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Utilization of artificial intelligence in the democratization process of Nigeria

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Article Info

Abstract

The 2023 Nigerian elections revealed persistent issues, including ballot box theft, manipulation of results, BIVAS malfunction, religious and ethnic disenfranchisement, and inadequate infrastructure. This highlights the need for impartial AI systems to ensure transparency and easily monitor the election process. The study investigated how artificial intelligence (AI) can help promote fair and inclusive innovation in Nigeria's electoral processes. Warns against relying too heavily on technology and emphasizes ensuring that AI systems align with and enhance democratic values rather than undermine them. AI can be framed as an enabler, rather than a driver, of participatory democratic innovations, which is a valuable perspective. The Democratic Innovation Theory was employed to explain how inclusive participation, contextual relevance, and collective ownership can be achieved in electoral innovations. AI is regarded as a catalyst for implementing these principles by reducing barriers to entry, promoting collaboration, and providing data-driven insights. Specific AI applications analyzed include computer vision for ballot security, blockchain-enabled result transmission, machine learning to detect anomalies, natural language processing for fact-checking, and predictive analytics to optimize planning. The study recommended multifaceted strategies involving stakeholders from government, civil society, technology sectors, and local communities. Proposed reforms emphasize inclusive AI system design that draws on diverse training data, participatory testing, citizen oversight boards, and public education campaigns. The study underscores the importance of robust governance frameworks and capacity building for responsible and democratically accountable AI adoption.

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Introduction

Nigeria, the most populous nation in Africa, is a significant democratic force in the region. However, it has faced challenges in establishing a credible and trustworthy electoral framework. The credibility of its elections is crucial for the stability of the nation and the wider region. During the 2023 elections, some civil society groups tested AI tools on a small scale, including the Center for Democracy and Development (CDD), Nigerian fact-checking organizations, non-governmental organizations, and media houses (Wilkinson, 2023) [26]. These groups came together to create the Nigerian Fact-Checkers' Coalition (NFC), consisting of 12 different fact-checking news and research organizations, including CDD Fact-check, Dubawa, Fact Check Hub, Cable Check, Round Check, Africa Check, and others. (Egwu, 2023) [10].

The NFC aimed to tackle the challenge of misinformation and disinformation during the elections. As part of their efforts, the CDD (one of the coalition members) deployed automated fact-checking bots on social media platforms, which could identify and flag misleading narratives in real time, limiting the impact of fake news on voting decisions. The CDD also used machine learning algorithms to detect anomalous voting patterns and results based on demographic data from previous election cycles, and they were responsible for verifying statements from politicians and false narratives being shared online. Africa Check, Fact

Check Hub, and Dubawa self-funded the activities and projects of the coalition. Their efforts helped detect potential ballot stuffing and early inflated turnouts in certain areas. Despite the multiple advantages of free speech and direct communication, the misuse of media to spread inaccurate or misleading claims has become increasingly common. This trend has led to the emergence of the modern fact-checker (Nakov *et al.*, 2021) [16].

It was reported that a journalist used metadata analysis to fact-check a doctored audio recording allegedly showing presidential candidate, Atiku Abubakar trying to manipulate the election. The journalist made concerted efforts to use digital tools such as Google Reverse Image Search to verify whether there was manipulation in multimedia content. In a similar vein, these tools can reveal the date a particular image was posted online, making it easier to compare and identify cases of misleading context. Tin Eye is another tool that can be used to verify videos (Ndhlovu, 2023) [17].

In spite making notable progress in promoting democratic values and practices, several obstacles taint Nigeria's electoral landscape, eroding public confidence and jeopardizing the basis of representative governance. Overcoming these challenges requires innovation in electoral processes, from logistical impediments to allegations of misconduct.

Fortunately, AI is emerging to enhance the electoral process's transparency, efficiency, and credibility. The application of AI in politics has the potential to benefit citizens by helping them understand governance better and participate in democratic debates. It could also assist politicians in better-comprehending citizens and representing them more efficiently. This synergy between citizens and politicians could revolutionize electoral campaigns and significantly enhance the policymaking process, making it more precise and efficient (Michael, 2023) [15].

Technology has exponentially transformed all spheres of human endeavours such that there is scarcely an area of human activities which it has spared (Adeniyi, 2023) [2]. As technology revolutionized politics, economies, religions and health of nations across the universe, it has brought about revolution in ramifications of human events. Technological innovations are central to recruitment, selection and placement in Human Resource Practice in South-West, Nigeria (Omolawal, 2018) [18]. Nevertheless, the adoption of innovations is pretty low in Nigeria. As while concerns over the use of AI in politics have been around since the late 2010s, those associated with democracies and the election process, in particular, has grown with recent advancements in AI technology. The advent of AI tools like Chat GPT, Claude, Bard, Google AI and automation, voice recognition, and dynamic AI applications in various industries, including Explainable AI (XAI), AI Ethics and Responsible AI, AI-driven Automation, AI in Healthcare, AI in Natural Language Processing (NLP), AI for Climate Change and Sustainability,

Edge AI, Federated Learning and many more, presents an array of options that could transfer the political realm of Nigeria.

In this context, democratisation refers to making innovation in electoral systems and processes accessible, inclusive, and open to participation from individuals and communities across diverse socioeconomic strata, geographic locations, and cultural backgrounds. A democratized electoral innovation ecosystem is one where barriers to entry are lowered, enabling a broader diversity of stakeholders – from civil society organizations to technology experts, community leaders, and ordinary citizens – to contribute their unique perspectives, experiences, and ideas. It creates a culture of cooperation, information exchange, and collective resolution of issues, breaking down traditional barriers and empowering individuals from all backgrounds to help shape the future of Nigeria's electoral integrity. As Uetaniavows, the ultimate objective of "democratization" is to establish elections that are free and fair, and "democratization" can be seen as the process through which the civil liberties and political rights required to achieve this aim are realized and preserved."

AI in the democratic process advocates using artificial intelligence technologies to improve and enhance various aspects of the democratic process, such as voter engagement, election monitoring, and policy analysis. AI can help make the democratic process more efficient, transparent, and inclusive (Eisen *et al*, 2023) [8]. One example of AI in the democratic process is using AI algorithms to analyze and predict voter behaviour, which can help political parties and candidates tailor their campaigns to reach better and engage voters. AI can also be used to detect and prevent election fraud, by analyzing large amounts of data to identify any irregularities or anomalies in the voting process.

Nigerian innovators and stakeholders recognize that technology can be a potent catalyst for change. The commitment to exploring new solutions is evident from biometric verification to electronic voting and real-time result transmission. Irrespective of trend, the adoption and implementation of these innovations remain fragmented and beset by significant barriers. Limited access to resources, funding, and technical expertise perpetuates a cycle of exclusion, leaving untapped potential across Nigeria's diverse regions and communities. This disparity stifles brilliant minds from underrepresented groups, marginalized communities, and remote areas, preventing their contribution to developing electoral innovations that could strengthen the nation's democratic fabric.

Conceptual Operationalization
Operationalizing democratization in the context of electoral innovation necessitates a multifaceted approach that addresses various dimensions of inclusivity and accessibility. This includes:
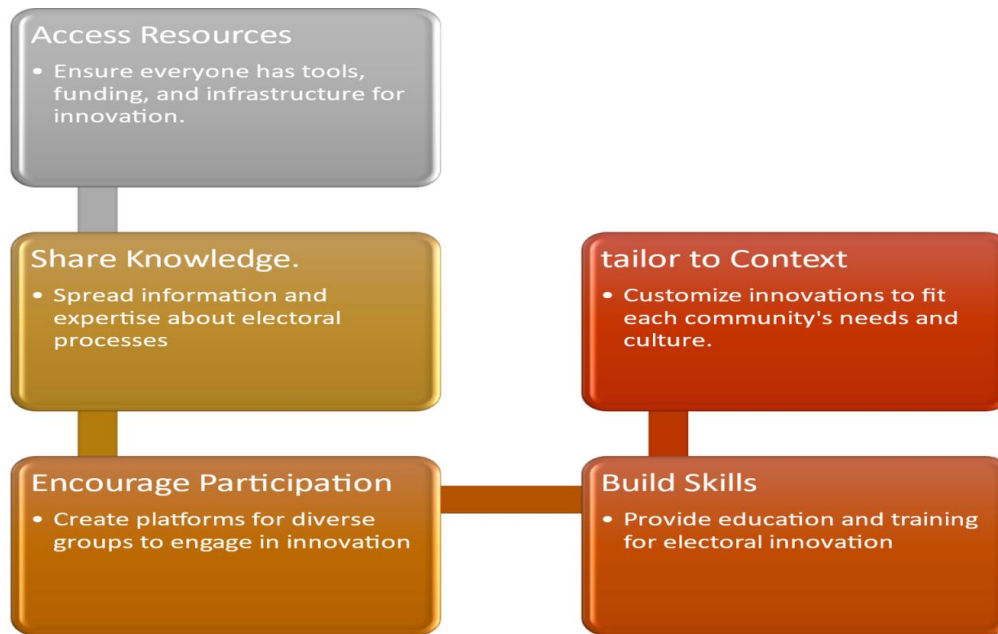
Fig 1: Operationalization of Democratization

1. Resource accessibility: Ensuring that innovators and stakeholders have access to the necessary tools, infrastructure, and funding opportunities to develop and implement electoral innovations, regardless of their socioeconomic status or geographic location.

2. Knowledge democratization: Facilitating the free flow of information, expertise, and best practices related to electoral processes and technologies, enabling individuals and communities to learn, collaborate, and

3. Inclusive participation: Creating avenues and platforms that encourage and enable diverse stakeholders, including marginalized groups, civil society organizations, and ordinary citizens, to engage in the development and implementation of electoral innovations actively.

4. Capacity building: Providing education, training, and mentorship opportunities to nurture and develop the skills and capabilities required for electoral innovation across all segments of society.

5. Contextual relevance: Ensuring that electoral innovations are tailored to the unique needs, challenges, and cultural contexts of diverse communities, enhancing their relevance, acceptability, and potential for impact on the credibility and integrity of the electoral process.

B. Importance of AI in Democratizing the Electoral Processes

A democratized electoral innovation ecosystem empowers individuals, communities, and civil society organizations to develop context-specific solutions that address their unique challenges in exercising their democratic rights and holding free and fair elections. By tapping into diverse stakeholders' collective wisdom and lived experiences, electoral innovations are more likely to be relevant, culturally appropriate, and widely accepted, increasing public trust and participation in the democratic process.

Furthermore, democratized innovation in the electoral realm fosters a culture of civic engagement and democratic ownership, inspiring grassroots initiatives and bottom-up approaches that promote transparency, accountability, and adherence to the principles of inclusive governance. This can strengthen the resilience of Nigeria's democratic institutions and reduce political tensions and conflict. Moreover, by embracing diverse perspectives and experiences, democratized innovation in electoral processes can enhance the adaptability and responsiveness of solutions, ensuring they are better equipped to navigate the complex and rapidly evolving political atmosphere of Nigeria's diverse regions and communities.

Perhaps most importantly, democratizing innovation in the electoral context is a matter of upholding the fundamental democratic principles of equal representation and citizen participation. Breaking down barriers and fostering inclusive participation ensures that all Nigerians, regardless of their backgrounds or circumstances, have a voice in shaping the processes that govern their lives and determine the future of their nation. Amidst these challenges and opportunities, artificial intelligence (AI) is a powerful catalyst for democratizing innovation in Nigeria's electoral processes. AI, with its ability to process vast amounts of data, automate complex tasks, uncover insights, and augment human capabilities, has the potential to revolutionize the way electoral innovations are conceived, developed, and implemented.

By leveraging AI technologies, barriers to entry can be lowered, enabling individuals, communities, and civil society organizations with limited resources to participate in developing and implementing electoral innovations. Machine learning algorithms can identify patterns and trends in voter behaviour, election data, and logistical challenges, facilitating the discovery of novel solutions tailored to local contexts. Natural language processing can break down language barriers, fostering cross-cultural collaboration and knowledge sharing among diverse stakeholders involved in the electoral process. Computer vision and image recognition can enhance voter verification, ballot security, and result transmission, strengthening the integrity and transparency of the entire electoral cycle.

Moreover, AI-powered platforms and communities have the potential to enhance collaboration, facilitate knowledge exchange, and promote capacity building. This

empowerment can benefit aspiring innovators, civil society organizations, and ordinary citizens who are eager to contribute to the advancement of electoral innovations. These virtual hubs for democratic engagement can surpass geographical boundaries and cultivate a collective sense of responsibility towards upholding the principles of free and impartial elections. Nevertheless, the journey towards utilizing AI for democratized innovation in electoral processes is accompanied by challenges. Challenges like data availability, privacy concerns, algorithmic bias, and digital literacy require robust governance frameworks, ethical guidelines, and capacity-building initiatives. Additionally, it is crucial to ensure that the advantages of AI-enabled electoral innovations are distributed fairly without worsening existing inequalities or creating new forms of disenfranchisement.

This paper aims to examine how AI can promote democratized innovation in Nigeria's electoral processes. This will be achieved through a comprehensive analysis of theoretical foundations and real-world case studies, followed by the proposal of actionable strategies for stakeholders across sectors. Specifically, we will explore the AI technologies that can facilitate democratized innovation in the electoral realm, drawing insights from successful

implementations and emerging best practices. However, we will also address the challenges and limitations that must be overcome, and provide a roadmap for policymakers, election management bodies, civil society organizations, and technology experts to collaboratively shape Nigeria's inclusive, equitable, and credible electoral ecosystem. By harnessing the power of AI and democratized innovation, we can empower Nigerian stakeholders to tackle the nation's electoral challenges, strengthen public trust in democratic processes, encourage civic engagement, and ultimately uphold the principles of representative governance for all Nigerians, regardless of their backgrounds or circumstances.

Theoretical Framework
Democratic Innovation Theory
Nigeria is tasked with establishing a reliable and trustworthy electoral system. In this regard, the Democratic Innovation Theory provides a valuable framework that leverages innovation to strengthen the country's democratic foundations. This theory is grounded in inclusive participation, collaborative problem-solving, and empowering citizens. We can assess how innovation can promote electoral processes that are unbiased, equitable, and widely accepted through the lens of this theoretical perspective.
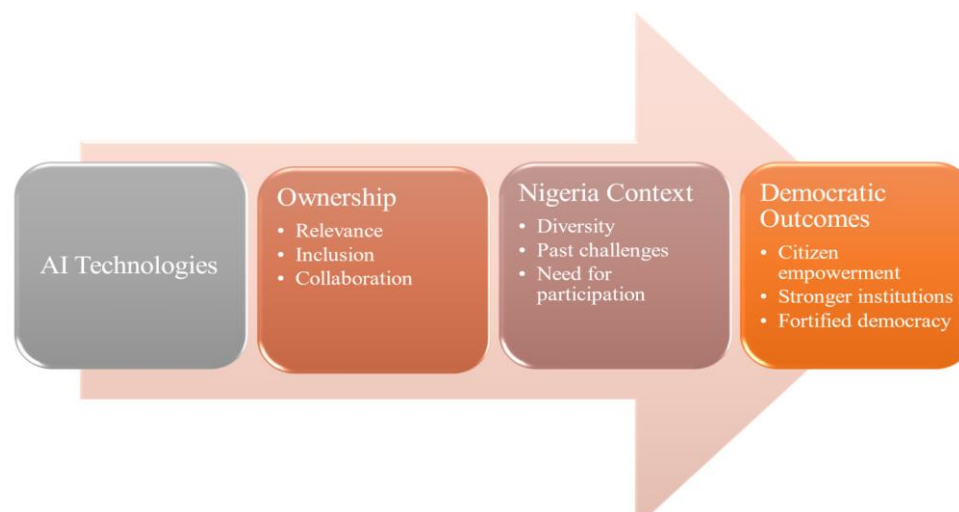
Source: *Author*

Fig 2: Theoretical framework of Democratic Innovation Theory and AI in democratization

1. Principles and Key Concepts
The Democratic Innovation Theory is underpinned by several core principles and concepts that shape its application in elections and democratic governance. At its core, the theory posits that innovation should be a collective endeavour driven by the active involvement of diverse stakeholders, including citizens, civil society organisations, and government institutions. One of the central tenets of this theory is the concept of "democratic ownership." (Smith, 2009; Stewart, 1996) [19, 20]. This principle asserts that for innovations to be truly effective and sustainable, they must be developed and implemented with a sense of shared ownership and accountability among all relevant actors The concept of democratic innovation was developed through the efforts of various practical, political, and theoretical responses to criticisms of contemporary democracy, the decline in citizen trust and satisfaction with it, and efforts to revitalize it. According to Elstub and Escobar (2017) [9] and Giessel (2012), democratic innovation is a type of improvement or

change that aims to expand, diversify, or deepen opportunities for citizen participation in governance, policy, or public administration processes. Smith (2009) [19], on his part, defines democratic innovations as institutions specifically designed to increase and deepen citizen participation in political decision-making. This contextualizes democratic innovation as an institutionalized model that bolsters a sense of collective accountability and participation, which increases the probability of widespread adoption and impact.

Additionally, the theory emphasizes the importance of "contextual relevance." Electoral innovations must be tailored to the unique socio-cultural, political, and technological contexts of the communities they serve, tilted towards policy making instead of politics making (Porta, 2020; Warren, 2009; Tilly & Wood, 2012) [25]. By accounting for local realities, challenges, and aspirations, innovations are more likely to resonate with stakeholders and address their specific needs effectively. Furthermore, the Democratic

Innovation Theory highlights the need for "inclusive participation" throughout the innovation process. This principal advocates for the active engagement of diverse voices, perspectives, and experiences, including those of marginalized and traditionally underrepresented groups (Fuminaya, 2022). By embracing diversity and fostering a culture of collaboration, the theory posits that more robust, equitable, and sustainable solutions can be developed.

2. Relevance to the Nigerian Context

The Democratic Innovation Theory holds particular relevance in the Nigerian context, where the quest for credible and inclusive electoral processes has been a longstanding challenge. Nigeria's diverse socio-cultural atmosphere, coupled with historical experiences of electoral malpractices and disenfranchisement of voters in many regions, especially in the recently concluded General election of 25th February 2023, underlines the importance of adopting an innovative approach that prioritizes broad-based participation and collective ownership. Moreover, the theory's emphasis on contextual relevance corroborates deeply with Nigeria's multi-ethnic and multi-religious society, towards which the politics is polarized. Electoral innovations must be attuned to the nation's diverse regions and communities' unique needs, challenges, and aspirations. They must account for language barriers, literacy levels, and cultural norms. Nigeria can leverage the power of innovation to address long-standing electoral challenges, foster greater public trust and participation, and ultimately strengthen the foundations of its democratic institutions.

How AI can facilitate democratic innovation

In the context of electioneering, voting, free and fair elections, popular vote, and strong institutions, artificial intelligence (AI) emerges as a powerful catalyst for facilitating democratic innovation in Nigeria. AI technologies have the potential to transform various aspects of the electoral process, enabling more inclusive, transparent, and efficient systems that uphold the principles of democratic governance.

1. Reducing Barriers to Entry

One of the key ways AI can contribute to democratic innovation in the electoral realm is by reducing barriers to entry and enabling broader participation. Through the development of user-friendly, AI-powered platforms and tools, individuals and communities with limited technical expertise or resources can engage in the ideation, design, and implementation of electoral innovations. For instance, natural language processing (NLP) and conversational AI can facilitate the collection and analysis of citizen feedback, ideas, and concerns related to electoral processes. These insights can then be leveraged to inform the development of context-specific solutions, ensuring that innovations address the real needs and challenges faced by diverse stakeholders. Furthermore, AI-based predictive analytics and modelling can help identify potential bottlenecks, logistical challenges, or areas of concern in the electoral process, enabling proactive planning and targeted interventions to mitigate risks and enhance accessibility for all eligible voters.

2. Enabling Inclusive Participation

AI can also play a pivotal role in enabling inclusive participation in electoral processes, ensuring that no community or group is left behind. By leveraging techniques such as machine learning and computer vision, AI-powered solutions can enhance voter registration, verification, and authentication processes, minimizing the risk of disenfranchisement or discrimination. For example, AI-enabled biometric identification systems can streamline voter registration and authentication, reducing the potential for human error or bias. Moreover, AI-powered language translation and interpretation tools can facilitate effective communication and dissemination of information across Nigeria's diverse linguistics, ensuring that all citizens have equal access to electoral information and resources. Besides, AI can be harnessed to detect and mitigate the spread of misinformation and disinformation campaigns, undermining public trust and participation in electoral processes. AI can identify and flag potentially harmful content by employing natural language processing and social media monitoring techniques, enabling timely interventions and fact-checking efforts.

3. Fostering Collaboration and Knowledge Sharing

The Democratic Innovation Theory emphasizes the importance of collaboration and knowledge sharing in driving sustainable and impactful innovations. AI can play a pivotal role in facilitating these processes within the electoral context, by providing virtual platforms and tools that enable diverse stakeholders to connect, exchange ideas, and collaborate on solutions. AI-powered knowledge management systems and collaborative platforms can serve as centralized repositories for best practices, research findings, and lessons learned from previous electoral cycles. By democratizing access to this wealth of knowledge, stakeholders can build upon existing insights and accelerate the pace of innovation. In the same vein, AI can support data-driven decision-making and evidence-based policymaking in the electoral realm. By leveraging advanced analytics and predictive modelling techniques, AI can provide valuable insights and recommendations to election management bodies, policymakers, and civil society organizations, enabling them to make informed choices that enhance the integrity and credibility of electoral processes.

Nevertheless, it is crucial to acknowledge that AI is not a panacea, and robust governance frameworks, ethical guidelines, and capacity-building initiatives must accompany its integration into democratic innovation processes. Data privacy, algorithmic bias, and digital literacy must be addressed to ensure that AI-enabled electoral innovations uphold the principles of transparency, accountability, and equal representation. By embracing the synergy between the Democratic Innovation Theory and the transformative potential of AI, Nigeria can pave the way for a more inclusive, participatory, and trustworthy electoral ecosystem. This harmonious fusion of innovation and democratic values can empower citizens, strengthen institutions, and ultimately fortify the foundations of Nigeria's democratic journey.

Table 1: Actionable Insights

Issues in the 2023 Elections	Challenges Exposed	Opportunities for Improvement with AI	Policy and Administrative Opportunities
Ballot box snatching	Inadequate real-time monitoring and reporting of infractions	Automated image and video monitoring to rapidly detect and flag incidents	Increase security personnel at polling sites; Enact stiffer penalties for infractions
Security breaches and election violence	Lack of insights into emerging threats	Analysis of social media and news to identify rising risks	Set up election violence early warning systems; Improve coordination with security agencies
Bi-Modal Voters Accreditation Machine System (BIVAS) malfunction	Technological limitations of current systemsresult in glitches.	Facial recognition, fingerprint authentication, blockchain-enabled verification	Procure more robust verified equipment; Enhance IT support and maintenance.
Delayed transmission of results on Independent National Electoral Commission (INEC) Election Result Viewer (IReV) on realtime	Centralized tallying is prone to manipulation	Blockchain-enabled decentralized, tamper-proof transmission	Simplify result collation structure; Mandate legally binding deadlines
Over-counting and inflated figures	Lack of rapid analytical checks on anomalies	Machine learning to detect anomalous patterns and figures	Strengthen results auditing; Institute fabricated figures penalties
Underage and illegal voting	Shortcomings in voter identification	Cross-referencing digital ID databases	Expand biometric voter enrolment; Strengthen voter registry updating
Vote buying	Difficulty tracking incidents	Automated text analysis of citizen reports and social media	Institute penalties for candidates involved; Encourage anonymous reporting
Exclusion of remote areas	Infrastructure limitations like connectivity and power	Extension of broadband, off-grid solar power, satellite internet	Prioritize infrastructure development in underserved areas
Socioeconomic and literacy divides.	Biases in data and system design	Inclusive training data and algorithm auditing for fairness	Voter's education programs, especially for disadvantaged groups
Legal time pressures	Delayed intervention in anomalies	Explainable AI for rapid informed human judgment	Simplify procedures for election dispute resolution
Religious and Ethnic Exclusion during Voting	Risk of excluding people based on their ethnicity and religion	Inclusive training data and algorithm auditing for fairness	Strengthen rules against ethnic and religious discrimination; Increase diversity awareness
Partisan influence	Potential misuse of data and algorithms	Guidelines and independent audits to ensure nonpartisan AI	Strengthen impartiality rules; Increase transparency in AI systems
Spread of misinformation	Limited monitoring of online disinformation	Automated fact-checking and misinformation identification	Enhance media literacy programs; Penalize sources of misinformation
Intimidation of voters, officials	Inadequate risk intelligence	Analysis of speech, news, and social media to identify threats	Improved protection for election officials; Anonymous reporting of intimidation
Logistical issues like ballot paper shortages	Poor planning and forecasting	Data analytics to optimize distribution	Overhaul logistics planning; Increase printing reserves
Insufficient election officials	Inadequate deployment of INEC officials	Improved workforce planning algorithms	Expand recruitment ahead of elections; Improve hiring and training
Lengthy adjudication of disputes	Manual procedures prone to delays	AI assistance in legal research, evidence review, and report drafting	Simplify dispute resolution frameworks and procedures
Poor Forensic Jurisprudence			
Lack of transparency in the Electoral Commission	Weak public information sharing	Automated reporting dashboards updated from AI systems	Regular public briefings; Publication of election procedures and processes
Low public confidence in the process	Limited credible information	AI fact-checking and anomaly detection to provide objective evidence	Voter education campaigns on election administration integrity

Source: Author

Democratic systems worldwide face ongoing challenges to ensure citizens have trust and confidence in the integrity of election processes. As Bekkers, Edelenbos, and Steijn (2011) [6] note in their research on democratic innovations, adopting new technologies can help modernize practices and strengthen civic participation, two important pillars of a robust democracy. The 2023 general elections in Nigeria exposed enduring flaws in electoral integrity despite attempts to introduce new technologies like BIVAS. This emphasizes the need for robust, impartial AI systems to enable free, fair, and transparent elections. According to Carrilho Santos (2023) [13], AI tools for automated monitoring, fact-checking, and results analysis could significantly improve malpractice detection in real-time. However, realizing the full potential of AI in the Nigerian context entails addressing prevailing limitations around digital infrastructure, literacy, and

accessibility.

In the 2023 general election in Nigeria, widespread reports of electoral malpractices, including ballot box snatching, vote buying, underage voting, and falsifying results, significantly undermined the credibility and integrity of the electoral process. However, adopting artificial intelligence (AI) tools for election monitoring and reporting provided a glimpse into how technology could curb malpractice and enhance transparency in future Nigerian elections. While the initial uses of AI were limited in scope, they provide a foundation for wider adoption during future elections. APET Secretariat(on behalf of the African Union Development Agency (AUDA-NEPAD) (2022) noted that AI tools for monitoring elections have proven effective in other African countries like Kenya and South Africa. Nigeria can learn from these examples to develop an integrated AI system for election management encompassing monitoring, fact-checking, and statistical detection of anomalies.

To make this viable, the Independent National Electoral Commission (INEC) must partner with technology companies and academic institutions to develop customized AI solutions for the Nigerian context. INEC officers must receive training on how to use and interpret AI systems. There should also be public awareness campaigns to build trust and understanding of how AI can improve election credibility. Comprehensive adoption of AI for election monitoring requires electoral reforms establishing clear procedures and regulations for AI use. There must be transparency in the development and deployment of algorithms to assure the public that the technology is unbiased and fair. Adherence to data protection protocols is also necessary to avoid misuse of voters' information.

2. Pilot blockchain voting systems that allow citizens, observers, and political parties to verify that votes were properly recorded and counted through a distributed, tamper-proof digital ledger (Jafar *et al.,* 2021). This provides an auditable record to build trust.

3. Implement computer vision and machine learning to process digital images of paper ballots and rapidly tabulate results while maintaining a verifiable paper trail for audits (Wadowski *et al.,* 2023). AI can efficiently detect anomalies for further review.

4. Develop natural language processing systems that fact-check political claims, speeches, and ads in real-time, surfacing contextual information for voters (Allen *et al*., 2021). This supports more informed participation.

4. Apply predictive models analyzing voter registration data to optimize polling resource allocation and estimate turnout (Vendeville *et al.,* 2021) [23]. Efficient planning bolsters accessibility and participation.

5. Conduct rigorous testing and evaluation before any full-scale deployment to identify and address potential harms like bias, lack of explainability, or unintended. Oversight ensures innovations achieve democratic aims responsibly.

While AI could bolster election technology like the malfunctioning BIVAS kits, its efficacy would depend on reliable internet connectivity and ubiquitous power supply across all polling centers (Eze, 2023). Many remote areas still lack stable broadband access or electricity. Technical glitches could exclude certain voters or disrupt automated monitoring tools. Extending broadband coverage and off-grid power through solar panels is essential for deploying AI effectively countrywide.

Moreover, benefitting from automated fact-checking and misinformation detection presumes widespread digital literacy and internet access among voters similar to the one put in place by the Nigerian Fact-Checkers Coalition. However, smartphone ownership and social media use rates lag in rural areas. Many citizens cannot discern online misinformation or interpret insights from AI monitoring tools. Public education is imperative to boosting digital literacy and countering disinformation among the electorate.

Conclusion

Integrating artificial intelligence (AI) into Nigeria's electoral processes is a promising step towards strengthening the country's democratic principles with innovative technologies. However, the recent 2023 national elections have shown that AI usage in the political domain is still in its early stages and needs careful consideration regarding its potential impacts, limitations, and ethical concerns. Collaborative civil society initiatives that use automated fact-checking to counter election misinformation and disinformation demonstrate the increasing recognition of AI's value in upholding information integrity. Similarly, journalists' use of metadata analysis and digital verification techniques showcase AI's ability to improve the accuracy and reliability of public communications. However, the scale and scope of these applications have not matched the magnitude of systemic issues corroding Nigeria's democratic processes.AI has the potential to expand participation, deliver voter education, streamline administrative functions, and increase transparency. However, it is vital to examine how AI can be integrated into the Nigerian context while considering Democratic Innovation Theory. This framework emphasizes the need for inclusive, open participation, and democratized ownership in designing appropriate socio-technical systems to avoid exacerbating existing inequities. Ethical risks around data privacy, surveillance, and algorithmic bias must also be considered before automating democratic processes. To fully harness the potential of AI for democratization, Nigeria needs to establish multi-stakeholder partnerships, foster digital literacy, implement thoughtful governance protocols, and prioritize human rights and development imperatives. The adoption of AI must be guided by democratic principles of participation, representation, and accountability to strengthen Nigeria's electoral institutions. With careful collaboration, AI can help to ensure free, fair, and credible elections that give voice to Nigeria's diversity and lay the groundwork for deepening its democratic foundations in the digital age.

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