



**Beyond the Card Reader:
Elections Rigging as an Emerging
National Security Threat in Nigeria**

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Electoral fraud is widely perceived as a common phenomenon in developing countries due to the lack of established institutions that can ensure transparency, accountability, legal norms and order, and sophisticated electoral system and electorates that appreciate and have the capacity to defend the franchise. Indeed, there is strong evidence that electoral fraud has been rampant in developing environments because elite clusters are able to control and structure the system to either serve narrow interests (where there is reasonable cohesion) or mediate competing interests or rivalries (where there are serious regional or social cleavages). Unsurprisingly, electoral malfeasance has been a scourge historically all over the world and across political systems and levels of economic development, including the contemporary advanced democracies. For instance, electoral manipulation and fraud were commonplace historically in the United Kingdom where political corruption was effectively institutionalized and justified until the middle of the 19th century following the Reform Act of 1832. Before reforms, many aspects of British electoral corruption were as scandalous as many of the worst electoral frauds in developing countries today. For instance, riddled with internal divisions -- especially ethnicity, class and north-south regional issues -- British politicians nurtured and tolerated a representative system that was so corrupt that it was widely acknowledged as “rotten” or “pocket” boroughs. One such borough -- Old Sarum -- had two representatives for hundreds of years even when it had absolutely no residents to represent; and despite the fact that cities like Leeds or Manchester, with more than 200,000 people by 1830, had no representatives at all. It was bought and sold by powerful elite families such as the Pitt family, which produced two British Prime Ministers -- William Pitt, 1st Earl of Chatham, and his son William Pitt the Younger (Farrell, 2009). Thomas Paine (1791) argued decades earlier:

The county of Yorkshire, which contains near a million of souls, sends two county members; and so does the county of Rutland which contains not a hundredth part of that number. The town of Old Sarum, which contains not three houses, sends two members; and the town of Manchester, which contains upwards of sixty thousand souls, is not admitted to send any. Is there any principle in these things? Is there anything by which you can trace the marks of freedom, or discover those of wisdom?

As with Britain, so it was with the United States. Indeed, political shenanigans of various sorts have been so integral to the American political system that the integrity of the system has always been a major concern; and, often, has been subjected to questions periodically following close elections. Beyond issues such as the elitist Electoral College, which sometimes serves to undermine the will of the people by making nonsense of the popular vote, or the habit of ruling parties to manipulate geographic lines to ensure the right mix of voters in particular areas for themselves, political processes in the United States have always been open to abuse:

From the earliest days of the republic, American politicians (and much of a cynical populace) saw vote rigging as a necessary evil. Since the opposition was assumed to be playing equally dirty, how could you avoid it? Most Americans would probably have confessed to a grudging admiration for New York City's Tammany Hall machine, which bought off judges, politicians, and ward captains, ensured the suppression of thousands of votes, and controlled Democratic Party nominations for more than a century (Collier, 2012:33)

Basically, much of America's more than 200 years of independence has been filled with illegal and quasi "legal" arrangements and activities designed by dominant elite fractions to achieve an upper hand in political competitions. Historically, from gerrymandering to a range of technicalities, electoral processes in America were often manipulated for political advantage: the 1792 election where John Jay's gubernatorial mandate was stolen; the 1855 "Bleeding Kansas" electoral debacle that resulted in post election riots and a physical fight between a US Senator and a Congressman; the hugely disputed 1876 presidential elections, which led to the controversial Compromise of 1877 that had historic social and political consequences for the states of Florida, Louisiana, and South Carolina. More recently, in America's closest presidential election, George W. Bush got the presidency over Al Gore by: winning the decisive and very controversial Florida contest by a .009% margin (537 votes); and, subsequently, winning at both the Florida Supreme Court and the United States Supreme Court. This was despite Al Gore's acknowledged superior vote count and evidence that he would have won if legally valid ballots were counted (Chait, 2012; Kettle, 2001).

Beyond the United States and the United Kingdom, electoral fraud (legal or otherwise) or intrigues have marred electoral processes around the world and denied hundreds of millions

of people their democratic franchises. Around the world, citizens are increasingly intensifying age-long battles against social and political elites over their serial abuses of authority to manipulate and usurp control of electoral processes in service of their personal and familial interests. In this way, there is a growing public realization and perception around the world that all is not well with democracy and democratic institutions. Clearly, beyond the well known incidences of electoral conflicts in developing countries, continuing issues of electoral fraud and manipulations in the United Kingdom, European Union states, United States, and other countries are not only undermining democratic values and democracy but also weakening confidence in the idea of free and fair elections as a panacea for the governance issues and challenges facing many countries around the world.

Aided by social media and other forms of new media, citizen responses have been fairly swift and growing in intensity (and deadliness) as more people join the loop. Electoral systems that flourished for decades or even hundreds of years are increasingly being challenged as flawed or manifestly unjust. In a wide range of countries such as Afghanistan, Brazil, Burundi, Congo, Cuba, Egypt, Guatemala, France, India, Iraq, Libya, South Africa, South Korea, Syria, Ukraine, United States, Venezuela, and Zimbabwe, citizens are complaining and demanding significant reforms or wholesale changes of electoral processes and governance apparatuses. In some instances – Egypt, Tunisia, Venezuela, Zimbabwe, etc – citizen reactions have bordered on outright revolt against the system.

This paper provides an evaluation of the existing technological strategies in the Nigerian electoral process with a view to ascertain their reputed efficacy for solving the problem of electoral malpractices in the country. Are the devices really fit for purpose? Will they address the accreditation problems and prevent multiple voting and other forms of elections rigging and malpractices? Is Nigeria technically ready and able to manage effectively electronic devices that have the potential of being used to unleash massive electoral fraud that could completely undermine peaceful coexistence within its fragile and sensitive electoral context? It then provides policy recommendations on advancing the measures to improve the credibility of elections in Nigeria.

Explaining Electoral Fraud

Usually, electoral fraud is understood to mean a deliberate attempt to manipulate, alter, or interfere with the true result of an election or the processes leading to an election. In essence, according to Birch (2007: 3), the idea explains “all activities that lead to a violation of the ‘level playing field’ that is the ideal of electoral processes”. Basically, the purpose of electoral fraud is to shape election results in favor of a preferred candidate or political party. Electoral fraud may take place at any stage of the electoral process including before, during and after voting. Although electoral fraud often occurs during the voting process, significant amounts of electoral fraud do occur:

Before Voting -- through the manipulation of the electorate: for instance, by emplacing legal rules on eligibility; disinformation (spreading false information about rivals or self); shaping demographic contexts; disenfranchising particular population groups; cracking or packing population groups through gerrymandering; making favorable laws on voting processes and details, dividing the opposition by ensuring continuous discord through the manipulation of the power of incumbency and the use of financial rewards; fake voter registration; intimidation through the use of violence or threat of violence and other intimidation tactics on rivals or supporters of rivals.

During Voting -- through ballot box stuffing or multiple voting; vote buying; misleading (confusing) ballot papers; misuse of proxy votes; misrecording of votes; destruction or invalidation of ballots; voter impersonation; and tampering with electronic voting machines, etc.

After Voting— through fabrication of results; false declaration of winners; rigging through court decisions; etc. (Onapajo and Uzodike, 2014)

As with the rest of the world, Nigeria has faced serious challenges with respect to building a credible democracy and its enabling institutions. As such, Nigeria is currently a notional “democracy” without established or embedded democratic values, principles and institutions. Not surprisingly, elections – better understood as (s)elections in Nigeria -- pose significant challenges to the state due not only to persistent reoccurrence of massive electoral fraud, malpractices and violence, but also because of the inability of the state to control key gatekeepers who mobilize their wealth or political authority in illegal furtherance of their personal political

interests.

In fact, since the transitional elections in 1999, each Nigerian electoral cycle has been associated with intense controversies following allegations and counter-allegations of election rigging and fraud by the political actors. The dire consequences include: the emergence of a culture of near-automatic challenges of electoral results as rigged; a recourse to highly expensive “legal” fights in which the winner of the election is chosen by a judicial system that is brutally corrupt; and the possibility of large-scale, destructive and deadly violence if the outcome is unfavorable. In one of the worst instances -- the highly controversial 2007 General Elections – as many as 1,527 legal petitions were lodged by unhappy candidates that had the financial power to either seek or buy justice. One exasperated observer found incomprehensible the logic of the judicial judgment proffered for one of the legal battles where state governorship was awarded to an individual who was not even on the ballot:

... we have ample cases of technical justice where a person who was not allowed to contest a particular election can also be declared the winner of the same election...the governorship election in Rivers State in 2007 is no doubt a good example. According to the Independent National Electoral Commission (INEC), Celestine Omehia who contested the governorship election under the banner of the Peoples Democratic Party (PDP) won the contest. On the other hand, the Nigerian Judiciary having found that Rotimi Amaechi was the rightful candidate of the party declared him the winner. That was how the election was won. The judgment made some sense to some people but the layman may have found it hard to understand the logic which tended to suggest that persons who voted for Omehia thought it was Amaechi they voted for (Iredia, 2013).

Increasingly, this has not only created a legitimacy crisis for purportedly elected leaders but also informed a number of negative assessments by election observers and scholars alike about the quality of the country’s elections. More importantly, it has had the net effect of engendering serious concerns about, and reduced confidence in, electioneering, democratic institutions and democracy. Clearly, the phenomenon tarnishes Nigeria’s democratic credentials internationally.

Controversial Elections and Democracy in Nigeria

Since 1999, Nigeria has experienced five major electoral seasons; of those, one led to an unprecedented change of power between political parties at the level of the presidency. In the

“electoral turn-over” and “power alternation” perspectives in the literature on elections and democracy and given the regularity of state elections, Nigeria may be adjudged to have performed satisfactorily and, as such, could be deemed to be moving towards democratic consolidation. However, from a liberal democratic perspective on electoral integrity, Nigeria is a country still in search of a truly democratic system. Liberal democracies are characterized by free, fair and competitive electoral systems where power is constitutionally separated and apportioned to different branches of government, and the rule of law is recognized and obtainable in everyday life within an open society in which individuals enjoy full sets of civil, political, and human rights – and equal protection of all their rights and freedoms.

However, the objective reality remains that Nigeria is a country where the president and some government officials and powerful individuals openly ignore legal judgments or the law. Essentially, Nigerians do not enjoy equal rights or protection before the law. As impunity has become the norm with top public officials, it has become normal in private life, across a wide range of social, economic and political activities. It is this development and the associated attitude that has deeply permeated the electoral process and shaped the outcomes of elections in the country. Not surprisingly, until a mild reversal trend occurred with the 2011 and 2015 elections, Nigeria’s electoral outcomes were progressively worse (more corrupt) for each cycle. By 2007, it had become possible not only for incumbents (or a clique) to openly select and enthrone who they want but also for well-placed private persons to do so as happened in Anambra State in 2003 where an individual fraudulently chose the governor and his deputy as well as all the members of the state assembly. In essence, Nigeria’s election results have tended to be incongruent with the popular wishes of the people; hence, many Nigerians lack confidence in the electoral process and the institutions governing it. The net effect is three-fold: the political office holders who emerge from the process struggle with a certain legitimacy burden; because the office holders assumed office without support, many often feel unconcerned about building bridges within their constituencies; and finally, negative impact of the resulting dissonance on governance due to the combination of lack of legitimacy, arrogance about needing support to remain in office, and (sometimes) the need to spend significant amount of financial resources and time in a legal fight to remain in office.

While electoral malpractices in Nigeria have been extensive over the years, scholars and election observers argue that it is incontestable that the 2007 general elections were the worst. For instance, Momoh (2016: 2) notes that while **“the 2003 general elections were frankly scan-**

dalous...the 2007 general elections were nothing but mere allocation of votes to contestants or candidates.” Many other assessments were equally emphatic: for the European Union – “...the worst ever seen anywhere in the world”; Human Rights Watch argued flatly: “Many seasoned observers stated that the 2007 polls were among the worst they had ever witnessed anywhere in the world” (Human Rights Watch, 2007). DFID (2007:1) was detailed in its assessment:

The Nigerian elections of April 2007 were judged by most observers to fall a long way short of the standards for credible, free and fair elections and to be the worst in Nigeria’s post-independence, electoral history. Thus far, elections have served the interests mainly of the powerful elite and have had little, if any, significant impact on deepening representative democracy, let alone transforming people’s socio-economic livelihoods in a positive manner. The reports of domestic and international observers provide confirmation that all stages of the elections were fundamentally flawed

With the general elections that swept him to office roundly criticized and questioned locally and internationally about its freeness and fairness, the Umaru Musa Yar’Adua government took the bold step of commissioning the Electoral Reforms Committee (ERC) to provide recommendations on how best to reform Nigeria’s electoral system. The ERC report and recommendations, which were well received by the public, called for sweeping reforms of the entire electoral process including the restructuring of institutions that relate to the delivery of elections such as INEC, the judiciary, political parties, security forces, and civil society. The report also emphasized the need for attitudinal change on the part of the political elite. Although generally applauded as useful, the ERC report suffered the fate of many other committee reports – perhaps, due to Yar’Adua’s shaky health and eventual death. What was clear was that, as a group, the political elite lacked the will or interest to implement the recommendations of the committee.

Nevertheless, the committee’s efforts were not totally wasted. More than ever before, Nigerians had become more aware of the need for credible management of electoral processes. Maurice Iwu, who had fared very poorly as INEC chair, was replaced by Attahiru Jega. A member of the ERC, Jega was deemed to be generally acceptable both to civil society groups and the general public. The ERC’s report further influenced debates in the public space, which ultimately led to aspects of the reform measures taken at the governmental level. For instance, some amendments were made on the 1999 Constitution and the Electoral Act (2010), which

enhanced the independence and capacity of INEC, improved the governance structure of political parties, and restructured election timelines and the structure of election jurisprudence (Onapajo, 2015).

The changes notwithstanding, the next general election in 2011 was also scarred by serious large-scale violence despite being widely praised and adjudged as a radical shift from previous elections. The carnage that followed the announcement of the results led to more than 800 deaths and 65,000 people being rendered homeless within three days of rioting in 12 northern states. Though an improvement from the 2007 elections, there were indications that the results for the presidential and federal parliamentary seats as well as the state level processes were neither free nor fair. However, it was the presidential results that particularly triggered anger in the north. Reputedly, many northerners claimed that sophisticated fraudulent acts were used to rig the elections in favor of Goodluck Jonathan, the incumbent President and a southern Christian, over Muhammadu Buhari, a northern Moslem (Onapajo, 2012).

Electoral Reforms and the Introduction of the Technological Model in Nigeria

Jega, Nigeria's INEC chair, had assumed his responsibilities fully inspired by the new powers and opportunities introduced through the reforms instituted by the Yar' Adua government, such as increased independence and freedom to change rules, procedures, and instruments that obstruct effective electoral processes and high quality elections. The institution sought to tackle process challenges such as: fake registrations; vote buying; rampant bribery; vulnerability of election materials and officials to hijacking or manipulation; and poor training of ad hoc staff and use of incompetent staff. They also delved into other problem areas: structural issues within INEC; policy issues with respect to the formulation, implementation, and monitoring of new policies to enhance the quality of elections; and strategic and planning issues to ensure greater levels of efficacy.

Given the centrality of electoral malpractices in undermining efforts to emplace democratic values and democracy in Nigeria, INEC's most visible and far-reaching policy reform, understandably, focused on targeting the perennial issue of electoral fraud. In line with emerging trends around the world, INEC sought to stop electoral fraud by deepening modernizing efforts previously initiated (in an environment where it lacked adequate authority and official political backing). It began to make sweeping reforms of the electoral system in Nigeria through the in-

roduction or strengthening of new technologies in the electoral process as a bulwark against human fallibility, incompetence, or weakness to irregular inducements. The idea was to prevent electoral fraud, reduce electoral disputes, and encourage voter participation.

Clearly, the issue of electoral malpractice had become so huge in Nigeria that the country was desperate for an effective solution even if it meant introducing controversial electronic systems that were being challenged in other countries. With Jega's commitment and the strengthened authority of INEC, the deepening of technology-based strategies began to reverse the trend of electoral impunity and fraud. The innovations, which were first rolled out in the 2011 general elections, kicked off with the introduction of a new biometric system for voter registration. This effort resulted quickly in a significant reduction – more than 870,000 -- of fake and multiple entry voter registrations (INEC, 2011).

The lessons learnt from the challenges and successes in the 2011 elections were used by INEC to build a technological framework for the 2015 general elections. It deployed the Automated Fingerprint System (AFIS), the Permanent Voter Cards (PVC), and Smart Card Reader (SCR) technologies. The AFIS detected over 80,000 fake entries and weeded out fictitious names in the register; this reduced significantly the number of registered voters from 73,528,040 million to 68,833,476 million. The PVC was introduced as a replacement for the Temporary Voter Cards (TVC). Unlike the TVC, the PVC is a machine readable card with a chip that stores the biometrics of legitimate holders. The verification of the authenticity of the card and the data of each prospective voter was a pre-requisite for voting on Election Day (Agbu, 2016). The SCR was meant to complement the other electronic devices in ensuring the integrity of the elections. Using a reputedly secure and cryptographic technology, the SCR was the electronic and scientific tool used to verify the PVC at the polling units (Agbu, 2016).

But, are electronic devices necessarily the best way to redress serious challenges in Nigeria's electoral processes? Is Nigeria well positioned now to manage effectively already known weaknesses of such devices? Given Nigeria's highly charged and culturally segmented environment, will INEC and the sitting government be able to weather a political storm if a section of the country perceives/believes that (yet again) a governance mandate has been stolen? Clearly, any perception that a political system is affected by electoral malpractices intrinsically undermines its democracy and the principles that underpin its democratic values. This is because "they take away from individuals the right to vote as they wish, distort the results of elections and weaken the legitimacy of elected bodies, and they cause mistrust between com-

munities” (Electoral Commission - UK, 2017). Potentially, this situation is massively exacerbated by electronic devices whose growing use and influence in the running of elections has become a doubled-edged sword for all countries. But for countries that lack the technical skills to control or deal effectively with possible threats from internal and external sources seeking to manipulate election results – such as independent hackers or product insiders (companies responsible for the development of the products’ hardware or software) – electronic devices pose a very real danger to their national security.

The issue is simple. Electoral fraud under manual voting systems, which are now being phased out, tended to be largely localized and limited in geographical spread. By contrast, the new electronic voting systems, which are fast replacing the manual ballot boxes around the world, can “allow insiders to rig elections on a statewide or even national scale. And whereas once you could catch the guilty parties in the act... the virtual vote count can be manipulated in total secrecy” (Collier, 2012). For culturally segmented countries like Nigeria, where electoral processes and activities are often seen in ethnic, religious or regional terms, electoral fortunes can become a matter of life and death. Currently, Nigeria does not produce electronic devices for elections and does not have the technical capacity to ensure that it is calibrated appropriately and consistently, and that any illegal interference is detected and handled quickly. Beyond the huge stakes locally where a technological equivalent of an arms race can be triggered by parochial interests, there is also the matter of another country (or private company) deciding to pick and support its own choice of leaders for the country by manipulating results without even setting up operations within the country. As such, electoral fraud has the potential of not only triggering conflict or war between antagonistic population groups, but also of being manipulated by a rival (hostile) foreign government or private corporation with the technical capacity either to hack into, or use its bonafide code to access the anchoring computer systems or paraphernalia used to run an election.

Technological Model as Solution: Blazing New Trails or Stroking Old Fires?

Clearly, a measure of the success of INEC’s technological innovations in improving the quality of elections is the positive ratings and popular acceptance of the 2015 general election outcomes. As Onapajo (2015: 581) notes: “indeed, the fact that the outcome of the elections was trusted and accepted by the majority, including the incumbent president who lost to the opposition...demonstrates the extent to which the reforms improved the quality of the elections.”

Many experts and practitioners believed and argued that, indeed, the 2015 elections in Nigeria were not only transparent and free but also fair and credible and, as such, had served to deepen democracy and democratic values in Nigeria. This, it was believed, was evidenced by the fact that the country experienced a sharp decline in election petitions when compared to the previous elections.

Indeed, the 2015 presidential election was a watershed event in Nigerian history because it was the first time since 1999 that a presidential election was not contested in the courts. The European Union Elections Observation Mission (EU EOM) noted approvingly: “Election day overall passed peacefully with appropriate performance by security agencies and EU EOM observers saw no evidence of systematic manipulations” (EU EOM, 2015: 1). Also the Commonwealth Observer Group (COG) concluded that “notwithstanding the organizational and technical deficiencies, the conduct of the Presidential and National Assembly Elections were generally peaceful and transparent” (COG, 2015).

Seemingly, the reform efforts to stem electoral rigging and other fraudulent practices had worked during the 2015 elections. They were reduced because of the digitization measures, which made electoral manipulation more difficult. The cases of impersonation, inflated figures, vote buying, ballot snatching, and other methods politicians use to manipulate the votes were controlled. Furthermore, the strategies made accreditation less cumbersome and more transparent, and provided backup information that could assist in electoral adjudication should they occur (Momoh, 2016).

Still, notwithstanding compelling evidence that the 2015 elections produced relatively better outcomes regarding quality -- and that as with other countries (such as India and Brazil) that digitalized voting systems save costs and facilitate faster electoral processes than the manual ballot card processes -- there were equally strong evidences that the elections were not entirely free of rigging and other forms of manipulations. In northern Nigeria, rampant cases of underage voting were reported by observers. Minors in several states including Kano, Jigawa, Katsina, Gombe, Bauchi, Katsina and Kogi states were reportedly in possession of the PVCs (Agbu, 2016). Highly controversial results, over inflated figures, and sabotaged SCRs were reported in the South-South zone. In Rivers States, for example, the PDP gubernatorial candidate was awarded 1,029,102 votes, which were clearly inconsistent with the official number of accredited voters of 292,878 (Agbu, 2016). Most states in the Niger Delta region were also engulfed in large-scale violence aimed at intimidating prospective voters and election officials. Other cases

of connivance of the INEC officials with politicians to manipulate the elections were reported (Agbu, 2016).

Electoral fraud in the 2015 elections cycle was further aggravated by the technical and logistical problems encountered by INEC, which necessitated recourse to manual accreditation at about 300 polling areas. It seems that some politicians created or exploited technical challenges to ensure or facilitate opportunities to engage in various forms of electoral malpractices that were commonplace in the old voting system. Some analysts have raised fundamental issues on the extent to which the Anti Electoral Fraud Procedures (AEFP) used by INEC actually prevented electoral malpractices. They suggest that the general insecurity within the country, the lack of confidence about the electoral environment, and the ratio of actual voter turnout to registered voters “speaks of peace in the electoral process” (Ayinde and Idowu, 2016:50).

Agreeing that the 2015 elections had limited success, Momoh (2016) underscores several reasons for the cases of manipulations and fraud experienced in the elections despite the digitization exercise:

The lack of sufficient pilot exercises with the SCRs;

Lackadaisical attitude towards training on the use of the SCRs by many ad hoc staff and thus their display of inexperience on the field;

Sabotage and compromise by some election officials; inadequate security for the SCRs like other sensitive materials;

Criminal acts of collection of PVCs by proxies with the intention of impersonation; and

Data mismatch in such a way that there was conflict between the biometric data and the true identity of voters.

In essence, the 2015 electoral outcomes could have been better managed if INEC was better prepared and supported by government.

Anti-Rigging Devices and National Security: Much Ado about Nothing?

A series of high profile cyber attacks on voter registration systems in at least 20 [American] states -- and a massive breach this spring of databases used by the Democratic National Committee and Hillary Clinton's campaign -- has set a sizable portion of the public on edge. Almost six-in-ten US voters believe it's likely electronic voting machines could be hacked during the election, according to cyber security firm Carbon Black. And recent research shows it's easier than some might think. Last week, Symantec released the results of a simulated election it ran during the Black Hat conference in August using an electronic voting machine it bought at auction. The company found numerous vulnerabilities in the machine that left it open to manipulation (Moraff, 2016).

Electronic voting machines are produced by dozens of companies around the world. Together,

there are about five general categories; but, two general categories of electronic voting machines seem to be predominant: Optical-Scan Paper Ballots (OSPB) and Direct Recording Electronic (DRE) Systems. With OSPBs, for instance, voting is done by marking the ballots in pencil, and then feeding into a machine that scans it, records the information, and stores it electronically before discarding the paper ballot into a safe box for manual recount, if required (Moraff, 2016). One key advantage of the OSPBs is that they keep a tangible record of the voter's intention. Unfortunately, they also have many demonstrable points of vulnerability with respect to tabulation fraud, chain voting, and tampering. However, some experts argue that most challenges associated with OSPBs can be moderated or prevented altogether through various means such as introducing a cryptographic verification mechanism.

DRE voting systems record votes when a voter activates a button or touchscreen in response to a ballot display. The resulting data from voters are processed, stored and tabulated electronically at the end of the voting process in computers using voting system software. DRE machines can transmit results that may be used to provide complex assessments of voting patterns in formats (precincts, regions, states, age, ethnicity/race, affiliations, etc.). The adaptability of the machines for complex social environments (language groups, handicapped persons) and detecting technical challenges make DREs both accessible and popular with election officials. However, as with other electronic voting devices, DREs can be easily rigged not only through external hacking but also through insiders including government officials and hardware and software producers. In that regard, many experts and practitioners easily agree. For instance, the Brennan Center for Justice warned in a September 2016 report (before the US elections) that voting machines across the United States were very vulnerable to attacks (Barrett, 2016). Indeed, the US Secretary for Homeland Security, Jeh Johnson, had also conceded the need to make "longer-term investments...in the cybersecurity of our election process" (Wofford, 2016). Similarly, dozens of security experts at the Aspen Institute (2016) issued a public statement that:

Election officials at every level of government should take this lesson to heart: our electoral process could be a target for reckless foreign governments and terrorist groups. The voting process is critical to our democracy and must be proof against such attacks or the threat of such attacks. Voting processes and results must receive security akin to that we expect for critical infrastructure.

Indeed, many experts are often able to demonstrate that electronic voting machines are

so readily accessible to hackers that “elections could be vulnerable at myriad strike points, among them the software that aggregates the precinct vote totals, and the voter registration rolls that are increasingly digitized. But the threat, the cyber experts say, starts with the machines that tally the votes and crucially keep a record of them -- or, in some cases, don't” (Wofford, 2016). Clearly, it was those and related concerns such as Gore’s “stolen” presidential mandate that led to worries about the integrity of election results in America. Donald Trump’s alarmist claims while running for the American Presidency demonstrated how the prospect of manipulation may create serious questions about the integrity of an electoral process.

In fact, several countries are beginning to re-assess their use of electronic devices with a view to either discard them altogether or strengthen the management and integrity of the system. For instance, the Netherlands, which had used mechanized voting since 1965 and where nearly all elections were done electronically before 2008, had already rejected electronic voting systems due to issues about recounts and certification of results and “minor” errors in the tabulation software. The two issues had triggered some discussions in the media which, in turn, had triggered a red flag on the integrity of elections in the country; hence, the decision to revert to a paper balloting system. Similarly, Ireland had also scrapped its divisive electronic voting system in 2009 due to security and transparency issues that were raised about the trustworthiness of the system.

Still, despite challenges with electronic devices in other countries and during the 2015 Nigerian elections, the Nigerian government and citizens seem poised to retain their continued use in managing electoral processes in the country. In fact, in March 2017, the Nigerian National Assembly amended the Electoral Act to properly institutionalize the PVCs and SCRs and other technologies deemed relevant for INEC’s efforts to improve the integrity of elections. Clearly, keen to end negative experiences from the massive irregularities – including issues of integrity, transparency, accountability; colossal corruption; domineering activities and administrative failures -- associated with the traditional voting system in past elections, the Nigerian government seems determined to proceed with electronic devices. This is despite already known problems in both its experience and those of other countries. Does the usefulness of the technological model in giving a measure of credibility and transparency to electoral processes trivialize its vulnerability to massive fraud? For technologically poor or socially segmented countries with highly contested political systems such as DRC, Kenya, Mozambique, Nigeria, South Su-

dan, or South Africa, prospects of elections rigging may not only undermine electoral credibility but also could lead to serious pre or post elections violence.

As previously underscored, voting devices can be hacked or manipulated by a local company or an individual wishing to take political office or to determine those that do; or, a corrupt public official who is available for hire. They can also be hijacked by a foreign or hostile government or multinational corporation intent on shaping the domestic or foreign policies of its target country in line with its own interests. As such, electronic voting devices can constitute a severe threat to the national security of a country such as Nigeria. Countries such as the United States, France and the United Kingdom have a history of dabbling into the internal politics of other countries and actually installing or trying to install favorable governments. Countries in Africa and beyond -- such as Chile, Brazil, DRC, Gabon, Ghana, Guinea, Mexico, and Panama -- have been victimized in the past. Recent events in Kenya, where the manipulation of electoral devices have been blamed for the court decision to re-run its highly charged, costly and divisive presidential elections, may be instructive. Do Nigerian courts and political leaders have the will and wisdom to handle such matters as calmly and effectively as the Kenyans have done so far? Sadly, the evidence is not encouraging. Given the efforts of state security organs -- such as the Central Intelligence Agency (CIA) -- aimed at shaping electoral outcomes in other countries, the manipulation of electoral outcomes would be more attractive and far cheaper (and provides a greater opportunity for plausible deniability) than military action and other forms of intervention.

In fact, despite ongoing American complaints (and suggestions of moral superiority) about the apparent successful Russian manipulation of the outcome of the 2016 US presidential elections, it was only a payback for US manipulations of elections results in Russia where the US pushed aggressively behind the scenes to shape electoral outcomes in favor of a former Russian President, Boris Yeltsin. If America, Russia or other such powers can target rival states and technologically powerful countries, what guarantee does one have that the electoral processes of incorrigibly corrupt or comparatively weak/vulnerable countries such as Nigeria (and many other developing countries) would not be targeted for exploitation? Clearly, the presumption of technological inevitability regarding electoral devices is premature now -- even if it is adjudged to anticipate the future of democratic elections. But before that can happen, care must be taken to ensure that electronic devices do not torpedo the development and deepening of the values that underpin democracy by undermining its linchpin -- electoral processes.

Recommendations

To ensure and deepen the vitality of democracy and the maintenance of peace and order within society, the integrity of electoral system is essential. For that to happen, we recommend procedures that may ensure credible electoral processes and strengthen democracy through the appropriate utilization of technological devices.

Elections and associated equipment as national security issues:

The electoral processes and the associated equipment should be formally regarded as national security matters. As such, appropriate laws should be put in place to govern the use and handling of electoral devices.

Analysis of the use and implications of technological devices:

The use of smart card readers and other technological devices should be revisited formally with a view to identify and vet all crucial issues around their deployment and implications for the electoral system, democracy and the national security of Nigeria. This should not only draw from Nigeria's local experiences but also the experiences of other countries; and from assessments of potential subterfuge and the associated implications for national security.

Training of equipment and software experts: The adoption and introduction of technological devices for Nigerian elections should entail (at minimum) the development of a strong pool of certified skilled experts in all areas pertaining to such devices including equipment design and assessment, and software development and monitoring.

Certification of experts: all experts directly involved in the use and monitoring of the devices must undergo certification processes including appropriate tests, assessments, and clearances to handle, evaluate, and work with such equipment and software.

Procedural enhancement for election practitioners: this is critical for ensuring orderly processes and national security. Stringent rules on qualification and disqualification should be put in place to govern all candidates and legal practitioners. According to McCormack (2016), the procedures should include the following steps:

- I. Rigorous pre-election testing and post-election auditing of the vote count
- II. Introduction of third-party/independent auditing of the voting system software and source codes

- III. Inviting party representatives and outside observers into all stages of the election process; and
- IV. Parallel vote counting (an election observation methodology based on random sampling of voting sites to independently verify election results). These procedures should also be applied to the Nigerian electoral processes to guarantee the security of the voting technologies and people authorized to handle them.

Accessibility of up-to-date information on all steps of the elections: To ensure transparency in the system, it is crucial that all information related to elections from the pre-election to the post-election periods should be regularly updated on the website of INEC and made available for easy accessibility to the public. Most importantly, the accredited voters and their polling units and results of elections at each polling unit should be officially available in the media platforms of INEC as they are counted. Clearly, this will discourage falsification of data and results by politicians and compromised election officials.

Electronic monitoring by civil society groups: efforts should be made to ensure additional layer of protection of election processes by enabling the involvement of civil society organizations in monitoring electoral processes and reporting fraudulent actions.

Increased public education: The stakeholders involved in the electoral process such as INEC, political parties, the media, and civil society organizations should be enabled to educate the public properly about the voting processes and the use of enabling technologies. Enough education about the procedures will empower prospective voters to know when manipulations are being perpetrated by election officials and politicians. This may be easily reported through election or electronic monitoring methods.

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