

The Role of Electronic Voting Machine (EVM) In Strengthening Democracy in India



Jayanta Baruah

Abstract: *Democracy and Elections are inseparable and related to each other. Elections are the central institution of democratic governments through which people choose their representatives to represent them in the decision and policy formation process of the government. The democratic government derives its all powers from the consent of the governed. Through holding free and fair elections people's consent has been translated into governmental authority in a democratic country. Democratic elections are periodic. As India is a democratic country, hence elections are held regularly to the parliament, state legislatures and to the institutions of urban and rural local bodies after every five years. Electronic Voting Machine (EVM) is one of the remarkable contributions of science and technology in our times which has been helping the countries, mostly democratic countries, in conducting elections in free and fair means. EVM has been used in India since long back. Use of EVM has made the electoral process in India simple, easier and free from electoral frauds and riggings. But questions have raised many a times on the tampering and acceptability of EVM. In our paper we will try to examine the usefulness of EVM in conducting free and fair elections in a big democracy like India and also the merits of this machine which has been helping strengthening Indian democracy in various ways.*

Keywords: Democracy, Election, EVM, Voter, Result, Tempering.

I. INTRODUCTION

In the contemporary world, technology has been incorporated into democratic process and system known as digital democracy or e-democracy (Rajan, March, 2019). This present world has been hit by digitalization, from registering a voter to casting a vote in the election booth. There are about 120 countries in the world that adopts democracy. Of these, a few 25 countries have experimented with or used EVMs to elect their governments (Pallavi, 2019). In our country voting with Electronic Voting Machines (EVMs) has been started after 35 years of India's Independence. Ballot papers were used as the main means of elections.

It becomes a hard reality for the Election Commission of India to conduct free and fair elections with ballot papers which made cost of election sky touching and time consuming. Malpractices like vote riggings, forged voting, booth capturing with muscle powers etc are some of the features of elections of India. On the other hand, it was also a matter of great concerns that 0.2 million trees have been destroyed in India while producing 10,000 tons ballot papers for conducting a single general election. These all factors compelled the Election Commission of India to search alternatives and better way of using voting rights by citizens. The traditional method of conducting elections with ballot papers and indelible ink has gradually been replaced by Electronic Voting Machine (EVM) in India. Electronic Voting Machine popularly known as EVM is an electronic means of recording votes in the elections. Conducting free and fair democratic elections in India is an amazing task because voters in India are increasing day by day. Data reflected that in the 2014 general elections 66.4 percent from total electorate of 834,101,479 casted their vote (Herstatt, 2014) and 900 million voters casted their votes in the Seventeenth Lok Sabha elections held in the year, 2019. The elections conducted in seven phases from April 11 to May 23, 2019 (Douglas Schorzman, 2019). Though it was a very difficult task but the use of EVMs has made the election procedures fast and easier. Electronic Voting Machines (EVMs) used in India are unique and quite different from EVMs employed in other nations like the USA. Rather than large, expensive, complex and computer like systems the Indian machine is praised for its simplicity, inexpensiveness, and efficiency. The Election Commission of India is very proud of this system and stated that the machines are perfect and tamper proof (Agarwalla, 2006). The 2019 General Election of India was the first Lok Sabha election in which each EVM was 100 percent backed by a VVPAT and in which physical verification of VVPAT slips has been done-concluded with a full clean chit to the machines. Physical verification of VVPAT slips with the EVM count was done across over 20,000 polling stations on May 23 before declaration of results as per the Supreme Court order. As at 8:30 pm, with over 157 of the 542 results declared, there was not a single case found of a mismatch between the EVM and the VVPAT (Bureau, 2019).

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* Correspondence Author

Jayanta Baruah*, Associate Professor and Head Department of Political Science, T.H.B. College, Jamugurihat, Sonitpur, Assam,

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II. RESEARCH METHODOLOGY:

We will describe the usefulness of the EVMs in the elections of Indian democracy in our paper. Hence, our paper will mainly be based historical and chronological data. Our research is based on document analysis of a variety of publicly available sources, including official reports of Election Commission of India, Articles publish in different Journals, News Papers and Books about electronic voting in India and worldwide.

III. A BRIEF HISTORY OF THE USE OF EVM IN INDIA:

The history of using EVM in an election in India is not new. The first EVM used in India was invented by MB Haneefa in 1980 and was used in the by-election to North Paravur Assembly Constituency of Kerala in 1981 (Staff, January, 2019). The state owned Bharat Electronics Limited (BEL) and Electronics Corporation of India Limited (ECIL) were the souls behind the commissioning of the EVMs in India in 1989 in collaboration with the Election Commission of India (ECI). The EVMs developed and tested by these two state owned companies were introduced phase manner in the Indian elections between 1998 and 2001 (Somanathan, April, 5, 2019). According to a press note of Election Commission of India, in last twenty years, the Commission has successfully conducted 107 State Legislative Assembly elections and 03 Lok Sabha, the lower house of Indian Parliament, elections using EVMs (Ozah, 2017). EVMs have been used in all the general elections and the elections to the state legislatures in India since 2004. A new technologically advanced voting system completely replaced the erstwhile voting method of using ballot papers in elections. Since September, 2013, Voter Verifiable Paper Audit Trail (VVPAT) machines have also been used in the elections of various State Assembly and Parliamentary constituencies for enhanced transparency and credibility in the voting process. Though controversies were tremendous on the use of EVMs in elections, finger raised on its faithfulness, tampering, hacking etc but the introduction of voter verified paper Audit trail (VVPAT) with EVMs in the recent Lok Sabha election in 2019 has answered to all the question marks and controversies raised against the EVMs. It is worth mentioning that in the Lok Sabha election of 2019, 900 million Indians voted to elect their next government. It witnessed the Election Commission commissioning 2.23 million ballot units, 1.63 million control units and 1.73 million VVPATs. Of these 1.73 million VVPATs, a physical count of 20,625 VVPAT slips was to be done in this election season as compared to the earlier election where a few 4,125 VVPAT slips were counted. This has been done following a Supreme Court order that tally of VVPATs in five polling stations should be done instead of one in every assembly segment. The report was submitted by Chief Electoral Officers from across states that there wasn't a single mismatch reported anywhere out of the 20,625 VVPATs that were tallied (Pallwal, 2019).

The election result of 2019 has increased the faith of people on the EVMs and people believe that there is less chance of

tampering and hacking the machine. VVPAT is a method that displays the feedback to the voters. It is an independent verification printer machine, which is connected to the electronic voting machine. It allows voters to verify whether their vote has gone to intended candidate. The machine works when the voter presses the button in the ballot unit. The ballot unit sends the signal to the VVPAT machine to print a paper slip. The printed paper slip consists of the name and symbol of the candidate, which voter has voted. It allows the voter to verify his/her choice. After displaying to the voter from a glass case in the VVPAT for seven seconds, the printed ballot slip will be cut and dropped into the drop box in the VVPAT machine and a beep sound is heard. VVPAT machine can be accessed only by the polling officers. This machine helps the voter to detect if the EVM is tampered. A maximum of 2000 votes can be recorded in an EVM and the name of 64 candidates can be display on the EVM's balloting unit. However, according to the rules of Election Commission of India one EVM should not recorded more than 1400 votes. Accordingly polling stations are divided. In India each Lok Sabha constituency has approximately 1.8 to 2 million of voters. Hence, constituencies have also been divided (Vaktania, 2019). If the numbers of candidates are more than 64 in the constituency, then the traditional ballot paper "ballot or box method" is used for voting. It is not possible for a voter to vote more than once by pressing the button of EVM machine repeatedly because after casting one vote the machine closes. If someone tries to vote more than one then the machine will not work. Therefore it is safe to use EVM in elections. The Figure-1 given below shows the chronology of events of EVMs in India

Figure-1: EVM in Indian Elections

DATE	CHRONOLOGY OF EVENTS
1977	ECI MOOTED THE IDEA OF EVM
1979	A PHOTO-TYPE WAS DEVELOPED
6 AUGUST, 1980	DEMONSTRATION BY ECI BEFORE THE REPRESENTATIVES OF POLITICAL PARTIES
JANUARY, 1981	BEL APPROACHED ECI FOR MANUFACTURING EVMs
29 TH JULY, 1981	ECI HELD A MEETING WITH REPRESENTATIVES OF BEL, ECI, THE MINISTRY OF LAW, AND CHIEF ELECTION OFFICERS OF SOME STATE

19 MAY, 1982	EVMS FIRST USED IN 70 PARAVUR ASSEMBLY CONSTITUENCY OF KERALA
1982-83	EVMS USED IN 10 BYE-ELECTIONS OF DIFFERENT PARTS OF THE COUNTRY
5 TH MARCH, 1984	SUPREME COURT OF INDIA HELD THAT EVMS CAN'T BE USED IN ELECTIONS WITHOUT A SPECIFIC PROVISION IN LAW.
DECEMBER, 1988	A NEW SECTION 61A WAS INCLUDED IN THE REPRESENTATION OF THE PEOPLE ACT 1951(THE SUPREME COURT UPHELD THE VALIDITY OF SECTION 61A IN 2001)
15 TH MARCH, 1989	THE AMENDMENT CAME INTO FORCE
JANUARY, 1990	ELECTORAL REFORMS COMMITTEE (ERC) FORMED BY GOVERNMENT OF INDIA
APRIL, 1990	TECHNICAL EXPERTS COMMITTEE RECOMMENDED THE USE OF EVMS
24 TH MARCH,1992	NECESSARY AMENDMENTS TO THE CONDUCT OF ELECTIONS RULES 1961 WERE NOTIFIED BY THE GOVERNMENT
1998	A GENERAL CONSENSUS WAS REACHED ON THE USE OF EVMS FOR CONDUCTING INDIAN ELECTIONS.
1999-2004	EVMS USED IN DIFFERENT STATE ASSEMBLY ELECTIONS
2004-2014	EVMS USED IN THREE CONSECUTIVE ELECTIONS TO THE LOK SABHA
14 AUGUST, 2013	THE CONDUCT OF ELECTIONS RULES 1961 WERE FURTHER AMENDED AND NOTIFIED TO PROVIDE FOR VVPATS
4 TH SEPTEMBER,2013	VVPAT WAS FIRST USED IN A BYE-ELECTION FOR 51-NOKSEN AC IN NAGALAND
8 TH OCTOBER,2013	HON'BLE SUPREME COURT DIRECTED THE ECI TO INTRODUCE THE VVPAT SYSTEM IN A PHASED MANNER
2013- PRESENT	LIMITED NUMBER OF VVPATS INTRODUCED IN PHASES BY ECI

APRIL, 2017	APPROVAL RECEIVED FOR PURCHASE OF 16,15,000 VVPATS AT A COST OF RS. 3173.47 CRORE DURING 2017-18 AND 2018-19. ALL REQUIRED VVPATS WILL BE PRODUCED BY THE COMMISSION BY SEPTEMBER, 2018, SUBJECT TO MANUFACTURING EXIGENCIES
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Source: Electronic Voting Machines In India: A Status Paper

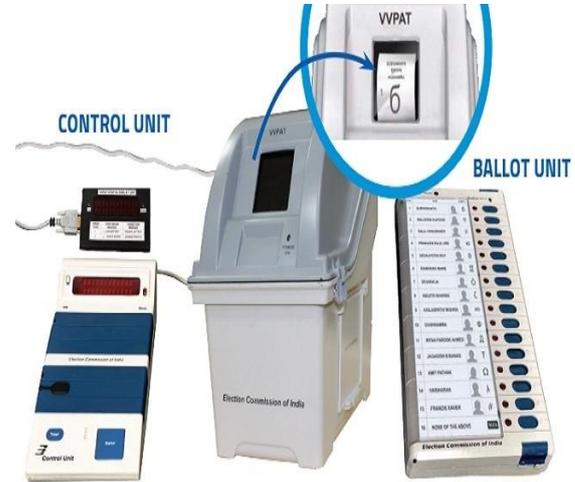


Figure: 2-Shows a complete set of EVM machine with VVPAT

Though political parties and many political wings are protesting the use of EVMs in the elections in our country but it is worth mentioning that 20 countries in the world use some form of electronic voting (Roche, 29 January, 2019). Britain, regarded as the mother of all democracies, use paper ballots to elect 650 MPs to the House of Commons. The United States of America, the oldest democracy in the world, on the other hand, rely on a combination of direct voting machines to read the vote marked on ballot papers, as well as ballot papers. Namibia, Nepal, Armenia, Bangladesh, Bhutan, Australia, Belgium, Bulgaria, Italy, Switzerland, Canada, Mexico, Argentina, Brazil, Chile, Peru and Venezuela, besides the US, use some form of electronic voting at present.

It is to be noted that in USA, direct vote-recording machines are used in 27 states, while 15 states use machines with paper audit trail machines, according to two US government websites. Unlike the Indian EVMs, which are stand-alone machines, voting machines in the USA are connected to a server and operate using the internet, making them vulnerable to cyber attacks. Against the backdrop of allegations of hacking of the USA presidential elections held in 2016, the congress last year had earmarked \$380 million to secure servers and systems in the country, a *Bloomberg* news report highlighted.

IV. BENEFITS OF USING EVMS IN INDIAN DEMOCRACY:

The usefulness of EVMs in the elections in India has thoroughly discussed in our paper.

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There are many positive signs of using EVMs in elections which will help strengthening Indian democracy to a great extent. Some of the benefits of use of EVMs are discussed below:

- The invention of EVM machine can be regarded as the blessings of science and technology to mankind. Use of EVM machines in the National election in India greatly impacts on our environment. A report has highlighted that use of EVMs in a National election saved about 10,000 tons of ballot papers which also save around 0.2 million trees.
(Singh, 2019) So the uses of EVMs are great impacts in saving our environment. The data given below in Figure-3 will reflect the facts.

Figure-3: Data reflecting the saving our environment.

General Election (A)	1999 (B)	2004 (C)	2009 (D)
Total Seats	543	543	543
(E-Voting)	(45)	(543)	(543)
Eligible Electorate	619.55 million	671.49 million	716.99 million
Actual Turnout	371.67 million	389.95 million	417.04 million
Polling Stations	774,651	687,402	834,919
Number of EVM used	---	1.075 million	1.368 million
Total Invalid Votes	7,098,879 (1.91%)	101,625 (0.043%)	198,705 (0.048%)
Of Them EVM Votes	---	67,121 (0.017%)	77,342 (0.019%)
Paper Saved	---	8000 tons	10,000 tons

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Source: Tiwari and Herstatt, 2014, p-69: Compilation based on ECI data

- The use of EVMs in the elections reduces the election expenditure. The cost of election becomes high while conducting election with ballot papers. The cost of printing ballot papers, their storage, transportation and cost incurred on the manpower used to carry ballot papers makes the cost of election high. But the manufacturer cost is low of M2 EVMs (2006-10) was Rs.8670/EVM (Balloting Unit and Control Unit). The cost of M3 EVMs has been tentatively fixed at about Rs. 17,000/unit.
- EVM machines can be moved easily from one place to another as compared to the ballot boxes. EVMs can be carried easily to the hilly and other inaccessible areas which help in smooth conduct of election. So EVMs has given the chance to enjoy the right to vote too many peoples of the country.
- It has been observed that a huge 900 million people have cast their vote in a peaceful manner due to the use of EVM machines in the Lok Sabha elections of India held in 2019. It is also to be mentioned here that the result of the election was declared in a very short period due to use of EVMs. Otherwise this could be an unending process.
- Use of EVMs has helped the election machinery in conducting free and fair elections in India. Riggings, booth capturing and electoral frauds become some common phenomena while elections conducted with ballot papers. It is worth mentioning that one person can be casted just one vote in the EVM. Hence, EVM reduces the possibilities of the fake votes and riggings.
- Booth capturing becomes meaningless while elections conducting with EVMs. EVM saves the votes in its memory so it reduces any possibility of the fake vote when voting is finally closed. Again, only five votes can cast per minute in EVM.
- EVM makes re-counting of votes easier in case of any disputation because 'Control Unit' of the EVM can keep the conducted vote in its memory for a period of up to ten years.
- EVM is useful in the areas where there is no electricity. Because EVMs run by the battery.
- EVMs are very cost effective because a machine works around 15 years. So the total cost of an election get reduces.
- Due to the use of EVM there is less chance of cancellation of votes. But it has been observed that a huge number of votes have been cancelled while used ballot papers in election. The rate of cancellation is high while voted in ballot papers because there is every possibility of touching the name/ symbol of other candidates in ballot papers with indelible ink of arrow cross mark, resulting cancellation of valuable votes.
- EVM machine makes the election process easier. Voters need not to use ink and arrow cross mark. After identifying their candidate they can cast their vote only by pressing the button of the EVM.

V. A CRITICAL EVALUATION:

In a democratic polity people gives moral legitimacy to the government. People's will is the base of this legitimacy. Hence, people express their will through electing their representatives to form the government by vote (the principle of secret ballot). Not only this vote registered correctly and counted correctly, it must also be seen to be registered correctly and counted correctly. The registering and counting process must be transparent, and verifiable by the people. Hence, pillars of a free and fair election are secrecy, transparency and verifiability.

In India, for the first time EVMs were used in some polling stations of the by-election to North Paravur Assembly Constituency in Kerala in 1982. Successful completion of the by election of Kerala inspired the Election Commission of India to use EVMs in other elections too. That was the beginning of EVM era in India. Election Commission of India had decided to use EVMs for Lok Sabha elections in 2004 and since then the use of EVMs instead of ballot papers are continuing.

Elections have always been a matter of great controversy in every country of the world, India is no exception. Be it ballot papers or Electronic Voting Machines (EVMs), both have their own share of merits and demerits. Controversy was seen continued while election conducted with ballot papers, party which lost always blamed the party which won was attributed to booth capturing and riggings, and at present, the tradition still continues and party lost elections blame the party which won, the blame is EVM tampering.

The first complaint of EVM tampering was lodged by BJP after the party lost the general election in 2009. The senior most leaders put forward complain of the so-called EVM hacking or tampering. But after winning the general election by a thumping majority of 51.9% votes, BJP quietened while Congress put forward the same issue of EVM hacking. Same complain has been lodged by BSP and AAP after the completion of Uttar Pradesh Assembly elections held in 2017. These opposition parties strongly argued about pre-programming in the EVMs so that the vote went on to a preferred party. This complains was also supported by Congress and Samajwadi party.

The demands of the opposition parties to ban EVMs in the elections of India intensified by the decisions of some developed nations to shift to ballot papers again instead of EVMs. They forward their request more strongly to ban EVMs in India and to shift to paper ballot again arguing that there is every possibility of EVM tampering. It is remarkable that Netherland banned the use of EVMs in October 2006. Republic of Ireland banned EVM in 2009. Italy also followed Ireland in the same year. The judgment of the Supreme Court of Germany relating to the use of EVMs was worth mentioning. In March 2009, the Supreme Court of Germany ruled that voting through EVM was unconstitutional (Sampath, 2019). The Court believed that transparency in elections is the constitutional right of the people, but "efficiency" is not constitutionally protected value.

Though there was strong protest from the political parties to ban EVMs in India and return to ballot papers again, however the comment made by the Chief Election Commissioner of

India compelled the political parties to tight their lips on the issue. On February 1, 2019, Chief Election Commissioner, Sunil Arora said, "We are not going back to the days of ballot paper (Arora, 2019). The EVMs have been in use in our country for more than two decades. And it has been a consistent policy of the Election Commission of India for quite some time and I think it will remain the same."

VI. CONCLUSION

Using of Electronic Voting Machine (EVM) in India has been created tremendous dissatisfactions among the political parties, mostly the parties sitting in opposition and the controversies are still continues. But we must express our rational views why EVMs be used in our elections. It has already been mentioned that the invention of EVM can be regarded as the blessings of science and technology to mankind. To save our planet Earth we should be always alert to save our environment. The use of EVMs instead of paper ballots in the general election in India greatly helped in saving our environment by saving more than 0.2 million trees which use to produce 10,000 tons paper. In a democratic polity people elect their governments through casting their votes. So the votes of the people are invaluable. But it has been observed that due to the high rate of illiteracy among the people, mostly the rural people, people are unaware to cast their vote properly. Hence, huge number of votes seen cancelled while vote cast in ballot papers. In using EVMs in elections there is less chance of invalid votes. It is interesting to mention here that in some time high cancellation of votes may change the result of the candidate or party with winning possibility. In a research paper discussing the data of three general elections in India, political scientists Zuheir Desai and Alexander Lee of Rochester University focused that switch to EVMs in India eliminated invalid votes. "This results stems directly from the design of the machine: Indian EVMs, with their finite menu of buttons, make it almost impossible to cast an invalid ballot (Mishra, 2017)." Again, use of EVMs has minimized the chance of riggings and booth capturing in elections. Because in EVMs only five votes can cast per minute. The latest connection of VVPAT with the EVMs has made it clear that conducting of elections with EVMs is more transparent and fair. It has already been mentioned above that Chief Electoral officers from across all states declared that there wasn't a single mismatch reported anywhere out of the 20,625 VVPATs that were tallied in the general election held in 2019. The election cost reduce due to the use of EVMs in the elections is another blessings of science and technology for the countries like India where 33.8 percent people are still living below poverty line. We can also say that the use of EVMs in elections have attracted more people towards our democratic polity. They have participated in the democratic polity to choose their representatives without any fear of wrong-casting of their rights. Now people are waiting to cast their votes in the elections of grass-root levels- The Panchayati Raj Institutions with EVMs.

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Finally, we may sum up our discussion by saying that EVMs are the greatest contribution of science and technology to the democratic countries of the world in general and India is particular. The use of EVMs made electoral process in India low cost, easier, and smoother and fraud free- all contributing in making Indian democracy stronger and successful.

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AUTHORS PROFILE



Dr. Jayanta Baruah, M.A, B.Ed, Ph.D, is serving as Associate Professor and Head in the Department of Political Science, T.H.B. College, Jamugurihat, Sonitpur, Assam, affiliated to Gauhati University. Dr. Baruah has completed his research on the Topic, 'Political Participation of Student Community: A Case Study of Sonitpur District, Assam.' He has completed two MRP sponsored by UGC. His area of interest is political participation of different tribes,

caste, women studies etc. Dr. Baruah has edited a number of valuable books contributed write ups by academicians across the country. He is the life member of Indian Political Science Association, North-East Political Science Association, All Assam Political Science Association and Assam College Teachers' Association (ACTA).