EVALUATING THE IMPACT OF ELECTRONIC VOTING SYSTEM ON ELECTORAL CREDIBILITY: INSIGHT FROM THE 2019 IMO STATE GOVERNORSHIP ELECTIONS

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ABSTRACT: This study examined the electronic voting system and election credibility in Imo state with a focus on the 2019 governorship election. The specific objectives are to ascertain if the application of the electronic voting system in the 2019 general elections has enhanced election credibility in Imo State, verify how the malfunctioning of the smart card reader affected the credibility of the 2019 governorship elections and examine how the issue of competent personnel employed for utilising technology affected the credibility of 2019 governorship elections in Imo State. The theory of technological determinism was adopted as the framework for analysis. The survey research design was used and data were collected through primary sources using the questionnaire instrument and focus group discussion. Data were analyzed quantitatively and qualitatively. The quantitative analysis was done using the mean score statistical method and the thematic analysis was utilized to analyze the qualitative data. The study revealed that the application of the e-voting system has not significantly enhanced election credibility in 2019 governorship election in Imo State. Additionally, the study observed that the malfunctioning of smart card reader and issue of competent personnel significantly militated against the credibility of the 2019 governorship elections in Imo State. It was recommended for adoption of a full e-voting system or electronic transmission of result, improvement of electronic devices and adequate training of both permanent and ad-hoc staff.

Keywords: Election, Credible Election, E-Voting System, Smart Card Reader

INTRODUCTION

The achievement of free and fair or credible election in any country depends on the strategies adopted by the body entrusted with management of elections. Therefore, effective formulation and adoption of electoral procedures or strategies will significantly enhance election credibility. Elections and electoral processes are very central to the development of democracy and the management of elections by any election management body is significant to the electoral process and by implication, the consolidation of democracy in any state (Odoziobodo, 2015).

Election is an essential and major component of democracy, which ensures representative and participatory governance. Ugwozor (2021) noted that credible elections are relevant to sustainable democracy and serves as a way of empowering citizens to make leaders accountable. In the absence of periodic and regular elections, democracy gradually will lose its value and appeals (Ikyase & Ejue, 2015). Even though the concept of democracy is not necessarily synonymous with elections,

free and fair elections are generally accepted to be at the heart of democracy. Credible elections are sine quo non to the survival of democracy (Agbu, 2015). For election to serve as the essential component for survival of democracy in any country, it must be credible, free and fair. Failure to achieve free, fair and periodic elections makes democracy (mainly in terms of representation and participation) a mirage.

In contemporary times, governments now make use of Information and Communication Technology (ICT) in the governance of its society in order to ensure effective service delivery, responsiveness, transparency and accountability. Also, to achieve credible elections, states are now utilising technology in the conduct of their elections. The application of electronic voting system in the electoral process is on the increase across the globe (Omoleke, 2017). Evidence has shown that an effective implementation of e-voting system can eliminate electoral fraud and rigging, speed up the processing of results, increase accessibility and make voting more convenient for citizens and even reduce the cost of election or referendums. Furthermore, electronic voting is seen as a tool for the advancement of democracy, building trust, efficiency and ensuring credibility to election results (Alausa & Akingbade, 2017; Layiwola, 2024).

In Nigeria, several general elections have been organized in the past. These have varying degrees of success, failure and controversy which most scholars and commentators assumed to be mired with irregularities (Obiagu, 2023; Ikyase & Ejue, 2015; Ezeador, 2023; Layiwola, 2024). As a result of the continued high level of irregularities in Nigeria's general elections calls for electoral reforms and application of modern technologies for conducting credible elections. This informed the recommendations of Uwaise Commission and 2014 National Conference for the adoption of electronic voting systems in the country and, of recent, the 2022 Electoral Act (Tsokwa & Nwanegbo, 2024; Duruji et al., 2016).

The use of technology in elections in Nigeria can be traced to 2011 when Nigerian government introduced the automated fingerprint identification system in order to eliminate multiple registrations from voter list. In the 2015 general election, the Independent National Electoral Commission (INEC) used a more sophisticated technology in the electoral process. These include: Bio-metric Data Capturing Machines for the registration of voters which leads to the introduction of Permanent Voter Card (PVC) and Smart Card Readers (SCR) for authentication of the PVC and accreditation of voters at the polling booth. The use of the Smart Card Reader was meant to eliminate duplication of voters' registration and multiple voting. The 2022 Electoral Act introduced new technologies, namely the Biometric Voter Accreditation System (BVAS) and the INEC Result Viewing (IREV) portal.

Imo State is one of the five (5) states in the South-East geo-political zone with a landmass of 5,530km and 27 local governments. Before the 2019 general elections, Imo State had 305 registration areas (RAs), 3523 polling units (Pus) and 2,272,273 registered voters. (Independent National Electoral Commission, INEC, 2020). In Imo State, 2019 governorship and State House of Assembly elections were conducted on March 9, 2019. The governorship election was contested by four major candidates namely: Emeka Ihedioha of People Democratic Party (PDP), Uche Nwosu of Action Alliance (AA), Ifeanyi Araraume of All Progressive Grand Alliance (APGA), and Hope Uzodinma of All Progressive Congress (APC) and other candidates. Therefore, this

study evaluates the impact of electronic voting system on the credibility of the 2019 Imo State governorship election.

Statement of the Problem

The organization of general elections in Nigeria (governorship and presidential elections) has been associated with cases of irregularities such as electoral fraud, late arrival of voter materials, incomplete electoral materials, multiple voter registration, multiple voting, ballot box snatching, missing of names of registered voters, intimidation, under-aged voting, disfranchisement of voters, falsification of results etc. These problems made it very impossible to achieve credible elections in Nigeria (Oyinmiebi & Inokoba, 2023; Obiagu, 2023; Ugwuozor, 2021; Tsokwa & Nwanegbo, 2024). These have also led to election-related violence with far-reaching consequences resulting in eroding people's faith and confidence in democratic process, which further contributed to post-election violence and prolonged litigations (Mohammed et al., 2019; Awofeso, 2020; Obiagu, 2023; Ugwuozor, 2021).

According to Ike et al. (2017, p. 49) "Rigging has become a norm rather than the exception as elections have always been contested with a zero-sum mindset by politicians and parties, a situation that made one observer describe rigging as synonymous with Nigerian elections." The late President of Nigeria, Umaru Musa Yar'adua supported this on his day of inauguration that there were serious flaws in the election that brought him to power (Tsokwa & Nwanegbo, 2024; Jega, 2015). These militate against credible elections in Nigeria, which have generated poor representation, political apathy, distrust and lack of confidence by the citizens (in the electoral body), economic underdevelopment etc. This led to the introduction of several reforms like the use of electronic voting like smart card readers. Despite the use of improved technology (Smart Card Reader) in the 2015 general elections in Nigeria, there is still the challenge of realizing free and fair elections as a result of several incidences of election rigging and manipulation, violence, disenfranchisement etc (Mohammed et al., 2019). This made the INEC to improve on the election technology in order to realize credible elections in 2019 general elections.

There have been several debates on the extent to which the application of electronic voting system can produce credible elections. Some scholars see the use of smart card readers as ensuring credible election, some see it as bringing little improvement and others see its application as a total failure. Based on these issues, this study intends to examine the application of e-voting system in the 2019 governorship elections in Imo State.

Objectives of the Study

The broad objective of this work is to critically investigate the impact of the electronic voting system on election credibility with particular reference to the 2019 governorship elections in Imo State. The specific objectives are:

i.   To ascertain if the application of electronic voting system in the 2019 governorship election has enhanced election credibility in Imo State.

ii.   To verify how the malfunctioning of the smart card reader affected the credibility of the 2019 governorship elections in Imo State.

iii.   To examine how the issue of competent personnel employed for utilizing technology affected the credibility of 2019 governorship elections in Imo State.

Research Questions

i.   Did the application of electronic voting system in the 2019 governorship election enhance election credibility in Imo State?

ii.   How does the malfunctioning of smart card reader affected the credibility of the 2019 governorship elections in Imo State?

iii.   How does the issue of competent personnel employed for utilizing technology affected the credibility of the 2019 governorship elections in Imo State?

Review of Related Literature

The review of related literature focused on conceptual review and empirical review.

Conceptual Review

The conceptual review of this study focused on the concept of election, credible election and electronic voting system

Election

Babalola (2019 as cited in Tsokwa & Nwanegbo, 2024) viewed that elections mainly revolve around the selection of leaders. Ekwonna (2012, p. 238) posits that election "is the process through which the people choose those from among their constituency to represent them in the relevant bodies of law-making or its execution." According to Ikaye and Ejue (2015, p. 290) election is also "a procedure recognized by the rule of an organization be it a state, a club, a voluntary organisation or whatever, where all or some of the members choose a smaller number of persons to hold an office or offices of authority within that organization." This shows that election does not only occur to decision regarding the selection of candidates for political offices. Election can happen in different organisations.

Bello-imam (2015 as cited in Tsokwa & Nwanegbo, 2024, p. 219) defined election as a formal process through which citizens choose their representatives according to constitutional rules." According to Ugo (2023, p. 16) election is "a process that allows the adults of a society who have their franchise to select leaders through a majority poll. Therefore, election is a period in which citizens in a democratic space participate actively in the decision making and shaping of the future of their society through their conduct in the selection process of their leaders." Furthermore, Mohammed and Ibrahim (2021 as cited in Seriki et al., 2023, p. 33) maintained that election "provides the basic platform with the opportunity for people to indicate their preferences among the policies and programmes presented by different political manifestos and ideologies in a candidate that will represent them in government." In this study, we see election as a process where

eligible citizens select leaders or candidates that will represent them in different governmental or political positions in the state.

Credible Election

A credible election is defined by Bush and Pruther (2018, as cited in Kaburu, 2020) as an election which its result is generally trusted by the people and the majority believes that it produces an outcome that reflects the will of the people. According to them, credibility is built on people's perceptions of how free and fair the electoral process is, to the extent that the results are perceived as reflecting the will of the people (Kaburu, 2020). Onyenye (1998 as cited in Oyinmiebi & Inokoba, 2023, p. 59) defined a credible election as "one that is conducted without any instances of rigging or electoral fraud. In such an election, eligible voters have the freedom to vote for their preferred candidates and political parties without facing coercion or intimidation." Furthermore, Oyinmiebi and Inokoba (2023, p. 59) defined credible election as "one that is free from fraud, allows for equal participation, maintains transparency, holds stakeholders accountable and promotes fair political competition."

According to Ugo (2023, p. 17) "A credible election is that election that could be attested to have been free and fair with its results not manipulated or changed. It is that election that is free of violence, free of intimidation, and where the election officers stand neutral in the whole process." Credible elections refer to electoral processes that are conducted in a transparent, free, and fair manner, where all eligible voters are able to cast their votes freely and their votes are counted accurately (Kersting & Vetter, 2018). The concept of credible elections involves several key elements, including impartial election administration, free and fair campaigning, and transparent vote counting (Kersting & Vetter, 2018).

In addition, a credible election is an election conducted without partiality or undue advantages of any party or candidate. A credible election creates an equal electorate and freedom which makes them to select their candidates devoid of coercion or intimidation. In effect, the election would be deemed to be credible, and, hence good if it is free and fair and not based on the patronage of any kind (Ayogu et al., 2019). Furthermore, Ononihu and Okonkwo (2020, p. 5) see credible elections to involve the trustworthiness, believability and acceptability of elections. To them, credible elections are elections that are devoid of all sorts of electoral malpractices, intimidations, violence etc. Election credibility include: adequate security, an independent electoral administration, clear electoral rules, an independent judiciary, a trustworthy voter register, and transparent voting and counting processes (Tsokwa & Nwanegbo, 2024). In this study, we see election credibility to include the following indices: trust and wide acceptability of the electoral result, transparency of voting, integrity and smooth electoral process, impartiality of electoral officials, reduction or elimination of intimidations or violence, prevention of vote suppression and, strict adherence to electoral laws or guidelines. It also includes absence of multiple voting, absence of falsification of results, prevention of ineligible voters and effective accreditation of voters

Electronic Voting System

According to Igbinosa (2022, p. 11) electronic voting system "refers to the use of electronic devices or technologies for the organization, administration and the execution of electoral tasks so as to improve and automate the entire election process." Mensah (2016) sees the e-voting system as a voting system in which the election data of registered citizens as a voter is captured and recorded, stored and processed as digital information for conducting an election. The Institute for Democracy and Electoral Assistance (IDEA) (cited in Mensah, 2016) defined electronic voting system as a system where the recording, casting or counting of votes in political elections and referendum involve ICTs. This means that any technological device used in the conduct of election (most especially in area of casting and counting) involves electronic voting system.

Furthermore, Organization for the Advancement of Structural Information Standard (OASIS) (cited in Okediran & Ganiyu, 2015) conceptualized e-voting system to made up of three phases namely: pre-voting phase, voting phase and post-voting phase. In addition, Olayinka and Olayinka (2013) maintained that in designing an effective e-voting system, we must consider six phases namely: voter's registration, authentication, voting and vote saving, vote managing, vote counting and auditing. Alausa and Akingbade (2017) see electronic voting system or procedure as the adoption of technology in undertaking such activities as voter registration exercise, voting and vote counting. In this study we see electronic voting system as a system that made use of ICT or electronic devices for conduct of elections. The electronic device involves the use of smart card reader for authentication of PVC and accreditation of voters during the election.

Empirical Review

Here, we took time to review works done by some scholars as relates to use of technology or electronic voting system in elections. Bisong (2019) investigated the perception of voters on the role of e-voting towards realising credible elections in Nigeria with particular reference to Calabar Metropolis. The research adopted a questionnaire instrument for the collection of data, and the percentages and chi-square statistics were used for data analysis. The study revealed that significant challenges existed to the use of e-voting technologies during elections. These challenges were malfunctioning smart card readers, poor network connectivity, and poor technical skills of INEC ad hoc staff and issue of cyber attacks. The study further discovered that the e-voting system had led to several benefits which promote credible elections. These benefits are: a decrease in election rigging, an increase in the confidence to voters and a reduction in cost of organizing election.

The study by Ugwuozor (2021) assessed the effect of electronic card readers on general elections in Nigeria from 2015 to 2019. The specific objectives of the study are to ascertain whether biometric devices effectively captured thumbprints and enfranchised registered voters and find out if inadequate trained INEC personnel led to the disenfranchisement of voters in Nigeria. A documentary method with secondary sources was adopted for data collection and the analysis was done qualitatively using content analysis. Based on the analysis, it revealed that biometric devices did not effectively capture thumbprints which led to disenfranchisement of many registered voters. The research also, discovered that power failure (leading to running down of device batteries) and

inadequate trained INEC personnel significantly contributed to the disenfranchisement of Nigerian voters. It was recommended that there is a need for voters' education and the use of trained personnel in technology for technology support roles in elections.

Mohammed et al. (2019) studied the impact of smart card reader on the credible election with focus on the 2019 general elections in Bida local government, Niger State. The survey research design was adopted with the use of structured questionnaire as an instrument of data collection. The analysis was done quantitatively using inferential and descriptive statistical techniques. The study revealed that Smart Card Readers enhanced credible election and the smart card reader is highly reliable in 2019 general elections in Bida local government. In addition, it found out that there are constraints affecting the reliability of smart card readers in 2019 general elections in Bida local government. The research recommended for improvement of enlightenment or awareness campaign; proper training of both INEC and Ad hoc staff and automation of smart card readers. The above research is an indication that despite the role of smart card reader in enhancing election credibility, it is still confronted with strong challenges that undermine the electoral process.

Maphunye (2019) investigated the feasibility of electronic voting technologies in Africa, specifically Namibia, Kenya, Uganda, Nigeria, South Africa and Botswana. The study made use of interview as the main source of data collection and qualitative method was used as the method of analysis. The study revealed that there is high tendency of empathy and optimum regarding the effect and significance of electronic voting in Africa. However, it indicated that there are worrisome issues that may undermine e-voting system which is constitutional, legal and policy that must be considered before successful implementation of e-voting or election-related technologies by electoral management bodies. In addition, the study shows that e-voting or use of ICT plays an important role in the election of African countries because it helps in communication across regions/areas, reduction of multiple registrations, effective transmission of election results; passing of fast information/messages, effective dissemination of information to citizens and adequate reach to citizens in rural areas. The study further revealed that electronic voting is a complex issue in many African countries because of the following challenges: inadequate finance for procurement of ICT, lack of political will and commitment, debate on how to replace outdated technology, issue of training officials, the problem of securing secrecy of vote, poor infrastructure and broadband challenge, issue of brain drain phenomenon, legislation and the perception of the people that ICT are not the final solution to Africa's election-related woes.

Olorunfunmibi (2019) critically studied the effects of the smart card reader on electoral malpractices in Nigeria with particular reference to the 2016 gubernatorial elections in Ondo state. Specifically, the study aimed to examine the impact of smart card readers on the 2016 gubernatorial elections and challenges of smart card reader in the conduct of the 2016 gubernatorial elections in Ondo State. The study used interview as primary source of date collection and analysis done qualitatively. The study found that the introduction of smart card reader contributed to reduction of electoral malpractices in 2016 election in Ondo. It was also revealed that low batteries, poorly trained INEC officials and malfunctioning smart card readers are challenges to the use of smart card readers during the 2016 Ondo election. It recommended adequate training of INEC officials on the use of election technology and the need for re-engineering of smart card readers for easy operation in next election.

The study by Nnaeto and Ndoh (2018) focused on perception of respondents on electronic voting and credible election in Nigeria with particular reference to Owerri Senatorial Zone. The study adopted a survey research design which made use of structured questionnaire for data collection. The percentage method was used for the analysis of data. The research revealed that there is the wider perception of voters in Owerri municipal that e-voting system will bring election credibility in Owerri Senatorial zone and Nigeria at large, and the introduction of e-voting system will further enhance the level of electoral participation. In addition, the study revealed that there are general perceptions of the challenges to effective implementation of e-voting systems mainly as a result of persistent power and internet fluctuations and prevalent internet fraud. The researchers recommended fixing of power supply, internet and technology challenges. Also, there is a need for development of anti-hacking software, adequate enlightenment and the appointment of competent and honest personnel. Based on the findings, it shows the understanding of people's views on the acceptability of e-voting system, which implies that e-voting system will enhance election credibility. However, the study has a methodology problem because the researchers only relied on 100 respondents, which is too small to measure and generalize the views of total voters in Owerri Senatorial Zone.

Layiwola (2024) examined the deployment of technology and election credibility in Nigeria with a focus on the fourth republic. The study aimed to verify the impact of election technology on election credibility in Nigeria. Data were gathered by using interviews and thematic analysis was utilized for data analysis. The study revealed that there has been a consistent and substantial increase in the level of technological deployment in Nigeria's electoral process since 2003. In addition, it shows that electoral technology has significantly addressed critical challenges in elections in Nigeria thereby leading to the promotion of election credibility. However, it noted that the issues of technological glitches, legal frameworks and politicians' interventions have undermined the potential of the technology deployed towards realizing election credibility.

In another study, Ugo (2023) examined the digital democratization with a focus on the smart card readers in the 2019 general elections in Enugu West Senatorial zone. The specific objectives are to: examine on how the use of smart card readers promoted digital democratization in the 2019 general election; ascertain how the SCR helped to curtail the electoral malpractices and find out the challenges that militate against digital democratization in Nigeria using the SCRs in Enugu West Senatorial Zone. The questionnaire instrument and interview were utilized for data collection. The analysis was done quantitatively using the mean statistical method. Based on the analysis, the study revealed that the use of smart card readers has promoted digital democratization in the 2019 general election and SCR has helped to curtail the electoral malpractices in the 2019 general elections. In addition, the study observed that internet problem, lack of technical know-how by INEC ad-hoc staff, inadequate digital devices, lack of mobile devices for internet access, digital illiteracy, malfunctioning smart card readers etc are factors that posed challenge to digital democracy in Nigeria. The study recommended for stronger internet connectivity, strict adherence to application of electronic devices, effective training of INEC ad hoc staff etc.

The study by Egwu (2022) evaluated the impact of electronic card reader machines on election credibility in Nigeria with particular reference to the 2019 general elections. The specific objectives of the study are to examine how card reader malfunction affect election credibility, how

power failure and fast battery drainage contribute to lack of election credibility and how illiterate electorate unable to use the card readers affect election credibility in Nigeria. Data were gathered through questionnaire and analysed using the percentage method. The study observed that the utilization of the electronic card machine failed to ensure election credibility. This is because the card reader malfunction significantly undermined election credibility, power failure and illiterate electorate significantly contributed to lack of election credibility in Nigeria. The study suggested for adequate arrangement to ensure a functional card reader machine for future elections. Also, there is a need for improvement of infrastructure that will enhance electoral technology.

In addition, Anyanwu (2024) evaluates the smart technology and credible elections in Nigeria. The study aimed to verify how smart technology affected the credibility of the electoral process in Nigeria, and examine the degree to which Nigerians accept smart technology in the electoral process. The questionnaire instrument was utilised to collect data from the sample of 400 respondents. The data were analysed using the percentage method. The research revealed that the adoption of smart technology has immensely improved on the credibility of the electoral process in Nigeria and there was a high level of acceptability and support for the introduction of smart technologies in the electoral process by Nigerians.

The research by Tsokwa and Nwanegbo (2024) looked at the impact of 2022 electoral reform on the election credibility of 2023 general elections in Nigeria. The study used a mixed research method was used for the study integrating both quantitative (using questionnaire) and qualitative (using interview) method to collect data. The analysis was done using descriptive statistics (percentage) and thematic content analysis. The study observed that the implementation of the 2022 electoral reform failed to mitigate security threat during the 2023 general elections. Also, the study revealed that the effectiveness of Biometric Voter Accreditation System (BVAS) in accreditation of voters was undermined by operational difficulties, and the technical glitches in INEC Viewing Portal (IReV) militated against election credibility in the 2023 general elections. The study recommended comprehensive electoral reforms, strengthen institutional capacities and implementation of advanced technologies.

Gap in Literature

Most of the above studies reviewed, looked at the issue of e-voting systems and the credible elections in specific locations and Nigeria in general. They made effort to examine the influence electronic devices like card readers on election credibility, the reliability of the electronic devices, how poor functioning of card readers affect elections and the extent to which the problem of trained personnel affects elections. Based on this, this research established a research gap in area of scope, location and subject matter. In terms of location, this study focused on elections in Imo State and the scope is limited to 2019 governorship elections in Imo State. In the area of subject matter, this research looks at the electronic voting system and credible elections in 2019 governorship elections in Imo State; how the malfunctioning of the electronic device and the problem of competent personnel affects election credibility in 2019 governorship elections in Imo State. This is the gap the research set to fill.

Theoretical Framework

This work adopted the theory of technological determinism theory as framework for analysis.

Theory of Technological Determinism

The theory of technological determinism originated from Thorstein Veblen in 1918, an American sociologist and economist and, followed by Clarence Ayres, John Dewey, William Ogburn (Nosiri & Ndoh, 2018). This theory sees technological advancement as a factor that determines human activity and societal progress. It sees the media technology as a force that shape how we think, feel, act and how society as a whole operates (Adler, 2006; Chandler, 2014). The level of technology of any society affects how such a society operates and determines the progress of society. For a state or government to progress, it needs functional modern information technology for the delivery of services.

Technological determinism is characterized by soft and hard technological determinism. The soft technological determinism views that technology is one of the important factors that affect societal progress and human activity, while the hard technological determinism argues that technology is the main or the only significant driver affecting society and human activity (Adler, 2006). Technological determinism is based on the following tenets:

 i. Technology is the principal governing force in society
 ii. Technological development determines social change and progress
iii. Technology has an overwhelming power to drive human interaction and social change.
 iv. Social progress is determined by innovation in technology
 v. The idea of progress is centralized around the idea that social problems can be solved by technological advancement and which makes society to move forward.
 vi. ICT bring transformation shifts in society
vii. Technological advances are outside our control. There is no how we can control technology and this makes society to allows technology to drive social change because there is no alternatives (Nosiri & Ndoh, 2018).

Application of the Theory

This theory can be applied to this study because in this digital age, which heavily relies on use of technology (ICT) for smooth activities and development or progress, INEC cannot be able to achieve credible elections without the effective use of relevant technology for the conduct of elections. The Smart Card Reader (SCR) is a technological innovation adopted by Independent National Electoral Commission (INEC) to achieve free and fair elections in Nigeria. Therefore, the effectiveness of these technologies will significantly achieve a high level of credible elections. However, the failure of these technologies to function adequately will automatically lead to electoral failure and malpractices that will undermine democratic progress in Nigeria. That is why the failure or the difficulty of INEC in achieving free and fair elections in previous elections necessitates the call for the adoption of modern technologies in order to realize credible elections.

METHODOLOGY

This work adopted the survey research to get the responses of the selected respondents to achieve generalization of the total population. The population of this study comprised total number of both permanent staff of Independent National Electoral Commission (INEC) (which comprises 475) and INEC ad hoc staff (which consists of 20,000) in Imo State. Therefore, the total number is twenty thousand, four hundred and seventy-five (20,475). The sample size was 392, which was determined using the Taro Yamene formula. In sampling techniques, the study adopted a multi-stage sampling technique because of the vastness of the research population. In the first stage, the researcher adopted stratified sampling where the respondents were stratified or grouped into two categories namely: the INEC permanent staff and INEC ad hoc staff. In the second stage, we used the quota sampling. The researcher ensures that the questionnaires distributed to different categories of respondents are based on their population. 252 questionnaires were distributed to INEC ad hoc staff (they were identified through the options in the questionnaire instrument) and 140 to INEC permanent staff. The third stage involves using simple random sampling where the researcher selected one local government each from the three senatorial zones in order to get a wider spread of respondents coming from INEC permanent and ad hoc staff. In the fourth stage, the researcher adopted a convenient sampling technique to select respondents the researcher was accessible to.

Data were collected through questionnaire instruments and Focus group discussions. The questionnaire involves two sections. Section one deals with the demographic information of the respondents while the second section deals with the questions raised to achieve the objectives of the study. Secondly, the focus group discussion was adopted to augment the questionnaire instrument. The researcher selected eight (8) respondents for the group interview and relevant questions that related to the subject of interest were asked. The focus group discussion was adopted to get in-depth information on the issue of the electronic voting system and election credibility during the 2019 governorship elections in Imo State.

The questionnaire instrument realized validity and reliability tests. In an aspect of validity, the questionnaire items were scrutinized by two experts, and amendments or corrections were made. This was done to ensure that the questionnaire items reflected the specific objectives of the study. This work achieved reliability by using the test-retest reliability method. The questionnaire items were given to twenty (20) respondents who were not part of the sample on two different occasions, and their responses produced almost similar results with coefficient of 0.82. This research adopted both quantitative and qualitative method of data analysis. The quantitative analysis utilized include mean score statistical method, while the qualitative method used was thematic analysis. The mean statistical method was adopted to analyse quantitative data (from questionnaire) and suitable for better description of the impact of e-voting system and credible elections. The thematic analysis was utilized to analyse qualitative data (from focus group discussions), which help to identify, analyse and interpret patterns in the qualitative data, and necessary to realize in-depth understanding of the issue of the subject matter.

DATA PRESENTATION AND ANALYSIS

In this section, data were analysed by utilising both quantitative and qualitative analysis.

In quantitative analysis, data were analysed with mean score statistics with four-point Likert scale of strongly agree (SA), agree (A), disagree (D) and strongly disagree (SD) and rated 4, 3, 2 and 1 respectively. The decision level of the mean score is 2.50. Therefore, the mean score from 2.50 and above was accepted as significant while score less than 2.50 was rejected. 392 questionnaire instruments were distributed to the respondents, however, 321 of the questionnaires was successful retrieved (which is 81.88% retrieval rate).

In an aspect of qualitative analysis, the thematic analysis was adopted in order to augment the results from quantitative analysis by giving an in-depth analysis and understanding of the subject matter.

Research Question One: Did the application of electronic voting system in the 2019 governorship election enhance election credibility in Imo State?

Table 1: Application of electronic voting system and credibility of 2019 governorship election in Imo State

S/N	Items	SA	A	D	SD	$\bar{X}$	Remarks
1.	The use of electronic devices in 2019 governorship election greatly reduced the rate of rigging in Imo State	27	45	171	78	2.06	Disagreed
2.	The use of electronic devices effectively prevented multiple registrations for 2019 governorship election in Imo State	89	109	76	47	2.74	Agreed
3.	The use of card readers prevented the disenfranchisement of eligible voters in the 2019 governorship elections Imo State	33	75	151	62	2.24	Disagreed
4.	The use of card readers ensured smooth accreditation of voters in the 2019 governorship election in Imo State	27	78	130	86	2.14	Disagreed
5.	The use of electronic devices prevented ineligible voters in the 2019 governorship election in Imo State	26	71	133	91	2.09	Disagreed
6.	There is the absence of a high rate of irregularities in the 2019 governorship election in Imo State	33	37	169	82	2.06	Disagreed
7.	The use of electronic devices has reduced the level of irregularities in the 2019 governorship election.	64	75	99	83	2.37	Disagreed
	Grand Mean =					2.24	Disagreed

Source: Field Survey, 2022

The table above indicated that the mean scores of questionnaire items 1 to 7 were 2.06, 2.74, 2.24, 2.14, 2.09, 2.06 and 2.37, respectively, which indicated that all questionnaire items except questionnaire item 2 fall below the decision level of 2.50. In addition, it indicated that the grand mean of questionnaire items 1 to 7 was 2.24, which also below the decision level of 2.50. Therefore, since the grand mean (2.24) is less than the decision level of mean score of 2.50, we conclude that the application of the electronic voting system in the 2019 governorship elections has not significantly enhanced election credibility in Imo State.

Qualitative Analysis

Question: Has the smart card reader goes a long way to improve on election credibility during the governorship in Imo State?

Based on the question above, the respondents interviewed viewed that card readers could not effectively bring election credibility in the 2019 governorship election in Imo State. The respondents agreed that even though the card reader was a welcome development, it failed to realize election credibility because there were instance of irregularities such including double voting, ghost voting, intimidation of voters, violence, falsification of results, over voting etc. According to one of the respondents, "the card reader could not achieve election credibility because of inadequately trained personnel, technical glitches, insufficient number of the card reader, voters' intimidation and violence, voters' suppression, voting buying, multiple voting etc." In addition, another respondent viewed that the card readers as not being able to effectively achieve election credibility because it serves as an instrument of disenfranchisement. The respondent further said that the problem of card readers was more pronounced in rural areas. Furthermore, the smart card reader cannot adequately achieve election credibility because of vote buying. According to one of the respondents:

> Election credibility was questioned because of vote buying in some many areas especially in Mbaise, Orlu and Owerri. So many pooling units encountered vote buying. In Imo State University pooling units, vote buying was high. I witnessed it. Some electorates were given N4,000, others were given N5,000 to vote for their candidate. This really distorted the credibility of the election.

In addition, the respondents agreed that the issue of insecurity could not allow the INEC officials to make use of card reader. They noted that in most pooling unit, the use of thugs to cause violence and to make sure they don't use card reader in the conduct of the election. Furthermore, all the respondents stated that results of some polling units were cancelled because card readers were not utilized.

Therefore, the result from both quantitative and qualitative analysis, it indicated that the application of e-voting system in 2019 governorship election has not significantly enhanced election credibility in Imo State.

Research Question Two: How does the malfunctioning of smart card reader affected the credibility of the 2019 governorship elections in Imo State?

Table 2: The malfunctioning of smart card reader and the credibility of 2019 governorship election

S/N	Items	SA	A	D	SD	$\bar{X}$	Remarks
1.	The poor functioning of the smart card readers frustrated the effort of INEC to conduct free and fair elections in Imo State.	98	164	39	20	3.05	Agreed
2.	The malfunctioning of the smart card reader in the 2019 governorship election posed a challenge in preventing election rigging in Imo State.	93	164	39	25	3.01	Agreed
3	Malfunctioning of the smart card reader posed a challenge to the effective accreditation of voters in the 2019 governorship in Imo State	70	179	45	27	2.90	Agreed
4	Malfunctioning of the smart card reader made it very difficult in preventing ineligible voters in Imo State	78	157	73	26	2.97	Agreed
					Grand Mean =	2.98	Agreed

Source: Field Survey, 2022

The above table indicated that the mean scores of questionnaire items 1 to 4 were 3.05, 3.01, 2.90 and 2.97 respectively, which fall above the decision level of 2.50. In addition, the grand mean of the above was 2.98. Therefore, since the grand mean is greater than the decision level of 2.50, we conclude that the malfunctioning of smart card reader has significantly undermined the credibility of the 2019 governorship elections in Imo State.

Qualitative Analysis

Question: How do you rate the functionality of smart card reader towards improving the credibility of 2019 governorship elections in Imo State?

The respondents all agreed that the functionality of the smart card reader did not improve the credibility of the 2019 governorship elections in Imo State. Therefore, the malfunctioning of smart card reader poses a significant challenge to credibility of the 2019 governorship election in Imo State. This is because the issue of malfunctioning can be a result of poor network, faulty card reader, poorly trained INEC personnel etc. The malfunctioning of the card reader gives room for manipulations. One of the respondents said that the poor functioning of smart card readers is one of the major problems encountered by the INEC officials. All respondents agreed that in many polling units, the card reader could not function because of network issues or card reader could not recognize the thumbprint or the card reader was damaged. According to one of the respondents:

> For instance, in Aladinma Ward 1, Owerri, the card reader
> failed woefully. It couldn't be switch on. All attempt to
> switch it on by the officials failed. It simply portrayed that

the majority of the card reader sent were fake or not working.
It contributed to the failure of the election in 2019.

Other respondents added that smart card reader encountered technical problems leading to delays and disruption during the voting process. It was also revealed that the incidence of over voting was mainly associated with the malfunctioning of card reader. To support this, one of the respondents stated that:

> The 2019 governorship election was not credible as in most places there was over voting because card reader was not used as a result of its malfunctioning. For instance, in Mbaise, there was massive over voting which led to 64,000 votes and more for a particular candidate. In the same vein, some part of Orlu, like Oru East and Oguta witnessed massive voting for a particular party and candidate.

Therefore, from the results of both quantitative and qualitative analysis, we conclude that the malfunctioning of smart card reader has significantly undermined the credibility of the 2019 governorship elections in Imo State.

Research Question Three: How does the issue of competent personnel employed for utilizing technology affected the credibility of the 2019 governorship elections in Imo State?

Table 3: Showing the analysis of issue of competent personnel and election credibility

S/N	Items	SA	A	D	SD	$\bar{X}$	Remarks
1.	A low level of expertise in the use of smart card reader in the 2019 governorship election made it difficult to prevent electoral fraud (rigging) in Imo State.	56	162	66	37	2.70	Agreed
.2	Incompetent personnel employed for utilising smart card readers in the 2019 governorship election highly contributed to the problem of voters' accreditation in Imo State	60	164	58	29	2.73	Agreed
3.	poorly trained ad-hoc staff on use of smart card reader posed a challenge in preventing multiple voting in 2019 governorship election	65	144	62	50	2.69	Agreed
4	The low level of expertise employed for utilising the smart card reader in 2019 governorship election serves as a challenge in reducing ineligible voters in Imo State	63	150	68	40	2.73	Agreed
			Grand Mean =			2.71	Agreed

Source: Field Survey, 2022

From the table above, it shows that the mean scores of questionnaire item 1, 2, 3 and 4 were 2.70, 2.73, 2.69 and 2.73 respectively and the average mean score was 2.71, which fall above the decision level of 2.50. Since the grand mean score (2.71) is above the decision level of 2.50, we conclude that the issue of competent personnel employed for utilizing technology has significantly undermined the credibility of 2019 governorship elections in Imo State.

Qualitative Analysis

Question: To what extent can you say that the issue of inadequate trained personnel (both ad hoc staff and permanent staff) for conduct of elections poses a challenge to election credibility in 2019 governorship elections in Imo State?

The respondents all agreed that the extent to which the problem of competent or skilled personnel is a challenge to election credibility is very high. The respondents argued that there were evidences where a good number of the INEC personnel are not well trained and which undermined the smooth conduct of election and election credibility in the 2019 governorship elections in Imo State. According to one of the respondents

> Some of the INEC officials couldn't operate or manipulate the card reader. Yes, it was their first time and many of them lack requisite knowledge of its function. It delayed the election process in Start Right Ward were my friend voted. At a point the abandoned the use of card reader and reverted to manual voting.

Furthermore, another respondent added that the lack of sufficient training of some INEC officials in operating smart card readers contributed to errors in handling the devices and misinterpretation of results. In addition, another respondent argued that some of the INEC officials mainly the corps members and other ad-hoc staff were untrained, and they did not understand the card reader very well, which made them unable to operate the card reader effectively.

The results from both quantitative and qualitative analysis shows that the issue of competent personnel employed for utilizing technology has significantly undermined the credibility of 2019 governorship elections in Imo State.

DISCUSSION OF FINDINGS

Based on the analysis, this research made the following findings:

First, this research revealed that the application of the electronic voting system in the 2019 governorship election has not significantly enhanced election credibility in Imo State. This is based on the results from Table 1 and views of the respondents in focus group discussion, which indicated that the application of e-voting system has led to disenfranchisement of eligible voters, frustrated smooth accreditation exercises, encouraged a high rate of irregularities and promotion of ineligible voters in 2019 governorship elections in Imo State. This finding is in line with the studies

conducted by Ugwuozor (2021), Bisong (2019), Onapajo and Babalola (2020), Omoleke (2017), Nwagwu (2016) that the use of electronic device like smart card reader has not realize election credibility. According to Nwagwu (2016) even though that the use of ICT has helped to reduce or minimise electoral fraud, there were still existence of so many irregularities like disenfranchisement of citizens, delay in voting, rigging of elections, and difficulties in collection of PVC. In addition, the study by Tsokwa and Nwanegbo (2024) observed that in the 2023 general elections in Nigeria, the Biometric Voter Accreditation System (BVAS) in accreditation of voters was undermined by operational difficulties, and the technical glitches in INEC Viewing Portal (IReV) militated against election credibility in the 2023 general elections.

Second, this study revealed that the malfunctioning of smart card reader has significantly undermined the credibility of the 2019 governorship elections in Imo State. This is evident from the analysis of Table 2 and views of respondents from focus group discussion, which revealed that malfunction of smart card reader posed a challenge to the accreditation exercise and was unable to prevent free and fair elections. This finding was in line with the works or study of Ugo (2023), Egwu (2022), Mohammed et al (2019), Onapajo and Babalola (2020), Bisong (2019), Maphunye (2019), Shittu and Onyeukwuru (2019), Omoleke (2017) that poor functioning of electronic device like (SCR) posed a challenge to credible election in Nigeria. Furthermore, the report by INEC (2020) shows that where 1,235 cases of where smart card reader malfunctioned during the 2019 general elections.

Thirdly, this research observed that the issue of competent personnel employed for utilising technology has significantly undermined the credibility of 2019 governorship elections in Imo State. The result has proved that because of the use of poorly untrained INEC Staff (ad hoc) for the use of smart card readers led to multiple voting, poor accreditation exercise, and voting by ineligible voters in most polling units in Imo State. This is in line with research conducted by Ugo (2023), Ugwuozor (2021), Olorunfunmibi (2019), Bisong (2019), Maphunye (2019), Mohammed et al. (2019) and Onapajo and Babalola (2020) that poorly trained personnel on use of Smart Card Reader (SCR) posed a challenge to election credibility in Nigeria.

These findings are related to the theory adopted for the study (theory of technological determinism), which states that the advancement of any society is determined by the level of technology development. Therefore, the failure to effectively apply the electoral technology undermined Nigeria's progress or development in the electoral process. The poor application of electronic devices caused by malfunctioning of the device or untrained personnel frustrated the election credibility, which shows low level of progress in electoral process in Imo State and Nigeria at large.

Conclusion

In this digital age, the use of technology or ICT in the management of election has been essential for the achievement of election credibility in Nigeria if well managed or implemented. However, the findings of this study indicated that the application of e-voting system has not enhanced election credibility in the 2019 governorship election in Imo state. It revealed that issues like the malfunctioning of smart card reader and poorly trained electoral officers constituted a strong

setback in the successful implementation of e-voting system (use of SCR) for credible elections in Imo State. Therefore, government and INEC must adopt adequate strategies or measures for successful implementation of full e-voting system in order to realize free, fair and credible elections in Imo State and Nigeria at large. The implication of this study is that it will help the stakeholders to identify the areas needed for proper electoral reforms for successful elections in future. These include the aspect on how to improve on the technology deployment, enhance training for INEC personnel and support legal framework that will support the full e-voting systems.

Recommendations

Based on the analysis and findings of this research, the following recommendations are made:

i. To avoid the challenge of untrained or incompetent personnel, INEC should conduct a timely intensive training to both permanent and temporary (ad hoc) staff on the application or use of the required technology for conduct of future elections. This will help to eliminate or reduce the challenges experienced in previous elections.
ii. Regarding the issue of malfunctioning of card readers, there is a need to improve on the electronic device or technology used to conduct election future elections. This will significantly reduce or eliminate any issue of malfunctioning of electronic devices in future elections.
iii. The government and INEC urgently need to embark on a full e-voting system or electronic transmission of results for future elections in order to realize election credibility.

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