Social Media Echo Chambers: A Study of Public Political Discourse on Social Media

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Abstract

In the current era of digital age, the use of social media is growing day by day and people are having access to social networking sites on a single click. This trend is also giving rise to a public discourse on platforms related to different types of events, such as politics and entertainment. The situations like filter bubbles and echo chambers are influencing the people and they are also affecting the public discourse. The aim of the study is to explore how "Echo Chambers" are influencing the public discourse in online sphere. This study also explores key factors and tools involved in Echo Chambers which are making the sub groups in online sphere. On top of that, the public political discourse on social media is either open or biased. In this study the method of literature review is opted to gain the insights into the research problem mentioned above. Three studies were taken from different countries, including U.S.A, Poland, Hungry and Thailand, to see the impact of echo chambers in different political systems with diverse audiences. In the result, it was found that echo chambers confirm the previously held beliefs of the audience regardless of demographics and the countries. People who are influenced by echo chambers prefer to interact with and follow the people with a like-minded mentality. Moreover, they try to keep themselves from opposing views or opinions. However, for this study the sample taken was small, so it is difficult to generalize the findings. The content available for this topic is scarce and there are no tools from which the effect of echo chambers can be measured before and after entering the chambers.

Keywords*: Filter Bubbles, Political Discourse, Social Media Echo Chambers.*

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Introduction

As compared to the previous times, social media has diminished the cost of production and dissemination of news to a scattered kind of audience with an interest in political information. It is very useful and has replaced the print media such as newspapers and magazines. Publishing news on these printing platforms requires more sources like machines and larger labor as compared to publishing online which is cost effective. After the boom in social networking websites like Twitter and Facebook, individuals have an easy medium to share their views and ideas on an agenda with their fellows and they can have a debate on it (Bakshy, Rosenn, Marlow & Adamic, 2012). Since the technological advancements are taking over, the use of mobile internet is also increasing, which is giving easy access to social networking sites such as Facebook and Twitter. These sites are becoming important platforms for political public discourse. Social media provides a vast reach to wider audience and is not restricted like traditional media, which is one way of communication. Traditional media also doesn't provide a chance to exchange the opinions or start a healthy debate on a topic (Pariser, 2011). Furthermore, from an estimation it is expected that by the end of 2019, the total population of the world using internet and having access to social networking websites will become 72.8%. Based on this report, given by eMarketer, the world of internet is becoming a keen place for the public debate (Williams, Mcmurray, Kurz, & Lambert, 2015).

In this current era of technology, individual's beliefs are becoming more biased as search engines, social networking sites and news aggregators are gradually personalizing the content based on the previous search history of the user with the help of machine learning models which is creating filter bubbles (Pariser, 2011). Filter bubbles is a serious threat to the democracies as people don't have access to the opposing views and they are just making their beliefs from the information they are getting on a matter (Lassen, 2005). To differentiate between the ideas of filter bubble and Echo Chamber, different scholar gave different definitions and, in the regard, Dubois & Blank, (2018) define filter bubbles as "algorithmic filtering which personalizes content presented on social media and, through use of search engines, could exacerbate the tendency for people to select media and content which reinforce their existing preferences" (p.3) and to make the idea more clear a definition for Echo Chamber was also provided which says that "when people with the same interests or views interact primarily with their group. They seek and share information that both conforms to the norms of their group and tends to reinforce existing beliefs" (Dubois & Blank, 2018, p. 3). Nowadays social media is considered to influence ideological segregation and this is the area where Echo Chambers come up in the scene. In this phenomenon the individuals are only uncovered to the information which confirms their biases. If the words "Echo Chamber" is broken down, the "chambers" means the social networks and "echo" means the process of sharing the same idea or matching views and opinions in the same network (Garimella, De Francisci Morales, Gionis,& Mathioudakis, 2018).

The aim of this study is to investigate how the public political discourse is affected online on social media from echo chambers. To address this problem some of the key concepts are explained first and afterwards the state of research has been analyzed. Three studies were selected to study the impact. In the end an overall criticism is provided on the selected studies. Final part includes the practical implications of the study and the future research suggestions.

State of Research

For checking any relationship, it is important to have a look on previously available literature. To check this research problem of public political discourse on social media which is being affected by Echo Chambers two most relevant data bases were chosen in which one was "Communication and Mass Media Complete" (CMMC) and Web of science which is consisted on six databases. Combinations of different key words were used and mentioned in table 1.

Table 1: *Search Results with Different Keywords for Echo Chambers*

Source	Communication and Mass Media Complete
Keywords Used	
Echo Chambers	Results: 46
Echo Chambers and Social Media	Results: 22
Source	Web of Science
Echo Chamber	Results:532
Echo Chambers and Social Media	Results:114

Note. The search results were containing some filters like the years which were chosen from 2013to 2019 and the literature is only in English

The reason why the filters were applied was to check the most recent effects on public political discourse. Studies which were opted for the analysis were mostly highly cited and were published in peer review journals. After screening of the most popular paper it is being found that Echo Chambers make the discussion polarized on social media.

Research Question

After having a look on different databases, it was observed that the topic of Echo Chambers and public political discourse is important. It's not a new topic but still has an urge to be explored rapidly. On top of that, public discourse which is being affected by this phenomenon of Echo Chambers should be tested in different countries to check the diverse reaction of the diverse audience. Research question which is needed to be addressed is as follows:

"How do Echo Chambers impact the public political discourse on social media?"

Study 1

The main idea of the study "Echo Chamber or Public Sphere? Predicting Political Orientation and Measuring Political Homophily in Twitter Using Big Data" was to investigate the political homophily on Twitter among the Democrats and Republicans in U.S.A and for this purpose previous studies were also conducted but they were only based on singular case studies. In this study the authors used Big Data approach and collected all the complete political conversational tweets which were related to both the political parties shared on twitter in 2009.

Methods

The methods which were used in the study to check the political homophily was machine learning and social network analysis. With the help of machine learning the user can easily distinguish between two and in this case, supervised classification was used to detect the political content in the tweets. Supervised learning algorithm uses a training set which helps in the labeling of the newly generated content. In this case with the help of this tool they checked if the data is political or non-political or if it is related to both the political parties or not. After that they split the training set into two parts, the first part of the set was about how to "train" the classifying algorithm and the second part was to test the algorithm whether the algorithm is correctly classifying the labels or not. The political homophily was then measured on a level of 0 to 1, be checking the outbound ties with their own political affiliated ties with the overall political ties.

Results

The objective of the research was to analyze whether Twitter is boosting a meaningful political discussion among the users with diverse political users. Furthermore, is it giving a platform to be polarized with likeminded people or not? For achieving this goal, they first categorized the users and they found out 72302 Republicans and 782371 Democrats who were debating on Twitter about a political agenda. Their investigation showed that the people who share the content in favor of Democrats, whether they are affiliated with the party or not was ten times greater than the Republicans. Whereas, the people who were affiliated with the official political account from Republican's perspective was 7 times higher than of Democrats. This means the Democrats followers show less affiliation with the official account but they like to speak more generally about the party in online sphere. Republicans showed more of their affiliations with the official account instead of being more general about the party. On the other hand, to check the political homophily the author checked the outbound ties as well in which they figured out that Democrats have their outbound ties with 88% of the Democrats and only 12% with Republicans. Whereas, the Republicans have 76% outbound ties with Democrats and remaining with Republicans which shows that Democrats have higher homophily as compared to Republicans.

Study 2

In the study "Are Echo Chambers Based on Partisanship? Twitter and Political Polarity in Poland and Hungary" by "Paweł Matuszewski and Gabriella Szabó" the authors tried to explore whether "Echo Chambers" make a polarized public political debate on social media which makes people think separately from previously held ideas or does it provide a platform to people to have equal knowledge about the double-sided political scenario of a country. In this regard they did a comparative study in which they included 77 political parties, politicians and different media outlets from Hungry and Poland. In this regard the research question was formulated as "What are the users' preferences for acquiring information on Twitter? Do they prefer to follow one-sided, two-sided, or a variety of one-sided and two-sided political or media accounts? "And to support this research question a hypothesis was provided which was stated as "Twitter users mostly follow accounts that are congruent with their beliefs." This means that users tend to follow accounts that have a political leaning similar to theirs and avoid accounts that differ in their political orientation.

Methods

According to the authors for measuring the effect of political information as suggested from the previous literature, they used network analysis as their methodological framework to check the public exposure on twitter. Social media was considered as social networks for the better understanding of the voter's information and exposure. Further they characterized the members of twitter network as like-minded or heterogeneous just to filter out the news from social media connections. Data was gathered automatically from Twitter REST API in September 2018. They took their sample from some important "hubs" which were politicians, famous journalists, celebrities and the famous content producers. A larger public was following such type of people for getting their information and for shaping the ideas. They took only 1% of the accounts which are most followed in these countries for their analysis which was consisting on Politicians, Prime minister, spokes persons and famous news media handles. They excluded the tabloids, businessmen and other influencers which were not attached to politics. The account which was sharing English content were also excluded as they wanted to check the influence on Polish and Hungarian public so only account of these languages was included. The data from Hungry was comprising on 455,912 unique users with (851,557 edges) and 1803,837 Polish users with (10,124,501 edges). In the analysis they used multi-level algorithm (Blondel, Guillaume, Lambiotte, &Lefebvre, 2012).

Results

Overall the results from the analysis state that most of 55% Hungarian and 48% Polish people have biased preferences. If they are following the anti-

government ties then they have big clusters and same are the results for the pro government ties as well. Only 1.9% of the people in Hungary follow political news media outlets and the numbers in Poland are also low with 5.6%. The results supported their hypothesis that on social media sphere people follow only those accounts which confirm their beliefs and they avoid such accounts having different opinions. Another important finding in the study was, 13.4% to 58% people in Hungary and 5.6% to 35.9% of the public in Poland has balanced preferences.

Study 3

The aim of the study titled "Echo Chambers' Partisan Facebook Groups during the 2014 Thai Election" was to check whether social networking websites such as Facebook is encouraging the public political discourse in its online sphere or they were just forming the echo chambers where the people with homogenous ideas were forming polarized groups and just confirming their old beliefs.

Methods

The data was taken from the partisan political Facebook pages in the time span of February 2014 and was related to Thai people in general. The content analysis of these Facebook pages was incorporated having the political posts which were only related to these elections. On top of that, they also did a network analysis and visualized the user interaction in the selected domain to check the relationship. The case study of Thai election was selected as the information was comprehensive and had triggered a huge political debate on social media. It sought out to answer the research question if due to presence of Echo chambers the societies are divided or not and were Echo chambers the perfect example or not.

Results

The motive of the study was to check that the SNS political discussion was improving deliberation on public political discourse or whether the previously held beliefs of the people were confirmed under the umbrella of "Echo Chambers. The results which were derived after the content analysis of the Facebook pages states that the "Echo Chambers" are making the conversation biased with previous held beliefs and SNS is unable to enhance the public political discourse. The tendency of sharing commenting and liking content was way higher in the like-minded people which lead to a scenario where people rarely want to engage in a conversation with the opposing view.

Conclusion

The studies which were chosen for analysis were from three different countries i.e. U.S.A, Poland, Hungry and Thailand. The main aim of this study was to study the literature and find out if echo chambers are impacting the public political discourse on social media or not. The findings concluded that the Echo Chambers are confirming the previously held beliefs of the users regardless of the countries. Although the demographics and the targeted audience was from different countries, but the Echo Chamber encouraged the like-minded people to share their ideas and beliefs with their selves and just because of that they are becoming polarized. This phenomenon is turning the society into a falling society, as people are having access to the information which is giving them confirmation bias. Furthermore, because of that the individuals and the society might head towards extremism (Munson & Resnick, 2010). Zuiderveen Borgesius, et al, (2016) stated that this phenomenon is a threat to the democracies as people formulate their opinion and shape their minds having no or less information.

Limitations

It is difficult to generalize all the results for this whole phenomenon of "Echo Chambers" as the studies which are available on public political discourse on social media are scarce. Furthermore, the impact of Echo Chambers is tricky to measure on traditional media users that how they are formulating their chambers. In the current scenario the studies on this topic are more for Western countries and the results may differ if more content could be generated for Asian countries.

Future Implications

There is a need for a further investigation into the phenomenon to check the complete potential of "Echo Chambers." The data which is available is mostly talking about democracies, but it is also important to check the impact of this phenomenon in post-authoritarian countries. New techniques should also be introduced to check the effects of Echo Chambers on public discourse before and after entering it.

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