



Public Perceptions and Concerns Surrounding Electronic Voting Machines: A Demographic Analysis in India

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ABSTRACT:

The shift from conventional paper ballots to electronic voting systems in India has elicited a range of attitudes from the population, encompassing a mixture of optimism, scepticism, and concern. India is the largest democracy in the world, known for its dynamic electoral system, within the context of global democratic processes. Throughout the years, the country has experienced a consistent transformation in its electoral procedures, with the incorporation of Electronic Voting Machines (EVMs) being one of the most notable progressions. EVMs, which were introduced in the late 20th century, have significantly transformed the voting process by offering more efficiency, transparency, and precision. The introduction of electronic voting technologies in India has had a significant effect on the efficiency of elections, bringing about a new era of streamlined procedures and accelerated outcomes. The implementation of Electronic Voting Machines (EVMs) has led to a substantial decrease in the duration needed for vote tabulation and announcement of results. The rapid tabulation has not only reduced logistical issues but also improved the overall efficiency of the electoral process, enabling faster transitions between election phases and alleviating the workload of electoral authorities. In addition, computerised voting technologies have helped to prevent fraudulent activities such as the seizure of polling booths and the illegal insertion of ballots, thus enhancing the credibility of elections. Although there have been debates and challenges associated with their adoption, Electronic Voting Machines (EVMs) have become a fundamental aspect of India's electoral process.

Keywords: Election, Electoral system, Ballots, Efficiency, Malpractice, India

Introduction:

In ongoing years, the advent of electronic voting systems (EVS) has transformed the landscape of electoral processes worldwide, including in India. The traditional paper-based voting method has gradually been replaced by electronic systems, promising efficiency, transparency, and accuracy in elections. This shift has sparked debates and discussions on the impact of EVS on the electoral process, particularly in a diverse and populous democracy like India. India, with its vast electorate and complex electoral dynamics, has been at the forefront of adopting electronic voting systems. The introduction of Electronic Voting Machines (EVMs) in the late 20th century marked a significant milestone in the modernization of the country's electoral process. Over the years, EVMs have become an integral part of India's electoral framework, facilitating the conduct of free, fair, and efficient elections. The adoption of EVMs in India was driven by several objectives, foremost among them being the enhancement of election efficiency. By automating the voting process, EVMs aimed to minimize errors, reduce electoral malpractices, and expedite the counting process. Proponents of electronic voting systems argue that they have streamlined the electoral process, leading to faster results and increased voter confidence in the integrity of elections. Proponents of electronic voting systems argue that EVMs have significantly expedited the voting and counting process, leading to quicker results and reducing the chances of human error.

The electronic format not only simplifies the voting procedure but also facilitates the aggregation of results, allowing for swift declaration of election outcomes. This efficiency is particularly crucial in a country as vast and diverse as India, where timely completion of elections is paramount for political stability and governance continuity. Moreover, electronic voting systems are touted as a bulwark against electoral malpractices, offering built-in safeguards to prevent tampering and fraud. The use of technology, including encryption and secure protocols, aims to ensure the integrity and confidentiality of the electoral process, instilling trust and confidence among voters and stakeholders. By minimizing the scope for manipulation and coercion, EVS contribute to the credibility and legitimacy of election outcomes. However, the implementation of electronic voting systems in India has not been without challenges and controversies. Critics have raised concerns about the security, reliability, and transparency of EVMs, citing instances of alleged tampering and malfunctions. These apprehensions have fueled debates over the vulnerability of electronic voting systems to manipulation and raised questions about their impact on the democratic process.

Background:

Free and fair elections are a cornerstone of any democracy, and both the efficiency and integrity of the electoral process are crucial factors. In India's case, electronic voting machines (EVMs) were rolled out across states in multiple phases starting in 1998 to replace the former system of paper ballot voting. The stated goals of the EVM transition included faster tabulation of results, prevention of invalid votes, better access for disabled voters, and reducing expenses and logistical efforts compared to printed ballot papers and boxes.

However, two-and-a-half decades since EVMs were first introduced, public opinion in India remains divided on whether they have truly enhanced election efficiency and public trust in the democratic process. This research paper aims to examine the available data and survey results reflecting how Indian voters perceive the impact of EVMs on major factors like speed of results, risk of tampering or hacking, user-friendliness, and other elements tied to overall electoral efficiency.

The Indian EVM setup uses two units - a control unit with the candidate names/symbols, and a cable-connected balloting unit into which voters cast their vote by pressing the candidate button of their choice. The EVMs are designed to be rendered inoperative after the poll to prevent any further recording of votes. Strict procedural safeguards established by the Election Commission of India are also meant to prevent any tampering of the EVMs before or after the polls.

After widespread allegations of rigging in the 1982 General Elections when paper ballots were used, the Indian government began exploring alternative voting methods. This led to the development of the country's EVMs in partnership with technical institutions like Bharat Electronic Limited (BEL) and the Electronics Corporation of India Limited (ECIL). Following pilot runs in select states/constituencies, EVMs were gradually rolled out for full-scale use in all Assembly and Parliamentary/General elections nationwide by the 2004 General Elections.

Research Problem

Despite the implementation of electronic voting machines (EVMs) in India with the aim of enhancing election efficiency and transparency, public opinion on their impact remains divided. This research seeks to examine the varied perceptions and concerns held by different demographic groups in India regarding the use of EVMs in the electoral process. By analysing factors such as gender, age, education level, and employment status, the study aims to uncover the nuances in public opinion and shed light on the specific advantages and drawbacks associated with EVMs from the perspective of diverse segments of the Indian population. Additionally, the research will explore the openness to potential reforms and measures to address concerns related to voter trust and overall confidence in the electoral system. Ultimately, the findings could inform policymakers and election authorities in their efforts to ensure a transparent, efficient, and widely accepted voting process through the effective implementation and continual improvement of electronic voting technologies.

OBJECTIVES

- To evaluate the effectiveness of electronic voting systems (EVS)
- To examine the legal and regulatory frameworks governing electronic voting systems in India
- To Investigate the security measures implemented in electronic voting systems
- To Gauge public trust and confidence in the integrity and reliability of electronic voting systems compared to traditional methods.
- To determine the frequency and types of errors encountered in electronic voting systems and compare them with manual voting processes.

Review of Literature

Several studies have documented the challenges faced during the adoption and implementation of electronic voting systems in India. These challenges include technological barriers, logistical issues, concerns about security and integrity, and resistance from stakeholders accustomed to traditional voting methods. It discusses potential vulnerabilities and risks associated with electronic voting systems, raising concerns about the integrity of elections and the need for stringent security measures. ([Reilly et al.](#))

Studies ([National Academies of Sciences, Engineering, and Medicine](#)) have highlighted the potential efficiency improvements associated with electronic voting systems in India. These include faster voting processes, reduced waiting times at polling stations, streamlined ballot counting procedures, and quicker dissemination of election results. Some research suggests that electronic voting systems have contributed to overall time savings and resource optimization in the electoral process.

There is ongoing debate regarding the impact of electronic voting systems on voter turnout in India. While some studies suggest that the convenience and accessibility offered by electronic voting systems may lead to increased voter participation, others argue that socio-economic factors, political dynamics, and demographic trends play a more significant role in determining voter turnout. ([Goldsmith et al.](#))

Several studies have explored the impact of electronic voting systems on the accessibility and inclusivity of the electoral process in India. Findings indicate that electronic voting systems have the potential to enhance access for voters with disabilities, elderly citizens, and those residing in remote or marginalized areas. However, challenges such as digital divide, technological literacy, and infrastructural limitations may hinder full inclusivity. (Wolf et al.)

This paper evaluates the efficiency of electronic voting systems in Indian elections based on a comparative analysis of EVS and traditional paper-based voting methods. It assesses factors such as cost-effectiveness, accuracy, and convenience for voters. The study underscores the importance of continuous evaluation and improvement of EVS to address challenges and optimize election efficiency. These studies collectively contribute to understanding the impact of electronic voting systems on election efficiency in India. This research explores the challenges and opportunities of electronic voting systems for electoral governance in India. (Raad et al.)

Methodology:

The research done on an empirical study on the topic “Public Perceptions and Concerns Surrounding Electronic Voting Machines: A Demographic Analysis in India”. Independent variables are age, gender, educational qualification, marital status and occupation. Dependent variables are, Are you aware of the potential benefit of electronic voting systems, Do you agree that electronic voting systems enhance election transparency, Primary Concern regarding the security of electronic voting systems, On a scale 1 to 10, rate your level of understanding on drawback of electronic voting system in terms of voter trust and Do you think that election commission implemented various reform to improve electoral processes. The primary information for the research is collected through surveys from 200 randomly selected respondents which included the general public of different age groups with a well framed and structured survey questionnaire. The research is done with a random and convenient sampling method and the results given through SPSS, simple bar graph and clustered bar graph.

Analysis

Table 1 Overall level of trust in Electronic Voting Machines

Level of Trust in EVMs	Percentage
Very High Trust	23
Somewhat High Trust	40
Neutral	11
Somewhat low trust	19
Very low trust	7

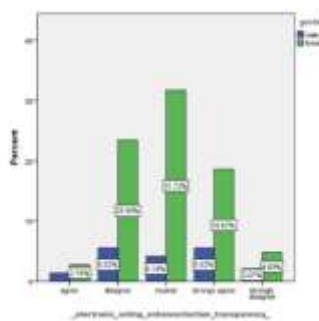


Figure 1 The above graph is between electronic voting enhances election transparency and gender.

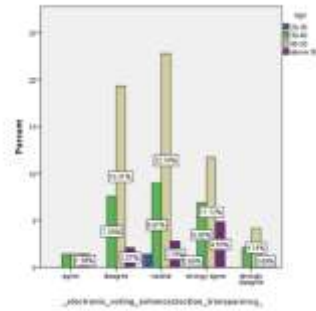


Figure 2 The above graph is between electronic voting enhances election transparency and age.

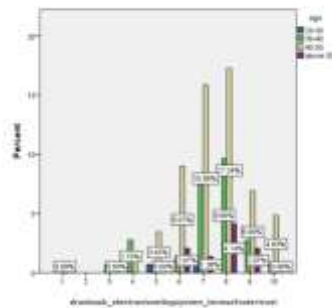


Figure 3 The above graph is between on a scale of 1-10 rate the drawbacks of electronic voting system in terms of voter trust and age.

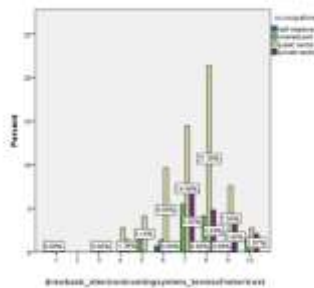


Figure 4 The above graph is between on a scale of 1-10 rate the drawbacks of the electronic voting system in terms of voter trust and occupation.

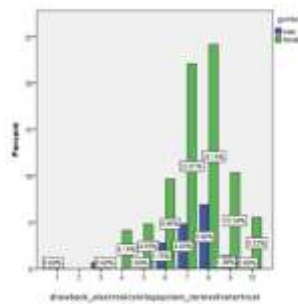


Figure 5 The above graph is between gender and on a scale of 1-10 rate the drawbacks of the electronic voting system in terms of voter trust.

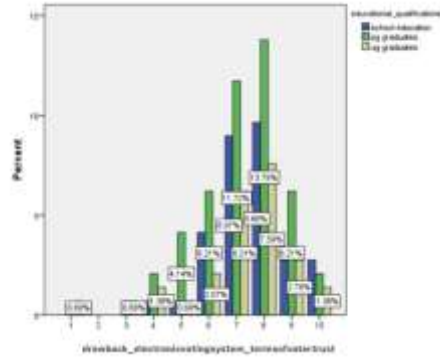


Figure 6 The above graph is between on a scale of 1-10 rate the drawbacks of the electronic voting system in terms of voter trust and educational qualifications.

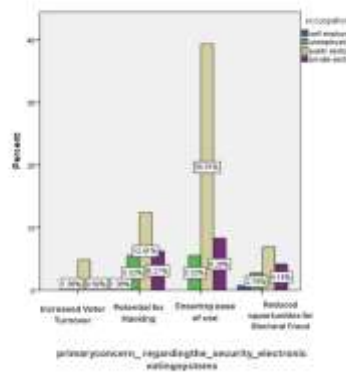


Figure 7 The above graph is between primary concern regarding the security of electronic voting systems and occupation.

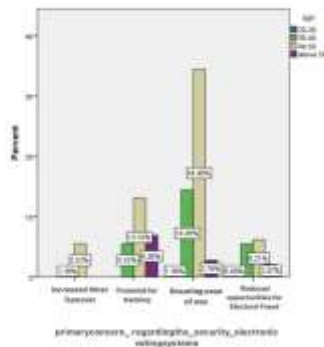


Figure 8 The above graph is between primary concern regarding the security of electronic voting systems and age.

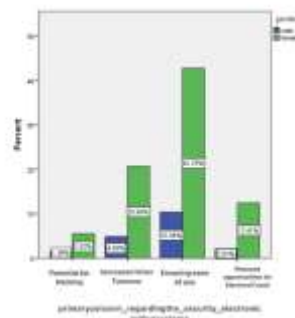


Figure 9 The above graph is between primary concern regarding the security of electronic voting systems and gender.

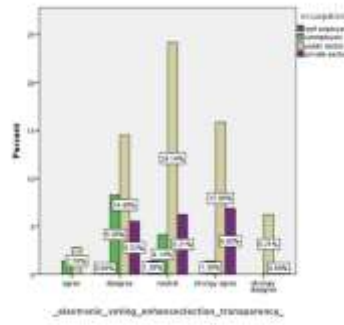


Figure 10 The above graph is between occupation and electronic voting enhances election transparency.

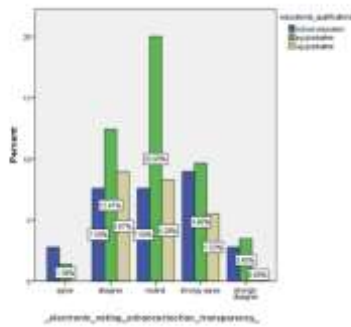


Figure 11 The above graph is between electronic voting enhances election transparency and educational qualification.

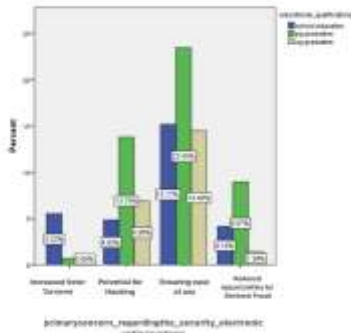


Figure 12 The above graph represents educational qualifications and primary concern regarding the security of the electronic voting systems.

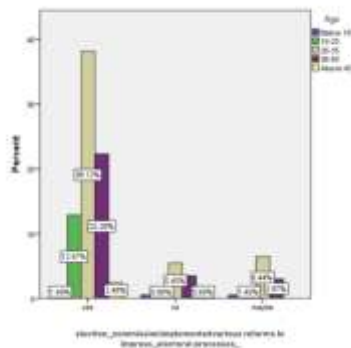


Figure 13 The above graph represents the election commission implementing various reforms to improve electoral processes and age.

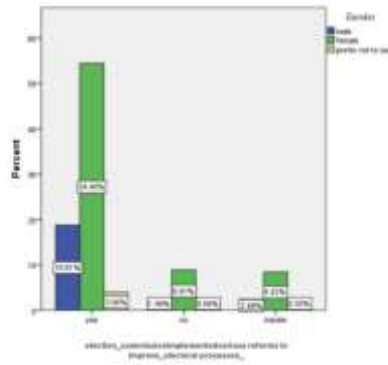


Figure 14 The above graph represents the election commission implementing various reforms to improve electoral processes and gener.

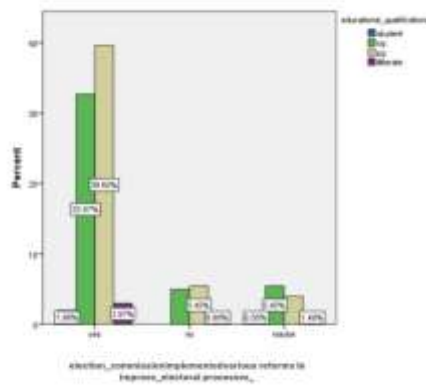


Figure 15 The above graph represents the election commission implementing various reforms to improve electoral processes and educational qualifications.

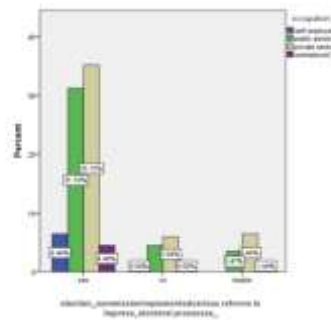


Figure 16 The above graph is between occupation and election commission implemented various reforms to improve electoral process.

Crosstab

Count

	Are you aware of the potential benefit of electronic voting systems					Total
	highly aware	slightly aware	somewhat aware	unaware	aware	
What is your age? below 18	98	47	127	86	59	417
19-25	85	83	150	72	62	452
26-35	80	106	141	36	86	449
36-45	56	45	76	61	85	323
above 45	21	28	78	24	36	187
Total	340	309	572	279	328	1828

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	94.972 ^a	16	.000
Likelihood Ratio	96.646	16	.000
Linear-by-Linear Association	11.086	1	.001
N of Valid Cases	1828		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 28.54.

Findings

- Gender Disparity in Opinions: Figure 1 shows that more females had a neutral opinion on whether electronic voting systems enhance election transparency, while fewer males had a neutral stance.
- Age Groups and Understanding of EVM Drawbacks: Figures 2 and 4 indicate that the age groups of 30-40 and 40-50 strongly agreed or agreed that they understood the drawbacks of electronic voting systems in terms of voter trust.
- Gender and Understanding of EVM Drawbacks: Figure 5 reveals that females rated their understanding of the drawbacks of electronic voting systems in terms of voter trust highly, at 9 on a scale of 1 to 10.
- Education Level and Understanding of EVM Drawbacks: Figure 6 shows that postgraduates rated their understanding of the drawbacks of electronic voting systems in terms of voter trust highly, at 9 on a scale of 1 to 10.
- Employment Status and Support for EVMs: Figure 7 indicates that individuals employed in the public sector and self-employed individuals majorly agreed or strongly agreed that electronic voting systems enhance election transparency.
- Education Level and Support for Electoral Reforms: Figure 8 suggests that postgraduates are more inclined toward the idea of the election commission implementing various reforms to improve electoral processes.

Conclusion

The data highlights a varied public opinion regarding the impact of electronic voting machines (EVMs) on election efficiency in India. While certain demographic groups, such as specific age groups, postgraduates, and individuals employed in the public sector or self-employed, generally support the use of EVMs and acknowledge their benefits in enhancing election transparency, there is also a significant understanding of the drawbacks and potential concerns related to voter trust.

Furthermore, the data suggests a gender disparity in opinions, with more females expressing a neutral stance on whether EVMs enhance election transparency. Additionally, there seems to be support among postgraduates for the election commission to implement reforms to improve electoral processes, which could potentially address concerns related to EVMs.

Overall, the findings indicate a nuanced public opinion, with recognition of the advantages of EVMs in terms of efficiency and transparency, but also an awareness of the potential drawbacks and a need for continued efforts to bolster voter trust and improve the electoral process.

References:

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5. [Raad, Raymond, et al. "The Capacity to Vote of Persons with Serious Mental Illness." *Psychiatric Services* , vol. 60, no. 5, May 2009, pp. 624–28.](#)