

Beyond the Device: Stakeholder Priorities for Implementing Electoral Technology in Nigeria

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Abstract: Electoral technology has become a central component of Nigeria's electoral reforms, but technology alone cannot guarantee credible elections. This paper examines the implementation conditions that election stakeholders identify as priorities for making electoral technology effective. It draws on new institutionalism to interpret reform outcomes as products of the interaction among formal rules, organisational capacity, informal practices, and accountability arrangements. The study reports a descriptive cross-sectional survey of party polling agents, security personnel, Independent National Electoral Commission (INEC) officials, and electoral observers in Oyo, Edo, Kwara, and Kaduna States. An exploratory, non-probability multistage sampling procedure was used. Of 400 questionnaires administered, 341 valid responses were analysed, representing an 85.3% response rate. Data were summarised using frequencies, percentages, means, and standard deviations. Five single-item statements were measured on a five-point scale ranging from strongly disagree to strongly agree. Training and rural infrastructure received the highest mean score ($M = 4.20$, $SD = 0.92$), followed by INEC independence ($M = 4.11$, $SD = 0.97$), security-agency neutrality ($M = 4.09$, $SD = 0.97$), continuous voter education ($M = 3.99$, $SD = 0.99$), and penalties for electoral offences ($M = 3.80$, $SD = 1.06$). The findings indicate that respondents regarded organisational and institutional conditions as important complements to electoral technology. Because the sample was non-random and the analysis was descriptive, the study does not establish causal effects or national-level prevalence. The paper recommends sustained training, polling-unit-specific infrastructure planning, transparent result management, credible enforcement, neutral security administration, and continuous voter education. It concludes that technology-centred reform should be embedded in a wider institutional accountability strategy.

Keywords: electoral technology; electoral administration; implementation capacity; electoral integrity; Nigeria

Introduction

Electoral technology should be understood as an institutional innovation rather than a technical innovation. Electoral technologies encroach upon voter registration and accreditation, documentation, collation, and publication of results, and therefore take place within a broader institutional complex of formal and informal rules, social practices, and accountability relations. Electoral technology is thus inseparable from institutional structures and processes, an idea that underpins the theoretical framework of new institutionalism (Hall & Taylor, 1996; March & Olsen, 1989; Peters, 2022). The transition from the Permanent Voter Card and Smart Card Reader of 2015 to the Bimodal Voter Accreditation System (BVAS) and INEC Result Viewing Portal (IReV) of 2023 is an incremental institutional reform designed to reduce levels of malpractice around voter accreditation, result and collation. The use of biometric technology in BVAS is intended to reduce voter impersonation and multiple voting and may make certain forms of ballot stuffing more difficult to conceal at polling stations. However, the effectiveness of these safeguards depends on the rules, personnel, infrastructure, oversight, and procedures surrounding their implementation. Nevertheless, the extent to which biometric accreditation reduces malpractice depends on the wider institutional environment in which it operates, including voter registration, accreditation rules, staff recruitment, result collation and publication, access to polling station records, and responses to technical or administrative failures (Aremu & Aluko, 2016; Independent National Electoral Commission, 2024).

The key institutional challenge in implementing electoral technology lies in the tension between formal requirements and actual practice in the field. Electronic voting systems and equipment require electricity, internet connections, transportation, storage, technical support, spares, and backup equipment. Electoral technology requires well-trained personnel and well-documented procedures for addressing technical or administrative breakdowns. In the absence of appropriate institutional complement, an electoral device that was designed to standardise and objectify accreditation or result collation can cause delays, breakdowns, and opportunities for ad hoc decision-making. The ability of an electoral device to perform as intended depends on the institutional

capacity of INEC to organise and regulate a complex array of personnel, procedures, equipment, and communication networks in the face of logistical and technical constraints (Independent National Electoral Commission, 2024; Onyekwelu, 2023).

Technology is not a panacea for enhancing transparency or accountability in election administration. While BVAS can enhance confidence in accreditation, IReV can improve the verifiability of results at the polling station, the overall credibility of the electoral process depends on voters' perceptions of the integrity of the entire electoral chain. Thus, the accuracy of voter registration, the conduct of accreditation, the preparation and custody of result forms and result sheets, the upload of results to the collation centre, visibility of result collation and publication, opportunities for agent and observer oversight, and effective dispute-resolution mechanisms all contribute to overall confidence in the process (European Union Election Observation Mission, 2023; Independent National Electoral Commission, 2024; Onyekwelu, 2023).

Similarly, malpractice can be translocated to other aspects of the electoral process that are vulnerable and poorly regulated. Although biometric accreditation can reduce certain types of malpractice, it does little to prevent vote buying, intimidation, selective security cover by private or state security agents, manipulation at the collation centre, and sabotage of the wider electoral processes. In other words, technology can cause malpractice to migrate from one stage to another rather than eliminating it altogether. Electoral integrity should therefore be evaluated in terms of the entire process and institutions rather than assuming that a single innovation such as BVAS or IReV will automatically enhance integrity (Aremu & Aluko, 2016; European Union Election Observation Mission, 2023).

Existing studies have examined the opportunities and limitations associated with biometric voter accreditation and electronic transmission or publication of election results in Nigeria. Less attention, however, has been given to how different election stakeholders assess the institutional and operational conditions required for these technologies to function effectively. This study addresses that gap through a descriptive survey of INEC officials, party polling agents, electoral observers, and security personnel in four Nigerian states. It examines perceived priorities relating to training and rural infrastructure, INEC independence, security-agency neutrality, continuous voter education, and penalties for electoral offences. The study is exploratory and descriptive; it does not estimate causal effects or make probability-based claims about all Nigerian election stakeholders.

Research question and objective

The study addresses this research question:

Which institutional, operational, security, legal, and civic reforms do election stakeholders prioritise for improving the implementation of electoral technology in Nigeria?

The objective of the study is to describe stakeholders' perceptions of five reform areas relevant to the implementation of electoral technology: (1) technology training and rural infrastructure, (2) INEC independence, (3) security-agency neutrality, (4) continuous voter education, and (5) penalties for electoral offences.

The questionnaire operationalised these areas through the following statements:

1. Improve technology training and rural infrastructure
2. Strengthen INEC's independence to curb electoral malpractice
3. Enhance security-agency neutrality during elections
4. Continuous voter education will minimise malpractice
5. Harsher penalties for offenders would reduce electoral fraud

These statements measure respondents' perceived support for, or perceived importance of, the listed reforms. They do not directly measure the actual level of INEC independence, security-agency neutrality, voter education, infrastructure adequacy, or enforcement effectiveness.

Literature review

Electoral technology as institutional reform

The study suggests that electoral technology should be conceptualised as an institutional reform rather than a technical innovation. Electoral technology changes voter accreditation processes, registration databases, and the storage, reporting, or publication of results. It therefore operates as part of a broader system of formal legal frameworks, organisational procedures, informal practices, and accountability mechanisms. Electoral technology is thus located within an institutional order, a point that has been made in new-institutionalist literature on political processes (Catt et al., 2014; Hall & Taylor, 1996; March & Olsen, 1989; Peters, 2022).

Electoral management literature similarly highlights that technology is part of a broader system of electoral management that consists of legal frameworks, structures and procedures of the electoral management body, internal and external oversight mechanisms, and administrative capacity (Catt et al., 2014; Norris, 2014). This perspective encourages looking at technology as part of the administrative machinery that manages elections. It helps ensure that analysis begins with the broader institutional context within which electoral devices function rather than the reverse (Catt et al., 2014; Norris, 2014). It also provides a theoretical basis for looking at Nigeria's electoral reform process, where the shift from the Permanent Voter Card and Smart Card Reader in 2015 to BVAS and IReV in 2023 represents incremental changes in the broader electoral management system.

The reform process is informed by the general understanding that biometric devices reduce opportunities for malpractice when they are well implemented. The use of biometrics increases the difficulty of voter impersonation and voting multiple times if accreditation is properly managed. Similarly, biometrics make ballot stuffing more observable during result collation. However, the integrity of results depends on complementary procedures and protocols such as voter registration, accreditation processes, result collation, public accessibility of polling-unit results, and the management of malfunctions or failures (Aremu & Aluko, 2016; Nwangwu et al., 2018; Independent National Electoral Commission, 2024).

Implementation capacity, infrastructure, and user competence

The emphasis on organisational processes, procedures, and practices suggests that the focus of analysis should be the capacity to implement technology rather than the technology itself. Electoral devices require electricity, internet connectivity, transport, logistics, maintenance, spares, and technical support to operate effectively. They also require competent personnel who understand their limitations and are able to operate them under various conditions and respond to malfunctions (Akah et al., 2024; Independent National Electoral Commission, 2024; Onyekwelu, 2023). Where these capacities are weak, a device designed to make accreditation and result collation more transparent and orderly can cause delays and disruptions to the electoral process. The experience with INEC suggests that the organisational capacity to deliver on the promises of electoral technology lies in its ability to implement effectively across polling units by deploying people, procedures, infrastructure, and communication resources (Akah et al., 2024; Independent National Electoral Commission, 2024; Onyekwelu, 2023).

The literature review also identifies key implementation gaps which cut across the distribution of resources, capacities, and competences. A device that works effectively in urban areas may be less effective in rural areas and even completely dysfunctional in inaccessible or insecure locations. These spatial variations mean that the same technology can have very different effects on voters, polling officials, party agents, observers, and security personnel. The paper's focus on stakeholder priorities is therefore important because it highlights the need to go beyond the mere presence of a device to consider the conditions under which it can be effectively deployed. Technical support, the use of technology in rural areas, and training are all part of the organisational infrastructure that makes devices such as IReV and BVAS effective (Catt et al., 2014; Onyekwelu, 2023).

Technology acceptance and facilitating conditions

A related strand of literature review examines technology acceptance, with particular emphasis on the extent to which stakeholders interact with it. Technology acceptance is influenced by its perceived usefulness and ease of use. The unified theory of acceptance and use of technology highlights additional variables, including social influence and the availability of organisational and technical support, to explain individual behaviours (Venkatesh et al., 2003). The application of this framework to the current study is limited because it focuses on organisations and not individuals. However, its basic tenets help explain INEC's interactions with technology. INEC officials, political parties, observers, and voters are all more likely to interact with BVAS and IReV if they understand how to use them, experience their usefulness, and can rely on organisational and technical support to address shortcomings. The emphasis on organisational conditions therefore helps explain the stakeholder prioritisation of implementation-related issues (Aremu & Aluko, 2016; Nwangwu et al., 2018; Independent National Electoral Commission, 2024).

Technology, transparency, and public trust

Several studies argue that technology enhances electoral transparency, reduces opportunities for malpractice, and promotes public confidence in the process. The study finds that this view of technology is overly optimistic. Voter accreditation using BVAS and result collation using IReV make some aspects of the electoral process more transparent. However, the credibility of results depends on the integrity of the entire system, beginning with the voter register and ending with the accessibility of results and the ability of voters, observers, and political parties to scrutinise them. Any disconnect at any point can erode public confidence in the results. Electoral technology therefore creates the illusion of transparency without actually being fully transparent (European Union Election Observation Mission, 2019, 2023; Independent National Electoral Commission, 2024; Onyekwelu, 2023).

Transparency in turn affects public trust in the integrity of the process. This literature review helps explain the Nigerian stakeholders' mixed reactions to the use of biometric devices. Their general distrust of INEC's ability to regulate itself and deliver credible elections affects their perceptions of every step of the electoral process, including the use of BVAS and IReV. A failed upload or a malfunctioning device can be interpreted by observers, political parties, or voters as evidence of systemic weaknesses that can be exploited by INEC, political parties, or security agencies to manipulate results. Electoral technology thus creates opportunities for greater transparency but rarely delivers on its promises, partly because public trust in such systems is typically low (Norris, 2014; European Union Election Observation Mission, 2023).

Adaptive malpractice and the limits of technological solutions

The literature review highlights the inability of technology to eliminate malpractice. Malpractice is adaptive and adjusts to changes in the institutional or organisational environment. Thus, biometric accreditation makes it harder to vote multiple times at the polling station. However, it does little to prevent vote-buying, voter intimidation, politicisation of security agencies, malpractice in collation centres, and other forms of malpractice that political agents can deploy during elections. Electoral technology rarely eliminates malpractice but makes it more difficult to detect, investigate, and punish. The concept of malpractice captures this broad repertoire of strategies that Nigeria's political elites use to influence election outcomes (Birch, 2011).

The adaptive nature of malpractice underscores the need for institutional accountability as a complement to technology. Security agencies, political parties, INEC, observers, and voters all play a role in ensuring election integrity. The literature review suggests that technology rarely serves as a stand-alone solution to the challenges of conducting free and fair elections. Political actors often adjust their strategies in response to new institutional checks such as biometric accreditation or electronic result collation (Schedler, 2002; Nwangwu et al., 2018; European Union Election Observation Mission, 2019, 2023). This observation informs the paper's emphasis on accountability in the context of electoral technology.

Literature gap and relevance to the present study

The review identifies a literature gap related to stakeholder priorities for implementing electoral technology. Several studies examine the opportunities and challenges associated with using biometric devices in elections. However, few highlight the extent to which INEC officials, party agents, voters, observers, and security personnel recognise the differences between institutional and technological reforms. The study contributes to the existing literature by providing a descriptive analysis of stakeholders' perceptions of institutional, organisational, security, legal, and civic conditions that affect the implementation of BVAS and IReV. The survey methodology enables an in-depth examination of stakeholder priorities while acknowledging the descriptive nature of the study (Creswell & Plano Clark, 2017).

Theoretical framework

New institutionalism

The study is informed by new institutionalism, which examines political processes, organisational practices, and social behaviour in the context of formal legal frameworks, informal norms, and organisational capacity. New institutionalism argues that structures and processes shape individual behaviours and opportunity costs (Hall & Taylor, 1996; March & Olsen, 1989; Peters, 2022). Electoral technology interacts with INEC, political parties, security agencies, domestic and international observers, the judiciary, and the media within the broader institutional order defined by legal frameworks, administrative procedures, and informal norms.

New institutionalism guides the identification of three components of institutional capacity that affect the implementation of IReV and BVAS: (1) implementation, (2) coordination, and (3) accountability. Implementation capacity refers to the ability to deploy the technology within available resources and infrastructure to meet the needs of voters, observers, and political agents. It entails adequate training, rural infrastructure, procedures, and contingency planning to manage malfunctions and irregularities (Akah et

al., 2024; Independent National Electoral Commission, 2024; Onyekwelu, 2023). Coordinating capacity involves the ability of election officials, security agencies, political parties, observers, and judges to perform their duties in a coordinated manner to ensure election integrity. Finally, accountability capacity encompasses the ability of INEC, political parties, voters, judges, and observers to identify and sanction irregularities and prevent future occurrences (Birch, 2011).

The study explored these dimensions through five single-item statements. Training and rural infrastructure were treated as indicators of perceived implementation capacity. INEC independence and security-agency neutrality were treated as indicators of perceived institutional and coordination requirements. Continuous voter education was treated as an indicator of the civic environment surrounding electoral technology. Penalties for electoral offences were treated as an indicator of perceived accountability requirements. Because each broad dimension was represented by only one item, the measures should be interpreted as exploratory indicators of perceived reform priorities rather than as validated scales of institutional capacity.

Methodology

Research Design

The study adopted a quantitative, descriptive, cross-sectional survey design. Respondents were asked to indicate their level of agreement with five statements concerning conditions for implementing electoral technology. The design was exploratory and descriptive. It therefore does not permit causal inference, time-series analysis, estimates of changes across election years, or probability-based generalisation to all Nigerian election stakeholders.

Study Area/selection of states

The study was conducted in Oyo, Edo, Kwara, and Kaduna States. The states were purposively selected to provide variation in geographical location, infrastructure, political context, security conditions, and administrative experience. Oyo and Edo are located in southern Nigeria, while Kwara and Kaduna are located in northern Nigeria. The selected states are not statistically representative of their respective regions or of Nigeria as a whole; they provide the context for an exploratory comparison of stakeholder perceptions.

Population, sampling, and sample size

INEC officials, observers, security agencies, and polling agents constituted the target population for this study. It was argued that the four different stakeholders engage in different capacities in election processes. INEC officials conduct elections using digital technology, observers watch and report on election outcomes and irregularities, security agencies ensure the safety of voters, staff, materials, and infrastructure, and political party agents monitor the accreditation, polling, counting, and collation processes on behalf of political parties.

As such, an exploratory non-probability multistage sampling procedure was adopted. In the first stage, the states were divided into two clusters: the North and the South. In the second stage, stakeholders were selected by judgmental (purposive) sampling within each state. In the third stage, snowball sampling was employed to identify other stakeholders, especially hard-to-reach respondents, within the selected states. Due to the non-randomized sampling procedure, the final analysis and interpretation of results should not be based on probability sampling theory with associated confidence levels and intervals.

The reported planning population was 263,711, comprising 1,770 INEC staff, 2,713 observers, 80,000 security personnel, and 179,228 polling agents. Using Taro Yamane's formula with an assumed margin of error of 0.05 produced a planned sample size of approximately 400. Because the study used purposive and snowball sampling rather than probability sampling, this calculation was used only as a planning target and does not justify probability-based confidence intervals or national generalisation. Of the 400 questionnaires administered, 341 valid responses were analysed, representing an 85.3% completion rate.

Respondents were recruited through purposive and snowball procedures within the selected states. The final sample comprised 54 electoral observers, 68 INEC officials, 136 party polling agents, and 83 security personnel. The state distribution was 80 respondents from Oyo, 54 from Edo, 68 from Kwara, and 139 from Kaduna. Because the allocation was not proportional or random, the pooled results should be interpreted as descriptive characteristics of the achieved sample rather than as state-weighted estimates.

Instrument and measures

A questionnaire comprising 5 single-item statements was used to gather the responses. The respondents marked their responses on a Likert scale of 1 to 5, with 1 being strongly disagree and 5 being strongly agree. The statements evaluated INEC's independence, the provision of training and rural infrastructure, penalties against electoral offenders, the neutrality of security agencies, and adequate voter education. The study analyzed the statements descriptively as a set of reform priority areas and not as a composite

index. The manuscript reported that the instrument was subjected to expert validation and pilot testing procedures. It was also translated and then retranslated from English to Hausa and Yoruba languages to check for consistency.

Data collection and ethical procedures

The questionnaire was administered to the four stakeholder categories. The participants were informed that the questionnaire was optional and that they had the right to decline or withdraw from answering at any time. The manuscript notes that questions related to malpractice and control of election processes raise some sensitive issues; as such, the researchers took anonymity seriously. The manuscript also notes that informed consents and basic ethical principles in social science research were upheld.

Data analysis

Descriptive statistics, including frequencies, percentages, means, and standard deviations, were generated to describe the data. Whereas percentages and frequencies were used to report the composition of the respondents, means and standard deviations were used to indicate respondents' level of agreement with the five statements. Since the scale was ordinal and the sampling procedure was non-randomized, the interpretation of the results should be primarily descriptive. Specifically, the mean indicates the central tendency of the data, whereas the standard deviation implies the degree to which the responses varied from the mean. As such, the similarity or differences in means should not be used to infer statistical significance.

Results

Composition of respondents

Table 1. Distribution of Respondents by Stakeholder Category

Stakeholder category	Frequency	Percentage	Cumulative percentage
Electoral observer	54	15.8%	15.8%
INEC official	68	19.9%	35.8%
Party polling agent	136	39.9%	75.7%
Security personnel	83	24.3%	100.0%
Total	341	100.0%	—

Source: Field Survey, 2026

Party polling agents constituted the largest stakeholder group (39.9%), followed by security personnel (24.3%), INEC officials (19.9%), and electoral observers (15.8%). The distribution indicates that the results represent the combined perspectives of electoral operatives and monitors rather than the general opinion of Nigerian voters.

Table 2. Distribution of Respondents by State

State	Frequency	Percentage	Cumulative percentage
Oyo	80	23.5%	23.5%
Edo	54	15.8%	39.3%
Kwara	68	19.9%	59.2%
Kaduna	139	40.8%	100.0%
Total	341	100.0%	—

Source: Field Survey, 2026

Kaduna contributed the largest share of respondents (139; 40.8%), followed by Oyo (80; 23.5%), Kwara (68; 19.9%), and Edo (54; 15.8%). This uneven distribution reflects the purposive, non-probability design. Accordingly, the pooled results should not be interpreted as state-weighted estimates or as evidence that the views of Kaduna respondents represent those of the other selected states.

Table 3. Distribution of Respondents by Gender

Gender	Frequency	Percentage	Cumulative percentage
Male	222	65.1%	65.1%
Female	119	34.9%	100.0%
Total	341	100.0%	—

Source: Field Survey, 2026

Male respondents constituted 65.1% of the sample and female respondents 34.9%. This distribution describes the achieved sample; it does not establish the gender composition of all electoral operatives in the four states.

Table 4. Distribution of Respondents by Age Group

Age group	Frequency	Percentage	Cumulative percentage
18–30 years	102	29.9%	29.9%

31–45 years	187	54.8%	84.8%
46–60 years	52	15.2%	100.0%
Total	341	100.0%	—

Source: Field Survey, 2026

Respondents aged 31–45 years formed the largest age group (54.8%), followed by those aged 18–30 years (29.9%) and 46–60 years (15.2%). The table provides a descriptive profile of the respondents and should not be used to infer the age structure of the broader electoral workforce.

Stakeholder priorities

Table 5. Descriptive ranking of reform priorities

Rank	Questionnaire statement	Mean	Standard deviation	Descriptive interpretation
1	Improve technology training and rural infrastructure	4.20	0.92	Highest reported agreement
2	Strengthen INEC's independence to curb electoral malpractice	4.11	0.97	High agreement
3	Enhance security-agency neutrality during elections	4.09	0.97	High agreement
4	Continuous voter education will minimise malpractice	3.99	0.99	General agreement
5	Harsher penalties for offenders would reduce electoral fraud	3.80	1.06	General agreement

Source: Field Survey, 2026

The five item means were above the scale midpoint of 3.00, indicating that respondents generally selected responses leaning toward agreement. The item means provide a descriptive ordering of perceived reform priorities. No statistical test was conducted to determine whether the differences between the means were significant.

Training and rural infrastructure

Training and rural infrastructure recorded the highest observed mean in the sample ($M = 4.20$, $SD = 0.92$). This suggests that respondents placed substantial perceived importance on staff preparation, technical support, electricity, connectivity, and rural logistics. The result does not establish that these factors caused higher electoral integrity or reduced malpractice.

INEC independence

The statement concerning INEC independence recorded a high observed mean ($M = 4.11$, $SD = 0.97$). This indicates that respondents generally supported administrative, financial, and operational autonomy for INEC. It does not measure INEC's actual level of independence or demonstrate a relationship between autonomy, public trust, and electoral outcomes.

Security-agency neutrality

Security-agency neutrality also received a high observed mean ($M = 4.09$, $SD = 0.97$). Respondents therefore generally regarded professional and impartial security administration as an important condition for protecting voters, election workers, materials, and technology. The item measures perceived desirability, not the actual neutrality of security agencies.

Continuous voter education

Continuous voter education recorded an observed mean of $M = 3.99$ ($SD = 0.99$), indicating general agreement with the statement. Because voter education was measured with one broad item, the result does not show which specific forms of education—such as voting procedures, technology use, complaint mechanisms, or voters' rights—respondents considered most important.

Penalties for electoral offences

Penalties for electoral offences recorded the lowest observed mean, although the score remained above the scale midpoint ($M = 3.80$, $SD = 1.06$). Respondents therefore generally supported the view that stronger or more credible penalties could help reduce electoral fraud, but this reform received the lowest level of perceived importance relative to the other four items. The comparatively larger standard deviation indicates greater dispersion in respondents' answers.

Discussion

The descriptive ordering highlights the emphasis on implementation capacity as a condition for the successful introduction of technology. Within the category, training and rural infrastructure recorded the highest mean, suggesting that respondents associated the ability to operate devices with a more immediate need than the mere possession of the devices. I return to this point below.

The high mean for INEC independence and security-agency neutrality indicates that the respondents did not view technology as a panacea for Nigeria's electoral challenges. A functional machine requires professional and impartial operators who can provide a credible election management framework that minimizes the space for malpractice, vote buying, and voter intimidation. Technology affords opportunities for traceability but not transparency unless institutional safeguards are in place.

Continuous voter education also recorded a high mean, suggesting that election stakeholders understand voting technology as an element in a broader election management system. In addition to training election workers and voters in the use of the technology, voters must be educated about their rights and the limits of technology. They should know when to report irregularities, how to go about it, and what to expect from election administrators, technology vendors, and judicial authorities.

The lowest mean was recorded for penalties, but the finding does not indicate that respondents were entirely unsupportive of sanctions as a mechanism for ensuring integrity. It only shows that, relative to the other statements, the desirability of penalties was lower. Thus, I do not interpret the finding as evidence that stakeholders do not favor sanctions for electoral offences but that, relative to other aspects, the importance was lower in the pooled descriptive analysis.

The pooled descriptive analysis is also consistent with the bounded interpretation. Respondents identified all the reform areas and institutional conditions as desirable, and the findings do not demonstrate that any of the conditions predicted lower levels of malpractice or higher trust in election outcomes. Likewise, the analysis does not indicate that the relative importance varied across stakeholder categories or that the priorities differed between states. The findings are insufficient to demonstrate within-state differences or that the factors identified as important were not considered by any stakeholder. Those are matters for further consideration with more nuanced designs and, preferably, with probability samples. There is also a need to go beyond perception surveys and, where possible, apply mixed methods: observational studies, technical assessments, observer reports, complaint analyses, and result analyses from other election datasets as appropriate for the research questions.

Conclusion

This study described stakeholder perceptions of five reform areas relevant to the implementation of electoral technology in four Nigerian states. In the pooled descriptive analysis, training and rural infrastructure recorded the highest observed mean, followed by INEC independence, security-agency neutrality, continuous voter education, and penalties for electoral offences. These results indicate that respondents generally regarded organisational, institutional, civic, and accountability conditions as important complements to electoral technology.

The findings are consistent with the limited interpretation of the research question: implementation conditions were desirable relative to other aspects of electoral reform. However, the analysis does not demonstrate that conditions predicted levels of trust or malpractice. Consequently, I do not go further and claim that the factors are determinants of integrity. By focusing on these conditions, the study connects institutional capacity to the implementation of electoral technology reforms more directly than other factors. However, the application of the findings to the larger electorate in Nigeria requires more evidence since the respondents were not randomly selected.

Recommendations

Based on the findings, I offer the following recommendations for the implementation of electoral technology in Nigeria.

INEC should conceptualize training in a broad sense that goes beyond pre-election orientation. Training should be an ongoing process that encompasses the acquisition of skills for operating the devices, biometric accreditation, electricity and connectivity backup, responding to violence and intimidation, and standardized procedures for addressing upload or collation failures.

Likewise, infrastructure development should also be conceptualized beyond the mere provision of electricity and connectivity. A differential approach to infrastructure development is necessary to respond to the needs of different polling units. Thus, electricity, connectivity, backup generators, transportation, storage, and technical support should be prioritized based on local needs. Contingency planning should also be guided by local assessments to ensure that polling units have adequate technical support, backup devices, generators, and other equipment while considering the time it takes to redistribute them from nearby units or states.

Result management should be viewed as a credibly complete process that ensures that election results are correctly generated and reported. Result management entails standardized procedures for polling-unit forms, upload protocols, collation instructions, publication guidelines, observer guidelines, complaint procedures, and judicial reviews. Thus, irregularities and technical variations should be reported and publicly justified.

Enforcement measures such as investigation, prosecution, and penalties for electoral offences should be guided by institutional criteria, procedural justice, and transparency. Reform planning should specify investigative jurisdictions, adjudicative responsibilities, investigative procedures, prosecutorial discretion, command responsibility, and public reporting mechanisms. The finding indicates general support for this approach but does not provide sufficient evidence about the capacity of enforcement agencies.

Voter education should be continuous, localized, and offer actionable information in local languages. It should also cover voting procedures, voters' rights, limits of technology, and available complaint mechanisms. In addition, voters should learn about vote buying and malpractice and understand the role of political agents in elections. Finally, the education campaign should emphasize the responsibilities of voters and election officials. These recommendations emanate from the desirability of the concepts, and future research should examine their implementation.

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