

# Elections in Africa: Trends, Diversity, and Emerging Technologies

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## Executive Summary

This study examines emerging trends and technologies in Africa's elections within the 2024 elections; with at least 19 of the 64 elections globally expected in the Continent. Areas of particular focus include electronic voting, misinformation, Artificial Intelligence (AI), internet connectivity, and big data. The study analyses the implications of such emerging trends and technologies on democracy in selected countries including Burkina Faso, the Democratic Republic of Congo (DRC), Ghana, Kenya, Namibia, Nigeria, Senegal, South Africa, Togo, and Tunisia, highlighting the challenges and potential for enhancing electoral integrity and democratic consolidation. The report also addresses issues of cybersecurity, the role of social media, voter education, and the influence of foreign entities in African Elections. By evaluating the successes and shortcomings of these technological advancements, the study provides recommendations for policymakers and stakeholders to strengthen democratic processes and promote fair and transparent elections across the continent.

The Democratic Republic of Congo (DRC) has seen significant electoral events, notably the 2018 elections, which marked a major political shift. However, challenges persisted in the 2023 elections, including infrastructure issues and technical failures with electronic voting systems, highlighting the need for better technology. Kenya, with a relatively longer electoral history, has increasingly relied on electronic voting and social media for political campaigning. Despite significant technological investments, issues such as technical capacity, transparency and governance hindered the effectiveness of these systems, leading to frequent electoral disputes.

Since South Africa's shift to majority rule in 1994, its electoral landscape has evolved from apartheid-era exclusion to a competitive multi-party democracy. However, recent elections reflect growing dissatisfaction with the African National Congress (ANC), marked by the party's historic loss of majority support in 2024. Despite this, South Africa has leveraged technology, including attempts at electronic voting and social media, to enhance participation. Regardless,

challenges such as political violence and misinformation persist. Tunisia, post-Arab Spring, demonstrates a dynamic democracy with active social media use influencing political mobilisation and public engagement albeit with frequent political crises that appropriate and adequate application of emerging technologies can effectively address.

Namibia stands out for its political stability and has made significant strides in electoral technology by adopting e-voting, becoming a global pioneer. Despite the country's independent political party, South West Africa People Organisation's (SWAPO) historical political dominance, winning 87% of the vote in 2014, its support fell to 56.7% in 2019, indicating shifting political dynamics. The success of Namibia's e-voting system, bolstered by robust ICT infrastructure and political will, highlights its role as a leader in modern and technologically driven electoral practices in Africa. Mauritius stands out as another key democratic success story in Africa. Since its independence in 1968, Mauritius has demonstrated strong democratic engagement with a vibrant multiparty system. While not yet utilising e-voting, Mauritius has effectively employed social media for political campaigning, capitalising on high internet penetration. Regardless, some of the country's most pressing sociopolitical challenges include democratic stagnation and political

cronyism. Future adoption of e-voting is anticipated, necessitating careful alignment with national sociocultural, political and economic reality and stakeholder collaboration to ensure transparency and inclusivity.

Nigeria's electoral processes, with its roots in the colonial era, have evolved through various phases of military and civilian rule. Recent advancements include biometric systems, the Smart Card Reader, and the Bimodal Voter Accreditation System (BVAS), aimed at enhancing accuracy and transparency. Despite these efforts, issues like voter intimidation and logistical problems persist, indicating ongoing challenges in



the electoral system. Senegal, with a tradition of stable democracy since 1960, has integrated biometric technology to address electoral fraud. However, the implementation of biometric cards in 2016 and 2017 faced controversy and operational difficulties. Despite these challenges, Senegal's commitment to democratic norms remains strong as evidenced by the seamless transfer of presidential power in the country's 2024 elections. Regardless, the country's attempts at technological transitions in elections have occasionally sparked political disputes.

Burkina Faso's democratic evolution has been marked by significant turbulence, including military coups and political instability. Following independence in 1960, the country faced instability until reforms were implemented under Blaise Compaoré in 1990. His extended rule ended with the 2014 "insurrection populaire," leading to a transitional government. Coup attempts in 2015 disrupted the process, but elections were eventually held, with Roch Marc Christian Kaboré emerging victorious. Despite the adoption of biometric voter registration in 2007, the 2020 elections were severely impacted by insurgency and logistical challenges, highlighting ongoing issues in electoral management and the need for further reforms. The prevailing rule of the military junta in Burkina Faso also presents a conundrum to the future of elections and democratisation in the country.

Since adopting the Fourth Republican Constitution in 1992, Ghana has transitioned from military rule to a stable multi-party democracy as well as one of the most liberal countries in Africa. The peaceful alternation of power between the National Democratic Congress (NDC) and the New Patriotic Party (NPP) demonstrated democratic maturity. Electoral reforms, including the introduction of biometric voter registration in 2012, have enhanced the process, though challenges such as machine malfunctions and voter disparities remain. The 2020 election, conducted during the COVID-19 pandemic, showed improvements despite technical issues. Future discussions include the potential adoption of electronic voting systems.

Togo's political system has been shaped by long-term authoritarian rule, with significant changes occurring in 1992 to allow multi-party democracy. Despite constitutional reforms, elections have often been marred by fraud and violence. Recent elections have shown continued dominance by the ruling party. The adoption of biometric voter registration in 2007 has faced challenges due to inadequate infrastructure and technical limitations. While mobile technologies have enhanced political engagement, the slow development of ICT policies and persistent socio-political constraints continue to limit the effectiveness of electoral technology in Togo.

## **Emerging Technologies and Trends in African Elections**

Emerging technologies are reshaping elections and democracy in Africa, presenting both opportunities and challenges. Some of such emerging trends and technologies with credible impact in elections in Africa include among others the pervasive nature of disinformation and misinformation, online gender-based violence (GBV), the potential impact of Artificial Intelligence (AI), Blockchain Technology and Big Data on elections and the role of Big Tech companies in online political discourse.

### ***Disinformation and Misinformation***

Disinformation and misinformation are prevalent, driven by limited resources in newsrooms to counter fake news, a dynamic communication environment, and varying levels of digital literacy. Mare et al. (2020) emphasise the need to understand misinformation in Africa's context, while Madrid-Morales et al. (2019) reveal that civic duty and 'fun' are primary motivations behind misinformation spread. The rise of social media platforms like Facebook, X, Tik Tok and WhatsApp has intensified the issue, particularly affecting older populations with lower digital competence.

### ***Online gender-based violence (GBV)***

Online gender-based violence (GBV) highlights the complex role of social media. Mangaka and Mamokhere (2022) report positive uses of social media for countering GBV, but Bardall (2013) and Southworth et al. (2007) note that these platforms also facilitate the spread of harmful content against women. Faith (2022) calls for greater female digital representation to combat online harassment.

### ***Artificial Intelligence (AI)***

Artificial Intelligence (AI) offers transformative potential for African elections by improving efficiency and integrity. Olusegun et al. (2020) suggest AI could enhance election management and reduce costs, though the technology's misuse, as seen in the 2016 US elections, poses risks.

### ***Big Data & Big Tech***

Similarly, big data and digital identity technologies could address issues like double voting and enhance polling efficiency. However, privacy concerns and the digital divide, with less than 36% internet access (World Bank, 2023), present substantial barriers. Effective technological adoption must account for Africa's unique socio-economic and infrastructural challenges to avoid exacerbating political disenfranchisement and inequality.

## Policy Implications

African nations are at a pivotal moment in incorporating emerging technologies into their electoral frameworks. With broadband penetration at only 36%, the risk of exacerbating existing inequalities, particularly among rural populations, women, and older individuals, is substantial. Balancing technological advancement with democratic principles is crucial to enhance electoral efficiency while preventing further marginalisation.

### *Contextualized Technology Adoption in Elections*

The experiences of Kenya and the Democratic Republic of Congo (DRC) highlight the risks associated with the indiscriminate adoption of new electoral technologies. Kenya's costly electoral processes—\$345.74 million in 2017 and \$386.82 million in 2022—illustrate the financial strain of technology integration without strategic planning (Citizen, 2022). Similarly, the Democratic Republic of Congo's use of electoral technology designed for Argentina underscores the pitfalls of inadequate feasibility assessments (Sentry, 2018). Policymakers must assess the technical capacities of electoral management bodies and the digital literacy of the electorate to ensure successful technology adoption. Strategic planning should address infrastructural constraints and cultural contexts to foster inclusivity and effectiveness.

### *Bridging the Digital Divide*

Addressing Africa's digital divide necessitates targeted digital literacy programmes and improved internet infrastructure. According to the International Telecommunications Union (2020), a significant digital gap exists between genders and regions, with a 35% access gap between men and women. Policies should focus on enhancing digital literacy among underserved groups and marginalised communities and improving internet access and affordability, especially in rural and arid and semi arid lands (ASALS) areas. This approach will help integrate marginalised communities into the digital electoral process.

### *Combating Misinformation and Disinformation*

The pervasive issue of misinformation and disinformation, as documented by Mare et al. (2020) and Madrid-Morales et al. (2019), undermines electoral integrity. The proliferation of fake news, driven by increased social media use, poses risks to informed voter decisions. Policymakers should establish partnerships with social media platforms, tech companies, and civil society organisations (CSOs) to promote digital literacy and combat misinformation. Initiatives should include fact-checking mechanisms and responsible media consumption campaigns as well as a balanced approach to regulation that safeguards freedom of expression (Fombad, 2022).

### *Regional Coordination*

Regional collaboration is crucial for developing and implementing effective electoral technologies. The African Union and respective regional economic communities (RECs) and Regional Bodies (RBs) should spearhead the sharing of best practices and the establishment of continent-wide standards.

### *Blockchain Technology*

Blockchain technology, proven effective in sectors like land management and financial transactions (Olusegun et al., 2020), offers a promising solution for enhancing electoral integrity and transparency by minimising tampering and increasing transparency.

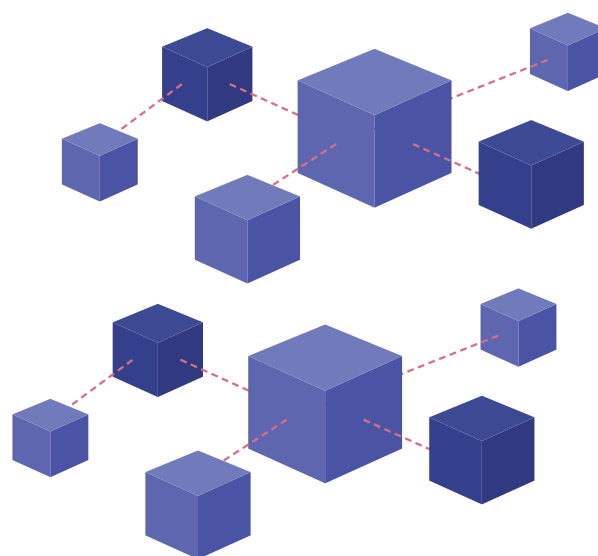
### *Legal and Regulatory Frameworks*

Updating legal and regulatory frameworks to accommodate technological advancements is vital. Frameworks must address data protection, system security, and procurement transparency. The dynamic nature of technology requires frequent reviews of electoral laws to address emerging issues such as digital campaigning and electronic voting. A responsive legal regime, as suggested by Olusegun et al. (2020), will ensure integrity and adaptability in the face of rapid technological change.

### *Ensuring Inclusivity and Transparency*

The rise of online gender-based violence (GBV), as noted by Mangaka & Mamokhere (2022) and Faith (2022), highlights the need for legislation and support mechanisms to create a safer digital space for women. Transparency in electoral technology adoption, including public testing and open-source solutions, is essential for building trust. Ensuring public awareness of technology capabilities and limitations, coupled with robust safeguards, will enhance confidence in electoral systems.

In summary, while emerging technologies offer significant benefits for African Elections, their successful integration requires careful consideration of existing inequalities, technological feasibility, and robust regulatory frameworks to ensure a fair, inclusive, and transparent electoral process.



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## List of Abbreviations

AI	Artificial Intelligence
AISA	Africa Institute of South Africa
ANC	African National Congress
BVAS	Bimodal Voter Accreditation System
BVRV	Biometric Voter Registration and Verification
CENCO	National Episcopal Conference of Congo
INEC	Independent National Electoral Commission (Nigeria)
CENI	Independent National Electoral Commission (DRC)
CODEO	Coalition of Domestic Election Observers
CSOs	Civil Society Organisations
DA	Democratic Alliance

# Introduction

The centrality of elections in promoting democracy and good governance cannot be overemphasised. The African Union's Charter on Democracy, Elections and Governance envisions increased democratic participation of the citizens of all State Parties and urges state parties to endeavour to hold regular, free, fair and transparent elections, condemn and reject unconstitutional government changes, as well as strengthen political pluralism by recognising the status, role and rights of all political actors, including opposition parties and civil society organisations (CSOs) within their jurisdictions (AU Charter on Democracy, 2007). In chapter 7 of the Charter, State Parties committed to holding regular, transparent and free elections and agreed to among other things, to establish independent national electoral commissions, strengthen national mechanisms for redress of electoral disputes, ensure fair and equitable access to the media, promote legitimacy of elections by forming formidable pre-electoral agreements to accept electoral outcomes or pursue legal mechanisms to resolve emerging electoral disputes as well as enhance the role of AU's electoral monitoring missions in respective national elections (AU Charter on Democracy, 2007). Similarly, the African Charter on Human and People's Rights in Article 13 envisions an Africa where citizens of respective state parties shall adequately exercise their right to participate in the governance of their country either directly or indirectly

according to the provisions of the respective laws (ACHPR, 1986).

Oluwakemi Ayanleye (2014) observes the critical role that elections play in democratisation and achievement of the UN sustainable development goals (SDGs) in Africa. Ayanleye's (2014) analysis concludes that despite the AU's commendable efforts to entrench free and fair elections across the continent, particularly through its Charter on Democracy, critical challenges still linger including consistent flouting of key tenets of democracy by some State Parties with limited retribution from the AU (Ayanleye, 2014). Regardless, Staffan Lindberg's (2006) analysis of over 200 third wave elections in Africa still found a positive correlation between regular elections and democratisation, irrespective of freeness. A report by Friedrich Ebert Stiftung (2010) highlighted the centrality of elections in emerging democracies and post conflict countries. The study observes the incredible place that elections hold as regards stabilisation and democratisation of such states (FES, 2010). As a result the report emphasises the need to continue support for among others contextually designed electoral systems, independent and functional electoral commissions and electoral complaints systems to ensure viability of elections. Consequently, as regards an independent electoral commission, it is critical to consider the requisite support for the respective election management bodies (EMBS) in the form of adequate resources, talent

and technical capacity for execution of their mandates. Such technical capacity includes the necessary technology for the conduct of the elections.

Before the colonial intervention, many African societies practised participatory forms of governance, featuring both centralised and decentralised structures led by kings, councils of elders, and chiefs (Wane et al., 2022). The post-independence era ushered in modern democratic processes and electoral systems as new models for nation-building and development. Globally, elections provide an avenue for political participation for citizens and competition for parties. They empower ordinary citizens to vote for candidates of their choice for political offices, which is key to a democratic system. This fundamental aspect of democracy holds particular significance in the African context, where the transition to modern electoral systems has been marked by both progress and challenges. Scholars have identified Africa as part of the 'third wave' of global democratisation (Akinyetun and Ebonine, 2022; Huntington, 1991), suggesting a trajectory towards stable, multi-party democracies. This perspective gained support with the fall of authoritarian regimes and the introduction of multiparty elections across the continent.

The transition from military rule to multiparty democracy varied across



African nations. Nigeria's political landscape, for instance, has been a source of both hope and concern for democracy. The country's first republic saw the emergence of a multi-party system, but initial attempts at establishing democracy were marred by controversies surrounding disputed electoral processes. Nigeria did not transition to democratic rule until 1999, and recent elections, including the 2023 general elections, continue to face allegations of irregularities (INEC, 2023). Ghana's transition in 1992, under Jerry John Rawlings, was initially heralded as a model for the region (Haruna, 2023). The country's successful alternation of power between political parties in 2000 and 2008 seemed to confirm its democratic consolidation (Gyimah-Boadi, 2009). Similarly, Senegal's long history of multiparty politics and peaceful power transfers since independence in 1960 positioned it as a beacon of democratic stability (Galvan, 2001). Namibia's transition to democracy following independence in 1990 and Mauritius's robust multiparty system since 1968 have been viewed as success stories (Melber, 2015; Srebrnik, 2002).

However, as democratic processes unfolded across the continent, issues such as electoral fraud, political violence, and persistent authoritarian practices emerged, questioning the depth and quality of democracy in many African countries. Ake (2001) argued that the form of democracy being implemented in many African countries was a "democracy of alienation," disconnected from the needs and realities of African societies. Scholars like Omotola (2010) have highlighted persistent challenges to democratic consolidation, including electoral violence, corruption, and the manipulation of ethnic and religious identities for

political gain. The experiences of countries like Togo and Burkina Faso further illustrate the complexities of democratic transitions. In Togo, despite the introduction of multiparty politics, the country struggled with dynastic rule and contested elections, leading scholars to question the substantive nature of democracy (Kohnert, 2020). Burkina Faso's democratic journey has been complicated by frequent political instability and military interventions, despite attempts at fair elections (Olukayode, 2022; Hagberg et al., 2018).

An essential element of institutional electoral reforms should include adoption of reliable technology for conduct of elections, as well as the technological ecosystem surrounding electioneering. Kealeboga Maphunye's (2019) analysis of the feasibility and applicability of electronic voting technologies in Africa highlighted the compelling need for African States to critically review, before adoption, the potential legal and political impact that such technologies could have on the outcomes of the respective electoral processes. For instance, Maphunye (2019) observes the need to ensure that the electronic voting technologies adopted are in compliance with the constitutional order of the state, otherwise the outcomes of such electoral processes risk facing legitimacy questions from the masses and other actors (Maphunye, 2019). Similarly, the increasing use of social media, mobile technology and other emerging



technologies in electioneering in Africa has also attracted critical analyses from various observers. For instance deployment of emerging technologies such as Artificial Intelligence and robotics is becoming increasingly key. Bonolo Makgale (2024) highlights some of the incredible applications of AI and robotics in African elections including in election related information sourcing, electoral related logistical support for voters e.g. identification of polling centres as well as matching of voters with relevant campaign messaging and political candidates among others. Some of the African-based entities involved in election tech include Yiaga Africa through My Election Buddy, Rivonia Circle through [Thoko the Bot](#) among others (Makgale, 2024).

Makgale (2024) also notes the impending challenges of such emerging technologies including the potential impacts of misinformation and disinformation, limitations of inadequate digital literacy, as well as the overwhelming digital divide across Africa which affects the wholesome participation of individuals and communities in the respective electoral processes (Makgale, 2024). A case study analysis of application of emerging technologies in African elections found that despite their immense positive impact on the outcomes of elections, including serving as watchdog platforms for keeping governments accountable thus improving governance, electoral and other



democratic processes, such technologies also posed real risks. As such the report calls for the institution of relevant policies and public awareness creation on positive use of emerging technologies in politics to ensure positive adoption and application of social media, mobile phones and other emerging technologies in electioneering in Africa and limit the potential negative implication of harmful use of such technologies (Arthur, 2020).

The diverse experiences across the continent underscore the need for a better understanding of the trends, patterns, and interconnections of emerging technologies for the improvement of democracy and democratic practices in Africa. As the continent continues to navigate its democratic path, it is crucial to address the underlying issues that hinder genuine democratic consolidation while leveraging technological advancements to enhance electoral processes and civic engagement.

# Study Objective

This study seeks to undertake a case by case analysis of a plethora of emerging trends and technologies in Africa's electoral landscapes and the ensuing implications of such phenomena on the outcome of elections and consequently democratisation in Africa. This review is cognisant of the impending or recently conducted elections in Africa in 2024 and utilises the prevailing multitudinousness of elections occurring in Africa in 2024 and its potential impact on the trajectory of

democracy and sustainable development in Africa as a centrepiece for analysis. As such the countries for analysis have been systematically selected with regional representation, as a key consideration, as well as countries with previous experience of application of technology in elections and those that await to experience the impact of emerging technologies in electioneering in their upcoming elections, majority of them in 2024.



# Methodology

The study employs a systematic approach to country selection, prioritising regional representation to ensure a diverse and comprehensive analysis. This selection process considers two key factors: countries with prior experience in integrating technology into their electoral processes, and those anticipating the impact of emerging technologies in their upcoming elections, with a focus on those occurring in 2024. This dual consideration allows for a comparative analysis of established practices and emerging trends. The countries to be considered for analysis include Burkina Faso, the Democratic Republic of the Congo (DRC), Ghana, Kenya, Namibia, Nigeria, Senegal, South Africa, Togo, and Tunisia. This diverse selection enables the study to capture a broad spectrum of African electoral landscapes, from established democracies to those in transition.

This study will consider seven distinct thematic areas central to the understanding of the intersectionality of technology and elections in Africa. These areas encompass electronic voting systems and their implementation, the spread and impact of disinformation and misinformation in electoral contexts, online gender-based violence in elections and its effects on political participation, the deployment and implications of artificial intelligence (AI) in electoral processes, the role of internet connectivity in shaping electoral participation and information dissemination, the use and

influence of big data in campaign strategies and voter targeting, and the role and responsibility of big tech companies in African elections. This study aims to conduct a case-by-case analysis of emerging trends and technologies in conventional electioneering practices across Africa, examining their implications and impact on election outcomes and the broader process of democratisation. The research is particularly timely, given the significant number of elections scheduled or recently held in Africa in 2024. This concentration of electoral activity provides a unique opportunity to assess the trajectory of democracy and sustainable development on the continent.





# CASE STUDIES

# Democratic Republic of Congo (DRC)



## Overview of Electoral Landscape

The Democratic Republic of Congo has held 5 elections since the end of the Second Congo War including in 2001, 2006, 2011, 2018 and 2023. The most significant of them was in 2018 which saw a transition of power from an incumbent regime. According to Aditi Lalbahadur and Elizabeth Sidiropoulos (2018) the then ruling People’s Party for Reconciliation and Democracy (PPRD) had attempted to eliminate political competition by all means including by barring key opposition figures including Jean-Pierre Bemba and Moïse Katumbi from running. The PPRD party anointed Emmanuel Ramazani Shadary as its flag bearer. However, in a surprising move the 2018 elections were actually won by Felix Tshenedi to the

chagrin of a majority. The most recent elections in DRC, in 2023, also had their own fair share of contests. The opposition parties majorly consolidated their efforts and united against the incumbent unsuccessfully.

An Election Observation Mission (EOM) report by the Human Science Research Council (HSRC) Africa Institute of South Africa (AISA) noted key challenges in the conduct of the 2023 elections as being among others inadequate infrastructure and accessibility of polling stations thus impacting inclusivity including in voter registration; as a result of among other things limited registration and voting kits. Other key constraints observed entailed

ineffective communication by the Independent National Electoral Commission (CENI) as well as operational and technical hindrances on voting day including unfriendly voting procedures, malfunction of electronic voting machines among others (Sekhejane et al., 2023). Therefore, based on Sekhejane et al.'s (2023) analysis of the outcome of DRC's 2023 elections there exists a need to accurately locate the relevance of adoption and application of emerging technologies in the conduct of elections in the DRC. For instance, the role played by electronic voting technology for voter registration and polling as well as emerging communication technologies is highlighted as being key. A systematic analysis of various facets of emerging technological trends and patterns and their impact on the democratic and electoral outcome in the DRC is thus critical.

### **Adoption of Technology in Elections in DRC**

It is important to note that the DRC was the first country in Africa in 2005/2006 to employ the use of biometric technology for elections in Africa (RECEF, 2017). Surprisingly, a National Episcopal (Catholic) Conference of the Congo (CENCO) report revealed that at least 45% of all the electronic devices employed in the 2023 DRC elections failed. Similarly, a pre-elections due diligence study conducted by an Argentine-based team of



technical experts under the auspices of the Sentry Team (2018) expressed reservations with regard to the technical capacity of the electronic voting systems that the DRC wished to acquire from Miru Systems Co., a South Korean company. In fact, it emerges that the same company had provided electronic voting technology in Iraq that subsequently led to widespread technical glitches that occasioned a vote recount. Most importantly, a thorough review of Miru's electronic voting systems in Argentina led to a decline of its adoption in the country's 2017 elections. As a result Sentry Team's due diligence study recommended that DRC's CENI abandon its planned purchase of MIRU's electronic voting systems based on its key findings as regards the threats of such systems for application in DRC's upcoming 2023 elections including potential threats to ballot secrecy, hacking and results manipulation (Sentry, 2018). The Quick Response Code (QR) technology applied by Miru exposed critical voter information

including voter identity, their ballot selection, and time and place they voted, thus posing a threat to voter secrecy. The study also alludes that Miru simply repurposed the electronic voting system initially designed for Argentina despite the gapping differences in geographical and logistical realities in the DRC including among others a more expansive territory and differing levels of digital awareness and access to technological infrastructure. A majority of the Congolese voters possessed limited digital competence to effectively utilise the largely hi-tech systems provided by Miru as a result CENI intended to deploy "agents" to help those unable to vote independently through the system. This approach raised grave concerns as it opened a door to voter manipulation. Social media has also played a critical role in elections in the DRC. For instance, key social media platforms such Facebook are often employed by the citizens both within the country and in the diaspora to contribute to the country's political discourse.





## Overview of Electoral Landscape

The Republic of Kenya has held a total of 11 national elections since it attained its independence in 1963. As such the country has a relatively long history of electioneering. Regardless, such elections have been held under different constitutional, political and democratic dispensations. For instance, the initial elections were held under a parliamentary system, whereby preceding the declaration of the republic and prior to the secession of the British Monarch as the head of state the political system was a representative parliamentary democracy with the head of government being the prime minister. Regional structures complete with regional assemblies and senators were also key aspects of the governance (Throup and Hornsby, 1998).

Once the country declared republic status, the regional structures were abolished but the parliamentary status was retained until 1988 when the first real national elections comprising presidential and parliamentary elections were held. The 1988 elections infamously known for application of the “mlolongo voting system” was largely criticised, both locally and internationally, as it compromised key aspects of free, fair and credible elections. For one, the mlolongo elections sacrificed voter confidentiality by demanding that voters stand behind their candidates instead of universally accepted secret balloting (Throup and Hornsby, 1998).

The elections of 1992 and 1997 occurred under relatively improved conditions including return of secret balloting, multiparty democracy and functional opposition parties. However, sporadic pre-elections and post-elections interethnic scuffles including conflicts over land were persistent in both electoral rounds. It is largely accepted that the 2002 national elections were in fact the most transparent elections Kenya has ever witnessed till date. For one, there was a smooth and peaceful transition of power between the incumbent President Daniel Moi to President Mwai Kibaki, an opposition candidate. It was hoped that precedence of the 2002 elections would set the democratisation and developmental trajectory of the country. However the preceding 2007 elections was nothing but a disaster. Over 1000 lives were lost, at least 700000 were displaced (Cheeseman et al., 2019) and at least 117,216 private entities and 491 government-owned facilities destroyed (CSI, 2009, Waki Report, 2008, KNCHR, 2008). According to the World Bank, Kenya's GDP growth potential narrowed by up to 4.5% from an initial pre-Post Election Violence (PEV) expected growth of upto 8% thus causing widespread inflation and further impoverishment within low income households (World Bank, 2008). Guibert and Perez-Quiros (2012) also estimated that Kenya's per capita income was reduced by at least 7% by the impacts of the 2007/2008 PEV. The three-month long post-elections violence

stained the country's democratic heritage and position as one of the most stable states in Africa. Regardless, the country manoeuvred the murky situation via a political compromise that encompassed a grand coalition government led by the two protagonists and other political actors with President Mwai Kibaki as the head of state and Prime Minister Raila Odinga as the head of government.



The 2007/2008 political crisis also instigated the constitutional review process that yielded a new constitution in 2010 thus displacing the 50-year old constitution as the country's supreme law. The 2010 constitution introduced new political dispensation expected to have far reaching implications on the country's democratisation and elections. For instance, the constitution, despite retaining the country as a pure presidential system, introduced the devolved governments as a second and legitimate source of power thus diverging power from the national government. The new law also increased legislative powers of a newly introduced bicameral parliament including subjecting all critical executive decisions to parliamentary approval before they take effect. Similarly, the new constitution also bolstered the role of the Judiciary in the governance of the country including introducing the Supreme Court of Kenya as the highest court on the land with inherent right to hear and determine presidential electoral disputes. The constitution also introduced numerous independent national commissions that were expected to focus their efforts on unique structural issues of public interest, a feature unique to the Kenyan political system. One of such constitutional commissions included the Independent Electoral and Boundaries Commission (IEBC) that is mandated by law to draw political boundaries in Kenya and conduct all national and local elections.

Additionally, on matters touching on elections, the law attempted to diffuse the potential of electoral violence by categorically establishing a requirement for a candidate to be declared a winner of the Presidential vote as well as providing an opportunity for run-off vote in the absence of a clear winner. Consequently the three preceding elections 2013, 2017 and 2022 elections despite ending with ambiguous political outcome, largely resolved through personal agreements between the main political antagonists did not result in a total post-election violence as the case in 2007/2008 (Cheeseman et al., 2019, [Cheeseman et al., 2013](#), [Rwigema, 2022](#)) In fact certain democratic gains were witnessed including the cancellation of the first presidential election outcome in 2017, a first in Africa and one of the few scenarios in the world for a sitting president.



## Adoption of Technology in Elections in Kenya

Beginning in 2013 elections, Kenya has relied on various forms of electronic voting systems as well as electronic communication ecosystem with social media campaigning and political advocacy being a key influencer of voting patterns in the country, particularly in the urban centres. However, increased adoption of technology in Kenya's elections, whether the country's intensive investment in electronic voting systems or widespread use of social media for campaigning and other civic engagement has not necessarily translated into democratisation (Ekstrom, 2013). Ekstrom's view is further strengthened by the evidence of electoral petitions in all the three recent presidential elections results with one, in 2017, having been nullified by the Supreme Court of Kenya (Barkan, 2013). Akello (2021) argues strongly that in the case of Kenya 2017 elections, while the constitutional and statutory requirement to incorporate technology to improve electoral outcome, the missing link in Kenya's adoption of technology in its elections remained among others limited technical capacity and appropriate governance strategies to utilise such technologies. Akello remarks as follows "...for technology to ensure free, fair and credible elections, its use, application and management must be proper. Without proper use and management, technology is nothing more than a mere tool or aesthetic" (Akello,

2021). A previous study by Micheni and Murumba (2018) corroborates Akello's (2022) assertions in which case the study identified the urgent need to back electoral legislative and regulatory frameworks with relevant feasibility studies and strategic planning mechanisms when introducing election technologies (Micheni & Murumba, 2018). The study had systematically reviewed Kenya's electoral processes in light of technological adoption and found critical faultlines as regards logistical preparedness of the Independent Electoral and Boundaries Commission (IEBC). It is also key to note the increasing role that social media and other digital platforms play in Kenya's electoral processes. The country's largely youthful population have continued to embed key social media campaign strategies. In the country's most recent 2022 elections emerging social media platforms such as Tik Tok and Instagram played a central role by enhancing voter engagement and political parties' campaign narratives.





## Overview of Electoral Landscape

Prior to attaining majority rule in 1994 South Africa had experienced numerous elections, most of them undemocratic as they largely entrenched apartheid policies and excluded the participation or effective representation of the largely black majority. Beginning with the election of Nelson Mandela and the African National Congress (ANC) as the ruling party in 1994, South Africa has largely experienced electoral cycles and political organisation largely structured around one-party dominance. However, this political reality is changing. Marcel Paret (2018) remarks that there is a marked move from the largely anti-apartheid nationalistic politics of the 1990s and early 2000s that had secured ANC's hold on

power. Marcel's study utilised surveys in the 2014 and 2016 elections and triangulated the outcome with case study analyses of interviews from popular protests encompassing blue collar workers, low income communities and students. This comprehensive study found a rapidly shifting focus and satisfaction by the South African electorates with a shift from traditional ANC anti-apartheid rhetoric to more socio-economic oriented issues (Paret, 2018).

A further analysis by Joleen Steyn Kotze and Narnia Cohler-Muller (2019) corroborates Marcel's findings and underscores the changing interest of the South African electorate. For instance in the 2016 local elections ANC lost three major municipalities including Tshwane,

Johannesburg and Nelson Mandela Bay to the opposition parties and for the first time secured less than 60% of the total votes cast with an 8% drop from 63.65% in 2011 to 55.68% in 2016 (Kotze and Cohler-Muller, 2019). Some of the issues of concern for voters with the ANC regime included high corruption levels particularly under the Jacob Zuma Presidency and lack of accountability. In addition the most outstanding issues of concern for voters going into the 2019 General Elections included socio economic transformation for the majority poor, land and economic justice (Kotze and Cohler-Muhler, 2019). And the 2024 elections marked the first time in history that ANC failed to secure the requisite 50% total votes and in fact garnered only 40% and had to resort to coalition building with the DA Party and other smaller parties to form government (Aljazeera, 2024).

Africa Center for Strategic Studies review of South Africa's 2024 elections also notes the enhanced competitiveness in the South African political space with many opposition parties including the recently formed uMkhonto weSizwe party under the patronage of former President Jacob Zuma, the Democratic Alliance (DA) and the Economic Freedom Fighters under Julius Malema being seen as the main challengers. The paper also noted the possibility of low voter turnout in 2024 by some supporters of ANC as a form of defiance. Voter turnout for South Africa's 2024 polls eventually stood at 57.54% higher than that of 2019 which was 46.7%.

Still the study recognises key strengths that would help South Africa successfully navigate the tight political race in 2024 including its relatively strong legal system with tested capabilities to hold the political class accountable including the recent judicial investigation into the allegations of state capture by the regime of Jacob Zuma, as well as a competent electoral body in the name of the Independent Electoral Commission that remains largely professional and impartial. Additionally the country's military is also seen as professional as such supportive of a democratic order (ACSS, 2024). Regardless, the South African political system and elections also showcased serious constraints including a wave of political assassinations (Makhaye, 2023), increased racial and socioeconomic inequality, xenophobia and other forms of hatred scenarios.

### **Adoption of Technology in Elections in South Africa**

Prevailing evidence indicates existing utilisation of technology in elections in South Africa. For instance, in the 2021 local elections, the Independent Electoral Commission enlisted electronic voter management devices (VMDs) and online voter registration facilities to tackle the challenge of double voting (Mathe, 2022). As a result Mathe (2022) proposes the need to entrench the adoption of technology in South Africa's electoral management, including introduction of parallel e-voting and manual voting,

processes based on the positive outcome of the 2021 scenario. However, constraints resulting from limited access to the internet for all and perennial electricity blackouts stand on this path. Mourine Achieng and Ephias Ruhode (2013) remarks on the increasing unreliability of manual voting including high costs of ballot papers and other overhead costs, electoral delays and general lack of confidence with electoral outcomes. They also observe the largely tediousness of the manual electoral process, and unsecured, and time consuming nature of the manual system. As a result the authors, in a study carried out in Cape Town, found a solid basis for e-voting in South Africa dependent on availability of internet connectivity and electricity (Achieng and Ruhode, 2013). An IEC-commissioned study also recommends a phased adoption of e-voting in South Africa with key considerations being the need for legislative input by the South African Parliament as well as an experimental and contextual approach to implementation of the system both at the national and regional levels (Thakur and Millham, 2018). As regards the implications of the overall technological ecosystem, particularly emerging technologies such as social media platforms and fourth industrial technologies, in South Africa's election, findings largely showcase a positive correlation.

An experimental study by Karen Feree et al. (2015) dubbed "Using Technology to

Promote Participation in Emerging Democracies: Voice and the 2014 South African Elections" found increasing adoption of tech in electoral-related information. The study sought to practically test the levels of public engagement in electoral and other democratic processes through emerging technologies such as social media, short message services (SMS) largely enabled through mobile phones. The study team sent 50 million SMS messages encouraging members of the public to participate on a platform designed to promote public participation in the upcoming 2014 elections. Observations indicate that a mixed profile of users actually registered and utilised the platform, both on feature phones, largely associated with low-income households, as well as on hi-tech smartphones, commonly associated with middle and elite socioeconomic status. As a result the study found a direct link between increased adoption of technology and increased participation in democracy in South Africa. The study also identifies other benefits of adoption of Information Technology in elections including use of citizens for election monitors and whistle blowers for negative political acts such as vote buying and campaign violence as well as inclusive participation in core electioneering activities for historically marginalised groups such as young women and persons with disabilities (Feree et al., 2015).

Elections in South Africa have increasingly embraced social media platforms with political parties and candidates utilising various social media platforms including Twitter, Facebook and Instagram for outreach. For instance, in the period leading to the 2019 elections, President Cyril Ramaphosa held a live Instagram chat with South African celebrities (SAIIA, 2020). While the impact of social media on electoral outcome is debatable with some sources claiming that it doesn't really influence voters' choices as much as is often perceived. Economic Freedom Fighters's (EFF) huge online following have barely turned into electoral gain over ANC. Some of the most limiting factors for social media influence include relatively low internet and mobile penetration and high costs of data compared to Western Democracies thus limiting access to

low-income households. A study by Broadcast Research Council of South Africa also emphasised the limited role of social media as a source of political information largely among the middle class (BRCSA, 2019). Additionally, misinformation and disinformation remain of particular concern in South Africa. Various reports indicate an extensive and negative preeminence of misinformation and disinformation content spewed on social media platforms in South Africa's 2024 elections. Certain impediments lie in the fight for a more responsible use of social media in South Africa including limited resources and inaccessible big tech API to effectively monitor online posts (Berger, 2024).



## Overview of Electoral Landscape

Tunisia's modern democratic journey began post-Arab Spring when the authoritarian regime was successfully replaced by a pro-democracy government and proponents of a secular state (Battera and Leraci, 2019). The nation's political system largely encompasses a two-party system with inherent regional and socioeconomic divisions namely the Sahel and Tunis Region, the South (Sfax and Kairoun) and the Western marginalised region along the Algeria border. The country's political and electoral scene is largely volatile and fluid with frequent electoral reviews including in 2014, 2017, 2019 and 2022, as well as cabinet reshuffles among other political

stalemates (Ali, 2022). As a result, in January 2021 major political protests almost similar to those of the Arab Springs were witnessed in Tunisia with the main target being Ennahda Islamists. President Kais Saied responded to the riots by instituting a constitutional reform that was largely seen by some observers as a coup against the country's supreme law (Kashina, 2022). Regardless, the country stands as a majorly democratic state with key tenets of democracy in observance key among them being conduct of regular free and fair elections.

A review of the raft of democratic and electoral steps undertaken by Tunisia post-Arab springs uncovered a progressive democratic space. For

instance, following the October 2011 elections the country established a National Constituent Assembly (al-Majlis al-Taʿsīr al-Wa anī, NCA) that delivered its mandate as per the legal frameworks with a draft constitution under consideration by the Assembly. Similarly, Tunisian political elites were also found to be largely subservient to the country's institutions (Koehler et al., 2014). A comparative study by Luca Bettarelli (2017) on electoral participation in Tunisia and Egypt found the former to have higher participation rates across multiple segments of the society including former revolutionaries, women, rural dwellers among others. For instance, revolutionaries in Tunisia (63%) were more likely to vote in the first election after the Arab Spring compared to their counterparts in Egypt (45%). The author proposes two potential explanations for this situation namely; differing fundamentals of the revolutions or differing capacities of succeeding governments to include the revolutionaries and other spectrum of the society in decision making including through processes such as constitutional reforms and accountability by the government among others (Bettarelli, 2017).

## **Adoption of Technology in Elections in Tunisia**

Tunisia's history with application of technology for political mobilisation is replete. Social media played an incredibly

critical role during the Arab Spring of 2011 which saw the autocratic regime of President Ben Ali driven out of power with intense usage linked to the greater political information efficacy observed during the revolution (Kavanaugh et al., 2017, Maurushat et al., 2014). Anita Breuer and Jacob Groshek's (2014) study on the role that social media potentially continued to play in Tunisia during its political transition found a positive correlation. Key social media use scenarios measured included participation in the 2011 elections and overall political efficacy of the public (Breuer and Groshek, 2014). For instance, social media and the internet was utilised to inform the public about the magnitude of past protest events and organise for upcoming protests during the Arab Spring. Breuer and Goshek (2014) observes that social media helped Tunisians overcome the barrier of fear associated with the protest under the authoritarian regime.

“In these ways, the Internet served as the foundation for the articulation and aggregation of grievance, and acted as a significant resource that helped overcome problems of collective action and foment a successful protest movement that resulted in regime change”

Furthermore social media has continued to shape Tunisia's electoral democracy with activists constantly using the platform to communicate with their followers. Nobel Peace Prize nominee Lina Ben Mhenni called for the boycott of the

elections based on perceived polarisation largely through online blogs. Similarly, the religious-secular divide in the country's electoral and political dynamics has also been largely expressed online with each side of the divide appealing to their followers. For instance, occasional street violence between these two groups has been linked to mobilisation on social media. One such mobilisation was over the controversy created by the film *Persepolis* which was aired by Neema TV and received negative reaction from conservative Islam community and eventually resulted in at least two successive protests by both sides with both of these sides organising on Facebook (Breuer and Goshek, 2014). Breur and Goshek's (2014) study revealed that at least 60.5% of Tunisians often used the internet for political conversations with friends, colleagues and family with 44.3% using the platform for political activation with strangers. Overall, the study found that increased usage of the internet daily enhanced political awareness.

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## Overview of Electoral Landscape

Namibia is considered one of the most politically stable countries in Africa. Several indexes place the country among the world's most sociopolitically successful countries globally even ahead of some European countries. Namibia has held democratic elections since 1989 when it obtained majority rule from the apartheid South Africa domination. While the country majorly stands as a one party dominant polity with South West Africa People's Organisation (SWAPO) having ruled the country for past 30 odd years of independence. SWAPO played a critical role in the push for Namibia's independence and thus has commanded immense loyalty and patriotism from a

majority of Namibians. For instance in the presidential and parliamentary elections of 2014 SWAPO achieved a majority vote of 87% and 80% respectively (Tijipueja, 2014). However, there is evidence of a drop in the loyalty levels with some of the recent electoral results in 2019 showing a marked decrease in vote commanded by SWAPO.

In 2019 SWAPO's parliamentary votes dropped from 80% in 2014 to 65.5% while its presidential dominance diminished from 87% to 56.7% (Fombad and Steytler, 2021). Regardless of the overall improvement in the multipartyism regime in Namibia the country still faces real



challenges in embedding true competitive multiparty politics. Ian Cooper (2012) identifies three fundamental hindrances to multiparty politics in Namibia including an acute volatility and fragmentation of the Namibian opposition parties with scenarios of ethnically driven politics and permissive electoral systems, regular than normal in-party splintering as a result of leadership contests as well as socioeconomic motives such as the parliamentary packages among others that often limit the focus of key opposition party figures (Cooper, 2013).

### **Adoption of Technology in Elections in Namibia**

Namibia stands as one of the few countries in the world to successfully implement electronic voting. Noluntu Mpekoa and Darelle van Greunen (2017) in an investigative study on the adoption of e-voting in Namibia and Estonia identified central driving factors for successful implementation of e-voting in the respective countries including ICT infrastructure, political will, voter education and awareness, adequate logistical planning, enabling legal and institutional environment, security and public trust, and existing acceptance and adoption of digital technologies (Mpekoa and Greunen, 2017). A further study also successfully built a case for the adoption of an e-voting electoral system for Zimbabwe based on the Namibian experience, with Namibia being primed as the first African country to adopt e-voting.

The study highlighted the most fundamental challenges facing elections in Zimbabwe and across Africa as being contentions over voter registration, polling process, ghost voting as well as counting and tallying processes commends electronic voting as a viable solution to the majority of these blockers. Consequently, e-voting is seen as bearing strategic benefits including less overhead costs, ease in voting, improved accuracy in counting and tallying of results among others (Dzisa and Chigora, 2017). As a result Namibia is seen as a pacesetter country globally as regards adoption of technology for management of national elections. Since 2014 Namibia has deployed e-voting in presidential and parliamentary elections.

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**The Blockchain Electoral Voting system is seen to have the capacity to guarantee the security of elections as well as keep the rapidly increasing cost of conducting elections at bay.**

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Kealeboga Maphunye (2019) acknowledges the imperative place of electronic voting in Africa including the need to locate elections within increasing adoption of the internet across Africa and the potential benefits of ICT for elections monitoring such as application of experimental design for monitoring illicit electoral practice. Maphunye's study also acknowledges the astounding place Namibia in adoption of e-voting. However, Maphunye cautions on the need for African countries, Namibia included, to ensure alignment of e-voting technologies (EVTs) adopted with their respective elections legislative and institutional frameworks. As such the constitutionality and legitimacy of EVT remain critical lest application of such technologies render elections either largely flawed or illegitimate (Maphunye, 2019). Matab et al. (2020) observe the urgent need for African countries to adopt blockchain technology for election management. The Blockchain Electoral Voting system is seen to have the capacity to guarantee the security of elections as well as keep the rapidly increasing cost of conducting elections at bay.

“An attempt to alter/manipulate records (votes) in the system's database can be spotted easily, because of its rigorous consensus rules, such an attempt is considered void and denied permission to access, alter, or destroy any of the previously saved votes.” (Matlab et al., 2020)

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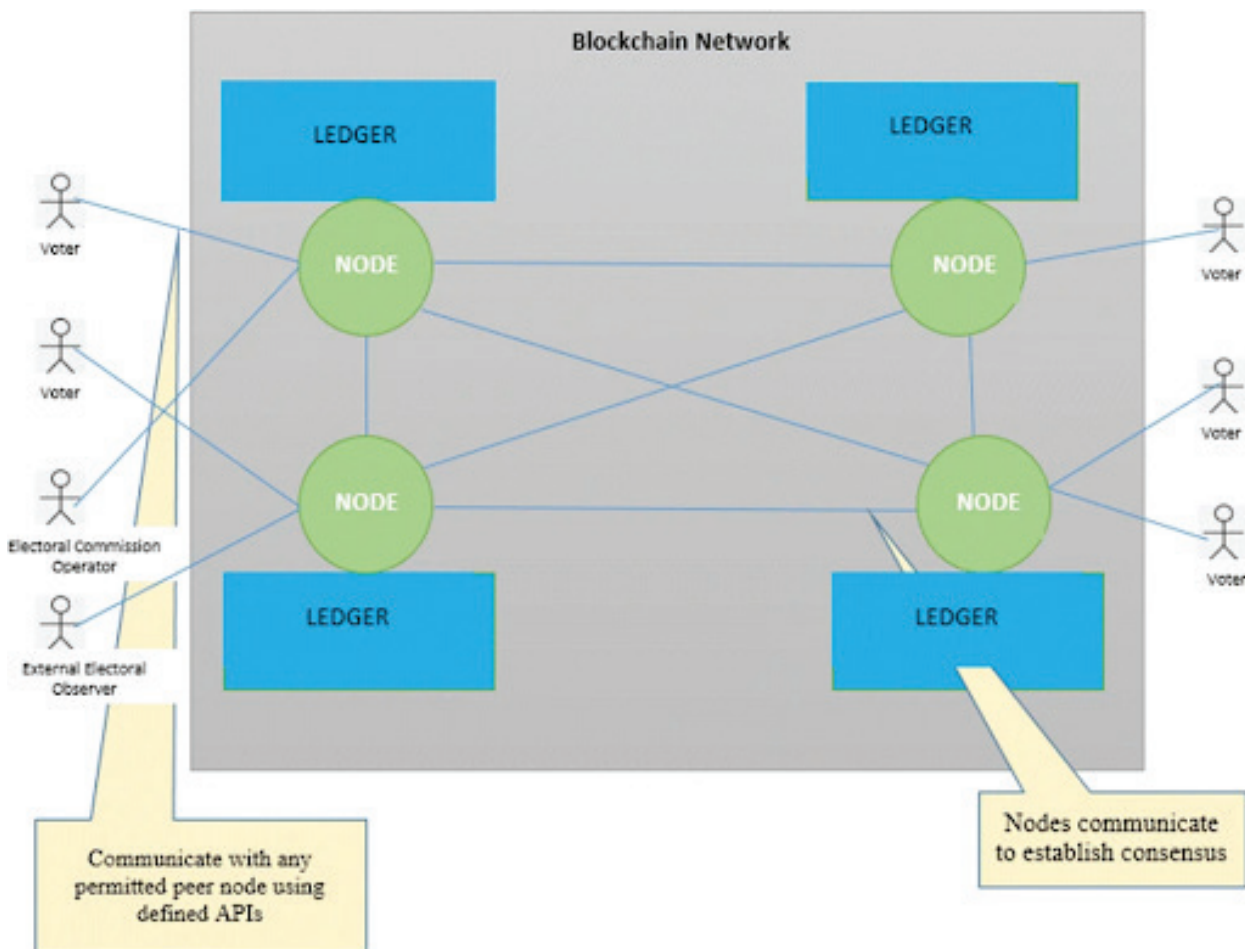
Matab et al. (2020) highlights the potential gains that African countries would derive from prioritising adoption of blockchain voting systems by ensuring sustained public awareness of the application of blockchain technology in elections and creating a conducive policy and legislative infrastructure that can support the implementation of such system in the nearest term. Namibia, having been a front runner in e-voting, could use its vast and tested EVT infrastructure to adapt the blockchain electoral system to set pace for the rest of Africa and the world.

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(Matlab et al., 2020)

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Proposed Blockchain Electoral System Architecture for Africa  
 Source: [Matlab et al., 2020](#)



## Overview of Electoral Landscape

Mauritius has held democratic elections since 1968, when it attained independence, and stands as one of Africa’s most democratically vibrant and socioeconomically advanced states. Elections in Mauritius are largely democratic with multiple political parties and actors engaged in meaningful political competition on key issues including social welfare programmes for the public (Phaala, 2019). Consequently, Phaala (2019) summarises the centrality of elections in the affairs of Mauritius and Mauritians as follows.

...in Mauritius, the power of elections extends beyond the narrow confines of

electing those with political authority to consolidate statecraft. Voting is an important component of the Mauritian social fabric, one which accords citizens with the power to choose policies that speak to their material needs and the island’s national identity as a bastion of social democracy in Sub-Saharan Africa (Phaala, 2019).

Despite a marked socioeconomic development and sustained democratic practice Mauritius’ political mechanisation does not lack its fair share of downsides. For instance, Roukaya Kasenally (2011) notes that despite having successfully weathered the “overcrowded barracoon” situation by investing in strategic national

resources and sectors including protected markets and flexible export business, even being considered a role model in Africa, the Island nation currently faces critical challenges that require urgent attention. Roukaya considers democratic stagnation key among these challenges. Other potential threats to the developmental trajectory of the country include ethnicization of politics, dynastic political formations, political cronyism and patronage, marginalisation of minority groups and disenchantment and cynicism against the political class (Kasenally, 2011). Sheila Bumwaree, while underscoring Mauritius' position as a leader in critical developmental indices in Africa, takes a critical angle at the country's democratic journey and its applicability as a model for other African countries. Some of the incredible milestones achieved by Mauritius include an impressive human development index with the UNDP designating the country as a middle income economy, an impressive ease of doing business index posting, as well as a high level of multiculturalism (Bumware, 2015). Bumware (2015) concludes that indeed Mauritius is an incomplete democratic project as democracy is both a goal and a process.

### **Adoption of Technology in Elections in Mauritius**

In addition to traditional challenges and opportunities that Mauritian democratic hold the regime provides, the country's political class and public have also

intentionally adopted certain emerging technologies for politicisation and electioneering. Key among these is the widespread use of social media platforms such as Facebook and Youtube for political campaigning and mobilisation of voters. The 2014 general elections marked the first time social media played an integral role in elections in Mauritius. This intense use of social media for political activities rested on the existing widespread use of such platforms across the country. For instance, for a country of 1.3million people Mauritius' mobile phone penetration at 1.65Million and internet penetration of 800000 with 630000 on Facebook as at 2017 is more than impressive (IWS, 2017, Elaiees, 2017). During the 2014 elections social media platforms were majorly used for political messaging and campaigning but barely showcased a strategic application (Kasenally and Awatar, 2017). Similarly, social media use was largely dominant among the opposition parties as a result of impending domination of the national broadcaster, Mauritius Broadcasting Company (MBC) by the government parties.

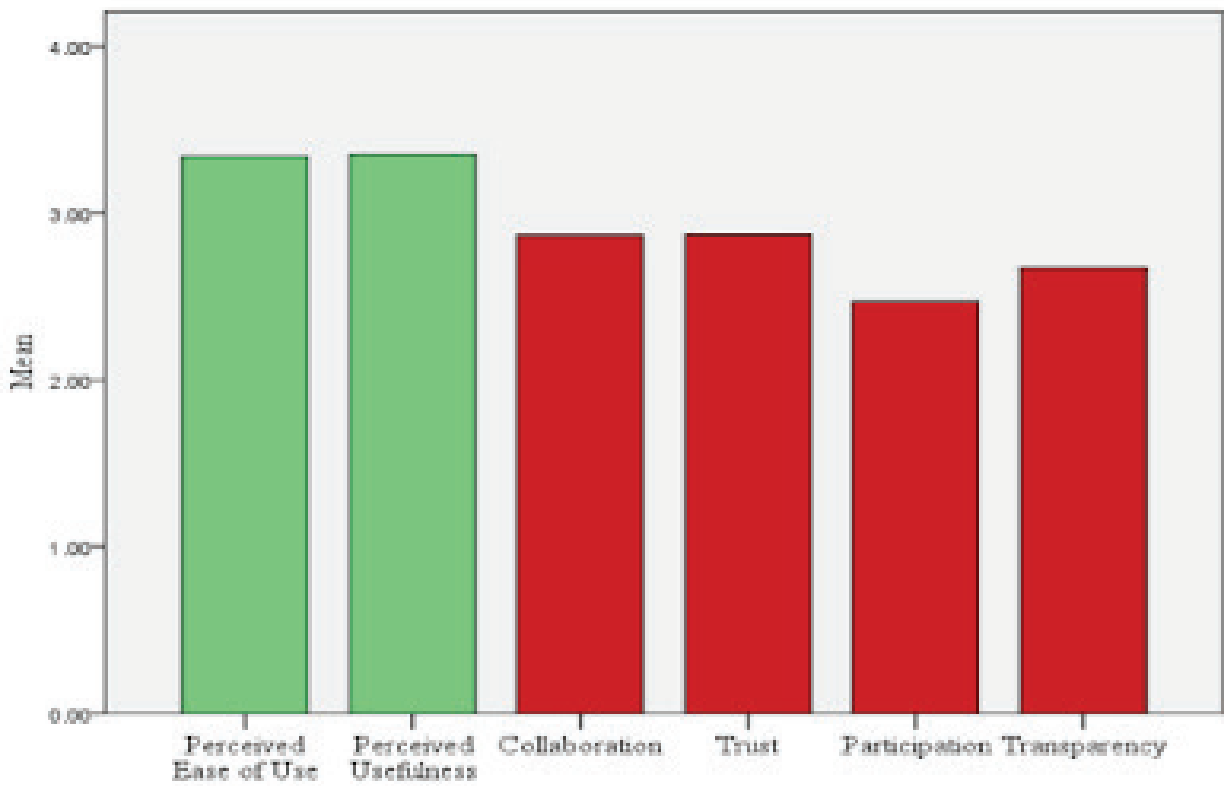
A systematic analysis of elections-related content posted on the various social media platforms included invitations to attend political meetings, political speeches, political interviews of various leaders, and regurgitated content from traditional media e.g. TV shows etc (Kasenally and Awatar, 2017). While Mauritius has not formally adopted

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e-voting technologies in its elections several studies predict near future adoption with extensive research ([Sheeba et al., 2012](#)) revealing the need for such an e-voting system when adopted to be relevant to the Mauritanian political and logistical context with the security of such system also being a central consideration. A quantitative study that sought to measure citizen perception on adoption of e-governance in Mauritius across key areas including perceived ease of use, perceived usefulness of the technology, collaboration and participation, trust and transparency found positive attitudes in the two initial strands but negative attitudes in the latter three ([Sanmukhiya, 2019](#)). Thus clearly outlaying the centrality of the government and civic society stakeholders in Mauritius to ensure an inclusive, transparent and participatory transition into e-governance including in the impending adoption of e-voting systems.



Prescription of E-governance Dimension in Mauritius by Citizens  
 Source: [Sanmukhiya, 2019](#)



## Overview of Electoral Landscape

The electoral process in Nigeria can be traced back to the colonial era, with the use of limited franchises in Lagos as early as 1922 (Enebeli and Njoku, 2022). However, it was not until the period leading up to independence that a more comprehensive electoral framework began to take shape. The 1959 federal elections, which set the stage for Nigeria's independence in 1960, is a crucial milestone in the country's democratic journey. During the post-independence period, Nigeria had the complexities of managing a multi-ethnic, multi-religious federation through democratic means (Odeyemi, 2014).

The First Republic (1960-1966) was characterised by regional politics and

ethnic tensions contributing to its downfall. The collapse of the First Republic and the subsequent military interventions significantly impacted the trajectory of Nigeria's democratic development. The periods of military rule (1966-1979 and 1983-1999) had profound implications for Nigeria's electoral processes and democratic institutions. These intervals were marked by the suppression of political activities, the centralization of power, and the erosion of democratic norms (Odeyemi, 2014; Omotola, 2010). However, it is crucial to note that even during these periods, there were attempts to return to civilian rule, as evidenced by the elections of 1979 and 1993.



The 1979 elections, which ushered in the Second Republic under President Shehu Shagari, represented a significant effort to revive democratic governance. However, this experiment was short-lived, succumbing to military intervention in 1983 amid allegations of widespread electoral malpractices and corruption (Joseph, 2014; Omotola, 2010). This pattern of military disruption of civilian rule underscores the fragility of Nigeria's democratic institutions during this period and the challenges faced in establishing a stable electoral system. The annulment of the June 12, 1993 presidential election, widely regarded as one of the freest and fairest in Nigeria's history, stands as a pivotal moment in the country's democratic journey. The election, won by Chief M.K.O. Abiola, was annulled by the military government of General Ibrahim Babangida, leading to a political crisis that significantly shaped Nigeria's subsequent democratic struggle (Omotola, 2010).

The Independent National Electoral Commission (INEC) has played a crucial role in Nigeria's democratic consolidation. INEC was reconstituted on several occasions: in 1958, 1963 (twice), 1964, 1977, 1981, 1987, 1989, 1993, 1994, 1998, 2000, and 2004 (Omotola, 2010). The transition to the Fourth Republic in 1999 marked a turning point in Nigeria's democratic evolution. The 1999 elections, while flawed, signalled the beginning of the longest period of uninterrupted civilian rule in the country's history (Suberu,

2007). INEC has undergone various reforms aimed at enhancing its independence and effectiveness. The appointment of Professor Attahiru Jega as INEC chairman in 2010 was widely seen as a positive development, contributing to improvements in the conduct of the 2011 and 2015 elections (Owen and Usman, 2015). Regular elections have characterised the Fourth Republic, gradually strengthened the democratic institutions, and increased political participation. However, there is a need to further strengthen the independence and capacity of electoral management bodies in addressing the persistent issue of electoral violence, enhance the inclusivity of the political process, particularly for women and youth, and deepen democratic culture beyond mere electoral participation (Ibeanu, 2007).

The analysis of election trends in Nigeria since 1999 reveals several notable patterns and developments. One significant trend has been the gradual improvement in the conduct of elections, albeit with persistent challenges. The 2015 general elections marked a watershed moment in Nigeria's democratic journey, resulting in a peaceful transfer of power from a ruling party to an opposition party at the federal level. This transition demonstrated a growing maturity of Nigeria's democratic institutions and increasing acceptance of electoral outcomes by political actors (Owen and Usman, 2015). However, it is

important to note that Nigeria's electoral processes continue to face different challenges. Issues such as voter intimidation, vote buying, and electoral violence have persisted, albeit to varying degrees, across different election cycles (Bratton, 2008). In addition, the recent 2019 and 2023 general elections recorded challenges such as logistical issues, incidents of violence, and allegations of malpractice in some areas, highlighting the ongoing need for electoral reforms (INEC, 2023; EU EOM, 2023; EU EOM, 2019).

### Adoption of Technology for Nigeria's Elections

Since the transition to civilian rule in 1999, the electoral process in Nigeria has undergone significant technological evolution. The 2003 and 2007 general elections, conducted using manual voter registers and ballot papers, were marred by electoral violence and malpractices (INEC, 2011). In response, the Independent National Electoral Commission (INEC) has progressively integrated technology into core electoral processes to mitigate human interference, enhance accuracy, and foster transparency.

The 2011 general election marked a crucial milestone in Nigeria's e-voting journey with the introduction of the Direct Data Capture Machine (DDCM) and the Permanent Voter Card (PVC) (INEC, 2011).

This system incorporated biometric data, specifically fingerprints, to reduce multiple registrations and enhance the voter register's integrity. However, the implementation faced technical challenges, including DDCM failures and inaccurate biometric data capture.





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Furthermore, INEC expanded electronic systems by introducing the Smart Card Reader (SCR) for voter accreditation during the 2015 general elections. This innovative anti-rigging biometric device aimed to ensure reliable voter identification and prevent electoral fraud. While the SCR's legality was initially questioned under Section 52 of the

Electoral Act of 2010, it was deemed compliant as it served for identification rather than ballot casting (PLAC, 2019).

Between 2011 and 2015, INEC optimised the voter registration process, removing over 15 million records due to de-duplication and non-compliance with established rules. From 2015 to 2019, an additional 15.7 million registrations took place, with 1 million records removed through deduplication, further strengthening the voter register's credibility. Despite these advancements, challenges persisted. The rate of successful voter authentication decreased over time, and some voters had to undergo manual accreditation due to SCR implementation issues. However, these challenges should be viewed as opportunities for improvement rather than indictments of the technology's efficacy.

In response to evolving needs, INEC launched an online voter registration portal, providing a convenient platform for voters to register and update their information, particularly addressing concerns surrounding the COVID-19 pandemic. In 2021, the commission introduced the INEC Voter Enrolment Device (IVED), a sophisticated tablet computer equipped with advanced features for faster and more accurate data capture during voter enrollment. For the 2023 general election, INEC adopted the Bimodal Voter Accreditation System (BVAS), which utilises both facial recognition and fingerprint authentication for voter identification. This improved system reflects INEC's commitment to ensuring electoral process credibility. Additionally, INEC introduced the INEC Result Viewing Portal (IReV), where scanned copies of Polling Unit Result Sheets (EC8A) are uploaded for public viewing. This system, piloted during the August 8, 2020, bye-election in Nasarawa State, aims to enhance transparency and accountability (INEC, 2023). The 2022 Electoral Act empowered INEC to

determine voting and result transmission procedures, including electronic methods. However, the 2023 general election faced technical glitches affecting the real-time display of election results on IReV, leading to public scrutiny and debate on the feasibility of fully embracing electronic voting systems in Nigeria.

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## Overview of Electoral Landscape

The democratic tradition and political evolution in Senegal has shaped its electoral process since independence from France in 1960. Initially adopting a parliamentary system, the country shifted to a strong presidential regime following the 1962 political crisis between President Leopold Sédar Senghor and Prime Minister Mamadou Dia. This transition was formalised by the Constitution of 1963, which established the President as the central figure of the executive branch.

Senegal was one of the pioneer countries in sub-Saharan Africa to organise a multi-party presidential election in 1978. This commitment to democratic processes

has been maintained through regular elections, despite occasional violence, which has largely upheld the stability of the country's institutions. Notably, Senegal remains the only West African nation to have avoided military coups since its independence (Grütjen, 2024).

The introduction of full multipartyism in 1981 under President Abdou Diouf's Parti Socialiste marked a significant step in Senegal's democratic journey. However, the historic turnover in 2000, which brought Abdoulaye Wade and his Parti démocratique sénégalais to power, did not fully realise the promise of democratisation. Instead, Senegal

evolved into what has been termed an "electoral democracy" - a system with democratic institutions but significant limitations on the quality of democracy (Brossier, 2024).

Subsequent peaceful transfers of power, including those in 2000 and 2012, have reinforced Senegal's reputation as a bastion of democracy in the region. The country has implemented key democratic reforms, including an independent electoral administration and secret ballots. These measures have facilitated peaceful transitions, as evidenced by the departures of Presidents Diouf in 2000 and Wade in 2012 following electoral defeats (Larreguy and Liu, 2024).

However, Senegal's democratic journey has not been without challenges. The 2024 election marked a critical juncture in Senegal's political history. President Macky Sall's attempts to extend his rule beyond the constitutional limit led to a severe political crisis. During this period, Senegal experienced significant civil unrest. Protests erupted in response to the perceived illegal arrest and imprisonment of opposition politicians (Kohnert, 2024). The government's use of force to suppress these demonstrations raised concerns about the state of civil liberties and highlighted vulnerabilities in the country's democratic fabric (Grütjen, 2024). This situation tested the resilience of Senegal's democratic institutions to their limits. The Constitutional Court's

intervention played a crucial role in resolving the crisis, underscoring the importance of strong judicial institutions in safeguarding democracy (Grütjen, 2024).

Despite these challenges, Senegal continues to be regarded as one of Africa's strongest democracies. Its commitment to multiparty competition, coupled with institutional features such as an independent media and freedom of speech, sets it apart from many of its regional counterparts. The country's ability to navigate political crises and maintain democratic norms, even in the face of authoritarian temptations, indicates the resilience of its electoral landscape (Larreguy and Liu, 2024).

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## Adoption of technology in Senegal's elections

The establishment of the Direction de l'Automatisation du Fichier (DAF) within the Ministry of the Interior in 1977 initiated the move towards integrating technology into state record management. Initially described as computerization, this process later evolved into digitization, reflecting both technological advancements and the changing needs of Senegal's electoral system. The introduction of biometric technology by the DAF in 2005 represented a significant leap forward in the production of state electoral registers. This technological upgrade was primarily motivated by the need to address recurring election disputes that had plagued Senegal since the 1980s. Issues related to electoral fraud in previous elections severely undermined public trust in the electoral process, with the opposition frequently accusing the ruling Parti Socialiste (PS) of manipulating the electoral register to their advantage (Passanti, 2021).

The introduction of the biometric identity card in 2016, following directives from the Economic Community of West African States (ECOWAS), further illustrates the complexities of implementing new technologies in electoral systems (Passanti, 2021). The card was designed as a multipurpose document serving as both an identity and voter card, with the aim of standardising identification across ECOWAS member states, facilitating



The challenges faced in the distribution of these new biometric cards further underscore the practical difficulties that can arise when implementing new technologies. As the 2017 legislative elections approached, many voters, particularly those who had registered early, reported not receiving their voter cards. Furthermore, the digitization of the electoral register was thus presented as a solution to these long-standing issues, promising greater transparency and accuracy in voter registration and identification. However, as evidenced by



the controversies surrounding the 2019 elections, the introduction of technology did not eliminate accusations of electoral manipulation (Eze and Enem, 2022). Instead, it shifted the nature of these accusations, with opponents of President Macky Sall claiming that he was using the new technological, bureaucratic, legislative, and legal infrastructure to "neutralise" his political rivals.

This situation highlights a critical aspect of technological implementation in electoral processes: while technology can enhance efficiency and accuracy, it can also become a tool for political manipulation if not implemented and managed transparently and impartially. The debate surrounding the 2019 elections underscores the dual narrative that often

accompanies such technological transitions, with supporters viewing them as safeguards against fraud and opponents perceiving them as sophisticated tools for political suppression.

This situation not only caused frustration among the electorate but also raised concerns about potential disenfranchisement and the overall integrity of the electoral process. The adoption of biometric technology in a non-consensual environment further complicates the narrative. It raises questions about the balance between technological advancement and political consensus, and how disagreements over technological implementations can exacerbate existing political tensions.





## Overview of Electoral Landscape

The democratic journey of Burkina Faso has been affected by continuing waves of military coups, authoritarian rule and insecurity. After independence from France in 1960, the country struggled to establish a stable democratic system of government. After the assassination of Thomas Sankara who ruled between 1983 to 1987, the government bowed to the pressure from regional and international organisations to reform its political institution (Harsch, 2013).

Blaise Compaoré's political alliance organised a National Congress to draft a constitution allowing for trade unions and political pluralism in 1990 (Hilgers, 2010). Compaoré then became President in 1991, running unopposed after opposition

complaints about the denial of a sovereign National Conference. He went on to win subsequent elections in 1991, 2005, and 2008, ruling for a total of 27 years (Moestrup, 2019).

Compaoré's attempt to extend his term in 2014 led to widespread protests known as the "insurrection populaire," forcing him from power (Brett, 2021). This ushered in a transitional period led by Michel Kafando, tasked with organising elections and establishing a new democratic order. However, the process faced challenges, including a failed coup attempt in September 2015 by elements of the presidential guard loyal to Compaoré (Hagberg, 2015).

Despite these setbacks, preparations for new elections scheduled for October 11, 2015, continued. However, on September 21, 2015, the presidential guard (RSP) staged another coup attempt, briefly taking President Kafando and other officials hostage. This attempt, perceived as Compaoré's continued interference in Burkinabe politics, was short-lived due to strong domestic and international opposition. The Burkinabe Army intervened, reinstating Kafando within a week (Bjarnesen and Lanzano, 2015).

The elections were rescheduled for November 29, 2015, with fourteen candidates contesting the presidency. Two leading candidates emerged: Roch Marc Christian Kaboré of the People's Movement for Progress (MPP) and Zéphirin Diabré of the Union for Progress and Change (UPC). Kaboré, a former Compaoré insider who had broken away from the CDP in 2014 over the term limits issue, ultimately won the election (Ariotti, 2016).

Between 2016 and 2020, the country experienced a surge in terrorist attacks. This insurgency had a profound impact on the nation's stability and political landscape. During this period, Burkina Faso suffered 1,567 attacks, with 600 occurring in 2020 alone (Saidou and Bertrand, 2022). The human cost was devastating, with nearly 5,000 people killed and about five percent of the population forcibly displaced. This

deteriorating security situation became a central issue in the lead-up to the 2020 elections.

The impact of the insurgency on the electoral process was significant. The National Independent Electoral Commission (CENI) was unable to conduct voter registration in 22 out of 351 municipalities due to security concerns.

As a result, at least 300,000 voters were disenfranchised, either because they were displaced or because their polling stations remained closed due to security threats (Saidou and Bertrand, 2022). The government had proactively adopted legislation allowing election results to be upheld even if polling could not proceed in certain parts of the country. Campaign activities were largely restricted to urban centres in some regions, as venturing into rural areas where insurgents operated was deemed too dangerous. These periods in the history of the country demonstrate a rough path towards democracy, marked by both setbacks and progress.

### **Adoption of technology for Burkina Faso**

In 2007, Burkina Faso adopted biometric technology for voter registration (Idowu, 2021), indicating a significant step towards modernising its electoral system. The process resulted in the registration of 4,365,153 citizens out of an estimated 7.5 million potential voters, demonstrating

both the system's success in capturing a substantial portion of the electorate and the difficulties in achieving comprehensive registration.

The implementation of biometric technology increased voter enthusiasm and participation, with turnout exceeding 70%. However, several logistical challenges hindered its optimal execution. These included complications due to the rainy season, uneven development of communication and transportation networks, and widespread lack of required documentation among rural populations. Technical issues, such as subpar generators and computer malfunctions, led to extended wait times and, in some cases, prevented registered

voters from participating due to lost data.

Following the data collection phase, the Independent National Electoral Commission (CENI) undertook computer processing to develop a provisional electoral list, which was made public one month prior to the election date. This public release served crucial purposes in maintaining the integrity of the voting process, allowing for error correction, removal of ineligible individuals, and reinstatement of those mistakenly omitted. Despite the implementation of the biometric system, the CENI identified over 26,000 cases of multiple registrations, underscoring the ongoing challenges in electoral management even with advanced technology.



The role of media in Burkina Faso's electoral process aligns with the development media theory, which posits that modern mass media has a social responsibility to drive positive developmental strides in society (Folarin, 1998). The media played significant roles in information dissemination, citizen mobilisation, voter education, and scrutiny of the electoral process. Agba and Ogri (2016) found that election outcomes in Burkina Faso were largely influenced by active media coverage and the widespread interest generated among members of the international community.

Social media platforms were crucial in shaping political events and mobilising support during the 2014 insurrection and 2015 resistance in Burkina Faso. Platforms

such as Facebook and WhatsApp facilitated real-time information sharing, allowing protesters to document events and mobilise support (Hagberg, 2023). This interconnectedness between social media and street protests highlighted how online activism complemented and reinforced street-level activism, contributing to the memory-making and marketing of the insurrection and resistance.

Nonetheless, the implementation of the biometric system revealed systemic shortcomings in Burkina Faso's electoral infrastructure, including lack of control over the electoral map and insufficient involvement of political parties and civil society in voter awareness campaigns.



## Overview of Electoral Landscape

Ghana experienced political instability between 1957 and 1992, marked by numerous coups d'état and alternating cycles of civilian and military rule. The last military regime, led by Jerry Rawlings, lasted from 1981 to 1992. An important moment in the country's democratic journey came with the adoption of the Fourth Republican Constitution in 1992, which ushered in an era of multi-party democracy. Since then, the political arena has been predominantly shaped by two major parties: the National Democratic Congress (NDC) and the New Patriotic Party (NPP), though there were other contesting parties such as the Convention People's Party, the Democratic Freedom

Party, the Democratic People's Party, the People's National Convention, and the Reformed Patriotic Democrats. This two-party system has had significant implications for electoral competition and governance in the country (Whitfield, 2009). The 1992 election saw relatively low turnout rates, partly due to opposition boycotts and scepticism about the electoral process (Anaman and Bukari, 2021; Jeffries and Thomas, 1993). However, subsequent elections have seen improvements in voter participation and overall quality.

The notable feature of an election in Ghana is the peaceful transfer of power

between the major political parties in 2000. No incumbent party has managed to secure a third consecutive term in office, a trend that can be interpreted as a sign of democratic maturity and the electorate's ability to hold governments accountable (Abdulai and Crawford, 2010). However, this pattern may also indicate a degree of voter dissatisfaction with successive governments' performance.

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Year	Political Party in Power	President	Note
1992	NDC	John Rawlings	Start of 4th Republic, civilian rule
1996	NDC	John Rawlings	Re-elected
2000	NPP	John Agyekum Kufuor	First power alternation
2004	NPP	John Agyekum Kufuor	Re-elected
2008	NDC	Evans Atta Mills	Second power alternation
2012	NDC	John Mahama	Re-elected (Mills died in office, Mahama succeeded)
2016	NPP	Nana Akufo-Addo	Third power alternation
2020	NPP	Nana Akufo-Addo	Re-elected

*Power alternation and Presidents of Ghana's 4th Republic (1992-2020)*

Source: [Boakye, 2018](#)

While Ghana has made significant strides in improving its electoral processes, challenges persist. Issues such as inflated voter registers and block voting, particularly in the strongholds of the two major parties, have remained concerns (Jockers et al., 2010). However, the Electoral Commission of Ghana has played a crucial role in maintaining the integrity of the electoral process. The commission has implemented measures such as biometric technology for voter verification and provisions for various categories of voters, including absent, transferred, special, and proxy voters (Sarumi and Sa'ad, 2020).

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The adoption of electoral technology in Ghana has had varied effects on different segments of the population.

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Civil society organisations (CSOs) and election observer groups have been instrumental in shaping Ghana's electoral landscape. Organisations like the Institute of Economic Affairs (IEA-Ghana), the Center for Democratic Development (CDD-Ghana), and the Coalition of Domestic Election Observers (CODEO) have contributed significantly to enhancing transparency, promoting public

discourse, and ensuring peaceful elections (Kumah-Abiwu & Darkwa, 2020). CODEO has emerged as a leading domestic and regional election observation group, demonstrating Ghana's capacity to monitor its own elections without relying solely on foreign observers.



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**while educated voters were enthusiastic about new technological approaches, less educated voters were more hesitant**

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### **Adoption of technology for Ghana's Elections**

The 1992 election in Ghana was widely considered flawed due to inadequate voter identification procedures. Asante (2008) notes that voter identification was haphazard and left to the discretion of election officials, making it difficult to detect impersonation and overvoting. This prompted the Electoral Commission to initiate reforms to enhance the credibility of subsequent elections. The commission introduced photo identification cards in select regions and thumb-printed cards in others, marking the beginning of technology adoption in Ghana's electoral system.

A significant leap occurred with the introduction of biometric voter registration and verification (BVRV) in the 2012 Presidential and Parliamentary elections. This system, accompanied by the "no verification, no vote" rules, was implemented with the aim of addressing

persistent electoral fraud issues.

However, the 2012 election, while innovative, faced significant challenges. Golden et al. (2014) reported patterns of biometric machine breakdowns, with fewer breakdowns occurring in polling stations with election observers. Machine malfunctions facilitated electoral fraud, including overvoting and ballot stuffing, especially in unobserved polling stations. Dorpenyo (2016) characterised the application of biometric technology in the 2012 election as a failure, though perspectives on the nature of this failure varied.

The 2016 election saw major improvements in the implementation of BVRV technology, as noted by Adams and Asante (2019). This suggests a learning curve in the adoption and management of electoral technology. The 2020 election, conducted during the COVID-19 pandemic, continued to employ technological solutions. Debrah and Owusu-Mensah (2023) report that despite some administrative and technical challenges, both domestic and international observers validated the election results, indicating an overall improvement in the use of technology.

There are indications of potential further technological advancements in Ghana's electoral system. Agbesi (2019) notes that discussions have been initiated by the Inter-Party Advisory Committee (IPAC) regarding the feasibility of adopting electronic voting in future elections.



Institutional forces have been identified as potential drivers for the adoption of internet voting systems in Ghana. The adoption of electoral technology in Ghana has had varied effects on different segments of the population. Adams and Asante (2019) found that while educated voters were enthusiastic about new technological approaches, less educated voters were more hesitant. The Electoral Commission has been criticised for not adequately considering population diversity when introducing technological interventions, potentially marginalising less technologically adept segments of society. This disparity in technological comfort and trust can negatively impact voter turnout.

The adoption of technology in Ghana's elections reflects a commitment to enhancing electoral integrity, but also highlights the challenges of implementing such systems in a diverse society.

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However, the integrity of technology in elections in Togo faces challenges related to poll workers' performance and resource constraints (Amegnran, 2017). While the country has implemented biometric registration, attempts to fully integrate computer-based systems in electoral processes have encountered difficulties. Olaniyan et al. (2011) attribute these challenges to inadequate infrastructure, low information literacy, limited internet penetration, lack of skilled personnel, and the high cost of specialised electronic voting hardware.

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## Overview of Electoral Landscape

The political system and electoral process in Togo have been shaped by a complex interplay of democratic aspirations and entrenched authoritarian tendencies, reflecting the instability in history and the profound challenges it faces in consolidating its democratic institutions. For more than three decades, Eyadéma Gnassingbé ruled as an authoritarian. In 1992, the country established a legal framework that allowed multi-party democracy which ushered in democratic reforms. Togo operates a unitary semi-presidential republic system. The president can be elected for a 5-year term and cannot be challenged by the legislature. The prime minister is nominated by the majority group in the unicameral parliament and appointed by the president. However, such democratic reforms have been flawed by allegations of fraud, intimidation, and a lack of transparency, raising concerns about the genuine commitment to democratic principles (Okeke and Ndubusi, 2023; Kohnert, 2020).

In 2005, the military announced Faure Gnassingbé as the president after the passing of his father. Most of the citizens protested the decision while the military suppressed their actions. Faure Gnassingbé was sworn in as official president on 4th May 2005. During this period the country experienced social unrest and declined economic activities and more than 30,000 migrated to the

neighbouring countries (Amnesty International, 2005). The pressure from the international community caused the government to negotiate with opposition parties and civil society groups leading to the formation of the Global Party Accords (GPA) (BTI, 2024). The GPA mandated opposition participation in the 2007 legislative elections, leading to a unity government led by Yawovi Agboyibo, which was successful, free, and fair, with low election violence.

Faure Gnassingbé, an introverted leader, is surrounded by an informal network of core regime supporters who make crucial decisions. Although he cannot claim to have inherited supernatural qualities, secret rituals of power still play a role.



Faure emphasises continuity and change, presenting Togo as a peaceful and prosperous country. The Rally of the Togolese People (RPT) was reformed by him even though the party's structure remained unchanged. He has tried to distance himself from his father by presenting himself as a reformer. Even so, the review of the presidential elections reveals a pattern of dominance by the ruling Union for the Republic (UNIR) party and the Gnassingbé family. The 2005 elections were flawed, but the 2010 and 2015 polls were believed to be free and transparent. Historically the official voters were reported high, while the opposition parties usually dispute election results due to violence and fraud (Roberts, 2008). The recent election was held in February 2022 and seven candidates were involved after a series of procedures conducted by the Constitutional Court. The incumbent president Faure Gnassingbé won the election with 70.78% of the total votes making it his fourth term in office. After the announcement of the results, the candidate of the Dynamique Monseigneur Kpodzro (DMK) coalition challenged the election results through an appeal to the Constitutional Court which was rejected for lack of evidence to support the allegations (ECOWAS, 2021).

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**The advent of social media and mobile technologies continue to have a significant impact on political engagement in Togo**

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### **Adoption of Technology in Togo**

Breuer et al. (2018) argue that while ICTs have the potential to enhance participatory communication and challenge local power dynamics, their success depends on careful adaptation to the political and technical environment, as well as consideration of local power structures and ICT accessibility.

The impact of new technology on civic engagement and political participation in Togo, particularly among young people, is significant. Keja (2022) notes that in regions like Sokodé, the proliferation of mobile technologies has influenced the interplay between social processes and political repression, shaping the country's electoral landscape. However, Breuer and Groshek (2017) found that general levels of non-electoral political participation remain low, attributing this to Togo's recent history of authoritarian rule and sociodemographic factors that limit both political participation and ICT access.

Togo deployed biometric technology for voter's registration in 2007 (Idowu, 2021). However, the integrity of technology in elections in Togo faces challenges related to poll workers' performance and resource constraints (Amegnran, 2017). While the country has implemented biometric registration, attempts to fully integrate computer-based systems in electoral processes have encountered difficulties. Olaniyan et al. (2011) attribute these challenges to inadequate infrastructure, low information literacy, limited internet penetration, lack of skilled personnel, and the high cost of specialised electronic voting hardware.

Togo's journey towards developing a national ICT policy has been gradual. Akoh (2012) reported that as of 2007, the country lacked a formal ICT policy, although more recent assessments

indicate plans to adopt policies promoting broadband. This slow progress in policy development may contribute to the challenges faced in implementing ICT-supported electoral systems.

The advent of social media and mobile technologies continue to have a significant impact on political engagement in Togo. Yao (2017) observes that these digital tools have enabled greater mobilisation during crises but have also exposed communication deficits and political constraints. Keja (2022) further notes that the widespread adoption of mobile phones among Togolese youth has altered information access and political reflection patterns, though not necessarily translating into increased protest activity.

# Trends, Patterns, and Interconnections of Emerging Technologies in Elections and Democracy Across Africa

## Disinformation and Misinformation

Mare et al. (2020) in an analysis of the spread of fake news and cyber-propaganda in sub-Saharan Africa vividly describes the constraining context under which misinformation and disinformation thrive including the region's resource constrained news rooms, dynamic communication environment, realignment of the relationship between news producers and consumers, digitalisation of political communication, repression of the media, digital literacy and competency and competing regimes of truth and non-truth. As a result Mare et al. (2020) asserts the impending need to contextualise misinformation/disinformation outlook in Africa (Mare et al., 2020). A further comparative study of the motivations for sharing misinformation in six African countries highlights the prevalence of fake news and politically motivated disinformation and misinformation in Africa way before such phenomena became mainstream in the rest of the world, particularly the Global North (Madrid-Morales et al., 2019). The study which relied on qualitative feedback from 12 focus group discussions (FGDs) across 12 African universities found that civic duty and fun were the main drivers of misinformation and disinformation in Africa. The research also found a correlation between the intensity of spread of fake news and the increased

adoption of emerging digital platforms, particularly social media including Facebook, Whatsapp, and X among others. Some of the participants' feedback corroborates this narrative as highlighted below.

"I consume a lot of social media. So, I used to get a lot of trash and a lot of clickbait stuff. I really had to tailor my social media to include lots of trustworthy kind of sources."

"I wanted to say WhatsApp is mainly used to [get news] nowadays, but sometimes it transmits fake news. So, you have to verify because you'll spread something that is not true." (Madrid-Morales et al., 2019).

Such views point to the fact that intensive use of social media which has been driven by increased access to smartphones and other technological devices in Africa has widened the scope and impact of fake news on the continent. It was also discovered that despite young people being victims of fake news, older people were likely to fall prey to misinformation due to relatively lower digital competence.

"For the older generation, social media has taken them by storm. They are excited about it. I don't think they realise what is fake and what is not. . . . My dad gets more likes on his Facebook posts than I would ever get. But if he shares it, one person shares it to three more, then it becomes such a big thing"

“You have a lot of people who are used to going to newspapers. When they’re told the news, they automatically take it as fact, because that’s the way the world worked before. In this age, where information is decentralised and anybody can say something is true, they still have those old habits of those days. Older generations, who are new to social media will start accepting fake news” (Madrid-Morales et al., 2019)

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The impact of misinformation and disinformation on elections and democratisation in Africa is replete. A review of the impact of fake news on democracy in Africa found serious and impending danger on the growth of democracy in Africa (Fombad, 2022). For instance, Africa’s low literacy rates that have often produced uninformed electorates who are in danger of being misinformed is a major cause for alarm.

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Similarly, the diversity of sources of misinformation and disinformation including certain state actors, individuals, and international actors with interest in Africa, further complicates the reality of fake news in Africa. For instance, some incumbent leaders have often relied on foreign-based companies to manipulate online followers. Among these companies include Cambridge Analytica which was recently employed by political players in various countries including Kenya and Nigeria to run sophisticated political campaigns against their opponents. Other notorious foreign companies that have been connected with interference in democratic and electoral processes in Africa include Israeli-based companies such as Black Cube and Archimedes Group among others. The Archimedes Group was linked to a mass online activity on facebook in several countries including Angola, Senegal, Togo and Niger (Fombad, 2022).

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Similarly, activities of foreign civil groups supporting domestic civil societies have also often been noted to pose certain risks. Fombad (2022) also notes the complexity of countering misinformation and disinformation which among others includes its transnational nature and the invisibility of its actors, the dynamic nature of social media which is largely user-driven and largely difficult to regulate as well as the balancing act required in regulating fake news and promoting fundamental freedoms and human rights including freedom of expression and press freedom. Consequently Fombad (2022) highlighted a mixed raft of steps that have recently been undertaken by African countries to contain fake news among them being legislative measures, enhancement of a responsible democratic space as well as the institution of extra-regulatory measures including throttling of internet and social media shutdowns. For instance, in 2021 alone at least 10 African countries

censored the internet and social media spaces among them being the Republic of Congo, Uganda, Zambia, Burkina Faso, Senegal, South Sudan, Chad, Ethiopia, Nigeria and Sudan (ITNA News, 2022). In the recent #rejectfinancebill2024 protests the Kenyan government was accused of throttling the country's internet to prevent or slow access to various social media and digital platforms that had been employed by actors to organise the protests (Odongo & Ogetta, 2024).

### **Online Gender-Based Violence (GBV)**

A study by Amukelani Collen Mangaka and John Mamokhere (2022) on the usability of social media as a tool for countering online gender based violence found a positive correlation. The study observed increasing usage of social media by key stakeholders to counter online-based gender based violence (GBV). For instance, women used social media platforms to seek help and band together to counter GBV perpetrators (Mangaka & Mamokhere, 2022). While Mangaka and Mamokhere's study focused solely on the

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Participation of women in elections, either as electorates or contestants, also involves a rather bold move to break into a traditionally male dominated sphere as such is often met with traditionally held chauvinistic and repulsive moralistic relations that among others draw on derogatory accusations such as prostitution, lesbianism among other sexually motivated taglines

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South African context, the reality of widespread online GBV and the double edged potency of social media use to combat the same is critical. A similar study by Gabrielle Bardall (2013) corroborates Mangaka and Mamokhere's findings. Bardall (2013) contends that Information Communication Technologies (ICTs) are key to combating Violence Against Women in Elections (VAWE) particularly through monitoring and documenting violence against women, critical usage in civic education and awareness on GBV as well as by offering platforms for women empowerment and advocacy against VAWE. Regardless, Bardall's study also points out to the negative agency that ICTs can play in entrenching VAWE particularly



as far as the instrumentalisation of ICT platforms to perpetrate electoral related GBV including infliction of fear and psychological harm on women particularly those vying or during polling (Bardalli, 2013).

Southworth et al. (2007) underscores emerging sophisticated digital forms of attacks on women including spyware attacks that grant access to victims' email addresses and web and communication, wireless technology that can remotely monitor victims' private communication e.g. text messages and calls, hacking, visual surveillance and geographic tracking through Global Positioning System (GPS). Wanyeki (2009) narrates how perpetrators of GBV utilised texts to bombard Kenyan women perceived to be on the opposing tribal or political cleavage with harmful texts including threats of violence including rape, bodily harm and even death in Kenya's 2007/2008 Post Election Violence (PEV). Participation of women in elections, either as electorates or contestants, also involves a rather bold move to break into a traditionally male dominated sphere as such is often met with traditionally held chauvinistic and repulsive moralistic relations that among others draw on derogatory accusations such as prostitution, lesbianism among other sexually motivated taglines. Such accusations are often hiped in particular on female candidates with the attempt to declare them unfit for political office (Bardalli, 2013). Social media platforms particularly X, Youtube and Facebook

provide an easy avenue for perpetrators and political actors to spread such demeaning content as a result of limited regulatory frameworks within such spaces as opposed to traditional media. The increasing access to digital devices by a majority also provides the window for all manner of video or image content to be taken by would-be perpetrators and circulated universally with almost immediate access across various social media and other digital platforms.

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**Online harassment was found to entrench offline violence against women and silencing of women’s voices on the digital spaces thus negatively impacting the contribution of women in socioeconomic and political development**

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A study by Becky Faith (2022) uncovered the complex relationship between gender, development and power relations within the digital spaces. Online harassment was found to entrench offline violence against women and silencing of women’s voices on the digital spaces thus negatively impacting the contribution of women in socioeconomic and political development (Faith, 2022). Faith’s analysis further underscore the key challenges that counter-online GBV measures would face including limited government and international regimes’ agency on social media and digital platforms-driven online GBV as such the study calls for proactive female voices to take back their rightful place on the online platform. As such women are called upon to “reject the powerful’s definition of their reality and clarify for women the powers they exercise

daily” by making the often hidden and invisible power dynamic visible (Faith, 2022, Hooks, 2000). As a result African women’s involvement in electoral processes, either as candidates or electors will benefit greatly from increased presence of female voices across various digital platforms.

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### **Artificial intelligence(AI) in African Elections**

Application of Artificial Intelligence portends numerous opportunities for Africa. The prominence of AI in the 21st century, and particularly in the recent past can not be overemphasised. Various forms of AI have emerged, key among them being generative AI, which essentially have near-human intelligence to execute cognitive and non-routine tasks (Olusegun et al, 2020). For instance, Chat Gpt-based AI can be utilised for various complex roles including for research, software

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development, learning among others. In the context of elections the interlink between AI and robotics is critical. Olusegun et al. (2020) underscore the impending role of robotics in management and conduct of elections going into the future. From Olusegun et al.'s analysis the most critical advantages of robot-conducted elections include reduced cost and enhanced integrity of the electoral process. AI could be used among others to coordinate

transportation of electoral materials, delineation of electoral boundaries in concert with GIS technologies, verification of electoral campaigns and electoral messaging by Electoral Management Bodies (EMBs), politicians and civic society groups among others.

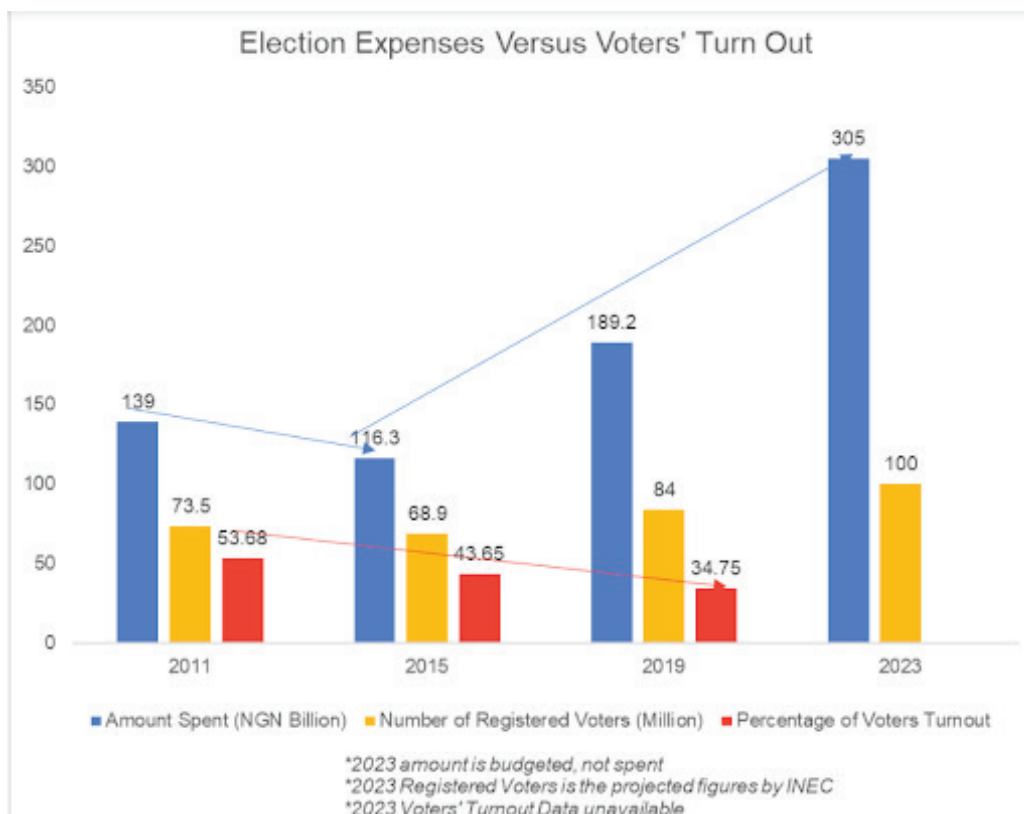
Coincidentally, these two particular issues still entail the most concerning challenges facing the majority of African elections. African elections remain the world's most contested and at the same time most expensive electoral processes. For instance, at 44.6 Billion KES (345.74 Million USD) and 49.9 Billion KES (386.82 Million USD) in 2017 and 2022 respectively, Kenya's elections still stand as one of the World's most expensive electoral processes (Citizen, 2022). This is especially if it is considered that the average per capita expenditure for the two electoral cycles was at least 25 USD (Nation, 2020). Similarly, Nigeria's elections also rank as another over budgeted exercise worldwide. For instance during the 2019 and 2023 elections the country spent N189 Billion (124 Million USD) and N305 Billion (200 Million USD) to manage the polls (Amata, 2022). Nigeria's average per capita expenditure stood at around 5 USD. This is against global per capita expenditure of between 1 to 3 USD including in high income economies. Additionally, a majority of the outcomes of African elections are often beleaguered with cases of integrity

deficiency and questionable transparency. As a result, application of AI and robotics will be critical for battling these key challenges. It is however critical to audit the negative implications of AI and robotics. For instance, AI and robotics can be repurposed by antagonistic players to negatively influence public opinion as was alleged in the 2016 US presidential elections (Moreira, 2018). Similarly, Africa’s stockpile of robotics and other AI tools compared to the rest of the world is still minimal as a result there’s need for continuous investment in key AI and robotic computing infrastructure and skills.

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### Election Expenses in Nigeria

Source: [Amata, 2022](#)

## **Big Data and Digital Identity in Africa Elections**

The controversy and complexity that surrounds adoption of big data technologies by governments across the world is seemingly unending. For instance China's Credit Scoring Programme employs thousands of CCTV cameras and face recognition technologies for monitoring human behaviour across its territory with the intention of among others curbing social disorder and improving governance (Chengdu and Campell, 2019). The most serious challenge that application of big data in elections in Africa will need to address is the concern over data privacy. Regardless, digital identification technologies such as face recognition technologies are critical tools for improving the integrity of African elections through among others discouraging electoral malpractices such as double voting and ghost voting; often literally by dead voters, underage voters, as well as by unregistered voters (Olusegun et al., 2020).

Big data technologies can also be used to enhance the speed of polling in African elections, which normally experience endless and exhausting queues that discourage voters. Electronic identification and voting systems, which is an essential part of big data, will also prevent massive

wastage of natural resources particularly in the form of ballot paper printing which is an integral component of manual-based voting. As mentioned earlier, the adoption of digital voting and other big data technologies including biometrics and digital identification systems enhances the speed of polling processes and are also environmentally sustainable, as they prevent use of paper. However, a breach of the digital voting systems may be injurious to a majority. As a result, big data technologies which form the chunk of e-voting technologies currently deployed across the world also portends extreme data breach risks save for systems based on block chain technology. For instance, it could be extremely dangerous for candidates, whether having been successfully elected or otherwise, to learn the voting preferences of individual voters by gaining access to the backend systems. Such a scenario is deemed technically and highly politically possible. The consequences of potential breach of such data could range from political targeting of individual voters perceived as being opposed to such candidates or elected leaders. As such, irresponsible or inadequate handling of big data systems may exacerbate political malpractices and other social vices consequently to political dissent such as targeting of perceived and real political enemies, extrajudicial killings among others, which are already widespread in Africa.

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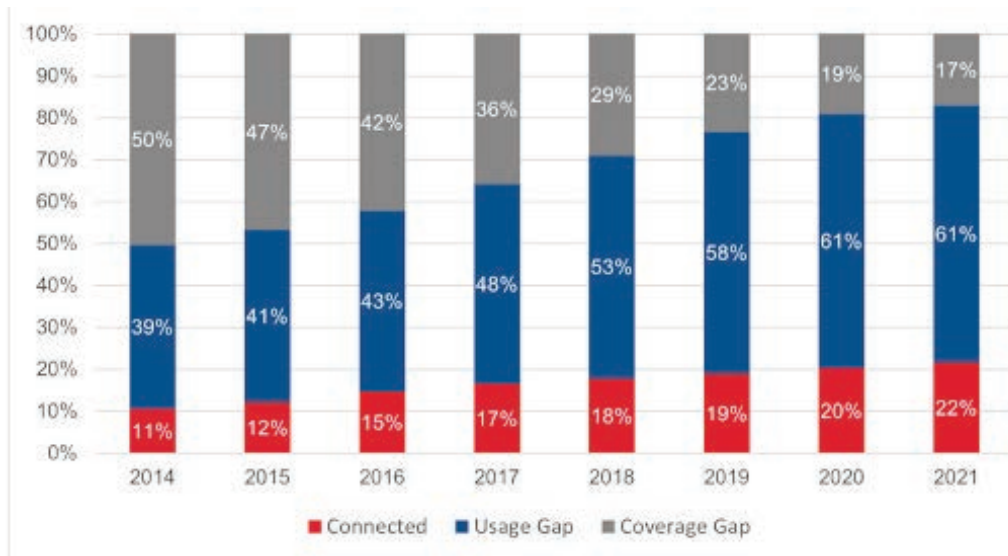
### **The State of Internet Connectivity in Africa and its impact on Elections**

Internet connectivity informs the rate and extent of adoption of all digital technologies. Presently, less than half of Africans have access to the internet with the World Bank 2023 data putting access to broadband internet at 36% (World Bank, 2023). According to GSMA 2021 data 22% of sub-saharan Africa were connected to mobile internet with 40% of adults (over 18 years) being connected. It is also critical to note the existential internet usage gap in Sub-Saharan, which essentially refers to a population within areas with access to broadband internet but not presently using or accessing the internet; which was up to 61% in 2021 (GSMA, 2021). Similarly, the International Telecommunications Union (ITU) reports persistence of digital gap across ages and genders with a 35% and 24% internet access gap between men and women reported as of 2020 (ITU, 2020).

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*Evolution of Internet Connectivity in Sub Saharan Africa*  
 Source: [GSMA, 2021](#)

In addition to gender and age based gaps, Africa’s internet quality also largely varies across regions and countries, with remote and socioeconomically less prosperous localities being unduly disadvantaged. Other socioeconomic and structural challenges that affect the rate of internet connectivity in Africa include overall infrastructural constraints such as affordability of digital gadgets and limited digital literacy among others. As a result, adoption of digital technologies in elections must put into perspective the internet connectivity challenges predominant in Africa and subsequently design innovative and contextual solutions to address them. For instance, the benefits of e-voting in a continent where more than half of the population lacks access to broadband internet may necessitate specialised technological design approaches, such as centralised

installations and alternative voting booths. As such copy-paste approaches of electoral technologies, as was the case in DRC, where an electoral voting system initially meant for Argentina was repurposed by MIRU for DRC is tragic and untenable ([Sentry, 2018](#)).

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# Conclusion

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**Digital inequality intersects with broader socioeconomic inequalities that have previously deepened political marginalisation.**

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While many African countries strive for free; fair; and credible elections, widespread application of technology in various forms including through biometric voter registration has already shown the potential of adoption of technology as an important tool for efficiency and transparency in elections. However, no African country, especially those under our study has fully digitised elections including by adopting e-voting, and technical glitches have persisted across many countries.

Additionally, there is an emerging concern surrounding the intolerable digital divide across Africa. With less than half of the population, 36%, having access to the internet, with significant gaps occurring across gender, age, and geography. Therefore, rapid digitalisation of electoral processes risks inadvertently

disenfranchising large segments of the population. Digital inequality intersects with broader socioeconomic inequalities that have previously deepened political marginalisation.

Similarly, the role of social media in political activities is two-edged. As much as it provides new opportunities for citizens' participation and mobilisation, it also harbours an environment where misinformation and disinformation spread at a faster rate. This phenomenon is very dangerous to electoral integrity and public trust in democratic institutions in Africa.

The considerable costs involved in establishing these technologies place further pressure on the already constrained budgets of numerous African countries. Although long-term cost savings may be achievable through regional collaboration and proper implementation, the substantial upfront investments create significant barriers to broad applicability.

The prospects that artificial intelligence, blockchain, and other emerging technologies hold for the future of African elections are quite interesting. However, such implementations need to proceed with a great deal of care and depth of understanding of the unique challenges and contexts within which democracy operates in the respective African countries.

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# Policy Implication and Recommendations

In the current era of internet connectivity related to technological advancement, African countries need to incorporate emerging technologies into their electoral processes. While there are benefits and drawbacks to this integration, African countries need to adopt the right course of action. The digital divide across the continent, with only 36% broadband access, indicates the potential for technological innovations to exacerbate existing inequalities, particularly in rural areas and among marginalised groups such as women and older citizens. This discrepancy makes it necessary to establish a careful balance between preserving fundamental principles of democratic participation and utilising technology to increase efficiency.

## ***Contextualised Adoption of Technology in African Elections***

As demonstrated by the experiences of countries such as Kenya and the Democratic Republic of the Congo, adopting specific technologies without conducting the necessary feasibility assessments is not always the best approach. Proper strategic planning should be considered before implementation of new election-related technologies. Policymakers should take precedence in assessing the technical capacity vis-à-vis electoral management bodies and digital literacy of the general population for successful adoption. Therefore, it calls for a multidimensional policy approach toward addressing the

issues surrounding the adoption of emerging technologies in African elections. It is only through gradual and contextual technology adoption strategy, that considers infrastructural, digital literacy levels, and cultural considerations, that it will guarantee inclusiveness while paving the way for technologically driven elections.

## ***Digital Literacy and Inclusive Adoption of Technology***

Digital literacy programmes targeting underserved groups is key to closing the digital gap in Africa, thus ultimately rendering participation in increasingly digitised electoral processes more inclusive. Policies aimed at improving internet connectivity and lowering access costs are major prerequisites for bridging the digital divide and promoting inclusivity, especially in rural and marginalised communities.

## ***Partnerships for countering Misinformation and Disinformation***

The increase in disinformation and misinformation on social media and other digital platforms raise a critical challenge to the dependability of such avenues for political discourse and for informed voter decisions. Policymakers should endeavour to foment broad based partnerships, especially with social media platforms and big tech companies and civic society actors and other stakeholders supporting independent fact-checking initiatives and promoting

digital awareness campaigns and responsible digital media use and content consumption among citizens. These strategies should also include elaborate digital literacy programs, measures to combat misinformation, and robust safeguards for freedom of expression..

### ***Regional Coordination in Adopting Election-related Technology***

Regional cooperation and sharing of best practices in electoral technology is of utmost importance. The African Union and regional economic communities (RECs) and regional bodies (RBs) should undertake to facilitate such exchanges and the development of continent-wide standards on adoption, application and use of technology in elections. Collaborations should also include partnerships between the public and private sectors to ensure the development of cost-effective, locally appropriate electoral technologies, thereby contributing to a well-functioning and properly designed domestic technology while minimising reliance on foreign-sourced expertise and systems. The financial implications of adopting new electoral technologies are huge as such regional collaborative efforts are needed to ensure a rapid, cost-effective and sustainable transition.

### ***Blockchain Technology and Electoral Integrity***

Lack of Integrity in elections is a stumbling block to democratisation in many

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**The digital divide across the continent, with only 36% broadband access, indicates the potential for technological innovations to exacerbate existing inequalities, particularly in rural areas and among marginalised groups such as women and older citizens.**

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countries in Africa. Evidence proves that electoral integrity can be boosted by the application of blockchain technology as it reduces the risk of tampering, and increases the integrity of the digital voting processes. Application of Blockchain technologies has already been tested and approved across various sectors including in land management and payment systems among others, and such gains can be transferred to electoral processes in Africa.

### ***Matching National Legal and Regulatory Regimes with Emerging Technologies***

Developing legal and regulatory frameworks for the application of technology in elections is central. Such frameworks should address issues of data protection, system security, and transparency in the procurement and

deployment of electoral technologies. Legislations should be responsive to fast-changing technologies while ensuring integrity in the electoral processes. Electoral laws and regulations need revamping from time to time to pace up with technological development in the face of emerging issues related to privacy, digital campaigning, and electronic voting. As such, there is an impending need by governments across Africa to review the prevailing electoral acts, laws and policies to develop a dynamic and forward-looking regulatory regime suitable for technological uptake within the electoral space.

The rise of online gender-based violence portends a hostile digital environment that

can discourage participation, particularly among women candidates and voters. Specific legislation accompanied by support mechanisms is therefore important to enable a more inclusive and safe digital political space. Additionally, transparency and public trust is central in the adoption of new electoral technologies. Policies should ensure the public is adequately informed about the capabilities and limitations of respective electoral technologies, including provisions for testing and auditing electronic voting systems by the public. Transparency in technology procurement processes and the consideration of open-source solutions can help build public trust in electoral systems.

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