree that elections are the most acceptable means to guarantee the protection of the right to participate in government.<sup>3</sup> In Africa, the African Union (AU) member states adopted some instruments for the promotion of democratic ideals and norms of free and fair elections, one of which is the [African Charter on Democracy, Elections and Good Governance](#).<sup>4</sup> This Charter is the key binding regional instrument on elections in Africa and promotes the holding of regular, free, fair and credible elections to institutionalise the authority of representative government, political stability, good governance, and democratic change of government.<sup>5</sup>

An election is a formal process by which individuals choose their representatives to hold public office. When elections are not free, fair, credible and legitimate, the whole governance becomes fragile.<sup>6</sup> Elections have increasingly become popular with many African countries now holding them regularly in accordance with their domestic laws. With about thirty-six elections in Africa in 2021 and 2022,<sup>7</sup> the question of the electoral process is a very topical issue. The quality of elections is still of concern given that elections are sometimes marred by a range of challenges such as voter identification problems, inaccurate voter registers, and rejection of electoral results and outcomes by some of the stakeholders who include opposition parties and civil society. These associated challenges have the potential to diminish individual and political freedom and pose a threat to election credibility. Indeed, the lack of systematic checks and balances, the complexity of voting processes, and arbitrary electoral outcomes have the potential to lead to political, and legal barriers that suppress voter participation.<sup>8</sup>

Presently, a lot has changed in the electoral processes in some African countries following the introduction of technological devices in their push to make elections more accessible and credible. Increasingly, many African countries are adopting and applying technological solutions and resources in the management of elections.<sup>9</sup> The use of technology spans various stages in the election process from the mobilisation of voters to organising, voting, counting and displaying of results. New technologies have been playing an integral role

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1 Article 13 African Charter on Human and Peoples' Rights, 1981; Article 21 Universal Declaration of Human Rights, 1948; Article 25 International Covenant on Civil and Political Rights, 1966; Article 23 of the American Convention on Human Rights, 1951. Also, Human Rights Committee General Comment No. 25 emphasised that state parties have a duty to anyone entitled to vote or be elected are able to exercise this rights.

2 Oji Umzuruike, *The African Charter on Human and Peoples' Rights* (Martinus Nijhoff Publishers, 1997) 32.

3 Article 13 (1) and (2) of the African Charter on Human and Peoples' Rights, 1981; Article 3 of Protocol 1 of European Convention of Human Rights, 1951; Article 23 of American Convention of Human Rights, 1969. See also, Article 4 (p) and Article 30 of the Constitutive Act of the African Union.

4 This Charter was adopted on January 30, 2007 and came into force on February 15, 2012, available at <https://africanlii.org/akn/aa-au/act/charter/2007/democracy-elections-and-governance/eng@2007-01-30> accessed 27 August 2023.

5 Lydia Nkasah and Delali Gawu, 'A Review of the Electoral Process Under Ghana's Fourth Republic' (2020) 28 (3) *African Journal of International and Comparative Law*, 355; Ben Kioko, 'The African Charter on Democracy, Elections and Good Governance as a Justiciable Instrument' (2019) 63 (1) *Journal of African Law*, 39. See, the preamble to the African Charter on Democracy, Elections and Good Good Governance 2007.

6 Awa Hossain Mollah and Rawnak Jahan, 'Parliamentary Election and Electoral Violence in Bangladesh: The Way Forward' (2018) 60 (2) *International Journal of Law and Management*, 741.

7 Electoral Institute for Sustainable Democracy in Africa, 'Election Calender', available at <https://www.eisa.org/election-calendar/> accessed 30 July, 2023.

8 Jane Susskind, 'Decrypting Democracy: Incentivizing Blockchain Voting Technology for an Improved Election System' (2017) 54 *San Diego Law Review*, 785.

9 In 2014, Namibia became the first country in Southern Africa to conduct a national election using electronic voting. In 2023, Nigeria adopted the Biometal Voter Verification System in its general election; Whereas Tanzania adopted the use of biometric technology in its 2020 elections, Kenya in 2022 adopted technologies for its voters' registration, voters' verification and result transmission.

to make elections more efficient, transparent, accountable, cost-effective, and to strengthen stakeholders' trust in all stages of the elections.<sup>10</sup> For instance, technological resources have been deployed to speedily compute, organise and transmit recent election results in Kenya,<sup>11</sup> Namibia,<sup>12</sup> Nigeria,<sup>13</sup> and Uganda.<sup>14</sup>

## Technology to the rescue?

The use of technology in elections around the world has recorded remarkable progress. From voter registration, verification, and to the transmission and declaration of results, technology is playing a crucial role and transforming the management of elections in many African elections since the mid-2000s.<sup>15</sup> In Africa, election technologies are thriving, and the continent has gradually become an important market for technology companies that provide various election equipment and software. Technology in elections has affected politics by being a fix capable of providing rational solutions to the democratisation of Africa.<sup>16</sup> However, the kind of technology to be deployed depends on the type of election fraud that is expected to take place and the political parties and incumbent government's commitment to a free and fair election process.

### *Key types of technology in elections*

#### *Biometric technology*

Biometric technology uses individuals' unique physical or behavioural characteristics to verify and identify them. Biometric technology is most commonly deployed for voter registration to ensure a clean voter register and to verify voter identity on election day, thereby eliminating multiple voter registration and voting.<sup>17</sup> Over the past five years in Africa, biometric technology has become a key element of voter registration, identification and verification, especially in countries that had witnessed gross electoral malpractices.<sup>18</sup> For instance, the 2019 general elections in Senegal deployed biometric technology for electoral registers, Ghana has used the biometric technology for voters' registration and verification in its 2012 and 2016 elections, whereas Nigeria introduced the biometric card reader in its 2015 general elections. This technology has been easily embraced by supporters of liberal democracy in Africa.<sup>19</sup>

The biometric system stimulates high voter participation and confidence in the electoral process and serves as a forensic measure against election fraud such as multiple voting.<sup>20</sup> It is well suited for failing identification and registration systems. For instance, biometric technology has been construed as part of the solution to Chad's political crisis.<sup>21</sup> Accordingly, the biometric system serves as a technology through which the problem

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10 International Institute for Democracy and Electoral Assistance, *The Use of Technologies in Electoral Processes* (2018) available at ><https://recef.org/wp-content/uploads/Rapport-CV-Final-ANG.pdf>< accessed 22 July, 2023.

11 2022 general election.

12 2019 general election.

13 2023 general election.

14 2016 general election.

15 Lesothos used fingerprint technology in 2002 to generate the voter roll while the Democratic Republic of Congo and Nigeria used biometric technology in 2006 and 2007 respectively.

16 Marielle Debos, 'Biometrics and the Discipline of Democracy: Technology, Electoral Politics and Liberal Interventionism in Chad' (2021) 28 (8) *Democratization*, 1406.

17 Alan Gelb and Anna Diafosa, 'Biometric Elections in Poor Countries: Wasteful or Worthwhile Investment?' (2019) 36 (3) *Review of Policy Research*, 318.

18 Marielle Debos, 'Biometrics and the Discipline of Democracy: Technology, Electoral Politics and Liberal Interventionism in Chad' (2021) 28 (8) *Democratization*, 1406. See also, Alan Gelb and Anna Diafosa, 'Biometric Elections in Poor Countries: Wasteful or Worthwhile Investment?' (2019) 36 (3) *Review of Policy Research*, 318.

19 Katja Jacobsen, 'Biometric Voter Registration: A New Modality of Democracy Assistance?' (2020) 55(1) *Cooperation and Conflict*, 127.

20 Emmanuel Debrah, John Effah, and Isaac Owusa-Mensah, 'Does a Biometric System Guarantee an Acceptable Election Outcome? Evidence from Ghana's 2012 Election' (2017) 78 (3) *African Studies*, 347.

21 Marielle Debos, 'Biometrics and the Discipline of Democracy: Technology, Electoral Politics and Liberal Interventionism in Chad' (2021) 28 (8) *Democratization*, 1406.

of democratic election processes can be linked to an actionable solution.<sup>22</sup> The biometric registration process takes place over a long period before voting, which gives the election body ample time to correct anomalies and make replacements when a technological breakdown occurs. Arguably, biometric technology has improved the credibility of electoral rolls in some African countries including Nigeria and Chad.<sup>23</sup> The biometric technology system has reduced two common types of election fraud, namely, over-voting and ballot stuffing.<sup>24</sup> The technology is most suitable in countries with less robust national identification systems capable of uniquely identifying citizens and this explains the reason for its early adoption by many African countries. For instance, as of the year 2012, twenty-three African countries had already used or were implementing biometric technology in elections.<sup>25</sup> Hence, this technology is not a worthwhile investment in countries where democracy is well-institutionalised.<sup>26</sup>

The biometric technology comes in different forms. For instance, the fingerprints identification system is a biometric identification technology that collects, stores and verifies fingerprint data. The system helps with the recognition of fingerprints to prevent multiple registrations of voters. This technology was first used by Lesotho in 2002 and is becoming more sophisticated.<sup>27</sup>

### *Electronic Voting Machines (EV)*

Electronic voting technology refers to the use of electronic systems to cast and count votes with the use of optical scan systems, punched cards, direct-recording electronic systems and electronic voting machines.<sup>28</sup> Electronic voting offers more advantages than the paper-based voting system because it applies to the transmission of votes via telephone, computer networks or the internet. In Africa, Namibia was the first country to use the EV in the 2014 presidential election and the same technology was further deployed in its 2019 general elections.<sup>29</sup> The Electoral Commission of Namibia (the body responsible for conducting and organising elections) purchased these specially designed machines from India to address some of the challenges experienced during the previous elections, particularly the six day delay in announcing the results of the 2009 election and other electoral malpractices such as alleged rigging. That notwithstanding, the key challenge to Namibia's use of the EV is the absence of paper trail capabilities despite the provisions of the electoral law requiring this to be provided.<sup>30</sup> Arguably, without a paper trail, the recount of votes may be difficult thereby creating room for ballot manipulation which may affect the integrity of the election.

The use of EV in elections can promote voter access and reduce waiting time for voters. The EV can reduce inaccuracy, fraud, forgery and manipulations inherent in the conventional manual method of voting. Furthermore, the EV has the potential to improve on the traditional paper-based voting process by providing

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22 Katja Jacobsen, 'Biometric Voter Registration: A New Modality of Democracy Assistance?' (2020) 55(1) *Cooperation and Conflict*, 127.

23 Ameen Abdulkadir, 'Securing Credible Elections in Africa through ICT: An Appraisal of Nigeria' (2021) *Acta Universitatis Danubius*, 5; Marielle Debos, 'Biometrics and the Discipline of Democracy: Technology, Electoral Politics and Liberal Interventionism in Chad' (2021) 28 (8) *Democratization*, 1406; Harrison Idowu, 'Biometrics technologies and the Prospect of Sustainable Democracy in Africa' (2021) 20 (1) *Journal of African Elections*, 23.

24 Victor Chidubem Iwuoha, 'ICT and Elections in Nigeria: Rural Dynamics of Biometric Voting Technology Adoption in Africa' (2018) 53 (3) *Africa Spectrum*, 89.

25 Alan Gelb and Anna Diafosa, 'Biometric Elections in Poor Countries: Wasteful or Worthwhile Investment?' (2019) 36 (3) *Review of Policy Research*, 318.

26 Alan Gelb and Anna Diafosa, 'Biometric Elections in Poor Countries: Wasteful or Worthwhile Investment?' (2019) 36 (3) *Review of Policy Research*, 318.

27 Marielle Debos, 'Biometrics and the Discipline of Democracy: Technology, Electoral Politics and Liberal Interventionism in Chad' (2021) 28 (8) *Democratization*, 1406.

28 Nangula Shejvali, 'Electronic Voting Machines' (2014) *Election Watch Briefing Paper No. 1*.

29 Section 19 (2) and section 95 (3) of the Electoral Act of Namibia, 2014. See also, BBC News, 'Namibia Votes in Africa's First Electronic Poll' (28 November 2014) available at ><https://www.bbc.com/news/world-africa-30241377>< accessed 5 August 2023. Estonia was the first country to successfully implement e-voting on a national scale. Outside Africa, Estonia, Brazil and Australia have adopted the EV.

30 A paper trail provides an auditable way to assure voters that their ballots will be available to be counted. See, Noluntu Mpekoa and Darelle Van Greunen, 'E-Voting Experiences; A Case Study of Namibia and Estonia' (2017) *IST-Africa Conference Proceedings*.

convenience and flexibility to the voter and its success depends on the citizens' trust of the technology and the electoral system. With the EV, the tabulation of results is much faster and easier, and it minimises the possibility of human error in vote counting than the traditional paper ballot methods. Simply, it reduces the workload associated with processing votes and the ease of compilation of election results and timely. There are no invalid votes with the EV, thereby amplifying the voters' choice. Thus, the EV has the potential to reduce fraud at the polling units during tabulation and transmission of election results. Specifically, successful implementation of EV requires advanced information and computer technology infrastructure, legal and institutional update, training of staff, and voter education and planning.<sup>31</sup> However, while the EV ensures a speedy vote-counting process, it can be bedevilled with challenges such as manipulations, citizens' lack of trust in the system, and lack of transparency on how the system works.

### *Bimodal Voter Accreditation System*

The Bimodal Voter Accreditation System (BVAS) is a large screen machine with three authentication components namely, facial scanner, thumb reader, and bar code, of which these authentication components can be used for verifying the identity of the voter. This technology is a broadband-driven technology and its use requires regular software updates to avoid interference and unlawful access, including by hackers. BVAS machine also has the capability for voter enrolment, voter accreditation, and results transmission. For instance, the accreditation capability of BVAS combines facial recognition technologies and fingerprints. This technological combination ensures thoroughness when verifying the identity of voters for purposes of voter registration and accreditation. The BVAS is a technology solution based on Artificial Intelligence that identifies and verifies individuals before they vote in an election.<sup>32</sup> For instance, this digital device has a camera device that captures the raw result sheets from the polling units for transmission to a central collation centre.

It is one of the technologies deployed in Nigeria's 2023 presidential election to increase confidence in electoral conduct. Arguably, the introduction of BVAS technology by the Nigerian Independent National Electoral Commission (INEC) places the electoral processes within a more advanced digital platform, which ordinarily should reduce certain election process abnormalities. Hence, the BVAS was introduced to address key pervasive weaknesses in Nigeria's election result management process such as falsification of votes at polling units, collation of false results, falsification of number of accredited voters, swapping of result sheets, forging of result sheets, destruction of result sheets, mutilation of results sheets, and computation errors.<sup>33</sup> This BVAS technology potentially exits the country from the era of analogue manipulation of numbers and incidence forms which were previously permitted under circumstances where the Smart Card Readers failed.

### *Smart Card Readers*

A Smart Card Reader (SCR) is a technology for the accreditation of voters which produces both temporary and permanent voters cards. The SCR is a single authentication factor machine deployed to reduce voters' card forgery as well as rigging in elections. The SCR authenticates a voter's identity by verifying that the fingerprints match the information stored on the embedded chip of the Permanent Voter's Card. It also enables the election officials to confirm whether a voter has already cast his/her vote. For instance, it was deployed in Nigeria's 2015 and 2019 general elections to address challenges such as under-age voters, multiple voter registration, and multiple voting. This technology could help to ensure that only registered voters with cards vote. The adoption of SCR in some African countries has contributed to the credibility and integrity of elections with its check on the authenticity of voters.<sup>34</sup>

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31 Noluntu Mpekoa and Darelle Van Greunen, 'E-Voting Experiences; A Case Study of Namibia and Estonia' (2017) IST-Africa Conference Proceedings.

32 Chidi Odinkalu, 'Let's talk About BVAS' The Guardian Newspaper, available at ><https://guardian.ng/opinion/lets-talk-about-bvas/>< accessed 29 August 2023.

33 Oluwasan Kolade, Demola Obembe, and Joshua Olufemi, 'Digital Disruption of Africa's Electoral Process: Insights from Nigeria's 2023 Presidential Election' (2023) Available at > [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4481059](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4481059)< accessed 10 August 2023. See also, Abiodun Fatai, 'Smart Card Readers and the Quality of the 2019 General Elections in Nigeria: Successes and Challenges' (2020) 109 (4) Commonwealth Journal of International Affairs, 396.

34 Abiodun Fatai, 'Smart Card Readers and the Quality of the 2019 General Elections in Nigeria: Successes and Challenges' (2020) 109 (4) Commonwealth Journal of International Affairs, 396.

## *Election Result Viewing Portal*

The Election Result Viewing Portal (ERVP) is an online portal that provides real-time public access to the results captured and transmitted from the polling units by digital election devices through the cloud service. This technology has been deployed in Kenya's 2022 election and Nigeria's 2023 election. As part of the supposedly new introduction to Nigeria's 2023 general election, this technology was anticipated to play a crucial role in addressing pervasive weaknesses in the election result management process such as the falsification of the number of votes at polling units, collation of false results, forging of result sheets, mutilation of results, snatching and destruction of result sheets, election results computation errors, and swapping of result sheets. Although the ERVP was eventually not optimally deployed in Nigeria's election, this technology is a significant improvement to election transparency given the opportunity it provides to citizens to access all uploaded results in real-time. The accessibility of polling units results has the potential to increase transparency and public trust in the process.

### **Challenges of the use of technology in election**

The use of technology in elections cannot be without risks irrespective of the potential for advancement it provides. The use of technology in elections could be a mirage and an image effect if not optimally deployed. For instance, where technology is used to aid the credibility of a compromised election outcome, it amounts to a simple waste of financial resources, which has huge, troubling implications for democracy. The core issues in conducting elections are not about the technologies but about the trust in the process. In all, technology alone is not a guarantee of election credibility.

#### *Digital imperfection and human interference*

The effectiveness of technologies depends on human input, which makes them more vulnerable to manipulations and disruptions.<sup>35</sup> Where human interference is negatively engaged, the technology adopted may neither foster a more robust nor better managed and transparent election process. This challenge will be more obvious in countries whose electoral management bodies lack independence. For instance, the public enthusiasm before Nigeria's 2023 election due to the introduction of BVAS and ERVP (IRev) by INEC was defeated following the lack of transparency in the use of election technology and failure to promptly upload the presidential election results on IRev.<sup>36</sup> This experience implies that the use of technology alone without human and system commitment cannot guarantee a holistic transparent election process.<sup>37</sup>

A system malfunction is a major drawback in the use of technologies in conducting elections. For instance, the failure of the SCR and BVAS to function optimally in various parts of Nigeria during the 2019 and 2023 general elections resulted in delays in conducting the election and announcing the final results.<sup>38</sup> Similarly, controversy and in particular, delays, have been recorded in previous polls in Kenya prior to August 2022 election which recorded quick election results upload on online portal run by the electoral commission.<sup>39</sup> When a country lacks the skill to promptly deal with technical challenges arising from technology malfunction and human error due to a lack of adequate training of staff on the use of the technology, it would suggest that the country is not prepared for such technology and, furthermore it erodes public confidence in the introduction of technology in elections.

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35 Nic Cheeseman, Gabrielle Lynch and Justin Willis, 'Digital Dilemmas: The Unintended Consequence of Election Technology' (2018) 25 (8) *Democratization*, 1397.

36 European Union Election Observation Mission: Nigeria 2023 Final Report. Available at >[https://www.eeas.europa.eu/eom-nigeria-2023/european-union-election-observation-mission-nigeria-2023-final-report\\_en](https://www.eeas.europa.eu/eom-nigeria-2023/european-union-election-observation-mission-nigeria-2023-final-report_en)< accessed 08 August 2023.

37 Emmanuel Debrah, John Effah, and Isaac Owusa-Mensah, 'Does a Biometric System Guarantee an Acceptable Election Outcome? Evidence from Ghana's 2012 Election' (2017) 78 (3) *African Studies*, 347.

38 See ECOWAS EOM Preliminary Declaration- Nigerian General Elections 2023, available at ><https://ecowas.int/wp-content/uploads/2023/02/NIGERIA-ELECTION-PRELIMINARY-DECLARATION.pdf>< accessed 1 August 2023.

39 Eric Sambu, 'Democratisation in Africa: Lessons from the 2022 Kenyan Presidential Election' (2023) 2 (1) *African Journal of Democracy and Election Research*, 71.



Election technology can promote discrimination and disenfranchisement when it struggles to read the fingerprints of some voters. While this was one of the issues in Nigeria's 2019 election, in Ghana's 2012 election, the electoral management body officials claimed that the biometric machines struggled to identify individuals with rough fingers due to the nature of their professions such as farming, manual labour, bricklaying etcetera.<sup>40</sup> Similarly, in Nigeria's 2021 local election in Anambra State, the BVAS machine had difficulties capturing the thumbs and faces of some of the voters, particularly the aged.<sup>41</sup> Arguably, who gets accepted or rejected by the technology devices is a matter of technology design and ethics, and demographic failures. Indeed, there is a need for election technologies to reflect the user's ideology instead of the developer's ideology.

Technological reliability and adaptation are very crucial before adoption to prevent potential security risks to the country. Technological failure that is not well managed portends a risk to the country's security if not well-managed. Furthermore, some adopted technologies are not robust enough to endure the amount of pressure exerted on them on election day, which leads to either resorting to manual voter verifications on election day or the breakdown of machines leading to the disenfranchisement of eligible voters.<sup>42</sup> For instance, during Nigeria's 2023 elections, voting in some parts of the country was moved to the next day while some a week after due to the failure of the BVAS. Also, Nigeria INEC claimed it abandoned the technology for result transmission and resorted to manual collation and transmission of results due to an alleged technology malfunction.

### *Concerns regarding the protection of personal information*

Electoral processes across Africa are increasingly relying on the use of technology involving the collection, storage, and analysis of personal, facial and other features and information which raises concerns about data protection and privacy. The concern about data protection and privacy is serious in this era of technology, especially in situations where countries contract foreign technology companies to manage the election technology and vote database. Many African countries rely on international donors for financial support during elections and such low-income or middle-income countries lack adequate privacy and protection laws or the capacity to enforce them.<sup>43</sup> At present, some African countries have either vague or inefficient legislation on data protection against unauthorised use of such large amounts of personal information. For instance, whereas Uganda's electoral law framework in 2020 legalised the use of technology in the 2021 election, the law fails to make any provision for this law to be interpreted in line with the country's Data Protection and Privacy Act, 2019. This entails that the electoral law of Uganda does not provide any safeguard for the rights of individuals whose data has been taken in the course of voter registration, verification and identification. In the absence of efficient data protection and privacy laws and policies, there is no guarantee that the election registration biometric data will not be used to undermine individual liberties and political rights. Certainly, any unauthorised processing of electoral data is a violation of the right to privacy. Citizens have a right to know how the personal data collected by electoral management bodies are being used before, during and after the election. Therefore, it is not enough that countries have a data protection legal framework, there should be clarity and assurances in electoral laws to avoid unregulated collection, processing and use of personal data.

### *Demographic Challenges*

The social and political context of each country as well as its level of development, and its size are some of

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40 Isdore Kafui Dorpenyo, 'Risky Elections, Vulnerable Technology: Localising Biometric Use in Elections for the Sake of Justice' (2019) 28 (4) Technical Communication Quarterly, 361.

41 Chidi Odinkalu, 'Let's Talk about BVAS' The Guardian Newspaper, available at ><https://guardian.ng/opinion/lets-talk-about-bvas/>< accessed 31st July 2023.

42 Isdore Kafui Dorpenyo, 'Risky elections, Vulnerable Technology: Localising Biometric Use in Elections for the Sake of Justice' (2019) 28 (4) Technical Communication Quarterly, 361.

43 In June 2023, only 33 African countries have data protection and privacy legislation. 6 countries have draft legislation, 10 countries have no legislation, whereas 5 countries have no data. See, United Nations Conference on Trade and Development, 'Data Protection and Privacy Legislation Worldwide', available at ><https://unctad.org/page/data-protection-and-privacy-legislation-worldwide>< accessed July 23, 2023.

the core factors that should be considered in the adoption of technology.<sup>44</sup> Every country has its peculiarities which must be considered in the planning, adoption and adaptation of election technology. For instance, against the reality that the ERVP relies on the strength of the internet server which may be unavailable in some rural areas in Nigeria, the country yet adopted the BVAS and ERVP in its 2023 general election. Such a gap may give room for human manipulation of election outcomes and disenfranchisement of other voters who cannot use these technologies.

### *Costs and dependence on donors*

The cost of technology in elections is not cheap when compared to traditional procedures in elections. Many African countries are low or middle-income countries and struggle with meagre finances to conduct periodic elections. For such countries, the huge costs of acquiring these technologies would reinforce election bodies' dependency on foreign donors and agencies. For instance, the procurement of adequate numbers of voting technology, training of staff, and logistics all require significant financial resources.<sup>45</sup> At present, several African countries rely on international donors for financial support during elections which may somewhat lead to a foreign country dictating what technology to adopt or showing a lack of interest in developing a permanent system to aid election outcomes in recipient countries. For instance, while the United States of America announced \$165m funding to support African elections in 2023, it also allocated \$50 as support fund to Nigeria's 2023 election<sup>46</sup> whereas the European Union supported Zambia's 2021 elections with the sum of 7.8m Euros.<sup>47</sup> Similarly, the Zimbabwe Electoral Commission receives funding from EU, Government of Japan and United Nations Development Programme (UNDP).<sup>48</sup>

## **The Technology Dialogue: The Way Forward**

The major cause of political apathy by voters in some African countries is the fear that votes do not count given the fact that elections are characterised by violence, rigging, over-voting, under-aged voting and ballot stuffing. To regain dampened confidence in electoral processes, countries are gradually introducing and advancing technologies in elections as alternative to the loss of confidence and trust and the lack of transparency that has enveloped the electoral process in many African countries. These technologies have been noticed from the registration of voters to the viewing of election results.

### *Synergy between institutions*

The introduction of technology in the electoral process requires cooperation between the electoral management bodies and other relevant institutions. The electoral management bodies must engage stakeholders in the planning and trial stages of successful implementation. Each institution would promote the use and importance of technology in elections, thereby increasing citizens' participation. There are two vital areas where synergy between institutions is critical. Firstly, the need to maintain secure custody of the technological devices cannot be done by the electoral management body alone. Secondly, the demonstration of a high level of accountability and transparency throughout the election process to win the trust of voters and allow for a credible election. Electoral processes must be open, secure verifiable, and protected through constitutional safeguards to ensure public trust.

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44 Tochukwu Onyike, 'Extending the Frontiers of Nigerian Electoral Laws in Cyberspace: A Case Study of Atiku Abubakar v Independent National Electoral Commission' (2022) 28 (6) 127.

45 Nigeria INEC claim it acquired 200, 000 units of the BVAS device at the cost of US\$159 million.

46 The Cable, 'US Announces \$165m Funding to Support African Elections in 2023' available at ><https://www.thecable.ng/us-announces-165m-funding-to-support-african-elections-in-2023>< accessed 30 August 2023.

47 MoneyFM, 'VEEP Hails EU for Supporting Zambia's Election with £7.8 Million' available at ><https://www.moneyfmzambia.com/2021/07/23/veep-hails-eu-for-supporting-zambias-elections-with-e7-8-million/>< accessed 30 August 2023.

48 UNDP, 'UNDP Electoral Assistance to the Zimbabwe Electoral Commission' available at ><https://www.undp.org/africa/news/undp-electoral-assistance-zimbabwe-electoral-commission>< accessed 30 August 2023.

### *Training of staff*

New technologies in an election require adequate training of staff on the new devices and knowledge of constant updates and maintenance of devices. Countries would require to train both low-skill and high-skill staff to operate and maintain these devices. Adequate training of local staff by experts on the effective use of newly adopted technologies should be prioritised by electoral management bodies. Such selected staff should undergo a series of assessments and evaluations before they are cleared to participate in the election exercise to eliminate some operational challenges on election day. Therefore, the government should ensure that a technical response team is formed to identify and respond to potential threats during an election by producing and having in place before the election a clear disaster recovery plan covering all potential risks of disruption.

### *Voter education*

Voter education is crucial in every election and it is more important when transitioning into a new method of election process. The idea of voter education must go beyond the basic information on the need to vote in an election to how to use new technologies. It must also go beyond the basic use of these new technologies for trust building to ensure the legal participation of voters in the voting process. Therefore, voters must be educated on the use of the country's adopted technology, its features, functionalities, how resistant the technology is to fraud and its procedure to elicit the trust of the voters. Without adequate and comprehensive voter education, there will be a lack of trust. Voter trust is the most crucial key to credible elections; hence, there is a need to educate the voter on the strengths, weaknesses and vulnerabilities of the adopted technology. Successful voter education should ensure that all eligible voters are reached despite the peculiar logistic challenges that may be encountered.

### *Technology-knowledgeable election observers and party agents*

With the introduction of technology in the electoral process comes the need to equip political party agents and election observers with adequate knowledge of the particular technology adopted in the election. This is more important where technology is used without a paper trail. The integrity of the election must be maintained and ascertained by the observers and political party agents throughout the electoral process.

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