

THE EFFECT OF DIGITALIZATION OF ELECTION PROCESSES ON VOTER TURNOUT IN THE 2023 GENERAL ELECTIONS: A STUDY OF SOKOTO STATE, NIGERIA

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Abstract

This study examines the effect of the digitalisation of electoral processes on voter turnout in Sokoto State, Nigeria, within the context of low historical voter participation and significant socio-economic challenges. Utilising a descriptive cross-sectional survey design, data were collected from 362 registered voters across three key local government areas. The analysis revealed that while most of the electorate acknowledged the ease of voting provided by digital tools, there remains substantial skepticism about their effectiveness in enhancing voter turnout and transparency. Key concerns include security, privacy issues, technical glitches, and a general lack of familiarity with digital processes. Theoretical frameworks such as the Technology Acceptance Model (TAM) and theories of political participation were employed to interpret these findings, highlighting the need for a comprehensive, multifaceted approach that includes enhancing voter education, improving necessary infrastructures, implementing robust security measures, engaging with communities to tailor digital solutions, advocating for supportive policies, and establishing rigorous monitoring and evaluation practices. This study underscores the complexity of digitalising elections and the need for a comprehensive approach to address the challenges and potentials in developing regions like Sokoto State.

KEY WORDS: Digitalisation, Election, Election Processes, Voter Turnout, Political Participation.

Introduction

In modern democracies, the efficiency and credibility of electoral processes are critical to establishing legitimate governance. Globally, there is a push towards digitalising electoral systems to address challenges such as logistical

inefficiencies and voter fraud that plague traditional voting mechanisms (Prayoga & Rumestan, 2023; Agunyai et al., 2024). With its complex political environment and history of electoral challenges, Nigeria provides a fertile ground for examining the impact of such

innovations (Omojowo, et al., 2024). In this regard, Sokoto State stands out due to its historically low voter turnout 38.6% in 2011, 52.5% in 2015 and 34.8% in 2019, and 28% in 2023 (Dass & Sa'idu, 2022; Ndubuisi, 2023), making it an ideal case study for this analysis.

Electoral integrity issues in Nigeria, including logistical challenges and allegations of fraud, significantly undermine voter confidence and participation. In Sokoto State, these problems are exacerbated by socio-economic barriers and cultural factors, leading to one of the lowest voter turnout rates in the country (Kura et al., 2023). This situation indicates a critical need for interventions to transform the electoral landscape (Kura et al., 2023). Studies have suggested that digital technologies offer promising solutions by enhancing the transparency and efficiency of elections (Adam & Fazekas, 2021; Ibeanu, 2022).

The introduction of digital technologies, such as electronic voter registration and biometric verification systems, has been shown to mitigate common electoral issues by reducing human error and potential fraud (Adekunle, 2020; Olaniyi, et al., 2022). These technologies streamline electoral processes and strengthen the security measures for free and fair elections. In regions like Sokoto, where electoral participation is notably low, deploying such

technologies could significantly impact voter turnout by making voting more accessible and trustworthy (Ugwueze, 2020; Kura et al., 2023). However, the implementation of digital electoral systems is not without challenges. The effectiveness of these technologies depends heavily on the supporting infrastructure (Bello & Chukwudi, 2023; Uchendu et al., 2023), which is lacking in many parts of Sokoto. Issues like unreliable power supply and limited internet access can hinder digital tools' functionality, potentially exacerbating voter access disparities. Moreover, the success of digital initiatives also depends on the population's readiness to adopt new technologies, which in turn requires comprehensive voter education programs to ensure widespread understanding and acceptance (Gil-Garcia & Flores-Zúñiga, 2020).

This research, therefore, aims to thoroughly examine the effect of digitalisation on voter turnout in Sokoto State. By investigating the correlation between digital interventions and changes in voter participation, the study will identify key factors that influence the effectiveness of these technologies. The findings are expected to provide actionable insights for policymakers and election administrators, helping to design more effective digital strategies for enhancing voter

participation in Sokoto and across similar regions globally. In addition to its practical implications, this study will enrich the academic discourse on electoral reforms by providing a detailed empirical analysis of the effects of digitalisation in a uniquely challenging environment like Sokoto State, Nigeria. Employing theoretical frameworks such as the Technology Acceptance Model (TAM) and theories of political participation, the research explores the dynamics between technological adoption and voter behaviour, offering a deeper understanding of how digital tools can foster sound electoral engagement and improve the democratic process in developing countries like Nigeria (Okediran, et al., 2020; Isa & Yucel, 2020). Therefore, this introduction sets the stage for a comprehensive investigation into the transformative potential of digital technologies in electoral processes, particularly in regions facing significant electoral challenges like Sokoto State, Nigeria.

Overview of Global Digitalization in Electoral Processes

The digital transformation of electoral processes worldwide offers significant insights into the potential and challenges of such interventions (Datta et al., 2020). Globally, numerous countries have adopted digital technologies with varied success in enhancing

voter participation and electoral transparency (Ibeanu, 2022). For example, Ehin, et al., (2022), Spycher-Krivososova (2022) and Ali (2023) noted that Estonia's pioneering e-voting system demonstrates how digital platforms can facilitate increased voter turnout due to their convenience and accessibility. Research by Dandoy & Kernalegenn, (2021) points out that the ease of online voting has encouraged more citizens to participate, particularly those who might be abroad or otherwise unable to visit traditional polling stations during elections. Similarly, implementing Electronic Voting Machines (EVMs) in India has been lauded for increasing electoral integrity and efficiency (Okuro, 2021). Iheanacho & Odion (2022) highlights how EVMs have significantly reduced the occurrence of vote tampering and electoral fraud, leading to more credible election outcomes and enhanced public trust in the electoral process. These technologies have been pivotal in streamlining the electoral process and safeguarding each vote's sanctity (Peter & Inokoba, 2023). However, the adoption of digital technologies in elections is not without challenges. As Licht, Duenas-Cid, Krivososova & Krimmer (2021) noted, technical failures, cybersecurity threats, and resistance to change are significant hurdles that impede the effective implementation of digital voting systems. Thus, these issues necessitate

robust frameworks and continuous adaptation to mitigate risks associated with digital electoral processes.

Digitalisation in Elections: The Nigerian Context

In Nigeria, integrating digital technologies into electoral processes has been a focal point of electoral reforms to enhance transparency and voter confidence (Duruji, et al., 2021). Bello & Chukwudi (2023) opined that introducing Smart Card Readers by the Independent National Electoral Commission (INEC) in the 2015 elections marked a significant milestone in this journey. According to Yusuf & Akuva (2020), these devices have helped reduce multiple voting and impersonation, which had marred previous elections. Furthermore, the Permanent Voter Cards have been instrumental in ensuring that only eligible voters participate in the electoral process, significantly curtailing electoral malpractices (Ayodeji & Odukoya, 2018; Olaide & Adewumi, 2020). Despite these advancements, Nigeria's digital electoral landscape is fraught with challenges. Studies have shown that infrastructural deficits, particularly in rural areas, and erratic power

outages can severely limit the effectiveness of digital technologies (Melie, 2021; Ibeanu, 2022). Moreover, technical glitches and insufficient training for electoral officials on the new technologies often result in delays and confusion at polling stations (Fatai, 2020; Acheampong, 2023). Furthermore, there is a significant divide in technology acceptance and functionality across Nigeria's diverse regions (Wamuyu, 2017). Urban areas, with better infrastructure and higher literacy rates, tend to exhibit more positive outcomes from digital interventions than rural areas, where lacking basic amenities can hinder the optimal use of technology in elections.

Generally, the downward trend in the voter turnout and occasioned by low political participation has become worrisome to observers of the Nigerian politics and academician. Despite the modernization of the electoral process and the introduction of technology for the ease of participation, the turnout in the 2023 general elections was abysmal, the lowest since 1959. The table below shows the inconsistencies and downward trends of voter turnout in Nigeria from 1959 to 2023.

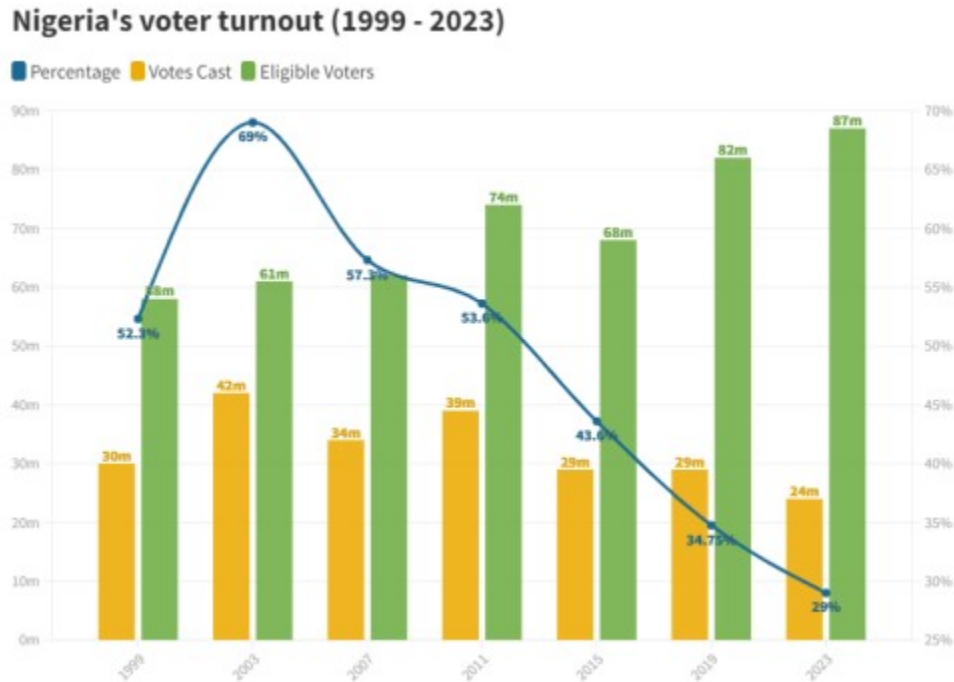
Table 1 Voter Turnout in Nigeria, 1959-2023

Elections	Registered Voters	Turnout	Percentage
1959 General election	9,043,404	7,189,797	79.50%
1979 Presidential election	48,633,782	16,846,633	34.00%
1979 Senate election	48,633,782	12,532,195	25.80%
1979 Representatives election	48,633,782	14,941,782	30.70%
1983 Presidential election	65,304,818	25,430,096	38.00%
1983 Senate election	65,300,000	Na	Na
1983 Representatives election	65,300,000	Na	Na
1992 Senate election	36,923,571	14,716,074	39.00%
1992 Representatives election	36,923,571	15,329,670	41.00%
1993 Presidential election	37,826,600	14,321,393	37.90%
1999 Presidential election	57,838,945	30,280,052	52.30%
1999 Senate election	57,938,945	24,386,427	42.11%
1999 Representatives election	57,938,945	23,573,407	40.70%
2003 Presidential election	60,823,022	42,018,735	69.12%
2003 Senate election	60,823,022	29,995,171	49.30%
2003 Representatives election	60,823,022	30,036,286	50.00%
2007 Presidential election	61,567,036	35,397,517 valid votes	About 58.00%
2011 Presidential election	73,000,000	39,469,484	54.07
2015 Presidential election	67,422,005	29,432,083	43.65
2019 Presidential election	82,344,107	28,614,190	34.75
2023 Presidential election	93,469,008	25,286,616	26.72

Source: Compiled by the author from various sources, including: 'Elections in Nigeria', African Elections Database, available at: africanelections.tripod.com/ng.html; 'Presidential Elections, 1999-2011 in Figures', Vanguard, 23 April 2011, available at: www.vanguardngr.com/2011/04/presidential-elections-1999-2011-in-figures/; Olaniyi 2008, p 110; Nwosu 2008, pp 296-298, 32, Premium Times available at:

<https://www.premiumtimesng.com/news/586788-nigeriadeclides2023-only-27-of-eligible-voters-decide-who-becomes-nigerias-president.html> etc.

Figure 1: Voter turnout in Nigeria from 1999 to 2023



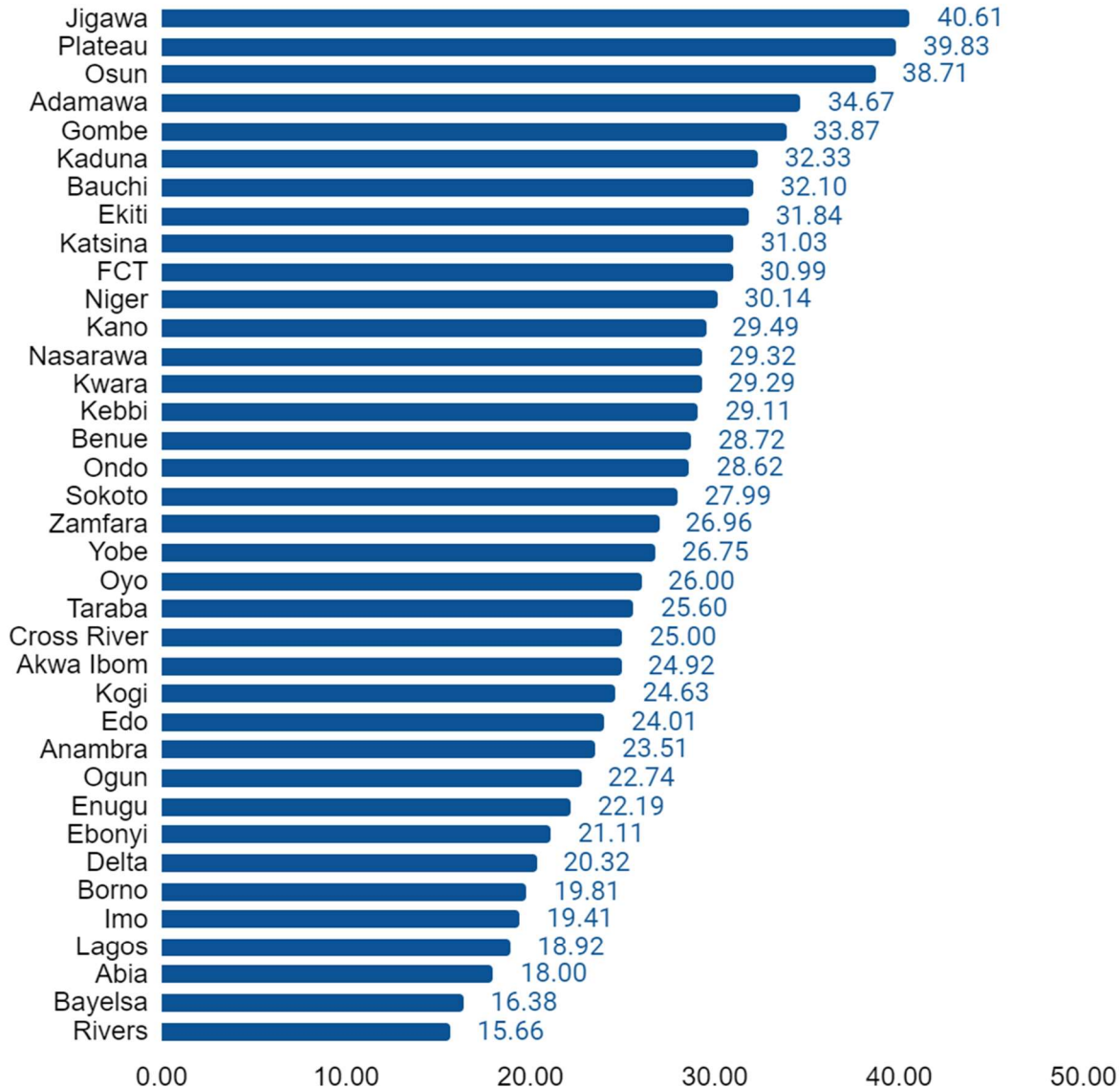
Source: Premium Times: <https://www.premiumtimesng.com/news/top-news/586193-analysis-trend-of-low-voter-turnout-continues-in-nigerian-elections.html?tztc=1>

In all the 36 states of the federation, less than half of the eligible population turned out to vote in the 2023 presidential elections, and no state

had a turnout above 40 per cent. This is shown in the figure below.

Figure 2: Percentage of Voter Turnout by States in the 2023 General Election

Percentage of Voter Turnout by States in the 2023 General Election



Source: INEC | Chart: Dataphyte

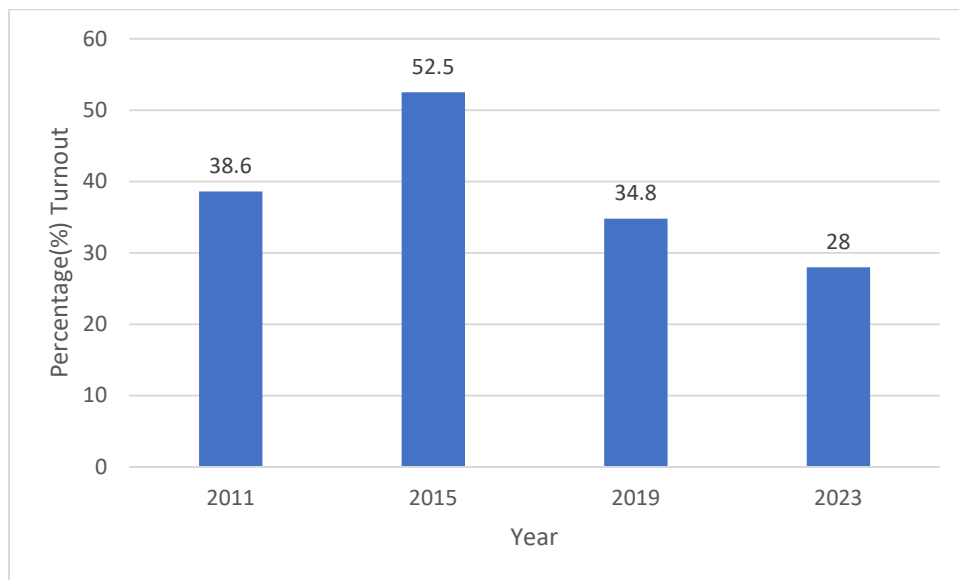
Sokoto state which is the focus of this study is not an exception from this downward trend. The

result in Fig. 3 below shows a consistent decline in voter turnout in Sokoto state from 2011-

2023, with the exception of 2015. The surge in the voter turnout in 2015 could be attributed to the people's desire to end endemic corruption, which is perceived to have enveloped former President Goodluck Jonathan's administration. Thereafter, in the 2019 general elections, the voter turnout in Sokoto State fell to 34.8% and

came down to 28% in the 2023 presidential elections. This is not unconnected to the abysmal performance of the Buhari Administration coupled with the failure to see, at the state level, the desired changes which the government promised the electorates.

Figure 3: Percentage of Voter's turnout in Sokoto State from 2011-2023.



Theoretical Frameworks

Theoretical models such as the Technology Acceptance Model (TAM) provide a framework for understanding the adoption of electoral digitalisation. According to Davis (1989), two primary factors influence the acceptance of new technologies: perceived usefulness and perceived ease of use (Khamis, 2023). In the electoral context, if voters believe

digital tools will enhance the voting process and are easy to use, they are more likely to adopt and engage with these technologies (Zhu et al., 2021; Omotayo et al., 2021). Empirical research has supported this model, suggesting that ease of use and usefulness significantly predict voters' attitudes towards electronic voting systems (Okediran, et al., 2020; Zhu et al., 2021; Omotayo et al., 2021).

Complementing TAM, theories of political participation offer additional perspectives on the impact of digital tools on voter behaviour (Boulianne, 2020). Theocharis, Boulianne, et al., (2023) emphasise the role of mobilisation and engagement in facilitating political participation. Digital tools can lower barriers to participation by making it easier and faster for citizens to vote, potentially increasing overall voter turnout. Moreover, these tools can serve as platforms for voter education and engagement, further enhancing participatory democracy (Aichholzer & Rose, 2020).

Methodology

This study employs a descriptive cross-sectional survey design to quantitatively analyse the effectiveness of digitalization of election processes on voter turnout in the 2023 general elections in Sokoto State. According to Vezzoni, et al., (2020) this design is advantageous for capturing a snapshot of effects and opinions at a specific time. Facilitating an understanding of the direct impacts of electoral digitalisation within the defined scope of the 2023 general elections. The target population for this study consists of registered voters across three strategically selected Local Government Areas (LGAs) in Sokoto State (383,001): Wammako (124,163), Sokoto South (170,212) and Gwadabawa (88,626) (Situation Room, 2019). These areas

were chosen due to their diverse socio-economic and demographic characteristics, which are representative of the broader voter population in Sokoto State. From each LGA, voters were selected using purposive sampling to ensure a balanced representation. The sample size of 384 was determined based on the total number of registered voters in the three LGA for 2019, which is 383,001, using the Taro Yamane Formula aiming for a sample that could provide statistically significant results within a 95% confidence level and a 5% margin of error. Formula:

$$n = \frac{N}{1 + N(e^2)}$$

Where:

n = sample size

N = population size (383,001)

e = margin of error (typically, 0.05 for 95% confidence level)

The distribution was as follows:

Table 2: Proportionate Sampling Table

LGA	Sample Size	Proportion of Sample size	Response Rate

Wammako	124,163	130	120
Sokoto South	170,212	178	120
Gwadabawa	88,626	92	122
Total	383,001	400	362

Note: Due to the massive shortfall in Sokoto South, the researcher tried to augment with more respondents in Gwadabawa

This sampling approach ensures that the study results can be generalised to the entire voter population in these LGAs with reasonable accuracy. Data was collected using a structured questionnaire with three sections and 14 items, the primary instrument for gathering quantitative data. The questionnaire was meticulously designed to include questions about demographic information, voter familiarity with digital electoral processes, the perceived impact on voting ease and transparency, and actual voting behaviours. Before the main survey, a pilot test was conducted with a different sample of 40 individuals from Wammako LGA who were not part of the main study. The purpose of the pilot test was to validate the questionnaire's effectiveness in capturing relevant data and to refine any ambiguous or biased questions. The

reliability of the questionnaire was assessed through Cronbach's alpha, resulting in a coefficient of 0.78, indicating good internal consistency and reliability of the instrument.

Data collected from the questionnaires were coded and analysed using statistical software. Descriptive statistics such as frequencies and percentages were used to summarise the demographic characteristics and survey responses. For inferential analysis, logistic regression was employed to examine the relationship between digitalisation familiarity and voter turnout, adjusting for confounders like age, gender, and marital status. This statistical method is appropriate for the binary nature of the dependent variable (voter turnout). It will provide insights into the odds of voting based on exposure to digital electoral processes.

The study was conducted in accordance with the ethical standards of the research community. Ethical approval was obtained from an institutional review board. All participants provided informed consent, were assured of anonymity and confidentiality, and were informed of their right to withdraw from the study without penalty.

Result

This section presents the results, starting with the demographic characteristics of the

respondents, their familiarity with digital electoral processes, their perceptions of its impact on voting ease and transparency, and finally, their actual voting behaviour during the 2023 general elections. Out of the 400 questionnaires administered, only 29 were

missing while 9 were not properly completed. Hence only 362 were considered fit for this study.

Table 3: Demographic characteristics of the Respondents

Gender	Frequency	Percentage
Male	294	81.2
Female	68	18.8
Total	362	100.0
Age		
18 – 27	156	43.1
28 – 37	120	33.1
38 – 47	42	11.6
48 – 57	22	6.1
58 and above	22	6.1
Total	362	100.0
Marital status		
Single	144	39.8
Married	212	58.6
Others	6	1.7
Total	362	100.0
Did you vote during the 2023 general election?		
No	220	60.8
Yes	142	39.2
Total	362	100.0
Voting history		
Voted in previous elections	164	45.3
Did not vote in previous elections	152	42.0
First-time vote	46	12.7
Total	362	100.0

The gender distribution among the respondents is heavily skewed towards males, who comprise 81.2% of the sample (294 out of 362

respondents), while females represent only 18.8% (68 out of 362 respondents). This significant disparity suggests that the results

may reflect the perspectives and behaviours predominantly of male voters in the area. The respondents are predominantly young, with 43.1% (156 out of 362) between the ages of 18 and 27 and 33.1% (120 out of 362) between the ages of 28 and 37. The remaining age groups (38-47, 48-57, and 58 and above) are less represented, with each accounting for roughly 11.6%, 6.1%, and 6.1%, respectively. This distribution indicates a relatively youthful electorate, which could influence the trends in digital adoption and electoral participation. Regarding marital status, the majority of respondents are married (58.6% or 212 out of 362), with singles making up 39.8% (144 out of 362) and a small fraction categorised as 'others' at 1.7% (6 out of 362). The marital status could influence priorities and perspectives regarding electoral issues and engagement in voting. The

data reveal that a majority of the respondents, 60.8% (220 out of 362), did not vote in the 2023 general election, while 39.2% (142 out of 362) did vote. This high non-participation rate might indicate voter apathy, disenfranchisement, or other barriers to voting, such as logistical issues or dissatisfaction with the electoral process or candidates. The respondents' voting history indicates that 45.3% (164 out of 362) voted in previous elections, indicating a moderately stable voter engagement among nearly half of the sample. However, 42.0% (152 out of 362) did not vote in previous elections, and 12.7% (46 out of 362) were first-time voters in the most recent election. This suggests that a significant portion of the electorate is either disengaged or inconsistently engaged in voting.

Table 4: Assessing the Impact of Digitalization on Electoral Processes in Sokoto

Familiarity with Digitalisation of the Electoral Process	Frequency	Percentage
Not familiar at all	70	19.3
Slightly familiar	96	26.5
Moderately familiar	82	22.7
Very familiar	88	24.3
Extremely familiar	26	7.2
Total	362	100.0
Effect of Digitalising Voting Process on Ease of Voting		
I don't know	50	13.8
No	92	25.4
Yes	220	60.8
Total	362	100.0
Effect of Digitalisation on Election Transparency		
Strongly disagree	70	19.3

Disagree	76	21.0
Neutral	122	33.7
Agree	64	17.7
Strongly agree	30	8.3
Total	362	100.0
Concerns About Digitalising the Electoral Process		
Security and privacy concerns	108	29.8
Technical glitches	86	23.8
Accessibility for all voters	68	18.8
Lack of familiarity with technology	74	20.4
None	26	7.2
Total	362	100.0

Incorporating digital technologies into the electoral process in Sokoto presents a mixed bag of familiarity, perceived benefits, and concerns among the electorate. The data reveals a spectrum of familiarity with digital electoral processes, where many respondents express some understanding. However, a notable 19.3% are not familiar at all. This disparity in digital literacy can influence the effectiveness and acceptance of digital voting systems. The levels of familiarity range widely among the respondents, indicating a gradient of digital literacy. About 24.3% of participants claim to be very familiar with the process. In comparison, 7.2% are extremely familiar, suggesting that while there is a base of technologically adept individuals, broader educational outreach might be required to bring more citizens to a reasonable level of comfort with digital electoral systems.

Regarding the actual impact of digitalisation on the ease of voting, a strong majority (60.8%) believe that digitalisation has made voting more accessible. This positive response suggests that for many, digital tools in voting processes enhance accessibility and streamline the experience. However, 25.4% do not see any improvement, highlighting the need for addressing specific usability issues or disparities in technology access across the voter base.

Opinions on whether digitalisation has increased election transparency are varied, with a substantial 33.7% feeling neutral and nearly an equal number of respondents distributed across disagreement and agreement. This indicates a significant uncertainty or scepticism about the impact of digital tools on making the electoral process more transparent, possibly

reflecting concerns over the security and integrity of digital voting systems. The primary concerns related to digitalising the electoral process include security and privacy issues (29.8%), technical glitches (23.8%), and accessibility for all voters (18.8%). These concerns underscore the critical challenges that

need to be addressed to gain complete confidence and participation from the electorate. The apprehension about security and privacy highlights the need for robust protective measures and transparent processes to reassure voters about the safety of their votes.

Table 5: Voter Turnout Dynamics and Digital Tools' Impact in Sokoto

Effectiveness of Digital Tools in Encouraging Voter Turnout	Frequency	Percentage
Not effective at all	178	49.2
Slightly effective	88	24.3
Moderately effective	72	19.9
Very effective	24	6.6
Total	362	100.0
Likelihood to Vote in Upcoming Elections		
Very unlikely	72	19.9
Unlikely	120	33.1
Neutral	76	21.0
Likely	94	26.0
Total	362	100.0
Main Reasons for Decision to Vote or Not to Vote		
Candidate preferences	98	27.1
Distrust in the electoral process	90	24.9
Personal or logistical reasons	68	18.8
Feel my vote does not matter	106	29.3
Total	362	100.0
Importance of Voting in Influencing Government Decisions		
Not important at all	98	27.1
Slightly important	90	24.9
Moderately important	86	23.8
Very important	88	24.3
Total	362	100.0
Strategies to Increase Voter Turnout in Sokoto		
By ensuring people's safety	82	22.7
Good leadership	48	13.3
By convincing people	16	4.4
By enlightening them about the election	24	6.6

Candidate preference	24	6.6
Adequate provision of digital information	12	3.3
Do not know	60	16.6
Voter education and awareness campaigns	22	6.1
Let our vote count	38	10.5
Ensured a transparent and secure process	10	2.8
I will never vote again	20	5.5
Social amenities provision	6	1.7
Total	362	100.0

The data reflects a comprehensive look at the effectiveness of digital tools in promoting voter turnout, voter motivations, and perceptions of the importance of voting in influencing governmental decisions in Sokoto. It also explores strategies considered effective in increasing voter participation. The assessment of digital tools in enhancing voter turnout reveals significant skepticism among the electorate. Nearly half of the respondents (49.2%) believe that digital tools are impractical, indicating a potential gap in either the deployment or the public's understanding of these tools. Only a minor fraction (6.6%) considers them very effective, suggesting that while there is some success, it may be limited or not widely experienced across the voter base. Regarding intentions for future electoral participation, a substantial number (33.1%) feel unlikely to vote in the upcoming elections, with another 19.9% feeling very unlikely to engage. This pessimism could be linked to

dissatisfaction with current political processes or digital tool ineffectiveness. However, there remains a noteworthy 26% who are likely to vote, pointing to a segment of the population that remains engaged and hopeful about their impact on future elections.

The primary reasons driving the decision to vote or abstain are profoundly telling of the current political climate. A significant 29.3% feel that their vote does not matter, which could indicate a broader sentiment of disenfranchisement or disillusionment with the electoral process. Distrust in the electoral process and candidate preferences are also significant factors, affecting 24.9% and 27.1% of respondents, respectively. These insights underscore the need for increased transparency and candidate quality to restore faith in the electoral system. Opinions on the influence of voting on government decisions are evenly split across the spectrum from not important to

crucial, reflecting a divided perception of voting's efficacy in governmental change. This division suggests a critical need for civic education to reinforce the value and power of voting as a tool for democratic participation and policy influence. The suggested strategies to boost voter turnout highlight security, leadership quality, and voter education as key areas of focus. Ensuring people's safety and providing information about digital voting tools are vital. Additionally, enhancing the transparency and security of the electoral process is considered crucial by a smaller segment of the population. These strategies

collectively point to a desire for a safer, more transparent, and better-informed voting environment that could help mitigate current skepticism and apathy towards voting.

Hypothesis

H₀: The effectiveness of digitalisation of election processes and procedures does not lead to a higher voter turnout.

H₁: The effectiveness of digitalisation of the election process and procedures leads to a higher voter turnout.

Table 6: Linear Regression Analysis of the effectiveness of digitalisation of election processes and procedures on voters' turnout

	B	Std. Error	Beta	T	Sig.
(Constant)	1.224	.055		22.456	.000
Effectiveness of digitalisation of the election process	.091	.026	.180	3.480	.001

Dependent Variable: **Voter turnout** during the 2023 general election
 $R = 0.180^a$; Adjusted $R^2 = 0.030$; $F = 12.110$; $\text{Sig.} = 0.001^b$ $df = 360$

The regression analysis was conducted to test the Hypothesis, which examines whether the effectiveness of digitalisation of the election process and procedures leads to higher voter turnout during the 2023 general election. The regression analysis results indicate a significant positive relationship between the effectiveness of digitalisation in the election process and

voter turnout. The unstandardised coefficient (B) for the effectiveness of digitalisation is **0.091** with a standard error of **0.026**. This positive coefficient suggests that as the effectiveness of digitalisation in the election process increases, voter turnout also tends to increase. The standardised coefficient (Beta) of **0.180** further supports the positive association

between these variables. The adjusted R-squared value of **0.030** suggests that the model explains about **3%** of the variance in voter turnout. Although this indicates a modest explanatory power, it shows that the effectiveness of digitalisation has a meaningful impact on voter turnout. The overall regression model is statistically significant, as indicated by the F-statistic of **12.110** with a significance level of **0.001**.

The t-value for this coefficient is **3.480**, with a p-value of **0.001**, which is well below the conventional significance level of 0.05. This result indicates that the relationship between the effectiveness of digitalisation and voter turnout is statistically significant. Therefore, we reject the null hypothesis (H0) and accept the alternative hypothesis (H1), concluding that the effectiveness of digitalisation in the election process leads to higher voter turnout. The analysis provides evidence that the effectiveness of digitalisation of the election process and procedures is a significant predictor of voter turnout. This supports the hypothesis that improvements in digitalisation can lead to higher voter participation in elections.

Discussion of Results and Theoretical Implications

The demographic characteristics of the respondents in Sokoto State reveal a

predominant male majority and a younger demographic, which are essential factors when considering the adoption and effectiveness of digital electoral processes. The substantial male dominance (81.2%) in the sample might influence the overall responses regarding the digitalisation of elections, as gender differences in technology use and political participation are well-documented in the literature (Schöll, 2022). Additionally, the younger age demographic, predominantly between 18 and 37 years (76.2%), aligns with higher tendencies toward technological adaptiveness, which may facilitate greater openness to digital voting systems (Hovik, & Giannoumis, 2022).

The results indicate that 60.8% of respondents did not vote in the 2023 general election despite 84.5% being registered voters, highlighting a significant gap between voter registration and actual voter turnout. This gap could be attributed to several factors, including political disillusionment and logistical barriers, which digitalisation aims to address. However, the data suggests mixed perceptions regarding digitalisation's impact on election processes: although a majority (60.8%) found that digitalisation made voting more accessible, a considerable proportion of those who are either neutral or disagree with this sentiment remain.

This disparity can be theoretically underpinned by the Technology Acceptance Model (TAM), which posits that user acceptance of technology is primarily influenced by perceived usefulness and ease of use (Davis, 1989; Alsyouf et al., 2023). The significant percentage of respondents who do not perceive improvements with digital tools suggests potential shortcomings in how these technologies meet voter expectations or needs or issues with the technologies' usability. Opinions on digitalisation's impact on electoral transparency are varied, with a notable portion of respondents (33.7%) feeling neutral. This ambivalence could indicate insufficient information or mixed messages about the workings and benefits of digital electoral tools, complicating their broader acceptance and trustworthiness. Security and privacy concerns highlighted by 29.8% of the respondents resonate with scholarly discussions on the risks associated with digital voting systems, emphasising the need for robust cybersecurity measures and transparent electoral processes to build voter confidence (Hyiamang, 2022).

Theoretical Implications

The findings also engage with theories of political participation, which suggest that engagement in voting is influenced by a combination of individual resources, political

mobilisation, and institutional structures (Fernandez et al., 2022). Despite the availability of digital tools, the lower turnout could indicate that while the tools may address structural barriers (institutional structures), they might not sufficiently tackle issues related to voter mobilisation and individual psychological engagement with the political process. Moreover, the scepticism about digital tools enhancing voter turnout, where nearly half of the respondents see them as not effective, suggests that technological solutions alone are insufficient without concurrent efforts in political education, voter engagement strategies, and improvements in the political environment that foster trust and interest in participation.

Conclusion and Recommendations

The study conducted in Sokoto State provides a comprehensive study of the complexities of digitalising electoral processes in a challenging environment. Despite the theoretical benefits of digital tools intended to enhance voter turnout by making the voting process more accessible and transparent, the findings indicate a mixed response from the electorate. While a significant portion of the respondents appreciate the ease provided by digital tools, there remains considerable skepticism regarding their effectiveness in enhancing voter turnout and election transparency. Concerns

over security, privacy, technical glitches, and a lack of familiarity with digital processes primarily drive this skepticism. The findings underscore the necessity of implementing technological solutions and addressing the broader socio-political and educational aspects that influence voter participation. The Technology Acceptance Model (TAM) and theories of political participation suggest that technological adoption is highly dependent on the perceived usefulness and ease of use, which in turn are influenced by the overall trust and confidence in the electoral process and its governance.

Based on the findings, the study recommends implementing comprehensive voter education programs to increase familiarity with digital tools. These programs should demonstrate the security, transparency, and ease of use of digital voting systems to build trust among the electorate. The study also recommends strengthening the necessary infrastructure, such as reliable power supply and internet connectivity, particularly in rural and underserved areas. This would help minimise technical glitches that can erode trust in digital systems. Develop and implement stringent security protocols to safeguard voter information and maintain the integrity of the electoral process. Regular audits and transparency in the handling of voter data can

help alleviate privacy and security concerns. Engage with local communities to understand their specific needs and concerns regarding digital voting. Tailoring digital solutions to meet these needs can enhance these technologies' perceived usefulness and acceptance. Advocate for supportive policies and legislation that promote digital tools in elections while ensuring that these tools comply with international standards for election integrity and transparency. Establish a mechanism for continuously monitoring and evaluating the digital election processes to ensure they adapt to changing needs and challenges. Feedback from these evaluations should be used to make iterative system improvements.

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