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Technological Innovations and the Performance of the Independent National Electoral Commission in Cross River State, Nigeria in the 2015 and 2019 General Elections

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Abstract

Public institutions in Nigeria like every other country are created with some specific mandates to render some essential services to government and the general public. The Independent National Electoral Commission was established with the mandate to conduct elections that usher in new sets of leaders in a political dispensation. Over the years, however, the commission has faced the challenges of conducting credible and acceptable election in the country as cases of malpractices are prevalent in the electoral process. In a bid to improve on its performance, the commission has introduced various administrative innovations like Bio-metric identification systems, smart card reader and delimitation of voting points to tackle the challenges in election administration. Therefore, this study examined whether there is an association between technological innovations by INEC and the conduct of elections in Cross River State. The research is quantitative in nature and adopted the survey research design. The study relied on both primary and secondary sources of information and the questionnaire was used to elicit information. The study adopted the multi-stage sampling technique which allowed the use of stratified, quota, purposive and accidental techniques to arrive at a sample size of one thousand two hundred (1200). Data generated were analyzed using the chi-square statistical technique to test the two hypotheses. The result of the tested hypotheses shows that the introduction of technologies and innovations such as the smart card reader, biometric voter registration, permanent voter card, have reduced the incidence of multiple registration, multiple voting, results manipulation and voter impersonation to the barest minimum. It is therefore concluded that with these innovations if properly and generally applied, the conduct of elections in the state will significantly improve as shown by the technologies deployed by the commission so far. It is therefore recommended that there should be an institutional framework to give legal backings to the various innovations introduced by INEC to put an end to contention of its legality in our electoral process. The commission should fully

automate all the electoral processes from registration to collation of results. Also, the commission should periodically update and revalidate its voter's registers before any general elections to detect and remove dead voters.

Keywords: Technological; Innovations; Performance; INEC; Smart-Card Reader; Bio-metric.

Introduction

Public institutions in Nigeria like every other country across the globe are created to perform or render specific services to the general public. These services are directed to improve citizen's welfare and enhance national development of a given country. Over the years, fundamental changes have been witnessed in public institution towards transforming societies globally, resulting to significant shift within the field of public administration. This changes according to Tunggul (2016), compels bureaucracy to step up new ideas and strategies in public institutions administration.

Many third-world countries, including Africa are now realizing the need for administrative innovations to provide citizens-focused, cost-effective and updated method to improve public service performance. Administrative innovations in the public sector as viewed by Awosiki (2015), has become increasingly popular around the world as a strategy for improving governance and aiding service quality. This is as a result of the pressure on public institutions to cut cost and improve efficiency. Public institutions therefore, adopt technological and administrative innovations in response to the always constant economic, political, social and technological changes in a more globalized and networked world. And this is constrained by increasing citizen expectations, complex problems, and tight budgets. The Independent National Electoral Commission (INEC) as an electoral umpire has had frequent challenges in conducting free, fair, credible and transparent general elections since the return of democracy in 1999. Most elections in the country are marred by gross irregularities, malpractices, electoral fraud, violence and inconclusive ballots that always raise questions on its credibility (Akpoo, 2015).

Constant criticism of elections administration by citizens that have pressurized the electoral umpire for a more credible election management in the country, has caused the Independent

National Electoral Commission to key into some modern technologies and strategies in the conduct of elections (Diamond, 2008). Some of the innovations introduced are bio-metric identification systems for voter registration, smart card reader for authentication of voter's card, voting point to ease voting in over populated voting units among others. These innovations are expected to reduce fraud in the registration processes, voting or vote count aggregation and to strengthen the quality of the electoral process (Golden, Kramon & Ofosu, 2014).

In the same vein, the former chairman of the Independent National Electoral Commission (INEC) Professor Attahiru Jega who introduced biometric voting technology in the conduct of elections in Nigeria in 2015, affirms that "the technology has made rigging impossible for electoral fraudsters as there is no way the total number of votes cast at the polling unit could exceed the number of accredited persons. Such discrepancy in figures will be immediately spotted. The technology made it impossible for any corrupt electoral personnel to collaborate with any politician to manipulate results. The smart card reader machines help the INEC to address all those irregularities, starting from the accreditation of voters at all polling units. Information stored in both the card readers and the result sheets taken to the ward levels would be retrieved once there are evidences of tampering. The electoral umpire believed that the innovation has added value to elections administration, as it is something that has not been done in the past (Jega, cited in Nnochii, 2015).

Nigeria has conducted six elections since the beginning of the fourth republic in 1999. They include 1999, 2003, 2007, 2011, 2015 and 2019 general elections respectively. Except from 2015 general elections, they were all roundly condemned for not meeting the required global standards and were therefore not considered credible.

In 2015 general election, some administrative innovations directed towards conducting credible elections were introduced, most local and international observers affirmed that the election was largely free, fair and credible. The improvement was attributed to some of the innovations by the professor Attahiru Jega's innovative initiative which helped to curtail malpractices by fraudulent politicians in the 2015 general elections. Most political analyst and

public affair commentators have used the 2015 general elections in rating the Independent National Electoral Commission Performance in the administration of elections in the country. This is because it was the first time about four major opposition political parties came together to form a very strong opposition party: All Progressive Congress (APC). This is done to challenge the dominance of the ruling party: Peoples Democratic Party (PDP) in the country's polity.

According to Omotola (2013), the election became the only game in town and helps to shape and reshape political actions, public institutions and the electoral umpire due to balance strength of the two major political parties in the contest. The tension in the polity prompted some prediction from both local and international stakeholders that the country was heading into doom, if the electoral process will not be credible and generally accepted. The concerns prompted the innovative deployment to avoid the massive electoral fraud witnessed in the past general elections in Nigeria. However, the introduction of innovations such as smart card readers, biometric verification technology, permanent voter's card, creation of voting points from overpopulated polling units, digital voters register in the 2015 general elections have generated debate among election stakeholders before, during and after the elections. Consequently, this study focused on administrative innovations and the performance of the Independent National Electoral Commission in the conduct of free, fair, credible and generally accepted elections in Cross River State.

The 2015 general election was adjudged the hottest electoral contest since Nigeria's post 1999 transition to multi-party democracy (International Republic and Institute, 2015). The election was seen as the most politically engaged in the history of electoral democracy in the country. Huge resources were used for the elections including 120 billion naira expended by the electoral umpire, 750,000 ad-hoc staff with over 360,000 security personnel. The presidential election has fourteen candidates from different political parties. However, the candidate of the People's Democratic Party (PDP) (Dr. Goodluck Jonathan) and that of the All-Progressive Congress APC (General Muhammadu Buhari) were the major contenders in the election.

Nigerians went into the election with full determination to exercise their voting rights and stood stoutly to monitor and protect their votes with anything and everything (Momodu, 2015).

Though, the 2015 general election has come and gone, the elections was bedeviled with issues that almost denied Nigeria and Nigerians the opportunity and courage of voting for who to represent them in the next four years. These issues nearly affected the integrity, quality and management of the election. Indeed, quality election management is crucial to the sustenance of democracy in a given country. This is because if the citizen does not believe in the fairness, accuracy, openness, and basic integrity of election process, the very basis of any democratic society might be threatened. This implies that public faith in the integrity of election system is a cornerstone of democratic government (Alverez & Hall, 2008). Therefore, a credible electoral process and public confidence in democratic societies depends on both the actual and perceived integrity of an election (International Foundation for Electoral system, 2015).

Statement of the problem

Public institutions in Nigeria have recorded a history of miserable failure and disappointment in the discharge of their statutory responsibilities (Eja, 2021). As a result, they have often come under heavy criticism for poor performance by citizens. The independent National Electoral commission (INEC), is a body recognized by the 1999 constitution for the conduct of elections that ushers in new political dispensation in the country's democratic system of government. Whilst acknowledging that the conduct of elections since 1999 has been regular, flawed elections have become a common phenomenon in Nigeria's electoral system. Since the beginning of the fourth republic, the experience is the bedrock of the diminishing electorate confidence in the democratic process, specifically, electoral institutions. The constant criticism is that the electoral umpire responsible for conducting elections in the country suffers institutional ineffectiveness and lapses. Various elections monitoring organizations both local and international have judged the electoral umpire as a major contributor to fraudulent elections in Nigeria.

Unfortunately, in Cross River State, the performance of the Independent National Electoral Commission has instead been a source of crisis and security threats recorded in the state during electioneering periods. Since 1999, the conduct of elections in the state has recorded series of irregularities and malpractices such as voters register alterations, over voting, result sheets

mutilation, stuffing of ballot papers, voter impersonations, long voting queue, late arrival of materials among others. These irregularities propagated the constant electoral violence recorded in the state during elections period. Moreover, it has been observed that the electoral umpire has a history of declaring unpopular candidates' winner in the state against the wish of the electorates as demonstrated in the poll. This has resulted to loss of confidence by voters in the state and consistent rejection of election outcome by candidates and their political parties. Consequently, the high rate of post elections litigation is recorded in Cross River State.

In an attempt to addressing the heavy criticisms against the electoral processes, the commission has brought series of administrative innovations in terms of operational mechanisms and institutional framework for administering elections aimed at improving performance. Some of the innovations introduced by the commission in the conduct of the 2015 general election include: Electronic Permanent Voters' Card (PVC), Smart Card Reader Device (SCRD) for authentication of voters' card to avoid impersonations, digitalized voters' register to avoid manipulation of registrations. Also, the commission introduced new voting points to ease long queue in polling units that has over seven hundred registered voters and above. It was also made compulsory for all the staff to undergo information and communication technology (ICT) literacy programme to expose them to effective use of modern technologies used in the conduct of the election. Despite all these innovations introduced by the commission in the conduct of the 2015 and 2019 general elections, aimed at ensuring credibility, the state still records high level of irregularities, condemnation and rejection of the outcome of those elections (Thomas, 2015).

This is evident in the series of post-election litigations in the state (Okoye, 2018). It was further observed that the Independent National Electoral Commission in the state finds it difficult in most cases to defend the result announced by them in court as variations in figures and other documents are frequently uncovered during litigations. The question is; given these innovations, why are electoral irregularities still common in the state electoral processes? Has election administration improved due to these innovations? Examining these and lots more form the purview of this study.

Smart card reader and conduct of elections

The major issue in the 2015 general elections in Nigeria was the introduction of the smart card reader (SCR), which was a critical innovation and component in the conduct of the election. The card reader was used for the first time in Nigeria electoral process and was seen to be one of the greatest technological innovations in the 2015 general elections. The independent Electoral Commission introduced the smart card reader as a technology to authenticate and verify on Election Day, the permanent voter's card (PVC) issued by the commission to the electorates. The logic for the deployment of the technological device was to ensure a credible, transparent, acceptable, free and fair election and thereby deepening Nigeria's democratic processes.

The introduction of the smart card reader generated a lot of debate among stakeholders and political analyst before, during and after the 2015 general elections. This led to the need for studies to investigate how the introduction of the smart card reader has added to the credibility of election administration in Nigeria. Jonah (2018) conducted a study on the impact of smart card readers on election credibility in Nigeria, using the 2015 presidential election in Ekeremor local government area of Bayelsa state. Data was collected and analysed. The findings of the study revealed that the smart card reader (SCR) has credible impact on the conduct of the 2015 general elections in Nigeria. The reason is that the card reader helped to dictate and reject cloned permanent voter's card distributed to electorate by desperate politicians who wanted to manipulate the process to their favour.

Adeniran (2017) also conducted a study on Smart Card Reader (SCR) and the 2015 general elections in Taraba state to ascertain the credibility of the 2015 general elections in Nigeria. Data for the study were generated from local government areas of the state with both INEC staff and Taraba electorates as respondents. The findings of the study revealed that the conduct of the 2015 general elections in the state using the smart card reader helped to eliminate massive fraud recorded in previous elections since Nigeria's independence in 1960. The author therefore recommends that Nigerians should continue to embrace the use of the card reader in future elections in the country to ensure the conduct of credible and acceptable elections outcome.

Furthermore, the author opined that subsequent general elections in Nigeria should gradually continue to embrace technological innovations which have paid-off with the introduction of the card reader.

According to INEC (2015), after a careful review of the commission's performance in the 2015 general election, it was revealed that it performed better in terms of credibility, transparency and acceptability in the conduct of the 2015 general elections due to the introduction of some technologies like the smart card reader. The commission revealed that the smart card reader aided them to technologically authenticate and verify on election day permanent voter card (PVC) issued by them. The reason is because the device uses a cryptographic technology that has ultra-low power consumption, with a single core frequency of 1.2 GH2 and an android 4.2.2 operating system. In other word, the card reader reads information contained in the embedded chip of the permanent voter's card issued by INEC and verify the authenticity of the permanent voter's card (PVC) and also carry out a verification of the intending voter by matching the biometrics obtained from the voter on the spot with the ones stored on the PVC (Engineering Network Team, 2015).

The fundamental reason for the introduction of the smart card reader in the 2015 general elections by the commission was to eliminate electoral fraud and to enable electorates vote count. It was also to reduce litigations arising from elections, to audit results from polling units across the country and to ensure transparency and accountability. Others include: to do a range of statistical analysis of the demographics of voting for the purposes of research and planning. It also builds public confidence and trust in the election, to reduce electoral conflicts, to ensure a free and fair election and to further deepen Nigeria's electoral and democratic process.

The introduction of the Smart Card Reader (SCR) by INEC in the 2015 general elections marked a significant technological advancement aimed at enhancing the credibility of Nigeria's electoral process. The SCR was designed to authenticate voters by reading the embedded chip in the Permanent Voter's Card (PVC) and matching the biometrics of the voter on the spot, thereby deterring electoral malpractices such as multiple voting and impersonation (INEC, 2019).

Despite its innovative approach, the deployment of SCRs faced several challenges. Technical issues such as fingerprint scanner failures were prevalent during the 2015 elections, leading to delays and, in some cases, the resort to manual accreditation processes (Ayeni et al., 2023). These challenges prompted INEC to upgrade the SCR hardware, including the adoption of larger fingerprint scanners, which significantly reduced failure rates in subsequent elections like the 2018 governorship elections in Ekiti and Osun States (Ayeni et al., 2023).

In the 2019 general elections, the SCR's role was further solidified. The device's ability to verify and authenticate voters contributed to reducing electoral fraud and enhancing the legitimacy of the electoral process (The Conversation, 2023). However, issues such as device malfunctioning and inadequate contingency planning persisted, highlighting the need for comprehensive training of electoral officials and robust technical support systems (Susa Africa, 2023).

Furthermore, the integration of the Collation Support and Results Verification System (CSRVS) in the 2019 elections complemented the SCR by identifying inaccuracies or miscalculations in vote counts, thereby enhancing the integrity of the electoral process (Ayeni et al., 2023).

In summary, while the SCR significantly improved the conduct of elections by enhancing voter authentication and reducing fraud, its effectiveness was occasionally hampered by technical and operational challenges. Continuous improvements in technology and training are essential to maximize the benefits of such innovations in future elections.

Eblomele (2015) study revealed that the device enhanced the credibility of the process which consequently reduced post-election litigation as witnessed in previous elections as a result of result rejections by candidates and their political parties. There was a departure from the past where every election outcome is being challenged at the election petition tribunals. Most of the candidates that lost in the 2015 general election did not challenge the outcome. In fact, some of the major contenders that did not win in the elections embraced and congratulated the winners. For instance, the People’s Democratic Party presidential candidate Goodluck Jonathan immediately congratulated the All-Progressive Congress presidential candidate Muhamadu Buhari as the

winner of the 2015 presidential election. This same attitude also happened across many states of Nigeria in the governorship, national and state houses of assembly's elections.

It was also discovered that electoral violence and election related conflicts was at the barest minimum due to the transparency of the electoral process as a result of the introduction of the smart card reader. The habit of excessive and pointless killings and ruinous acts between election losers and winners as recorded in the 2011 general elections was significantly reduced. In view of the minimal level of electoral malpractices recorded due to the deployment of the smart card reader, tension was reduced among the political gladiators and as such, electoral violence was grossly diminished in the 2015 general elections outcome compared to past elections in the country.

Oderemi, (2016) carried out a study in Ogun state after the 2015 general elections titled: "Card Readers: To be or not to be". The study was carried-out to determine the credibility, effectiveness and efficiency of the introduction of smart card reader in the administration of elections in Nigeria. The author stated that the use of card reader in the 2015 general elections altered the rigging plans of some fraudulent politicians that dwell in the manipulation of electoral processes to drive their way into power. Oderemi noted that the reason some opposition political parties won election in the state was as a result of the introduction of the smart card reader by the independent National electoral commission which made it difficult for unpopular candidates to manipulate the actual figure of vote accredited and cast. The study revealed that the practice of snatching ballot papers for massive thump-printing was avoided considering the use of the card reader for voter accreditation which must match with number of vote cast.

With the introduction of card reader in the 2015 general elections and the gradual deployment of technologies in the nation's electoral process, there is the prospect of Nigeria belonging to one of the countries of the world where elections are driven largely by technology.

Permanent voter's card (PVC) and election administration

Nigeria's election governing body, the Independent National Electoral Commission (INEC) in 2015 also introduced the use of permanent voter's card as criteria to vote in the nation's

elections. The commission said it produced sixty-eight million, eight hundred and thirty-three thousand, four hundred and seventy-six (68,833,476) permanent voter's cards for persons in the biometric voters register ahead of the March 28th and April 11th 2015 general election. The permanent voter's card was used to replace the temporal voter's card (TVC) used on the heels of voter's registration for the 2011 general elections in the country.

According to INEC FACTSHEET on PVCs (2015), quality, security, durability and cost effectiveness were underlying factors in the production of the permanent voter's card. The reason is that the PVC has some components and specialized features such as base substrate, security printing, limitation, personalization and chip embedding that were designed with an average duration of ten years. The embedded chip in the card contains all the biometric information of the voter, including finger prints and facial image which makes it difficult to be manipulated. On the day of election, the card is swiped in a smart card reader at the polling unit to ascertain 100 percent authentication and verification of the voters before he or she is allowed to vote.

Several studies have been conducted by scholars to investigate the impact of the introduction of the permanent voter's card on the conduct of credible elections by the Independent National Electoral Commission, (Victor, 2019; Chikodin, Vincent & Otu, 2018; Ayeni, Aweh, Badeji-Ajisafe, & Atachin, 2023). John and Deborah (2018) carried out research on the impact of biometric technology for voter identification in combating electoral fraud in Nigeria. The findings of the study indicated that the introduction of some biometric technology for voter's identification such as the permanent voter's card, and smart card reader in the 2015 general elections displaced some incumbent politicians that had in the past depended on fraud to win elections in the country. These authors submitted that cases of over voting, massive thump-printing and framing of figure were very minimal compared to previous elections in the country. The authors also stated that the introduction of biometric technology for voter identification has implicated politicians that are involved in electoral fraud even if INEC mistakenly declared them winners. This is because the use of the permanent voters' card and smart card reader have added credibility to election

administration in the country which provides information during post-election litigation to ascertain true winners.

Chikodiri, Vincent and Otu (2018) conducted a study on the impact of digital technology on the 2015 general elections in Nigeria. The study investigated the role of the permanent voter's card and smart card reader in improving the credibility of the 2015 general election in Nigeria. Adopting the cybernetics mode of communication theory, it was discovered that the deployment of permanent voter's card and smart card readers had rekindled the confidence of Nigeria's electorates and INEC deployment of partners in the country's electoral process. It was discovered that even though the adoption of biometrics technologies has not absolutely made the electoral process free and fair, they however, accounted for the credibility of the 2015 general election in the country. Though, some challenges were encountered in the use of the technologies, especially in fingerprint verification, the PVC and card readers. These contributed and aided the curbing of electoral fraud. Consequently, the result of the election leads to confidence building among Nigerians as well as in the significant reduction in the rate of post-election litigations filed by aggrieved candidates and their political parties. This is because of the use of the permanent voter's card for identification and accreditation.

Agbu (2015) assertion that the only way to shut out fraudulent politicians that manipulate the country's electoral process to continue to remain in power is to make the country's electoral processes more sophisticated to make election rigging very difficult. He further explained that rigging elections through the manipulation of voter's register and voter's card can be cautioned using sophisticated technologies like what is obtainable in the west.

The Permanent Voter's Card (PVC) was introduced by INEC as part of its efforts to enhance the integrity and efficiency of Nigeria's electoral process. The PVC contains biometric data and personal information of voters, serving as a critical tool for voter identification and authentication during elections (Susa Africa, 2023).

The implementation of the PVC has significantly improved election administration by reducing instances of multiple registrations and voting, thereby curbing electoral fraud (The

Nation, 2023). The biometric features of the PVC ensure that only eligible voters can participate in the electoral process, enhancing the credibility of elections.

However, the deployment of PVCs has not been without challenges. Issues such as the high cost of production, distribution logistics, and the digital divide in Nigeria have affected the efficiency of PVC deployment. For instance, areas with limited internet connectivity and electricity supply have experienced difficulties in PVC distribution and voter education (Susa Africa, 2023).

To address these challenges, INEC has introduced measures such as continuous voter registration and the establishment of more registration centers to facilitate easier access to PVCs. Additionally, the commission has leveraged technology to improve the voter registration process and PVC distribution, thereby enhancing overall election administration (The Nation, 2023).

In conclusion, the PVC has played a pivotal role in strengthening Nigeria's electoral system by improving voter identification and reducing electoral malpractices. Ongoing efforts to address logistical challenges and enhance technological infrastructure are essential to further improve election administration.

The discovery of a research conducted by Victor (2019) also agrees with that of other scholars reviewed in this work. The study assesses information and communication technology and elections in Nigeria: Rural Dynamics of Biometric voting technology adoption. It was revealed that so many innovations introduced by Professor Jega's led INEC in 2015 general elections gives a lot of credence to the outcome of the election. The author pointed out innovations such as: Advanced finger print identification, customization of sensitive electoral materials such as result sheets, ballot papers, biometric voter registration, colour coding of ballot papers that makes it useless in other constituencies if snatched, the issuance of chip embedded and machine-readable permanent voter's card as well as smart card reader necessitated the improvement recorded in the 2015 general election.

The researcher pointed out that the security features of the permanent voter's card used for accreditation on election day countered all mechanisms nursed by fraudulent politicians with

intending mindset to manipulate the process. Technological deployment for election administration across the world has brought remarkable improvement over the world in the last two decades. Information and communication technologies deployed by electoral commissions such as electronic voter registration, voter verification and result transmissions are sacrosanct to credible conduct of elections (Cheesemand, Iynch & Willis, 2018).

Theoretical framework

The study adopted the modernization theory to explain the innovations that were carried out and how it relates with the variables under study. The modernization theory has W. W. Rostov, David A., David Milliard as it's leading proponents. The theory is a functionalist approach to development. The assumption of the theory is that societies and organizations that are willing to developed and improve performance should move away from its old and traditional approaches in doing things or performing task to modern and innovative ways, through the application of science and technologies.

The modernization theory sees normative administrative strategy as obstacles to development and performance; therefore, advocate for the adoption of innovations in our institutions as facilitator of improved performance and development. The theory grouped societies into two categories: Traditional societies (the one that uses old and normative approaches in doing things) and modern societies (the one that is innovative and uses scientific methods in performing task). According to the modernization theory, third world countries that are majorly classified as traditional societies should move away from the application and use of normative approaches in the performance of task in their public institutions to the application of modern methods which is science and technologies if they want to be like the western countries. The proponents of the theory assumed that ineffectiveness, underdevelopment and poor performance in the administration of complex developing societies and institutions is as a result of the use of cruel methods in doing things.

Modernization theory is relevant to this study because of the growing desire of Nigerians to have credible elections administration which will be generally accepted by all stakeholders. INEC

as a public institution with the mandate to conduct free and fair periodic elections that will usher in new political dispensation have faced series of criticism on how elections are ineffectively conducted in the country. This has led INEC to move away from old methods of conducting elections by embracing some innovations in the conduct of elections in the country.

The theory is relevant to this study because it explains and predict the outcome of conducting elections with the use of modern technologies such as smart card reader, permanent voters' card, biometrics voters' registration, splitting of overcrowded polling units, exposure of the commission staff to ICT training among others. With the above listed innovations, the modernization theory assumed and predicted effective performance of the commission in conducting free, fair, credible and generally accepted elections in the country like what is obtainable in the west.

The modernization theory like every other theory has its limitations. One of the limitations of the theory is that it over emphasizes on adopting modern approaches in performing task if a developing country want to be like the west without considering the comparative advantage of available skilled personnel that can work with modern technologies in the west which are lacking in developing countries.

Research Questions

The following research questions were raised to guide the study:

1) To what extent did the INEC Smart Card Reader identify multiple voters' registration in elections in Cross River State?
2) How did the introduction of permanent voters' card reduce the incidence of voter's impersonation in the last general elections in Cross River State?

Objectives of the study

The broad objective of the study is to examine whether there is an association between the introduction of administrative innovations by the Independent National Electoral Commission and the conduct of elections in Cross River State. Specifically, the study sought to:

- Investigate whether significant association exist between the use of smart card reader and the identification of multiple registrations on election days
- Examine whether significant association exist between the introduction of permanent voter's card (PVC) and the reduction of voter's impersonation during elections in Cross River State

Statement of hypotheses

The following null hypotheses were formulated to guide the study:

i. There is no significant association between the use of smart card reader and identification of multiple registrations on election days.
ii. There is no significant association between the introduction of permanent voter's card (PVC) and reduction of voter's impersonation during elections in Cross River State.

Research Design and Methods

The research design adopted for this study is the survey research design. Survey research design is a subtype of ex-post facto design that systematically study a population or sample of population by using questionnaire, personal interview, focused group discussion, or observation technique to collect data.

For this study, the population comprised of the entire registered voters that participated in previous elections in Cross River State and all the staff of the independent National Electoral Commission, Cross River State. As at the 2019 general elections, Cross River State has a total registered voter of one million five hundred and twenty-seven thousand, two hundred and eighty-nine (1,527,289). While the commission in the state has a staff population of one thousand six hundred and ninety-seven personnel on its payroll (1,697). Therefore, the population of the study is the combination of the registered voters in the state and the staff strength of the Independent National Electoral Commission in Cross River State. This combination gives a total number of one million, five hundred and twenty-eight thousand, nine hundred and eighty six (1,528,986) and that forms the population of this study. It is usually, impossible to study the entire population of a study when dealing with a very large population of this nature. Therefore, the researcher devised a

means of selecting a sample size that is a representative sample of the entire population for analysis and generalization.

The study adopted the multistage random sampling techniques. The sampling technique adopted for the study are stratified, quota, purposive and accidental sampling techniques. The reason for the adoption of the stratified sampling technique is to allow the researcher to group the study population into three (3) strata according to senatorial districts in Cross River State, which was further down-sized into picking two local governments from each stratum which is a senatorial district.

The quota system sampling technique was applied to allow the researchers allocate equal number of respondents to each stratum which was based on each local government area selected for the study. The researchers also used the purposive sampling to deal with only respondents who have good knowledge of these innovations introduced by the Independent National Electoral Commission and how they are associated with election administration in the state. Also, the accidental sampling technique was adopted to allow the researchers deal with respondents that are readily available and convenient to provide the needed information. To determine the sample size for the study, two local government areas were selected from each senatorial district. In the northern senatorial district, Yala and Ogoja local government were selected. In central senatorial district, Abi and Yakurr local government areas were picked, while in southern senatorial district, Odukpani and Calabar municipal local government areas were selected for the study, making a total of six local government areas. To arrive at the sample size for the study, an equal allocation of two hundred (200) respondents were selected from each of the six local government areas. Going by this allocation to the six local government areas, using 200 respondents per strata, the sample size for this study is therefore, one thousand two hundred (1200). Therefore, the one thousand two hundred respondents' information was used as a basis for analysis in this study.

The method of data collection adopted for this study is the survey method. The instrument for the survey method was a structured questionnaire designed using the modified 4-points likert-scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The chi-

square technique is also used to test the hypothesis for the difference between a set of observed frequencies and a corresponding expected frequency.

Result and discussion

Table 1: Reponses showing frequency counts and percentages on whether a significant association exists between the use of smart card reader and identification of multiple registrations on election days

S/n	Items	SA	A	D	SD	Total
1.	The act of voting with fake voters' card has stopped due to the use of smart card reader for authentication	474	396	182	72	1124
		(42.2)	(35.2)	(16.2)	(6.4)	100.0
2.	Cases of over voting have reduced due to the introduction of smart card reader to identify fake voters	376	480	188	80	1124
		(33.5)	(42.7)	(16.7)	(7.1)	100.0
3.	Massive ballot papers thumb printing has stopped due to the use of card reader for accreditation	444	378	124	178	1124
		(39.5)	(33.6)	(11.0)	(15.8)	100.0
4.	Electorates no longer vote more than once because of verification with card reader before voting	399	394	206	125	1124
		(35.5)	(35.1)	(18.3)	(11.1)	100.0
5.	Impersonation, massive thump printing and double voting have reduced due to the introduction of the smart card reader	452	370	160	142	1124
		(40.2)	(32.9)	(14.2)	(12.6)	100.0

Table 2: Reponses showing frequency counts and percentages on whether a significant association exist between the introduction of permanent voter's card (PVC) and reduction of voter's impersonation during elections in Cross River State

S/n	Items	SA	A	D	SD	Total
1	Production of fake voters' card have stopped due to the introduction of electronic permanent voters' card	564	340	101	119	1124
		(50.2)	(30.2)	(9.0)	(10.6)	100.0
2	The electronic chips on the permanent voters' card have made it difficult for manipulation for rigging purposes.	404	378	120	222	1124
		(35.9)	(33.6)	(10.7)	(19.8)	100.0
3	The issuance of the permanent voters' cards allows for only eligible voters to vote during elections.	308	465	204	147	1124
		(27.4)	(41.4)	(18.1)	(13.1)	100.0
4	Rigging at the polling unit have reduced because of the permanent voter's card	388	424	124	188	1124

		(34.5)	(37.7)	(11.0)	(16.7)	100.0
5	The permanent voters' card has reduced voting by ineligible persons on election days	360	520	111	133	1124
		(32.0)	(46.3)	(9.9)	(11.8)	100.0

Test of hypotheses

Hypothesis one:

There is no significant association between the use of smart card reader and identification of multiple registrations on election days. The test variable in the hypothesis is the level to which the use of smartcard reader is associated with the identification of multiple registrations. Chi-Square goodness-of-fit was applied as the test statistics to establish the level to which the use of smartcard reader as administrative innovation by INEC is associated with the identification of multiple registrations. Results of the analysis is presented on Table 3.

Table 3: Summary of Chi-Square analysis of the association between the use of smart card reader and identification of multiple registrations

Level of effect on identification of multiple registrations	Frequency	Percent	X^2	Df	P-value
Very low	125	11.1			
Low	177	15.7			
Moderate	378	33.6	253.13*	3	.000
High	444	39.5			
Total	1124	100.0			

*p<.05; df = 3; Critical X^2 = 253.13

From the result of chi square analysis on Table 3 the calculated Chi-Square value used in establishing whether an association exist between the use of smart card readers and the identification of multiple registration is 253.13 with P-value of .000 (p<.05). The calculated Chi-Square value was seen to be greater than the critical Chi-Square value, with the obtained P-value less than .05 level of significance. With these results, the null hypothesis which stated that there is no significant association between the use of smart card reader and the identification of multiple

registrations on election days was rejected. Therefore, the use of smart card reader has a significant association with the identification of multiple registration on Election Day.

The responses to the level of association that the use of smartcard readers as INEC innovation has in aiding identification of multiple registrations showed that 39.5 percent of the respondents agreed that the innovation has high level effect on identification of multiple registrations, 33.6 percent agreed that the innovation has moderate effect. This showed that about up to 73.1 percent of the total respondents are in agreement that the innovation has contributed significantly, while 15.7 percent and 11.1 percent of the respondents have low and very low agreement respectively. This indicate that majority of the respondents perceive the innovation as being effective, which is to significant extent.

Hypothesis two:

There is no significant association between the introduction of permanent voter's card and reduction of voter's impersonation during elections in Cross River State. The test variables in the hypothesis is the level which the introduction of permanent voters card has reduced voters impersonation. Chi-Square goodness-of-fit was applied as the test statistics to establish the level at which the introduction of permanent voters' card as an administrative innovation by INEC is associated with the identification of voters' impersonation. Results of the analysis is presented on table 4.

Table 4: Summary of Chi-Square analysis showing association between the introduction of permanent voters' card and the reduction of voter's impersonation

Level of effect on reduction of voter's impersonation	Frequency	Percent	X2	Df	P-value
Very low	147	13.1			
Low	165	14.7			
Moderate	424	37.7	225.3*	3	.000
High	388	34.5			
Total	1124	100.0			

*p<.05; df = 3; Critical X2 = 7.81

. The calculated Chi-Square value used in establishing the level at which introduction of permanent voters' card reduced voters' impersonation is 225.3 with P-value of .000 (p<.05). The calculated Chi-Square value was seen to be greater than the critical Chi-Square value, with the obtained P-value less than .05 level of significance. With these results, the null hypothesis which stated that there is no significant association between the introduction of permanent voters' card (PVC) and reduction of voter's impersonation during elections in Cross River State was rejected. It was accepted that the introduction of permanent voters' card is significantly associated with the reduction of voter's impersonation during election.

The responses to the level of effect the introduction of permanent voter's card as INEC innovation has on reduction of voter's impersonation showed that 34.5 percent of the respondents agreed that the innovation has high level effect on the reduction of voters' impersonation, 37.7 percent agreed that the innovation has moderate effect. This showed that about up to 72.2 percent of the total respondents are in agreement that the innovation has contributed significantly, while 14.7 percent and 13.1 percent of the respondents have low and very low agreement respectively. This indicates that majority of the respondents perceive the innovation as being effective, which is to a significant extent.

Discussion of findings

The broad objective of this study is to examine whether there is an association between administrative innovations by the Independent National Electoral Commission and the conduct of elections in Cross River State. From information generated from the field, which was used to test the hypotheses formulated to guide the study, the study revealed that there is a significant association between the use of smart card readers by the commission and the identification of multiple registration on election days in the state. It was discovered that the introduction of the smart card reader has aided INEC in the identification of multiple registrations as the card reader is used to identify and authenticate all voter's cards as presented by the electorate before certifying

them to vote. This implies that people who dubiously register more than one time are no longer eligible to vote as the card reader is used to identify such fraud on election days. This means that the numbers of persons who vote on every election represent the actual registered voters which were duly accredited in areas where the smart card reader technology were used for the election.

It was also discovered in the study that the introduction of smart card reader in the 2015 general election in Nigeria, helped to dictate and reject cases of presentation of cloned voter cards distributed to electorates by politicians who wanted to manipulate the process in their favour. The reason is that the device uses a cryptographic technology which reads the information contained in the embedded chip of the permanent voter's card and also, carry out a verification of the intending voter by matching the biometrics obtained from the voter on the spot. This helped to denied electorates with fake voter's card access to vote and enhanced the credibility of the election. The finding was in agreement with Jonah (2018), that there were lesser number of accredited voters in the 2015 general election compared to previous where smart card readers were not used even when there was an improvement in voters' registration prior to the 2015. The finding is also theory affirming as it aligned with the tenets of the modernization theory used in the explanation of this study.

The implication of the findings is that with the card reader multiple voting by multiple registrants during elections has stopped through the innovation of the smart card reader. It can be deduced from the result that INEC through the use of the smart card reader is now more effective in voter's accreditation. The findings is in agreement with the assertion of Nwafor (2016) that rigging election during the present era of technology is a mission almost impossible if electoral processes are fully automated. He explained that if electoral process in the country is fully automated from voter's registration upto result announcement, rigging election in Nigeria will be very difficult. The findings also agree with Ahmed and Usman (2015) that the deployment of sophisticated technologies like the card reader by INEC in the conduct of elections will retire unpopular politicians in politics in the future who rely on rigging election to have their ways into power. They submitted that the card reader no longer permits fraudulent accreditation that leads to

inflation of voters in certain areas. Therefore, the introduction of the smart card reader is an upgrade towards conducting credible elections in the state.

In hypotheses two, the study exposes an association between the introduction of the permanent voter's card and reduction of voter's impersonation on election days. It was discovered in the course of the study that the introduction of the permanent voter's card used to replace the previous temporal voter's card have reduce the rate of which someone uses another person's card to vote during elections. The reason is that the permanent voter's card as INEC innovation has an electronic chip embedded in it that contains biometric information of every registered voter which is authenticated using the smart card reader.

The innovation has made it possible for impersonators to be apprehended during attempts to use some other person's voter's card. It was observed that some polling units and areas who use to record massive votes in previous elections in the state can no longer record such number of votes since the introduction of the permanent voters' card that limits the rate of impersonation and multiple voting. From respondents rating, a significant percentage of the respondents in the study agreed that the innovation of the permanent voter's card has high level association with the reduction of impersonation during elections in the state. This is because people who are not eligible to vote but smuggled to vote in the past using fake voter's card are no longer tolerated through the use of the permanent voters' card.

It was also revealed by the respondents that some politicians that usually print fake voter's card for their supporters to vote for them and their political parties on election days have been disarmed by the use of the permanent voter's card which reduces the comfort to manipulate. Consequently, rigging election through the manipulation of the vote's card in the state is now significantly reduced. The finding is in accordance with Agbu (2016) assertion that the only way to shut out fraudulent politicians that manipulate the country's electoral process to continue to remain in power is to make the country's electoral processes more sophisticated to make election rigging very difficult. He further explained that rigging elections through the manipulation of

voter's register and voter's card can be cautioned using sophisticated technologies like what is obtainable in the west.

Hence, the deployment of permanent voter's card with electronic chip has actually proven the above assertion. The findings also align with Ejikemejombo (2015) that the introduction of business rule which only allows voters who has at least two fingerprints captured in the register further reduced the chances of the permanent voter's card being manipulated by election riggers. He believed that with the rate of technological advancement by the Independent National Electoral Commission, the issue of voter's impersonation during elections in the country will be completely eradicated or systematically reduced in future elections.

Furthermore, the finding of the study exposes polling units in the state known for high voting strengths who could not replicate such voting number due the introduction of electronic permanent voter's card which dictate multiple registrations. The finding affirmed the assertion John and Deborah (2018) that the use of biometric voter registration and smart card reader for voter accreditation in the 2015 general election eliminated cases of multiple registrations and multiple voting which were experienced in the past elections in the country. The discovery of a research conducted by Victor (2019), also agrees with that of other scholars reviewed in this study.The study assesses information and communication technology and elections in Nigeria: Rural Dynamics of Biometric Voting Technology Adoption. It was revealed that so many innovations introduced in 2015 general elections a lot of credence to the outcome of the elections.

Significance of the study

This study is expected to be of relevance in theory building, policy formulation, public institutions and the academia. In the area of theory building, the findings of the study will help to describe, explain and predict possible outcome of an electoral process with or without the usage of modern technology in the conduct of an election anywhere across the globe. This is because the findings of the study will expose the effectiveness of this innovation that are introduced and its relevance in conducting credible elections. It will also predict the possible outcome of an election conducted without modern innovations.

In terms of policy relevance, the findings of the study will expose the effectiveness and challenges of diffused innovations in the nation's public institutions. Policy maker will therefore have a critical analytical value of these innovations and formulate public policy in accordance with global best practices. Therefore, stakeholders in the country's electoral process can formulate policies that will curb electoral malpractices. The study will also be of most relevance to the academia, students and other researchers that may want to study further in the subject area. This is because information from this study will add to the body of existing knowledge or literature which will serve as reference materials for future research. Public institutions will also benefit from the study. This is because the findings and recommendations will help them to appreciate the need for innovations to address the menace of poor performance.

Conclusion

The injection of some technological innovations and the incorporation of Information and Communication Technology in Nigeria's electoral system has significantly improved and modernized the system which enhanced election management in Cross River State. The findings of study have re-emphasized the need for a shift from traditional and normative approaches in institutional task performance if there must be improved performance. Hence, the introduction of Smart Card Readers, Biometric Voter's Registration, Permanent Voter's Card and other innovations by INEC in election management in Cross River State has curbed election fraud significantly, thereby, fostering credible elections and transparency of the electoral processes.

From the result of this study, it is hoped that if the Independent National Electoral Commission (INEC) fully automate the electoral process from registration to collation of results, there will be significant reduction in the rate of electoral malpractice in the nation's election management. Therefore, the application of science and technology is the only approach to credible administration in the country.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. There should be an institutional framework to give legal backing to the various innovations introduced by INEC to put an end to contention of its legality in our electoral process.
2. The Independent National Electoral Commission should fully automate all the electoral processes from voters' registration to collation of results. This will help to minimize some pockets of manipulations still witnessed in the processes that are not fully automated.
3. The Independent National Electoral Commission should periodically update and revalidate it's register before any general election. This will aid INEC to detect and remove dead voters from the register whose relatives always come to impersonate with.
4. The commission should periodically expose its staff to ICT training for effective handling of the various digital innovations introduced in elections administration.
5. The Independent National Electoral Commission should always carryout extensive enlightenment campaign of various technological innovations introduced to the public before election days for proper compliance.

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