



## **Democracy, Technology, and Electoral Violence in Africa: Lessons from Nigeria, Ghana, and Kenya**

**Testimony Omole**

*Corresponding Author*

Alumnus, Department of Political Science, Prince Abubakar Audu University, Anyigba,  
Nigeria

[omoletestimony2016@gmail.com](mailto:omoletestimony2016@gmail.com)

**Daniel Enock Manoba**

Teaching Assistant, Department of Political Science, University of Ghana, Accra, Ghana

[danielmanoba47@gmail.com](mailto:danielmanoba47@gmail.com)

**Obasesam Okoi**

Assistant Professor, Department of Justice and Society Studies, University of St. Thomas,  
Minnesota, USA

[ookoi@stthomas.edu](mailto:ookoi@stthomas.edu)

### **Abstract**

Election-related violence has become a persistent challenge across the African continent, frequently occurring in the aftermath of elections when dissatisfied citizens protest against perceived electoral fraud. Often, these protests escalate into violent conflicts. In response to demands for more credible and transparent elections, many African governments have integrated Information and Communication Technology (ICT) into their electoral

processes to reduce irregularities and enhance election integrity. This study investigates the impact of ICT adoption on the stability of African states, with a particular focus on Nigeria, Ghana, and Kenya. The findings indicate that, despite ICT integration, electoral irregularities and subsequent violent protests persist. The findings suggest that while ICT has contributed to the electoral process, it alone is insufficient to efficiently address the underlying issues of electoral fraud. The study advocates for a comprehensive approach to electoral reform, emphasizing the need for improvements across various facets of the electoral system, including managerial, monitoring, and oversight mechanisms.

**Keywords:** Election, Violence, Information Communication Technology, ICT, Election Irregularities, Protest, Electoral Commission.

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## **Introduction**

Electoral irregularities, including malpractices and violence, remain persistent challenges to the democratization process across the African continent. In response to these challenges, Information Communication Technologies (ICTs) have been introduced to strengthen public trust in electoral management bodies by mitigating opportunities for election manipulation, enhancing efficiency, promoting transparency, and fostering legitimate governance. However, the administration of credible elections has not significantly improved, despite the widespread adoption of digital technology. Africa continues to grapple with electoral irregularities despite efforts to advance a computerized democracy where aspects of the voting process rely on ICT.<sup>1</sup> Electoral malpractices and electoral violence often coexist, acting as two sides of the same coin, each perpetuating and exacerbating large-scale violence and conflict within African democracies. Electoral irregularities, particularly fraud, acts as root cause of election-related violence, provoking violent protests among aggrieved masses.<sup>2</sup>

Electoral violence in Africa frequently manifests in two primary forms: violent protests against electoral rigging, whether real or perceived, and state-sponsored suppression, often involving forceful responses to dissent, which further escalates the cycle of violence. In this research, electoral violence refers to acts of killing, harm, destruction, or damage as expressions of anger, indignation, or disappointment concerning the conduct of an election or its outcome.

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<sup>1</sup> Kofi Boateng and Mawulorm Akaba, "Computerizing the Voting Process: On the Difficulties and Benefits of Biometric Verification Elections," *Lecture Notes on Software Engineering* 3, no. 1 (2015): 67–72.

<sup>2</sup> Ashish Chaturvedi, "Rigging Elections with Violence," *Public Choice* 125, no. 1 (2005): 189–202.

Electoral irregularities, on the other hand, refer to errors that influence electoral procedures or results. This includes illegal actions, human or machine errors, or manipulations of electoral materials, all of which undermine electoral integrity to advance personal or partisan interests. Thus, this study captures irregularities arising both from systemic failures and deliberate actions aimed at influencing electoral outcomes in the selected African case study countries.

The integration of ICT into electoral processes in Africa has led to notable advancements, particularly in areas such as the expedited transmission of results, efficient coalition-building, and improved accessibility.<sup>3</sup> Despite these successes, it has yet to meaningfully resolve the persistent issues of electoral irregularities and associated violence. Even in nations considered leaders in ICT adoption, such as Nigeria, Ghana, and Kenya, these problems endure. Nigeria, for instance, has experienced significant post-election violence characterized by widespread riots and destruction of lives and property.<sup>4</sup> Similarly, Ghana's 2020 elections witnessed violent protests,<sup>5</sup> while Kenya endured severe electoral violence following its contentious 2017 presidential elections.<sup>6</sup> This raises the question: why does electoral violence persist in Nigeria, Ghana, and Kenya despite the adoption of ICT tools aimed at addressing election irregularities that often trigger such violence?

The research addresses a gap in the existing literature, which has predominantly focused on the role of political actors in using violence to manipulate electoral processes. Most studies<sup>7</sup>

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<sup>3</sup> Ameen Abdulkadir, "Securing Credible Elections in Africa through ICT: An Appraisal of Nigeria," *Acta Universitatis Danubius* (2015), <https://dj.univ-danubius.ro/index.php/AUDRI/article/view/879/1535>.

<sup>4</sup> John Campbell, "What Went Wrong with Kenya's Elections?" *Council on Foreign Relations* (2017), <https://www.cfr.org/expert-brief/what-went-wrong-kenyas-elections>; Henrik Angerbrandt, "Deadly Elections: Post-Election Violence in Nigeria," *The Journal of Modern African Studies* 56, no. 1 (2018): 143–67, <https://www.jstor.org/stable/26847026>; Kelvin Ashindorbe, "Electoral Violence and the Challenge of Democratic Consolidation in Nigeria," *India Quarterly* 74, no. 1 (2018): 92–105, <https://doi.org/10.1177/0974928417749639>; News24, "Ghana Opposition Supporters Protest against Election Results," (2020), <https://www.news24.com/news24/africa/news/ghana-opposition-supporters-protest-against-election-results-20201217>

<sup>5</sup> Mawusi Yaw Dumenu and Mildred Edinam Adzraku, "Electoral Violence and Political Vigilantism in Ghana: Evidence from Selected Hotspots," *Ghana Center for Democratic Development (CDD-Ghana)* (2020), [https://www.undp.org/sites/g/files/zskgke326/files/migration/gh/UNDP\\_GH\\_Report\\_-\\_Electoral-Violence-and-Political-Vigilantism-in-Ghana.pdf](https://www.undp.org/sites/g/files/zskgke326/files/migration/gh/UNDP_GH_Report_-_Electoral-Violence-and-Political-Vigilantism-in-Ghana.pdf).

<sup>6</sup> Human Rights Watch, "Kenya: Police Killed, Beat Post-Election Protesters," (2017), <https://www.hrw.org/news/2017/10/16/kenya-police-killed-beat-post-election-protesters>.

<sup>7</sup> Jakkie Cilliers, "Violence in Africa: Trends, Drivers and Prospects to 2023," *Institute for Security Studies* (2018), <https://issafrica.org/research/africa-report/violence-in-africa-trends-drivers-and-prospects-to-2023>;

Frank Bitafir Ijon, "Election Security and Violence in Ghana: The Case of Ayawaso West Wougou and Talensi By-Elections," *Asian Research Journal of Arts & Social Sciences* 10, no. 1 (2020): 32–46; Emmanuel Lambe Oyewole and Mubarak Suleiman Jamui, "Political Conflict and Electoral Violence in Nigeria: Implications on National Security," *African Journal of Politics and Administrative Studies* (2023); John Ishiyama, Michael Christopher Marshall, and Brandon Stewart, "Are Former Rebel Parties More Likely to Engage in Electoral Violence in Africa?" *Journal of Elections, Public Opinion and Parties* 33, no. 2 (2023): 278–299

tend to overlook other forms of electoral violence, particularly those arising from public protests against perceived irregularities in election procedures or outcomes. To bridge this gap, our study moves beyond the conventional focus on politically orchestrated violence, shedding light on election-related violent protests and mob attacks and providing a more comprehensive understanding of the link between ICT adoption, electoral irregularities, and violence, offering recommendations that could inform policies aimed at improving electoral processes in the selected countries.

### **Methodology**

The study is primarily qualitative in nature and adopts a descriptive approach and relies on deductive reasoning to address its central inquiry. Data for the study are drawn from a variety of secondary sources, including scholarly books, academic peer-reviewed journals, official reports, and news articles from reputable local and international media outlets. The analysis is conducted using thematic data analysis, a method particularly suited for identifying, analyzing, and reporting patterns within the data.<sup>8</sup> This analytical approach enables the study to substantiate its central arguments effectively and systematically. Particularly, thematic data analysis helps us to identify correlations in our analysis of electoral violence vis-à-vis the adoption of ICT in Nigeria, Ghana, and Kenya. The scope of the study focuses on the limitations of ICT in addressing electoral irregularities, a persistent catalyst for electoral violence in Africa.

It places special emphasis on Nigeria (2011-23), Ghana (2012-22), and Kenya (2017-21). The three were among the first set of countries that adopted ICT in electoral processes in sub-Saharan Africa. Hence, these three countries and the specific periods were purposefully selected as they mark defining moment in the introduction and implementation of ICT for electoral purposes in the region. By examining these cases, the study provides critical insights into the challenges and shortcomings of ICT in mitigating election-related irregularities and violence.

### **Theoretical and Empirical Foundations of Electoral Violence in Africa**

Several African studies have attempted to unpack the various complex factors undergirding electoral violence in the continent. On one hand, an ample number of such studies

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<sup>8</sup> Michelle E. Kiger and Lara Varpio, "Thematic Analysis of Qualitative Data: AMEE Guide No. 131," *Medical Teacher* 42, no. 8 (2020): 846–854.

extensively focus on the dynamics of electoral violence in a national space. On the other hand, some of the studies are cross-national in scope. However, a consistent pattern in these studies is their narrow analytical focus on the weaponization of violence by powerful interests to manipulate electoral processes and outcomes.

The “frustration-aggression theory” ranks among the most prolific theories in violence research. While the theory has been applied in different domains, it is particularly relevant for this study, given the close link between public dissatisfaction (which often causes frustration) and aggression.<sup>9</sup> The theory was initially proposed by Dollard et. al as a theory of aggression,<sup>10</sup> and further developed by Berkowitz.<sup>11</sup> The frustration-aggression theory posits that frustration consistently leads to aggression in human society. Frustrations are aversive events but trigger aggressive inclinations only to the extent that they produce a negative effect.<sup>12</sup> He further asserted that public disapproval in a given environment could instigate aggressive manifestations. In this context, dissenters deemed the observable election irregularities as grossly unfair, which consequently fueled their frustration. In turn, the frustration snowballed into aggression, manifesting in the form of violent protests. The theory is also premised on the knowledge that those frustrated usually direct aggression towards the party believed to be responsible for their frustration. Accordingly, protesters in these countries directed aggression against their respective governments, believing the latter had failed in delivering credible elections, notwithstanding the integration of ICT into the electoral system.

## **ICT Failure and Electoral Violence: Case Study Analysis**

### **1. Nigeria**

In 2011, Nigeria integrated ICT into its electoral process when the country’s Independent National Electoral Commission (INEC) introduced the Automated Fingerprint Identification System to prevent multiple voter registrations.<sup>13</sup> Similar to other African nations,

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<sup>9</sup> Johannes Breuer and Malte Elson, “Frustration-Aggression Theory,” in *The Wiley Handbook of Violence and Aggression*, ed. Peter Sturmey (2017), [https://www.researchgate.net/publication/321776001\\_Frustration-aggression\\_theory](https://www.researchgate.net/publication/321776001_Frustration-aggression_theory).

<sup>10</sup> John Dollard, Neal E. Miller, Leonard W. Doob, Orval Hobart Mowrer, Robert R. Sears, Clellan S. Ford, Carl Iver Hovland, and Richard T. Sollenberger, *Frustration and Aggression* (London: Routledge, 2023).

<sup>11</sup> Leonard Berkowitz, “Frustration-Aggression Hypothesis: Examination and Reformulation,” *Psychological Bulletin* 106, no. 1 (1989): 59–73, <https://doi.org/10.1037/0033-2909.106.1.59>.

<sup>12</sup> Ibid.

<sup>13</sup> Abiodun Fatai, “Nigeria’s Election Was Nearly Derailed by Technology – but Biometric Devices Weren’t the Problem,” *The Conversation* (2023), <https://theconversation.com/nigerias-election-was-nearly-derailed-by-technology-but-biometric-devices-werent-the-problem-200936>.

the adoption of digital technology in Nigeria's electoral system initially raised public hopes for smooth, free, and fair elections that would advance the country's democratic trajectory.<sup>14</sup> However, these aspirations have been undermined by persistent technical failures and deliberate illegal actions by electoral officials to manipulate election outcomes.<sup>15</sup>

Despite the integration of ICT into the electoral process, Nigeria has continued to experience violent election protests stemming from widespread irregularities. Like Ghana and Kenya, Nigeria has a troubling history of election-related violence. For instance, following the 2011 elections, which marked the foregrounding of ICT in Nigeria's electoral system, violent protests erupted, resulting in the deaths of 800 people. Protesters, believing the election results to have been rigged, engaged in mob attacks across twelve northern states.<sup>16</sup> During the same unrest, 350 churches and a police station were set ablaze, and at least 200 patients were treated for injuries caused by machetes and gunfire.<sup>17</sup>

The 2015 elections were similarly marred by violence. For example, one person was killed during a large-scale protest in Ekiti State by supporters of the Peoples Democratic Party (PDP) who rejected the election results.<sup>18</sup> In addition, Attahiru Jega, the former chairman of the Nigerian Electoral Commission, reported that electoral commission offices in Rivers State were burned by protesters following allegations of technical glitches in ICT tools, underage voting, and the substitution of electoral officials.<sup>19</sup>

Further evidence of the ICT system's limitations emerged in Ogbeide-Ihama's study of 315 respondents during the 2015 and 2019 elections.<sup>20</sup> The study revealed significant flaws, including the failure of biometric card readers to authenticate voters' fingerprints, which contributed to electoral malpractices. In the aftermath of the 2019 elections, Human Rights

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<sup>14</sup> Chijioko Iremeka, "Electoral Fraud, Technology and Future of Nigeria's Democracy," *The Guardian (Nigeria)* (2023), <https://guardian.ng/saturday-magazine/electoral-fraud-technology-and-future-of-nigerias-democracy/>.

<sup>15</sup> Adebayo Abdulrahman, "Did Nigeria's Election Tech Fail or Was It Sabotaged?" *African Arguments* (2023), <https://africanarguments.org/2023/03/did-nigeria-election-tech-bvas-fail-or-was-it-sabotaged/>.

<sup>16</sup> Human Rights Watch, "Nigeria: Post-Election Violence Killed 800," (2018), <https://www.hrw.org/news/2011/05/16/nigeria-post-election-violence-killed-800>.

<sup>17</sup> Al Jazeera, "Hundreds Dead in Nigeria Post-Poll Violence," (2011), <https://www.aljazeera.com/news/2011/4/20/hundreds-dead-in-nigeria-post-poll-violence>.

<sup>18</sup> Morgan Winsor, "Nigeria Elections 2015 Considered 'Peaceful' Despite Rising Death Toll and Violence," *International Business Times* (2015), <https://www.ibtimes.com/nigeria-elections-2015-considered-peaceful-despite-rising-death-toll-violence-1874714>.

<sup>19</sup> Attahiru Jega, "Nigeria Elections: Protests Erupt Following Knife-Edge Vote," *The Guardian* (2015), <https://www.theguardian.com/world/2015/mar/29/nigeria-elections-jega-protests-calls-for-re-vote>.

<sup>20</sup> Igbinsola Ogbeida-Ihama, "The Effect of ICT on the 2015 and 2019 Presidential Elections: Case of Bwari Area Council," *National Institute for Legislative and Democratic Studies (NILDS)* (2022), University of Benin (UNIBEN).

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Watch documented 11 deaths attributed to election-related violence.<sup>21</sup> Additionally, protests against the election procedures and results escalated as the Nigerian police used live ammunition and tear gas to disperse protesters, further exacerbating the violence.<sup>22</sup> A report by SBM Intelligence on the 2019 electoral cycle underscored the scale of election-related violence, documenting a total of 629 deaths.<sup>23</sup> However, the report did not specify how many of these fatalities were directly linked to protest-related violence. The cumulative evidence highlights the persistence of electoral violence in Nigeria, despite the adoption of ICT tools intended to enhance transparency and credibility in the electoral process.

Before the 2023 elections, INEC announced the adoption of a new digital system known as the Biometric Voter Accreditation System (BVAS).<sup>24</sup> The primary rationale for introducing this technological equipment was to enhance the credibility of the electoral process and ensure violence-free elections. However, the 2023 presidential elections were marked by significant discontent, particularly among the youth, who resorted to violent protests in Rivers State, deeming the elections fraudulent.<sup>25</sup> Despite the integration of ICT, Akinwotu contends that the elections were marred by disorganization, violence, and technical failures involving the BVAS machines.<sup>26</sup> Abdulrahman further corroborates these findings, noting widespread irregularities that fueled dissatisfaction and tension, especially among the youth.<sup>27</sup>

One of the major issues recorded was the absence of data service and cellular network connectivity at some polling units, which forced voters to use their mobile hotspots to enable electoral officials to upload election results.<sup>28</sup> In other instances, electoral officials lacked the technical expertise to operate the BVAS machines, contributing to breakdowns and operational delays.<sup>29</sup> As a result, machine failures, network disruptions, and other irregularities fell short

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<sup>21</sup> Human Rights Watch, "Nigeria: Widespread Violence Ushers in President's New Term," (2019), <https://www.hrw.org/news/2019/06/10/nigeria-widespread-violence-ushers-presidents-new-term>.

<sup>22</sup> Ibid.

<sup>23</sup> SBM Intelligence, "Election Violence in Numbers," (2019), <https://www.sbmintel.com/2019/03/election-violence-in-numbers/>; Policy and Legal Advocacy Centre (PLAC), "Nigeria's 2023 General Elections: A Return to the Old Ways," (2023), <https://placng.org/Legist/nigerias-2023-general-elections-a-return-to-the-old-ways/>.

<sup>24</sup> Mariam Ileyemi, "Nigeria Deploying Technology to Ensure Nigerians' Votes Count," *Premium Times* (2022), <https://www.premiumtimesng.com/news/top-news/558267-2023-inec-deploying-technology-to-ensure-nigerians-votes-count-yakubu.html?tztc=1>.

<sup>25</sup> Ann Godwin, "Violence in Rivers as Voters Protest 'Manipulation' of Results," *The Guardian* (2025).

<sup>26</sup> Emmanuel Akinwotu, "Nigeria's General Election Saw Disorganization and Violence," *NPR* (2023), <https://www.npr.org/2023/02/27/1159822850/nigerias-general-election-saw-disorganization-and-violence>.

<sup>27</sup> Adebayo Abdulrahman, "Did Nigeria's Election Tech Fail or Was It Sabotaged?" *African Arguments* (2023), <https://africanarguments.org/2023/03/did-nigeria-election-tech-bvas-fail-or-was-it-sabotaged/>.

<sup>28</sup> Ibid.

<sup>29</sup> Frank Eleanya, "INEC Fails Nigeria on E-Transmission of Results," *Business Day* (2023), <https://www.google.com/amp/s/businessday.ng/technology/article/inec-fails-nigeria-on-e-transmission-of-results/?amp>.

of public expectations for credible elections, prompting frustrated citizens to engage in protests.<sup>30</sup> Additionally, both the PDP and the Labour Party took legal action against INEC, accusing the electoral commission of conducting a fraudulent and manipulative election.<sup>31</sup> The Policy and Legal Advocacy Centre (PLAC) echoed these concerns, reporting that national and international observers, alongside political parties, widely criticized the elections for lacking transparency and fairness.<sup>32</sup> Problems with the BVAS machines were pervasive across most polling locations, resulting in issues such as over voting, disorganization, and other irregularities.<sup>33</sup>

The aftermath of the elections saw sporadic violence across the nation, with youths staging protests that involved shootings, vandalism of vehicles, and widespread unrest.<sup>34</sup> These violent responses reflect deep-seated dissatisfaction with the electoral process and underscore the challenges of ICT integration in addressing election irregularities in Nigeria.

## **2. Ghana**

Election reform has been a consistent feature of Ghana's electoral process since the onset of the Fourth Republic in 1992. The flawed 1992 elections, which led to the boycott of parliamentary elections by opposition parties, significantly undermined voter confidence in the system.<sup>35</sup> These elections were widely criticized due to improper voter identification<sup>36</sup> with

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<sup>30</sup> Valentine Benjamin, "Protesters in Nigeria Demand Action over Alleged Election Fraud," *The National* (2023), <https://www.thenationalnews.com/world/africa/2023/03/01/protesters-in-nigeria-demand-action-over-alleged-election-fraud/>.

<sup>31</sup> Ibrahim Hassan, "Labour Party Vows to Challenge Election Results in Court," *Vanguard* (2023), <https://www.vanguardngr.com/2023/02/breaking-labour-party-vows-to-challenge-election-results-in-court/>; *Vanguard*, "Violence That Marred 2023 Elections," (2023), <https://www.vanguardngr.com/2023/03/violence-that-marred-2023-elections/>; *Ripples Nigeria*, "Ripples Metrics: 2023 Elections Set to Be Nigeria's Most Expensive, as INEC Increases Spending Plan by N104bn," (2022), <https://www.ripplesnigeria.com/ripplesmetrics-2023-elections-set-to-be-nigerias-most-expensive-as-inec-increases-spending-plan-by-n104bn/>.

<sup>32</sup> Policy and Legal Advocacy Centre (PLAC), *Nigeria's 2023 General Elections: A Return to the Old Ways* (2023), <https://placng.org/Legist/nigerias-2023-general-elections-a-return-to-the-old-ways/>.

<sup>33</sup> Tope Omogbolagun, Deborah Tolu-Kolawole, Adejoro, Victor Ayeni, Oluwakemi Abimbola, Gbenga Oloniran, et al., "Nigeria Elections 2023: Polls Record BVAS Malfunctioning, Late Arrival of Materials," *Punch* (2023), <https://punchng.com/nigeriaelections2023-polls-record-bvas-malfunctioning-late-arrival-of-materials/>.

<sup>34</sup> Temitayo Jaiyeola, "How BVAS, IReV Failed First Election's Stress Test," *Punch* (2023), <https://punchng.com/how-bvas-irev-failed-first-elections-stress-test/>.

<sup>35</sup> Arthur Bofo, "Managing Inter-Party Conflict in Ghanaian Politics: Lessons from the National Democratic Congress and the New Patriotic Party (NPP) Dialogue," in *Democracy and Conflict Resolution in Ghana*, ed. Mike Oquaye (Accra: Gold-Type Publications Limited, 1995).

<sup>36</sup> Richard Asante, "Making Democracy Work? Quasi-Public Entities and the Drama of Elections in Ghana," *Journal of African Elections* 12, no. 2 (2013): 56–74.



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some emphasizing that the elections were fundamentally flawed, primarily as a result of inadequate voter identification mechanisms.<sup>37</sup>

In response to these challenges, the Electoral Commission (EC) implemented measures to address electoral irregularities. This included the introduction of Photo ID cards during the 2000 and 2004 elections, which served as preparatory phases for the eventual integration of ICT into Ghana's electoral process.<sup>38</sup> As one of the early adopters of ICT in elections within Africa, Ghana officially launched the Biometric System for Voter Registration and Verification (BVRV) during the 2012 general elections.<sup>39</sup> While ICT integration has enhanced aspects of Ghana's electoral process, such as voter verification and result collation,<sup>40</sup> it has also been accompanied by significant challenges that continue to undermine the credibility of elections.

For example, Golden et al. investigated the 2012 elections and reported that biometric identification machines frequently broke down, with failures being approximately 50% less likely in polling stations where election monitors were present compared to those without monitors. The breakdown of these machines created opportunities for electoral fraud, ballot stuffing, and over voting.<sup>41</sup> In addition, the 2012 elections were marred by delays in voting, late results, and poor collation of outcomes due to the machines' poor performance.<sup>42</sup> Further complicating matters, Boateng and Akaba noted that inadequate technical knowledge among electoral officials regarding the operation of biometric systems exacerbated the challenges.<sup>43</sup> Voting and result counting often extended late into the night, creating openings for diverse electoral irregularities. These developments sparked violent reactions, including an incident where supporters of the National Democratic Congress (NDC) stabbed a member of the New Patriotic Party (NPP) during protests against the election results.<sup>44</sup>

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<sup>37</sup> Samuel Adams, Kingsley Agomor, and William Asante, "Anatomy of Ghana's 2016 Parliamentary Elections" (2016).

<sup>38</sup> Samuel Adams and William Asante, "Biometric Election Technology, Voter Experience and Turnout in Ghana," *Journal of African Elections* 18, no. 1 (2019): 45–68.

<sup>39</sup> Sarah Brierley and George Ofosu, "Use of SMS Technology in Ghana's Provisional Voter Register Exhibition," (2012), <http://ghanaelection2012.blogspot.com/2012/09/use-of-sms-technology-in-ghanas.html>.

<sup>40</sup> Adams and Asante, "Biometric Election Technology"; Boateng and Akaba, "Computerizing the Voting Process."

<sup>41</sup> Miriam Golden, Eric Kramon, George Ofosu, and Luke Sonnet, *Biometric Identification Machine Failure and Electoral Fraud in a Competitive Democracy* (Working paper, UCLA, 2015).

<sup>42</sup> Kwasi Kpodo, "Ghana's Supreme Court Rejects Opposition Challenge to 2012 Vote," *Reuters*, August 29, 2013, <https://www.reuters.com/article/us-ghana-court-idUSBRE97S0TU20130829>.

<sup>43</sup> Boateng and Akaba, "Computerizing the Voting Process."

<sup>44</sup> Topeorekoy, "Protesters Clash in Ghana over Election Results – Foreign Affairs – Nairaland," *Nairaland*, December 10, 2012, <https://www.nairaland.com/1130054/protesters-clash-ghana-over-election>.

Similarly, the 2016 elections revealed continued flaws in ICT integration. Manipulations of results transmission through technological tools, coupled with other irregularities, ultimately led to the declaration of opposition leader Nana Addo Akufo-Addo as the winner.<sup>45</sup> Despite technological advancements, the elections were not devoid of violence, as one death and several injuries were recorded.<sup>46</sup> These recurring irregularities, arising from machine malfunctions and perceived result rigging, generated widespread concerns about the integrity of the electoral process.<sup>47</sup>

The trend of electoral violence persisted in the 2020 general elections. Mobs dissatisfied with the election results staged protests at the Electoral Commission headquarters in Ghana, carrying placards and burning tires in the middle of major roads, which resulted in severe traffic disruptions. In response, police forces used gunshots and teargas to disperse the protesters, escalating the chaos further. Similar protests occurred in other regions, fueled by allegations of illegitimacy and a lack of trust in the electoral process.<sup>48</sup>

It is evident from this analysis that electoral violence has remained prevalent across multiple locations in Ghana since the adoption of ICT in its electoral process. Despite the integration of biometric identification systems and other digital technologies, irregularities during the 2012, 2016, and 2020 elections, ranging from machine malfunctions to manipulation of results, have consistently triggered violence and eroded public confidence in the electoral system.

### 3. Kenya

In 2017, Kenya integrated ICT into its electoral framework to address persistent issues of electoral fraud, manipulation, and violence. This integration targeted three key areas: voter registration, voter verification, and results transmission. Specifically, Kenya adopted Biometric Voter Registration (BVR) to improve the accuracy of voter rolls, Electronic Voter Identification (EVID) to verify voters at polling stations, and an Electronic Results

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<sup>45</sup> Samuel Adams, "Biometric Election Technology, Voter Experience and Turnout in Ghana," *Journal of African Elections* 18, no. 1 (2019): 45–68.

<sup>46</sup> John Mahama, "Today in 2019: 2016 Election Rigged – John Mahama," *GhanaWeb*, first published in 2016, archived May 19, 2020, <https://mobile.ghanaweb.com/GhanaHomePage/NewsArchive/Today-in-2019-2016-Election-rigged-John-Mahama-951058>.

<sup>47</sup> *Africa Times*, "#Ghana: One Dead, 14 Injured in Political Clash Ahead of Wednesday Vote," December 6, 2016, <https://africatimes.com/2016/12/06/ghana-one-dead-14-injured-in-political-clash-ahead-of-wednesday-vote/>.

<sup>48</sup> Nebianet Usaini, "Ghana Opposition Supporters Protest Against Election Results," *Channels Television*, December 17, 2020, <https://www.channelstv.com/2020/12/17/ghana-opposition-supporters-protest-against-election-results/>.

Transmission System (RTS) to ensure the streamlined and secure reporting of election results. Despite these advancements, the adoption of biometric technologies has failed to restore public trust in the electoral process.<sup>49</sup>

Technical challenges, network failures, insufficient technological expertise among electoral officials, and malpractices ultimately marred the 2017 Kenyan elections.<sup>50</sup> Technology was therefore perceived as enabling, rather than curbing, election fraud.<sup>51</sup> Accusations surfaced from opposition parties including the National Super Alliance (NASA) and the Coalition for the Restoration of Democracy (CORD) and international observers, who alleged that the incumbent government had manipulated digital technologies to rig the election in favor of President Uhuru Kenyatta of the Jubilee Party.<sup>52</sup> These allegations triggered campaigns disputing the legitimacy of the results and sparked widespread election-related violence, characterized by aggressive protests, human rights violations, extrajudicial killings, and police beatings, resulting in at least 33 deaths and hundreds of injuries.<sup>53</sup>

Similar issues arose during the 2022 Kenyan elections, which were criticized as incomplete, inaccurate, and unverifiable, with electoral authorities accused of fraudulent activities.<sup>54</sup> Upon the announcement of the results, protests erupted, with large numbers of demonstrators congregating in cities such as Kisumu. Protesters hurled stones, set tires ablaze, and blocked roads with debris in a rejection of the declared outcomes.<sup>55</sup>

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<sup>49</sup> Marjorie Owino, Patience James, and Mwikya Mwikya, "Biometric Voter Registration and Electronic Voter Identification System on Credibility of the Electoral System in Kenya: A Case Study of Nairobi County" (2022), *ResearchGate*,

[https://www.researchgate.net/publication/348652556\\_Biometric\\_Voter\\_Registration\\_and\\_Electronic\\_Voter\\_Identification\\_System\\_on\\_Credibility\\_of\\_the\\_Electoral\\_System\\_in\\_Kenya\\_a\\_Case\\_Study\\_of\\_Nairobi\\_County](https://www.researchgate.net/publication/348652556_Biometric_Voter_Registration_and_Electronic_Voter_Identification_System_on_Credibility_of_the_Electoral_System_in_Kenya_a_Case_Study_of_Nairobi_County).

<sup>50</sup> Ayesha Chugh and Katherine Krueger, "The Role of Technology in the Outcome of the Kenyan General Election," *ACE Electoral Knowledge Network*, 2023, [https://www.aceproject.org/today/feature-articles/the-role-of-technology-in-the-outcome-of-the/discussion\\_reply\\_form](https://www.aceproject.org/today/feature-articles/the-role-of-technology-in-the-outcome-of-the/discussion_reply_form).

<sup>51</sup> *The News*, "Kenyan Opposition to Tell Court Technology Enabled Election Fraud," August 22, 2017, <https://thenewsnigeria.com.ng/2017/08/22/kenyan-opposition-to-tell-court-technology-enabled-election-fraud/>.

<sup>52</sup> Collins Odote and Karuti Kanyinga, "Election Technology, Disputes, and Political Violence in Kenya," *Journal of Asian and African Studies* 56, no. 4 (2021): 558–571, <https://doi.org/10.1177/0021909620933991>.

<sup>53</sup> Human Rights Watch, *Kenya: Police Killed, Beat Post-Election Protesters*, October 16, 2017, <https://www.hrw.org/news/2017/10/16/kenya-police-killed-beat-post-election-protesters>; Human Rights Watch, *World Report 2021: Kenya*, 2021, <https://www.hrw.org/world-report/2021/country-chapters/kenya>.

<sup>54</sup> Raila Odinga, "Kenya Election 2022: Were Results Sheets Altered as Odinga Claims?" *BBC News*, September 1, 2022, <https://www.bbc.com/news/62724762>.

<sup>55</sup> Sahara Reporters, "Violent Protest Erupts in Kenya over Declaration of Ruto as Election Winner," *Sahara Reporters*, August 15, 2022, <https://saharareporters.com/2022/08/15/violent-protest-erupts-kenya-over-declaration-ruto-presidential-election-winner>; Ripples Nigeria, "Ripples Metrics: 2023 Elections Set to Be Nigeria's Most Expensive, as INEC Increases Spending Plan by N104bn," *Ripples Nigeria*, 2022, <https://www.ripplesnigeria.com/ripplesmetrics-2023-elections-set-to-be-nigerias-most-expensive-as-inec-increases-spending-plan-by-n104bn/>.

The foregoing analysis underscores that elections in contemporary Africa, particularly in the selected case studies, remain plagued by irregularities and violence. Despite the introduction of ICT into electoral systems, public trust in election processes continues to erode. This distrust is frequently expressed through protests against election procedures and outcomes, which often escalate into violence. Protests stemming from dissatisfaction with electoral processes often spiral into large-scale unrest, exacerbated either by forceful responses from security forces or the deliberate use of violence by protesters.

### Constant Calls for Judicial Intervention

There have been persistent calls from organizations and civil society bodies for a comprehensive review of electoral processes in these countries. For instance, in Nigeria, the major opposition parties, the PDP and the Labour Party, filed lawsuits against INEC, alleging that the 2023 elections were grossly fraudulent.<sup>56</sup> Similarly, Ghana has experienced comparable challenges, as the National NDC submitted five petitions contesting the validity, transparency, and fairness of the 2020 presidential elections.<sup>57</sup> In Kenya, NASA and various human rights organizations filed petitions in Nairobi to challenge the 2017 elections on the grounds of electoral irregularities.<sup>58</sup>

Electoral corruption, fraud, rigging, and violence fundamentally undermine democratic principles and erode public confidence in the electoral processes of African nations.<sup>59</sup> These challenges highlight that, regardless of the successes recorded in certain elections, their overall integrity may be severely compromised when marred by allegations of fraud and episodes of violence.

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<sup>56</sup> Ibrahim Hassan, "Labour Party Vows to Challenge Election Results in Court," *Vanguard*, February 27, 2023, <https://www.vanguardngr.com/2023/02/breaking-labour-party-vows-to-challenge-election-results-in-court/>; *Vanguard*, "Violence That Marred 2023 Elections," March 2023, <https://www.vanguardngr.com/2023/03/violence-that-marred-2023-elections/>.

<sup>57</sup> Zubaída Mabuno Ismail, "Ghana's Opposition NDC Contests Results of 'Flawed' Presidential Election," *RFI*, December 13, 2020, <https://www.rfi.fr/en/africa/20201213-ghana-opposition-ndc-contests-results-of-flawed-presidential-election-akufo-addo-john-mahama>.

<sup>58</sup> George Obulutsa, "Kenyan Court Orders Opposition Access to Electronic Vote-Count Systems after Presidential Poll," *Reuters*, August 18, 2017, <https://www.reuters.com/article/us-kenya-election-court-idUSKCN1B80RW>.

<sup>59</sup> Obasesam Okoi and Maryanne Iwara, "The Failure of Governance in Nigeria: An Epistocratic Challenge," *Georgetown Journal of International Affairs*, April 12, 2021, accessed June 30, 2022, <https://gija.georgetown.edu/2021/04/12/the-failure-of-governance-in-nigeria-an-epistocratic-challenge/>

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The adoption of technology in African electoral democracies offers potential benefits but also entails significant financial costs.<sup>60</sup> While technological integration in elections was expected to enhance credibility, the persistence of irregularities and violence raises critical concerns. In Ghana, for instance, tensions and distrust in the political environment have continued to escalate since the incorporation of technology into the electoral process.<sup>61</sup> This raises an important question: Should ICT still be employed in African elections when it has failed to address irregularities and mitigate violence, despite the considerable financial investment involved?

According to Ripples Nigeria, the 2023 elections were projected to be the most expensive in Nigeria's history. Prior to the elections, former Nigerian President Muhammadu Buhari proposed a budget of N242 billion (approximately \$296 million).<sup>62</sup> Additionally, Nigeria's INEC estimated that N305 billion (\$373 million) would be required to conduct the elections.<sup>63</sup> Similarly, Ghana's adoption of electoral technology has entailed substantial financial implications.<sup>64</sup> In Kenya, the national treasury reported that the preparation and execution of the 2017 elections cost \$480 million. This was in addition to the \$95 million spent earlier on implementing a biometric voter registration system, which ultimately failed and disrupted the electoral process.<sup>65</sup>

Given the significant costs involved and the poor conduct of elections in these countries, questions arise regarding whether the allocated funds were effectively utilized for their intended purpose. While there may be justifications for the high expenditure associated with adopting ICT in elections, this expenditure does not necessarily translate into electoral credibility. The central issue requiring attention is the persistence of irregularities, which continue to trigger protests and violence across the continent, despite the considerable financial investment in technological innovations to enhance election processes.

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<sup>60</sup> Felicia Osondu Okwueze, "Interrogating the Cost of Digital Technology and Trust in Elections in Africa: The Nigerian Perspective," *Africa Development* 47, no. 2 (2022): 199–217.

<sup>61</sup> John Effah and Emmanuel Debrah, "Biometric Technology for Voter Identification: The Experience in Ghana," *The Information Society* 34, no. 2 (2018): 104–113; Samuel Adams, Kingsley Agomor, and William Asante, "Anatomy of Ghana's 2016 Parliamentary Elections," 2016.

<sup>62</sup> Okwueze, "Interrogating the Cost of Digital Technology."

<sup>63</sup> Henry Umoru, "INEC to Spend N355bn in 2023," *Vanguard*, 2022. <https://www.vanguardngr.com/2022/11/inec-to-spend-n355bn-in-2023>

<sup>64</sup> See Ghana's Budget for 2023 Elections

<sup>65</sup> Abdi Latif Dahir, "Kenya Is Set to Hold One of the Most Expensive Elections in Africa," *Quartz*, July 28, 2017, <https://qz.com/africa/1030958/kenyas-elections-will-cost-1-billion-in-government-and-campaign-spend>.

## **Why ICT Failed to Curb Election Irregularities?**

The analysis above indicates that African countries tend to rely exclusively on the adoption of technological equipment as the primary mechanism for improving electoral efficiency, while neglecting the critical areas of electoral administration and management. The poor conduct of elections and the resulting questionable outcomes can largely be attributed to technical challenges such as the failure to test-run devices to identify and resolve faults, the unavailability of power supply, data services, and cellular networks necessary for the smooth functioning of the technology, as well as insufficient training and technological expertise among electoral officials. These shortcomings have culminated in widespread dissatisfaction with electoral processes and, subsequently, outbreaks of violence.

Our analysis shows that the integration of ICT into electoral processes in Africa is insufficient on its own to address electoral irregularities and challenges effectively. Additionally, African governments appear to focus disproportionately on employing technology to enhance voting processes while neglecting the role of technological innovations in monitoring and safeguarding elections. For example, many polling centres across these countries lack essential monitoring systems, such as surveillance devices and closed-circuit television (CCTV) cameras, which are vital for ensuring transparency and accountability. The absence of these monitoring mechanisms creates significant opportunities for election result manipulation, as highlighted throughout the article.

## **Conclusion**

A critical examination of the electoral landscape in Nigeria, Ghana, and Kenya reveals that the integration of ICT alone is insufficient to address election irregularities, which remain a primary driver of electoral violence in Africa. Contemporary electoral processes in Africa require significant restructuring and reorganization to improve their effectiveness and efficiency. This includes the adoption of advanced technological surveillance systems, the recruitment of qualified election administrators, and the provision of comprehensive professional training. Such measures are vital for realizing the full benefits of modern voting technologies. To achieve efficient, fair, and violence-free elections, African governments must prioritize strengthening the managerial, monitoring, and oversight components of electoral processes alongside technological advancements.

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Furthermore, this study has established a clear link between electoral irregularities and violence within the context of ICT implementation in the electoral systems of the selected African countries. However, there is a critical need to expand research into the dynamics of electoral violence, particularly focusing on protests and mob attacks. This aspect remains underexplored in the broader discourse on African electoral violence. Future research should employ quantitative and empirical analyses to investigate violent electoral protests, specifically incidents that result in fatalities, injuries, and property destruction. Such investigations are crucial for developing a deeper understanding of the factors fueling electoral violence and for formulating effective strategies to mitigate its occurrence and impact.

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