Technology, Elections and Democracy: Lessons for Nigeria

Osunyikanmi, Adebukola Foluke

Department of Political Science and Public Administration Faculty of Social and Management Sciences Adekunle Ajasin University, Akungba-Akoko Ondo State

Keywords:

Technology, Democracy, Electoral system, Citizens, Political participation

Corresponding Author:
Osunyikanmi, Adebukola Foluke

Abstract

emocracy thrives on the willingness and ability of the people to participate in the political process. The political environment is expected to be free of inhibitions that obstruct freedom of expression. Political participation, political culture and political education are all critical elements of successful democracy. Technology is increasingly playing an invaluable role in encouraging citizens to participate in the political process. It makes information dissemination easy and fast. Thus, political culture and political education are simultaneously being promoted by technology. Politicians have begun to deploy technology in their electioneering activities. Nowadays, candidates use social media to attract supporters. Every clever aspirant uses Facebook and Twitters to engage and influence the electorate. The same technology is also used to distribute contents that can put their opponents in bad light. Furthermore, the electoral commission has started relying heavily on technology in the administration of elections in Nigeria. Technology is used to capture the biometric features of voters, manage the register of voters, and verify the identity of voters on Election Day. To a very large extent, technology has eliminated the incidence of ghost voters. In spite of these aforementioned benefits, technology can also serve negative political purposes. Therefore, this study focuses on the examination of the impact of technology on elections. Also, it examines the effect of technology on the promotion of Recommendations, considered democracy in Nigeria. helpful for the promotion of the country's democracy, are offered.

Background to the Study

Democracy is incontrovertibly the best political system. It is a government which results from the popular choice of people. The people are allowed to elect their representatives in government. Citizens decide the politicians who will work for them in the executive and legislative arms of government. Unlike dictatorship, democracy ensures that civil liberty is guaranteed for all citizens. Majority of the countries in Africa, South America and Asia were administered by military regimes and other dictators until they began to embrace democracy in the closing decades of the twentieth century. However, countries in Western Europe and North America are much older democracies with great models that can guide Nigeria and other African states.

Credible elections are critical to the sustenance of democracy. Periodical elections conducted for the transfer of power from a set of people to another must be free and fair. Outcomes of elections must reflect the political choice of the people. Thus, a government is deemed to be legitimate when the elections which brought it to power was free and fair. In young democracies, there were instances when candidates who lost elections were declared as winners; such electoral frauds always resulted in political crises. Although the courts were able to resolve some of the electoral cases and restored the winners to their lawful positions, countries should avoid flawed elections because of their political consequences.

The need for a fraud-free electoral system has led to the introduction of technology to the entire process. In Nigeria, technology has been deployed to create a database of voters register. Technology has also been used to capture the biometric features of registered voters. With the aid of technology, every voter is now giver a permanent voter's card (PVC) which is machine readable. The card reader is used on election day to determine the identity of every registered voter who comes to the polling unit to vote. This approach has considerably reduced the incidence of impersonation, identity theft and ghost voting.

In addition to its use for elections, technology is now being used by candidates to reach out to voters. Technology, typified by social media, has become a popular tool for political campaign. Candidates use social media namely Facebook, Whats App and Twitter to market themselves and de-market their opponents. Some smart politicians are now using technology to raise campaign funds: websites are created so that their supporters can donate funds online; the rest resort to crowd funding for the mobilization of funds from people. This study is going to examine how technology affects the electoral system, the outcomes of elections and the progress of democracy in Nigeria. It will analyze secondary data sourced from globally recognized institutions. The final result will offer recommendations that will enable Nigeria to improve on her democratic practices.

Perception on Technology

Orlikowski (1992) used its structuration theory to define structures as rules and resources organized as properties of social systems. This theory does not treat technology as an artifact. Its focus is on how people interact with technology in their activities, creates structures that bring technology into existence and situate the application of the technology.

MacKensie and Wajcman (1985) presented the theory tagged social construction of technology. Their argument was that human action shaped technology. Human action could not be determined by technology. They used key concepts to illustrate their proposition. According to them, technology has interpretive flexibility, that is, there is flexibility in how people interpret artifacts; there is also flexibility about how the artifacts are designed. They further explained that relevant social group could project meanings about an artifact. The third stage was referred to closure and stabilization being the period the relevant social group reached a consensus. Lastly, the wider context referred to the socio-cultural and political situation of a social group as it shaped the norms and values which would influence the meaning given to an artifact.

Luhmann (2000) in his systems theory attaches importance to the historical development of technology and media. The theory establishes a connection between the artifact and the environment in which it is situated. The environment is shaped by political, economic, social and cultural factors.

Chandler and Monray (2012) explains that information technology is used to depict information distribution across computers and computer networks. According to them, several products and services within an economy are promoted with the aid of information technology. The technology comprises computer hardware, software, telecommunication equipment and the Internet. It should be noted that some of the products that are promoted by information technology include political parties and political personalities.

Daintith (2009) describes information technology as the use of computers to store, retrieve, transmit and manipulate data or information. This is often done in the context of business or other enterprise. Information technology is now being used in the context of politics to store, retrieve, transmit and manipulate information relating to politicians.

Lovell (1983) provides an insight into the concept of data mining. According to him, data mining requires "data preparation which can uncover information or patterns which may compromise confidentiality and privacy obligations. This involves data aggregation which is the process of pulling data from different sources and analyzes them so that the identities of individuals are revealed".

Security Focus (2006) asserts that de-identified data sets can provide enough information to make the identification of individuals possible. This position was buttressed by the fact that journalists were able to use search histories to identify numerous people. The search histories unintentionally released by AOL facilitated the deed.

Obar and Wildman (2015) define social media as technologies linked to the computer for the creation of and sharing of information and ideas among virtual communities. Kaplan and Haenlein (2010) clarify that social media are Internet-based applications which enable users to generate contents by texting posts and comments, and sharing photos and videos. All social

media allow users to create profiles, engage in online interactions, and network socially with other people.

Wellman (2012) asserts that social media have benefits. According to him, social media enable users to document memories, learn about new things, advertise themselves and develop friendships. Also, ideas are propagated with the aid of blogs, videos and gaming sites. The social media have made it possible for everyone to create contents and use them to promote their social standing. In most societies, politicians have used the power of the social media to gain political support.

Flanigin and Metzger (2007) believe that social media have harmful effects. Their criticism arises from the ease of using social media platforms, the disparity of information, issues concerning trustworthiness and reliability of information presented. The preponderance of fake news may lend credence to their concern.

Brossard (2013) shows that civil and uncivil comments tend to bias how people process information. Even a message obtained from a trustworthy source is distorted by such bias. He asks communicators in the social media environment to be practical and ethical.

Perception on Democracy

Diamond (2014) defines democracy as a system of government that is associated with four key elements namely "a political system for choosing and replacing the government through free and fair elections; the active participation of citizens in politics and civil life; protection of the human rights of all citizens; and a rule of law in which the laws and procedures apply equally to all citizens".

O' Donnel (2015) identifies the characteristics of democracy as "legal equality, political freedom and rule of law". Legal equality demands that all citizens must be treated equally by the law. Political freedom ensures that citizens are free from oppression or coercion. Rule of law requires every citizen to be subject to the law; this is a departure from dictatorship where the ruler is above the law.

Fenichel, P (2004) describes representative democracy as a political system wherein people elect government officials to represent them. The feature of representative democracy is the election of candidates. Winners in elections are determined by majority or plurality of votes. Nigeria is a classic example of representative democracy.

Loeper, A (2016) buttresses that representative democracy is based on the principle of elected officials. Government officials are elected to represent the people. This political system is also called indirect democracy. It is an exact opposite of direct democracy which allows every person to participate in government. There are variants of representative democracy: Nigeria is a federal republic because it is a federal state where the president is elected, Ghana is a unitary republic because it is a unitary state with an elected president, and Britain is a constitutional monarchy because the Queen is an unelected Head of State while the prime minister and other members of British Parliament are elected.

Kopstein, et al (2014) explain that liberal democracy is both a political ideology and a form of government. The features of liberal democracy include elections which usually involve multiple political parties, rule of law, civil liberties, political freedom for citizens, and separation of powers among the three arms of government. The powers of government are outlined in the country's constitution. Liberal democracy extends voting right to all adult citizens through universal suffrage. Representative democracy has its roots in liberal democracy.

Lijphart (1994) identifies the electoral system as a crucial aspect of representative democracy. According to him, an electoral system provides the rules that govern the conduct of elections as well as the process of determining the winners. The electoral system, administered by an electoral commission, specifies the method of voting, date and time of an election, people who are eligible to stand as candidates, how ballots are cast and counted, maximum amount of funds that a candidate is allowed to spend on campaigns, and other factors that may protect the integrity of the electoral process. In Nigeria, the electoral system uses the secret ballot system which allows each voter to mark the ballot paper in an enclosure before dropping the paper in the ballot box.

Pound stone (2009) clarifies the concepts of plurality vote and majority vote. Plurality vote is a situation where a candidate who has the highest number of votes is elected in an election; such a candidate does not need to score a majority vote. For instance, if 500 votes were cast with candidate A receiving 200 votes, candidate B 150 votes, candidate C 100 votes and candidate D 50 votes. Candidate A will be declared elected having scored the highest number of votes. Note that candidate A scored less than 50% of the votes cast. Under an electoral system that stipulates a majority vote, a candidate can only be elected if they score more than half of the total votes cast. In Nigeria, plurality vote is used to elect state and federal legislators.

Elections in Nigeria's Fourth Republic

Prior to the transfer of power from the military government to civilian authorities in May 1999, elections were held to pick the president, the 36 state governors, federal and state legislators. The presidential election held on February 20, 1999 was won by Chief Olusegun Obasanjo of the Peoples Democratic Party as he got 62 percent of the vote. His major challenger, Chief Olu Falae using the joint ticket of Alliance for Democracy and All Peoples Party got 38 percent. Chief Olusegun Obasanjo was sworn in on May 29, 1999.

Another presidential election was held on April 29, 2003. The incumbent president, Chief Olusegun Obasanjo (PDP) received 61.9 percent of the vote; General Muhammadu Buhari (ANPP) got 31.2 percent of the vote. Chief Obasanjo was reelected to serve a second term of fouryears.

The presidential election held on April 21, 2007 effected the transfer of power from an elected president to another. Alhaji Umar Yaradua (PDP) was elected with 70 percent of the vote; General Muhammadu Buhari (ANPP) got 18.65 percent and Alhaji Atiku Abubakar (AC) got 7.25 percent. The Commonwealth Observer Group (2007) which monitored the election remarked that it was flawed with irregularities.

Dr Goodluck Jonathan of the PDP won the presidential election conducted on April 16, 2011; he received 58.9 percent of the vote. General Muhammadu Buhari of the CPC got 31.98 percent; Mallam Nuhu Ribadu of the ACN got 5.41 percent; and Mallam Ibrahim Shekarau of the ANPP polled 2.4 percent. Election monitors of the Commonwealth Observer Group (2011) concluded that "the elections were both credible and creditable and reflected the will of the Nigerian people".

The 2015 presidential election became a watershed in the history of democracy in Nigeria. Political power was transferred from the ruling Peoples Democratic Party to the opposition party, All Progressives Congress. President Goodluck Jonathan (PDP) received 12,853,162 votes and lost to General Muhammadu Buhari (APC) who received 15,424,921 votes. Figures obtained from the Independent National Electoral Commission revealed the following: total number of registered voters was 67,422,005; total number of accredited voters was 31,746,490; total number of votes cast was 29,432,083; total number of valid votes was 28,587,564; and total number of rejected votes was 844,519. The Commonwealth Observer Group (2015) noted that "Social media has exerted both a positive and negative impact on the 2015 campaign.

It has been a source of instantaneous communication, and may have helped with voter education, but has sometimes been a source of misinformation. Facebook and Twitter in particular are platforms which provide relative freedom to spread rumours and hate speech, but which are hard to monitor and regulate".

Technology and the Electoral Process

The 2015 General Elections witnessed the application of technology to the electoral process in Nigeria. The Independent National Electoral Commission ensured that permanent voter's card (PVC) was produced for each registered voter. The PVC is embedded with chip which contains the fingerprints, facial image and other biometric features of the card holder. The authentication of every voter is now done by swiping the PVC with a smart card reader. This technology is secure and it has considerably reduced the incidence of multiple voting.

Table 1: Distribution of PVCs in 2015

	Number of people	Percentage
Eligible voters	87,784,373	
Total number of registered voters	67,422,005	76.8% of eligible
		voters
Total number of PVCs distributed	56,350,776	64.2% of eligible
		voters; 83.6% of
		registered voters

Source: International Republican Institute (IRI.ORG)

Table 1 indicates that 56,350,776 people representing 64.2% of eligible voters collected their PVCs prior to the 2015 General Elections. Similarly, the people who collected their PVCs were 83.6% of the total number of registered voters. This figure showed that 11,071,279 registered voters did not collect their PVCs. Stated differently, 16.4% of registered voters did not exercise their franchise in the 2015 elections as they failed to collect their PVCs.

Citizens' Participation in Elections

Political participation is an essential aspect of democracy. This section examines the extent to which Nigerians have been participating in the country's elections.

Table 2: Voter turnout in Presidential Elections

Year	Voting age	Registered voters	Total votes	Voter turnout
	population			(%)
2015	91,669,312	67,422,005	29,432,083	43.65
2011	81,691,751	73,528,040	39,469,484	53.68
2007	71,004,507	61,567,036	35,397,517	57.49
2003	64,319,246	60,823,022	42,018,735	69.08
1999	52,792,781	57,938,945	30,280,052	52.26
1993	50,526,720	-	14,039,486	-
1979	38,142,090	48,499,091	17,098,267	35.25

Source: International Republic Institute

The statistics in Table 2 reveal that citizens' participations in elections were very low. It was only in the 2003 presidential election that a high turnout of 69.08 percent was recorded. In the 1979 presidential election, 17,098,267 voters turned out representing an abysmal 35.25 percent of the registered voters. The 1999 presidential election witnessed 52.26 percent voter turnout, 2007 presidential election recorded a voter turnout of 57.49 percent, the performance declined to 53.68 percent in 2011 and further fell to 43.65 percent in 2015. This high level of voter apathy is worrisome.

Punctuality of Voting Officials

Voters are encouraged to go to their polling units on election days if the polling officials approach the exercise with a measure of professionalism. The punctuality of the electoral officials at the polling unit was used to test their level of discipline.

Table 3: Arrival of polling officials at polling units by 7.30am (2015 Presidential election)

Zone	Percentage	
South West	38 percent	
South South	31 percent	
South East	30 percent	
North Central	51 percent	
North West	49 percent	
North East	62 percent	

Source: International Republican Institute

The election monitors from International Republican Institute reported that 62 percent of the polling officers in the North East arrived at their polling units by 7.30am, 51 percent arrived by 7.30am in the North Central, 49 percent in the North West.

The performance was worse in the Southern Zones as 38 percent were punctual in the South West, 31 percent in the South South and 30 percent in the South East. Polling units were expected to commence the accreditation of voters by 8am; the lateness of polling officials to the polling centres might discourage many voters from waiting to vote. This could be one of the factors responsible for low turnout of voters.

Evaluation of Democracy in Nigeria Table 4: Press Freedom

Ranking	Country	Abuse score	Underlying situation	Global
			score	score
1	Norway	0	7.63	7.63
2	Sweden	0	8.31	8.31
3	Netherlands	0	10.01	10.01
4	Finland	0	10.26	10.26
5	Switzerland	0	11.27	11.27
6	Jamaica	0	11.33	11.33
7	Belgium	0	13.16	13.16
8	New Zealand	0	13.62	13.62
9	Denmark	45	6.24	13.99
10	Costa Rica	0	14.01	14.01
23	Ghana	0	18.41	18.41
26	Namibia	0	20.24	20.24
27	South Africa	0	20.39	20.39
48	Botswana	11	25.29	25.29
82	Cote d'ivoire	20.80	29.76	30.08
96	Kenya	23	30.82	30.82
102	Brazil	48.90	26.78	31.20
119	Nigeria	41.10	36.48	37.41
133	Philippines	58.90	38.43	42.53
145	Malaysia	0	46.88	46.88

Source: 2018 World Press Freedom Index

Democracy flourishes in countries which allow the media to operate freely. Therefore, the degree of press freedom is a measure of how a country has progressed democratically. The data presented in Table 4 indicate that Nigeria is hostile to journalists with its abuse score of 41.10. More advanced democracies like Norway, Sweden, Netherlands and Switzerland had the abuse score of zero apiece. Furthermore, Nigeria with a global score of 37.41 was among the countries where it was risky to be a media practitioner. Other countries in that category included Brazil, Philippines and Malaysia with global scores of 31.20, 42.53 and 46.88 respectively. Norway and Sweden with global scores of 7.63 and 8.31 offered full freedom to media practitioners.

Functioning of Government

Functioning of government is used to measure the effectiveness of machinery government. Good governance is one of the major goals of democracy. It is a government that functions well that can provide good governance.

Table 5: Functioning of government

Country	Functioning of government
Norway	9.64
Iceland	9.29
Sweden	9.64
Denmark	9.29
Switzerland	9.29
United Kingdom	7.50
Austria	8.21
South Korea	7.86
Japan	8.21
Czech Republic	6.43
Jamaica	7.14
South Africa	7.50
Ukraine	3.21
Kenya	5.36
Turkey	6.07
Nigeria	4.64
Gambia	3.93
Venezuela	2.86
Angola	2.86
Egypt	3.21

Nigeria had a low grade of 4.64 as seen on Table 5. This indicated the underperformance of the Nigerian government compared to those of United Kingdom, Austria and Iceland which were graded 7.50, 8.21 and 9.29 respectively. There is need for Nigeria to improve the performance of the government for democracy to be sustainable.

Electoral Process and Pluralism

Democracy is a form of government which allows citizens to choose their representatives in free and fair elections. It requires the existence of multiple political parties which are allowed to present candidates for elections. The suppression of opposition is an anathema to democratic principles.

Table 6: Electoral process and pluralism

Country	Electoral process and pluralism
Norway	10.00
Iceland	10.00
Sweden	9.58
Denmark	10.00
Switzerland	9.58
United Kingdom	9.58
Austria	9.58
South Korea	9.17
Japan	8.75
Czech Republic	9.58
Jamaica	9.17
South Africa	7.42
Ukraine	6.17
Kenya	3.50
Turkey	5.33
Nigeria	6.08
Gambia	4.48
Venezuela	2.17
Angola	1.75
Egypt	3.58

Nigeria, as a relatively young democracy, had a fair score of 6.08 for improving on the electoral process. The political environment in Nigeria accommodates many political parties giving citizens numerous choices on election days. However, Nigeria is still lagging behind countries like South Africa, South Korea and Denmark which were scored 7.42, 9.17 and 10.00 respectively.

Civil liberties

Civil liberties are rights and freedoms that the constitution of a democratic state guarantees for the citizens. These include the right to free speech, the right to privacy, the right to vote, freedom of association and others. The level of a country's democracy is determined by the extent to which its government honours the principles of civil liberties.

Table 7: Civil Liberties

Country	Civil liberties
Norway	9.71
Iceland	9.71
Sweden	9.41
Denmark	9.12
Switzerland	9.12
United Kingdom	9.12
Austria	9.12
South Korea	8.24
Japan	8.82
Czech Republic	8.53
Jamaica	8.82
South Africa	7.94
Ukraine	6.18
Kenya	4.41
Turkey	4.71
Nigeria	4.41
Gambia	2.94
Venezuela	3.82
Angola	2.94
Egypt	2.94

With a score of 4.41, the Government of Nigeria had a low tolerance for civil liberties. The United Kingdom, Austria and Switzerland which tied on a score of 9.12 should be the models for Nigerian Government to follow. The constitutional provision of civil liberties must be fully respected by government officials so that democracy can flourish in Nigeria.

Categorization of Democracy

Countries are categorized into different levels of democracy. The Economic Intelligence Unit uses parameters such as electoral process and pluralism, functioning of government, political participation, political culture and civil liberties to measure democracy. A country that receives a score greater than 8 out of a maximum score of 10 is classified as a full democracy; a country which has a score greater than 6, and less than or equal to 8 is classified as a flawed democracy; a country with a score greater than 4, and less than or equal to 6 is classified as a hybrid regime; and any country which has a score below 4 is tagged an authoritarian regime(EIU, 2017).

Table 8: Categorization of Democracy

Country	Overall score	Rank
Norway	9.87	1
Iceland	9.58	2
Sweden	9.39	3
Denmark	9.22	5
Switzerland	9.03	9
United Kingdom	8.53	14
Austria	8.42	15
South Korea	8.00	20
Japan	7.88	23
Czech Republic	7.62	34
Jamaica	7.29	38
South Africa	7.24	41
Ukraine	5.69	83
Kenya	5.11	95
Turkey	4.88	100
Nigeria	4.44	109
Gambia	4.06	113
Venezuela	3.87	117
Angola	3.62	125
Egypt	3.36	130

Table 8 indicates that Nigeria with a score of 4.44 was classified as a hybrid regime. Venezuela got 3.87 and was classified as an authoritarian regime. South Korea and Japan received 8.00 and 7.88 respectively which placed them among flawed democracies. Austria, Switzerland and Norway were scored 8.42, 9.03 and 9.87 respectively thereby having them classified as full democracies.

Recommendations and Conclusion

Democracy creates the opportunity for people to freely choose the leaders who will represent them in government. It is the only form of government which confers legitimacy on public officials in the executive and legislative arms of government. This study identified some limiting factors in the practice of democracy in Nigeria. Consequently, recommendations are offered so that democracy can succeed in the country.

Every citizen must be ethical in their use of social media. They must desist from using Facebook and Twitter to disseminate false information. Social media should be used responsibly. Nigerians must be prepared to embrace the positive aspects of social media for the promotion of political participation. Also, technology should be used for voter education. The National Orientation Agency should begin to send enlightenment messages to all telephone subscribers. The messages should continuously educate Nigerians on the need to exercise their right to vote. The messages must consistently create the awareness which will stimulate people to become active in the country's democratic processes.

Religious organizations, especially Churches and Mosques, must sermonize on the essence of active political participation. Their male and female members must be advised to be peaceful during political campaigns and elections. Christian and Moslem clerics will help solve the problem of voter apathy if their followers are persuaded to vote on election days. The problem of rejected votes implies that the affected voters did not know how to mark ballot papers. Again, proper voter education can rescue the country from this predicament. Political parties, being the victims of rejected votes, must be prepared to educate their supporters on how to thumbprint ballot papers correctly. The Independent National Electoral Commission should ensure discipline among its permanent and ad hoc staff. Polling officers who fail to arrive at their assigned polling units by 7.30am must be sanctioned. The Commission must get the smart card readers to work without glitches when voters are being verified. Next, the Commission must accept the reality of the social media and begin to use it for voter education.

The court system should be retooled. The government needs to place efficient and incorruptible judges on the bench. This will lead to quick dispensation of justice in respect of disputes arising from elections. The law should be made to deal with people who commit electoral malpractices with impunity. Going forward, the judiciary must defend the country's nascent democracy. The government must respect press freedom so that journalists will feel safe to practice their profession. Next, the government should not have any occasion to withdraw civil liberties from any citizen. For the machinery of government to function properly, there must be regular training for the people in government. The government should be well positioned to provide good governance.

Finally, there is need for shared responsibility between the leaders and citizens in order to nurture democracy in Nigeria. As the country strives towards the perfection of its democracy, the benefits of good governance will flow to the citizens. The ultimate target is to transform Nigeria into a full democracy.

References

- Brossard, D. (2013). *New media landscapes and the science information consumer*. Proceedings of the National Academy of Sciences of the United States of America (PNAS). *11*0 (3), 14096-110
- Chandler, D. & Monray, R. (2012). *Information technology: A Dictionary of media and communication (First Edition)* London: Oxford University Press.
- Diamond, L. (2004). *What is democracy? Lecture at Hilla University for Humanistic Studies.* www.eiu.com (Economic Intelligence unit)
- Fenichel, P. (2004). *Representation and democracy: uneasy alliance*. Scandinavian Political Studies.
- Flanigin, A. & Metzger, M. (2007). The role of site features, user attributes and information verification behaviors on the perceived credibility of web-based information. *New Media and Society.* 9 (2) 319-342 www.iri.org (International Republican Institute)
- Kaplan, A. & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of socialmedia. *Business Horizons*. 53 (1) 61
- Kopstein, J., Lichbach, M. & Hanson, S. eds (2014). *Comparative politics, interests, identities and institutions in a changing global order*. Cambridge: University Press.
- Lijphart, A. (1994). Electoral systems and party systems: A study of twenty-seven democracies, 1945-1990. London: Oxford University Press
- Loeper, A. (2016). Cross-border externalities and cooperation among representative democracies. *European Economic Review. 91*, 180-208
- Lovell, M. (1983). Data mining. *The Review of Economics and Statistics*. 65 (1) 1-12
- Luhmann, N. (2000). *The reality of the mass media*. Stanford: Stanford, CA.
- MacKensie, D. & Wajcman, J. (1985). The social shaping of technology. Milton Keynes: Open University Press
- Obar, J. & Wildman, S. (2015). Social media definition and the governance challenge: An introduction to the special issue. *Telecommunications Policy*. *39* (9) 745-750
- O'Donnel, G. (2005). Why the rule of law matters in Diamond, Larry; Morlino, Leonardo, assessing the quality of democracy. Baltimore: John Hopkins University Press
- O'Keefe, G. & Clarke-Pearson, K. (2011). The impact of social media on children, adolescents and families. *Pediatrics*. 127 (4)800-804

- Orlikwoski, W. (1992). The duality of technology: rethinking the concept of technology in organizations. *Organization Science*. 3 (3) 398-427
- Poundstone, W. (2009). Game the vote: why elections aren't fair (what we can do about it). New York: Macmillan Press.
- Radical Revolution (2006). *The thermidorean reaction: Wsu.edu*. June 1999 Security Focus AOL search data identified individuals
- Shirky, C. (2008). *Here comes everybody: The power of organizing without organization*. London. Penguin Press
- Taipale, K. (2003). Data mining and domestic security: Connecting the dots and make sense of data. *Columbia Science and Technology Law Review.* 5 (12)
- http://thecommonwealth.org/media/news/commonwealth-releases-observer-report-nigerias-2015-elections
- Victorian Electronic Democracy, (2005). Final report glossary. July 28
- Wellman, B. (2012). Networked: The new social operating system. MIT https://rsf.org/en/ranking(2018World Press Freedom Index)