

DIGITAL VOTE: ASSESSING CONSTITUTIONAL COMPLIANCE OF ELECTORAL TECHNOLOGY LAWS AND VERIFIABILITY OF VOTES IN KENYA

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Abstract:

The integrity of the electoral process is the bedrock of any thriving democracy, a principle deeply enshrined in the Constitution of Kenya-2010, particularly under Articles 10, 81, and 86(a), which mandate free, fair, transparent, verifiable, and accountable elections. Despite this robust constitutional mandate, the current electoral system, governed by the Elections Act of 2011 and its subsidiary regulations, faces critical challenges. A fundamental issue lies in the abstract nature of a vote once cast, rendering its traceability and contribution to the final tally a "matter of faith," thereby making practical verification impossible. This research aims to critically analyze the effectiveness of the Elections Act, 2011, and the Elections (Technology) Regulations in ensuring compliance with these constitutional principles. Through an examination of recurring presidential election disputes in Kenya (2013, 2017, 2022) and the inherent limitations of the current legal framework, especially concerning the undefined "digital vote" and the contentious Section (83) of the Elections Act, 2011, this paper argues that the existing system fundamentally undermines electoral integrity and the core tenets of the Social Contract Theory. It highlights the significant gap between constitutional ideals and practical reality, leading to eroded public trust, political instability, and challenges to arbitrary vote attribution. The paper concludes with a call for comprehensive reform to align Kenya's electoral laws with its constitutional imperatives for a truly transparent, accountable, and verifiable democratic process.

Keywords: Digital vote, Elections Act 2011, Constitution of Kenya 2010, Electoral Integrity, Verifiability, Transparency, Accountability, Section 83, Social Contract Theory.

INTRODUCTION:

The bedrock of any thriving democracy rests upon the unshakeable integrity of its electoral process. In Kenya, this fundamental principle is enshrined within the Constitution of Kenya-2010, specifically under Articles (81) and 86(a), which mandate free, fair, transparent, verifiable, and accountable elections. These Constitutional articles establish the very foundation of the electoral system, emphasizing impartiality, accuracy, verifiability, and security as cornerstones of the vote in the electoral process. Furthermore, Article (10) of the Constitution underscores good governance, transparency, and accountability as indispensable national values.

Yet, despite this robust constitutional framework, the current electoral system, as delineated in the Elections Act of 2011 and its subsidiary regulations, faces critical challenges. A significant concern is the nature and identifiability of a vote, particularly within the increasingly prevalent digital context and a hybrid electoral system regime. The critical upshot is that after casting a vote, the vote "vanishes" and becomes an abstract quantity and a merely arbitrary number whose traceability, allocation, and therefore contribution towards building the final tally, remains forever only a "matter of faith". This situation highlights a fundamental gap between the constitutional ideal and the practical reality of Kenya's electoral process, leading to repeated disputes and undermining public trust.

RESEARCH PROBLEM STATEMENT:

Ideally, Kenya's electoral process should be unquestionably transparent, accountable, and verifiable, as enshrined in Articles (10), (81), and (86) of the Constitution. These articles mandate impartial, accurate, accountable, verifiable, and secure elections, with each vote identifiable and traceable up to the final tally, regardless of the means of voting; whether manual, electronic, or hybrid. However, the current reality starkly contrasts this ideal. Votes are treated as abstract numerical values, losing individual identity upon casting, making traceability and verification as per the constitutional requirement practically impossible. This gap between the constitutional ideal and the practical reality undermines electoral integrity and the civilized spirit of democracy.

This disparity reveals the core problem: the absence of a legally defined and technologically verifiable "digital vote". The Elections Act 2011 and related regulations, while outlining voter registration and voting procedures, fail to address the unique challenges of digital voting and vote traceability in building the final tallies. Furthermore, Section 83 of the Elections Act, in prioritizing election results over strict procedural adherence, potentially conflicts with constitutional requirements for accuracy, verifiability, and transparency. This legal ambiguity, coupled with the Elections (Technology) Regulations' focus on data security rather than vote identifiability, further exacerbates the problem.

Failure to address this deficiency carries significant risks. It erodes public trust, fueling political instability and disputes, as witnessed in recent Kenyan elections. The lack of transparency creates fertile ground for manipulation, hindering challenges to misattributed, arbitrary, or "stray" votes. Without a clear digital vote definition, election petitions, like

those of 2013, 2017, and 2022, will likely persist, as courts grapple with unverifiable figures and arbitrary tallies in the body of evidence during trials.

OBJECTIVES:

a) To analyze the effectiveness of Elections Act, 2011, and the Elections (Technology) Regulations, in ensuring compliance with Articles 10, 81, and 86 of the Constitution of Kenya - 2010 on transparency, accountability, and verifiability of electoral process

SCOPE AND SIGNIFICANCE:

This study was deliberately focused on the legal and digital definition of a vote, acknowledging that it does not encompass the entirety of the electoral process. It operated under the assumption that other aspects of the electoral process were conducted with utmost integrity. The study's data collection relied on a purposive sample of legal and digital experts to facilitate a focus group discussion, justified by the specialized expertise required to address the complex legal and technological dimensions of the research hypotheses.

This study is significant as it addresses critical gaps in Kenya's electoral framework, benefiting multiple stakeholders, including:

1. **Policymakers and legislators** can gain actionable insights to revise Section 83 of the Elections Act, 2011, ensuring compliance with constitutional principles of transparency, accountability, and verifiability.
2. **Electoral bodies**, such as the Independent Electoral and Boundaries Commission (IEBC), can access a techno-legal framework to enhance vote traceability and verifiability, fostering public trust and reducing disputes.
3. The **judiciary** can benefit from clearer, auditable electoral records, aiding in the resolution of election petitions.
4. **Voters** can be empowered through a more transparent and accountable electoral process, ensuring their voices are accurately represented in final vote count tallies.
5. Additionally, the study contributes to **academia** by advancing knowledge on electoral integrity and digital voting, while guiding **technology developers** in creating secure, legally compliant digital voting systems.

Ultimately, this research strengthens democracy by advocating for enhanced credibility and integrity of Kenya's electoral process.

LITERATURE REVIEW:

The literature review herein sought to critically evaluate existing scholarship relevant to the study's objectives, focusing on the integration of technology in Kenyan elections and the constitutional compliance of electoral processes. Specifically, it examined the effectiveness of the Elections Act, 2011, and the Elections (Technology) Regulations in meeting the requirements of Articles 10, 81, and 86 of the Constitution of Kenya, 2010, which emphasize transparency, accountability, and verifiability of votes. Several studies discuss the integration of technology in Kenyan elections following the promulgation of the 2010 Constitution, which mandates a secure, accurate, verifiable, accountable, and transparent election system under Article 86.

Several academic works have delved into the complex intersection of technology and elections in Kenya, often raising critical questions about integrity and implementation. For instance, Akello (2020) offered a case study of the 2017 Presidential Election, specifically scrutinizing the role of technology and labeling it "botched technology." This research meticulously explored the deployment of technology and pinpointed concerns regarding its reliability, all while discussing the broader legal and administrative frameworks governing elections. However, a notable gap in Akello's analysis was its failure to investigate the compliance of Kenyan electoral laws with constitutional mandates concerning the verifiability of election result tallies.

In their 2024 work, Miyandazi and Thuo explored the dynamic relationship between elections, technology, and democracy within the Kenyan context. Their research highlighted the Independent Electoral and Boundaries Commission's (IEBC) concerted efforts to integrate technology into the 2013 and 2017 general elections, drawing attention to provisions in the IEBC Act 2011 and Section 44(1) of the Elections Act that permit the use of technology, including electronic transmission of results. Yet, a crucial limitation in their findings on result transmission was the absence of a detailed examination into the identity, specificity, quantification, and verifiability of these transmitted results. This oversight implies that, in their view, transmission remains merely a conveyance of votes, potentially transforming into arbitrary numerical figures during the final tally. Moreover, their study did not address the constitutional requirements for election transparency or Section 83 of the Elections Act of 2011.

A 2019 volume of the Kenya Law Review discussed the 2016 amendment to the Election Act, which mandated electronic voter identification and transmission while providing for manual alternatives in cases of machine failure. This review underscored the ensuing debates and challenges, particularly issues related to biometric machine malfunctions. Nevertheless, it regrettably did not extend its discussion to the crucial aspect of vote verifiability on digital platforms, whether concerning votes as initially cast, during electronic transmission, or as tallies from individual polling stations. This omission leaves a significant void in understanding the end-to-end verifiability of the electoral process.

An examination study focusing on electoral technology in fostering an accountable election process in Kenya noted the Elections Act 2011's introduction of a hybrid electoral system. This study also referenced the Supreme Court's consistent observations from the 2013, 2017, and 2022 elections regarding the inherent undependability and anticipated failures of electronic technology. Despite these critical observations, the study surprisingly omitted any discussion of the

Kenyan constitutional requirements for transparency, accountability, integrity, and, most importantly, the verifiability of votes, whether as cast or transmitted through such electronic electoral technologies. This highlights a persistent oversight in examining the full constitutional implications of technology use.

Okutta K. (2023) conducted research on Presidential Elections in Kenya and the contentious notion of "Accept and Move on," providing insights into electoral laws and the reliability of technology. This work largely pointed to a prevailing lack of transparency and a sense of electoral apathy among the populace. Similarly, Shuaibu (2023) presented a systematic literature review of e-democracy in Africa, covering aspects like electronic voter registration and verification, and reviewing studies on e-voting. While Shuaibu's review included Magonga's work on a secure, end-to-end verifiable e-voting system using cryptography in Kenya, it did not offer a digital definition of a vote as it is cast or transmitted on electronic platforms.

Finally, Sikulu (2019) investigated the perceived fallacy of the right to access information during elections in Kenya, referencing Section 44 of the Elections Act, 2011, which pertains to technology and the online publication of the voters' register. Much like Miyandazi and Thuo's work, Sikulu's study also exhibited the same deficiency: a lack of clear definition for what constitutes a "vote" in the digital realm. This recurring omission across several studies underscores a fundamental conceptual gap in the academic discourse surrounding electoral technology and its impact on the democratic process in Kenya.

Research Gap:

While existing literature acknowledges the legal framework for technology in elections (Elections Act, Technology Regulations) and discusses the use and challenges of technology in past elections (especially 2013 and 2017), there is a lack of in-depth and specific analysis of the particulars of a vote and how effectively the current legal framework itself ensures compliance with the constitutional principles of transparency, accountability, and verifiability of a vote once cast, as enshrined in the context of Articles 10, 81, and 86 of the Constitution of Kenya - 2010.

Much of the literature focuses on the implementation of technology and the issues encountered, rather than a systematic legal analysis of whether the provisions within the Elections Act and its regulations are sufficiently robust and clear to guarantee these constitutional principles in a digital and electronic context. There is a need to specifically examine whether the legal framework adequately defines standards for verifiability of votes in digital format, digital processes, mechanisms for accountability in case of technological failures or manipulation, and measures to ensure transparency of digital electoral data and processes as mandated by the Constitution, specifically the definition of a vote in its electronic context.

THEORETICAL ANALYSIS / FRAMEWORK:

This study is grounded on relevant democratic theory, specifically the **Social Contract Theory** and its application within the Kenyan context. This theoretical lens is highly pertinent to the study of democratic governance and the role of elections in shaping the social contract between the government and the citizenry.

Key Tenets of Social Contract Theory: Social Contract Theory explains the origins of society and government through the concept of voluntary agreement. Individuals, seeking a more secure and ordered co-existence, willingly enter into a societal agreement, thereby establishing the moral and political framework for a functioning society. From this contract arises the legitimacy of governance, with the state's authority stemming directly from the consent of the governed. The government's primary responsibility is to protect the fundamental rights of its citizens, and in return, citizens agree to abide by the laws established for the collective good. Citizens exercise their sovereign power by electing representatives who, in turn, form the government, acting as agents of the people's will. In Kenya, this is achieved through regular election regimes by casting votes.

Application of Social Contract Theory in the Kenyan Legal Framework: The Kenyan legal framework, most notably the Constitution, reflects core tenets of Social Contract Theory, placing considerable emphasis on the consent of the governed as the foundation of legitimate authority. The right to vote, guaranteed by Article 38, stands as a prime example of this principle, representing the people's active participation in governance and their agreement to be governed by their elected representatives. Furthermore, the Constitution, through **Articles 81 and 86, mandates that elections be free, fair, transparent, verifiable, and accountable**. These stipulations are crucial for preserving public trust and upholding the integrity of the social contract. The establishment of the Independent Electoral and Boundaries Commission (IEBC) as an independent body underscores this commitment to electoral accountability, aligning directly with the social contract's emphasis on governmental responsibility to the citizenry.

The Current Study and the Social Contract: This study is driven by a fundamental concern: that **Kenya's current electoral system may not fully honour the principles of the Social Contract**, especially concerning the critical issue of vote integrity. A core tenet of the Social Contract is the **state's obligation to protect citizens' rights**, a protection that is fundamentally violated when citizens are deprived of the ability to have their votes accurately counted and attributed to their chosen candidates. The study underscores the necessity of ensuring that every vote cast genuinely reflects the voter's intention from casting it, up to the final tally. The **lack of a legal definition for a digital vote** within the existing framework poses a significant challenge to electoral integrity. This absence undermines the crucial principles of transparency and verifiability, making it untenable to ascertain whether election results truly reflect the will of the people, which is a clear contravention of the Social Contract's core principles. In addition, this research questions the constitutionality of Section 83 of the Elections Act of 2011, which endorses the validity of election results on mere appearance and not material reality and certainty on the substantial building blocks (votes) of the final tally. This

provision, allowing for validation despite non-compliance, appears to conflict directly with the essential need for verifiability and traceability of individual votes, further weakening the link between the electoral process and the Social Contract.

DISCUSSION:

The analysis of Kenya's electoral legal framework, particularly concerning the Elections Act 2011 and the Elections (Technology) Regulations, reveals significant shortcomings in ensuring compliance with the constitutional principles of transparency, accountability, and verifiability mandated by Articles 10, 81, and 86 of the Constitution.

1. The Abstract Nature of the Vote and Its Implications: A central flaw identified is the **abstract nature of a vote** once cast within Kenya's current electoral system. The vote is subsumed into a numerical tally, losing its individual identity and becoming a "faceless numerical component devoid of any tangible or quantifiable identification". This abstraction renders each vote fundamentally untraceable throughout the tallying process, severely impeding the verification of its unique journey to the final tally. This inherent lack of traceability directly erodes the principle of accountability, as it prevents the electorate from confirming their individual vote's contribution towards the final outcome.

Consequently, the system allows for **arbitrary misattribution of these faceless votes** in favour of unduly influential candidates, which may go unnoticed and unpunished due to the lack of clear vote definition. Despite outward appearances of openness, the system lacks a robust mechanism for precise verification of each individual vote's contribution, directly undermining transparency and verifiability. This consistent inability to trace a single vote's path through the various stages of tallying and aggregation has been a significant factor in the disputed election results and subsequent petitions that have challenged recent Kenyan elections, highlighting an urgent need for reform.

2. Ineffectiveness of the Elections Act, 2011, and Elections (Technology) Regulations: While the Elections Act 2011 and related regulations meticulously outline procedures for voter registration, voting, and tallying, they **notably fail to define the vote itself with distinct, verifiable characteristics beyond its mere physical or electronic representation**. The Elections (Technology) Regulations, for instance, focus more on data security rather than the fundamental problem of vote identifiability, exacerbating the issues of traceability. Past presidential election petitions (2013, 2017, 2022) consistently involved disputed tally figures and a lack of clarity on the origin and particulars of the votes building the final tally, underscoring the persistent problem of vote identifiability and verifiability despite the integration of technology. The use of the Kenya Integrated Electoral Management System (KIEMS) and Election Voter Information and Verification Devices (EVIDs) has been marred by controversies over accuracy and integrity, with the Supreme Court repeatedly noting the "undependability and expected failures of electronic technology". These technological failures, notably leading to the nullification of the 2017 presidential election, demonstrate that technology's application has not guaranteed the transparency, accuracy, and verifiability mandated by the Constitution.

3. The Constitutional Conflict with Section 83 of the Elections Act, 2011: The current state of affairs raises serious questions about the **constitutionality of Section 83 of the Elections Act of 2011**. This section stipulates that an election should not be invalidated due to non-compliance with written laws if it *merely appears* that the election was conducted in accordance with written laws, and such non-compliance *did not affect the outcome*. However, the research contends that due to the very absence of vote definition, quantification, and traceability, it is **indisputably impossible to definitively ascertain whether any non-compliance did affect the result or otherwise**. This legislative provision potentially allows for arbitrary attribution of votes at the final tally levels.

Given the constitutional imperatives emphasizing accuracy, verifiability, transparency, and accountability, coupled with Article 10 values, any non-compliance that potentially undermines these fundamental goals should be a matter of grave concern. Therefore, Section 83, which seemingly prioritizes the *appearance* of compliance and the final tally over strict adherence to electoral procedures of validity, **potentially conflicts with the spirit and letter of the Constitution**, particularly in light of the current system's inability to guarantee vote traceability towards building the final tally. This legislative ambiguity fuels electoral disputes and prevents courts from dealing with verifiable figures.

In essence, the current legal and procedural framework, despite outlining processes, **fails to define the vote itself with distinct, verifiable characteristics**, which is the paramount value in any electoral system. This failure directly contravenes the constitutional mandates for verifiable and transparent elections, undermining public trust and the democratic spirit.

SUMMARY, CONCLUSION AND RECOMMENDATIONS:

Summary

Kenya's electoral system operates under a robust constitutional framework (Articles 10, 81, 86) mandating free, fair, transparent, verifiable, and accountable elections. However, the current legal framework, particularly the Elections Act 2011 and its regulations, falls significantly short of ensuring compliance with these constitutional principles. The core issue is the abstract and untraceable nature of a vote once cast, which undermines transparency, accountability, and verifiability, making it impossible to definitively confirm the contribution of individual votes to the final tally. This deficiency has led to repeated presidential election disputes (2013, 2017, 2022) centered on disputed figures and technology reliability. Furthermore, Section 83 of the Elections Act, 2011, which prioritizes the *appearance* of compliance over strict adherence to procedures and the certainty of results, directly conflicts with the constitutional imperative for verifiability. This entire scenario represents a fundamental departure from the principles of the Social Contract, where government legitimacy is derived from the demonstrable consent of the governed.

Conclusion

In conclusion, the current legal framework governing elections in Kenya, as embodied in the Elections Act, 2011, and the Elections (Technology) Regulations, **lacks sufficient provisions to ensure the constitutionally mandated verifiability of digital votes**. This systemic weakness contributes directly to electoral disputes, erodes public trust, and hinders the full realization of democratic ideals in Kenya. The absence of a legally defined "digital vote" with specific traceability features is a critical gap that allows for ambiguity, potential manipulation, and the persistence of challenges to election results. The continued application of Section 83, in its current form, further exacerbates this issue by creating a legal loophole that compromises the fundamental need for substantive electoral integrity.

Recommendations:

Based on the critical analysis of the existing legal framework and its shortcomings in ensuring constitutional compliance for transparency, accountability, and verifiability, this research strongly recommends the following:

1. **Comprehensive Review and Amendment of the Elections Act, 2011, and Elections (Technology) Regulations:** There is an urgent need to revise the existing legal framework to explicitly address the unique challenges of digital voting. This must go beyond mere procedural outlines to incorporate specific standards for verifiability of votes in digital format and processes, and mechanisms for accountability in cases of technological failures or manipulation.
2. **Formulation of a Legal Definition for a "Digital Vote":** A concrete techno-legal framework must be developed to define a "digital vote" with specific, legally mandated features to enhance vote traceability and verifiability in electoral tallies. This definition should integrate unique digital attributes such as temporal, spatial, device, voter, and candidate codes, combined with cryptographic techniques to ensure security and verifiability from casting to final tally.
3. **Reconsideration of the Constitutionality of Section 83 of the Elections Act, 2011:** Section 83 should be critically re-evaluated and potentially amended or reinterpreted to align with the substantive constitutional demands for transparency, accountability, and verifiability. The principle that non-compliance *did not affect the outcome* cannot be genuinely ascertained without verifiable vote traceability, and therefore, the provision should not undermine the fundamental integrity of the electoral process.
4. **Integration of Advanced Technologies for Multi-Level Verification:** Future electoral technology deployments in Kenya should leverage advanced digital technologies such as cryptography, QR/Bar code scanning, AI, Blockchain, and Data Science to enhance transparency, accountability, and verifiability of votes. Techniques like blind signatures and mix-nets are crucial for balancing voter anonymity with the need for unique vote identification and traceability.
5. **Enhanced Public Trust Measures:** The implementation of a legally defined and verifiable digital vote system will inherently foster greater public trust. Continuous engagement and education with the electorate, along with transparent auditing mechanisms, will further ensure that citizens perceive their voices as accurately represented in election outcomes, reinforcing the social contract.

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