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Echo-Politics: Political Fragmentation, Echo Chambers and Polarization in Online Turkish Society

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Abstract

Online political fragmentation, echo chambers and polarization have been attracting a particular attention in political sciences and new media studies, especially performing data-driven analyzes on different countries. However, despite its population and dense political agenda, research on Turkey in this field has been lacking. In this thesis, focusing on Twitter which is one of the popular platforms for online political communications in the country, retrieving and analyzing up to tens of millions of tweets, indicators are found suggesting a considerable degree of fragmentation, echo chambers and polarization.

Summary

This thesis examines political fragmentation, echo chamber and polarization on Twitter sphere and analyzes important cases which can be considered relatively unique to Turkish politics.

One of the major research questions in the online political communication is about fragmentation, echo chambers and polarization issues on social network sites. A commonly studied research question is whether people tend to interact mostly with like-minded people with same ideologies, or with different-minded people with diverse and even opposite ideologies. Additionally, the majority of research concentrate on the unique circumstances in each country. Aiming to contribute to this debate, researchers have been studying various political issues in several countries (Bakshy et al., 2015; Gruzd and Roy, 2015; Rauchfleisch and Metag, 2015; Hahn et al., 2015).

Turkey is a bridge between east and west, and politics of Turkey is plausibly influenced up to a degree by the foreign politics of USA, European and Asian countries. However, research for the politics in Turkey in this field might be considered to be not at a sufficient level.

This thesis aims to provide a unique and data-driven contribution to the field. In order to analyze whether online political conversations in a society is driven to echo chambers or public sphere (Habermas, 1989), there are basic methods of data collection and analyses. For example, asking to people directly by surveys is one of the methods. However, this method is criticized in two dimensions. First is that the ability to make surveys with many people is limited, which ends up in creating a “pool” of data too small to provide reliable information analysis.

Second, people might often tend to respond more positively to questions than they actually do, which could bias the results. An alternative method is to collect existing interaction data from social networking sites (SNS). This method is free from the second disadvantage of the survey method. However, there may be problems in this method as well. A lot of research supporting each side (echo chamber or public sphere side) of

the debate are criticized by some researchers (Dahlberg, 2007) that usually “small pool of data” is collected and analyzed.

Therefore, in order to create not a small but a sufficiently “big pool of data”, in each study of this thesis, sufficiently many tweets from Twitter is retrieved. Also, not asking people their opinions about their interactions but rather collecting the actual data of the interactions, the research method is aimed to be safe from the potential bias on the result.

Findings of the thesis suggest indicators on political fragmentation, echo chambers and polarization on Twitter in Turkey, which is conjectured to be negatively affecting democracy. Within this context, the new term, “**Echo Politics**” is suggested referring to specific political communications characterized by echo chambers and polarization in a fragmented society.

In addition, findings on improving the method for quantifying the significance of connections in social networks from the perspective of the field are briefly presented in the Appendix.

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List of Abbreviations

AKP		Justice and Development Party (Adalet ve Kalkınma Partisi)
CHP	.....	The Republican People's Party (Cumhuriyet Halk Partisi)
DLE	.....	Deep Link Entropy
HDP	.....	The Peoples' Democratic Party (Halkların Demokratik Partisi)
HSYK		Supreme Council of Judges and Prosecutors (Hakimler ve Savcılar Y. Kurulu)
ICT	.....	Information and Communications Technologies
IMF	.....	The International Monetary Fund
ISIS	.....	Islamic State of Iraq and Syria
IYIP	.....	The Good Party (İyi Parti)
LE	.....	Link Entropy
MHP	.....	Nationalist Movement Party (Milliyetçi Hareket Partisi)
MİT	.....	The National Intelligence Organization (Milli İstihbarat Teşkilatı)
NA	.....	The Nation Alliance (Millet İttifakı)
PA	.....	The People's Alliance (Cumhur İttifakı)
PKK	.....	The Kurdistan Workers' Party (Partiya Karkeren Kurdistanê)
RP	.....	The Welfare Party (Refah Partisi)
SNS	.....	Social Network Site
TGB	.....	Youth Union of Turkey (Türkiye Gençlik Birliği)
TMSF	.....	Saving Deposit Insurance Fund (Tasarruf Mevduatı Sigorta Fonu)
TRT	.....	Turkish Radio and Television (Türkiye Radyo Televizyon Kurumu)
TÜİK	.....	Turkish Statistical Institute (Türkiye İstatistik Kurumu)

Chapter 1

Introduction

Summary of Chapter 1

This chapter starts with a brief summary of the thesis, introducing the main research question, the main hypothesis and its decomposition into three hypotheses to be examined and their correspondence, as well as the approaches used in the analyses.

In particular, it introduces one of the main debates of new media and politics which lies at the heart of the thesis, i.e., whether online political communications positively or negatively affect democracy by weakening or strengthening political fragmentation, polarization and echo chambers, respectively.

This part is based on the three hypotheses and it explores the case of Turkey. Through data-driven analyses on long-term interaction patterns and tens of millions of tweets on specific issues relatively unique to the country, it finds indicators supporting the negative side of the debate.

1.1 Detailed Summary of the Thesis

Focusing on political interactions on Twitter in Turkey, this thesis finds indicators on online political fragmentation, polarization, and echo chambers, which is conjectured to be negatively affecting democracy. In order to study fragmentation and echo chambers in Turkey along these lines, the main research question is designed as follows:

“Do Twitter interactions lead to weakening or reinforcing political fragmentation, echo chambers and polarization in Turkey?”

In order to seek an answer to the research question above, three hypotheses are structured towards forming the main hypothesis, and two approaches are designed to test the hypotheses. Following the list of hypotheses and approaches, below, each will be explained together with their correspondence.

- **Hypothesis 1:** There are considerable echo chambers among politically fragmented groups which are reinforced by exposure to same ideological lines and weakened by exposure to cross-ideological lines and verified accounts.
- **Hypothesis 2:** Even among like-minded people, the reasons behind a particular opinion can be fragmented.
- **Hypothesis 3:** Not only general elections but also mayoral elections can reinforce online political polarization in the entire nation.

Research Design and Relations of Hypotheses

Explanations on reasons leading to the conclusions of the hypothesis-testings are discussed where applicable. However, the core of the research is based on these hypotheses, each describing a particular situation. Therefore, as discussed in more detail in Subsection 4.0.1, this research is designed as a ***descriptive research***.

The relationships considered in the text and in the figures refer to the variables in hypotheses such as the strength of polarization and echo chambers. As discussed in Subsection 4.0.2, the hypotheses (i.e., the variables in the hypotheses) are in ***covariational relationship***. Because a change in the strength of one variable such as strength

of echo chambers is observed together with a change in another variable such as polarization. The changes in the strength of fragmentation, echo chambers and polarization are all in the same direction, i.e., an increase in one is along with an increase in another, resulting in *positive relationships* between the hypotheses. These relationships are depicted in Figure 1.1.

Approaches Followed for Testing the Hypotheses

The following two approaches were commensurately used for testing each hypothesis.

- **A1:** Account-based approach: Retrieve and analyze specific Twitter activities of selected accounts.
- **A2:** Hashtag- and keyword-based approach: Retrieve and analyze tweets with specific hashtags and/or keywords.

Below, the hypotheses are introduced in more detail. The hypotheses aim to explore the situation of online political fragmentation, polarization, and echo chambers in Turkey. Then the natural question arises: How to measure all these in an online society? Studies in the literature show that it is fruitful to focus on major social or political issues and an issue unique to a country provides valuable insights.

Along this vein, to find evidences from Turkey, major issues are studied which are relatively unique to the country, such as political youth organizations, refugee/immigrant issues and highly politicized mayoral/local elections. To perform data-driven analyses for measuring the degree of fragmentation, polarization and echo chambers are, two approaches are devised. In particular, echo chambers in fragmented political youth are studied by analyzing the interactions of accounts within each community and between the communities, requiring the A1 Approach. To analyze the fragmentation and polarization due to specific issues, relevant hashtags and keywords were studied following the A2 Approach.

In accordance with the majority of recent findings on countries around the world, the analyses for testing the hypotheses resulted in suggesting the negative relation in an inductive manner.

Relations of Approaches. Relying on *quantitative* data, in particular based on data-driven analyses, this research follows the above mentioned approaches in alignment with the hypotheses. Data analyzed in testing the hypotheses are in the *content traffic* category. This category constitute a commonly attributed source of data of a social network (Scott, 1988; Freeman, 2004). In more detail, approaches for testing the hypotheses are concerned about

- which accounts are in interaction with what intensity, and
- what is the level of polarization of shared contents.

As explained in Subsection 4.0.4 in more detail, each approach aims to grasp one major data from a social network. For a thorough understanding, it is usually necessary to focus on various types of data in a systematic way. The design of hypotheses and the corresponding approaches aim to be systematic so that the analyses of types of data in each approach *complement* each other towards building the main hypothesis. In summary, the approaches are in *complementary relation*.

Correspondence of Hypotheses and Approaches

Below, the reason why a particular approach is chosen for testing each hypothesis will be presented, which is also illustrated in Figure 1.1 together with the context of each phase of the research in testing the hypotheses.

Hypothesis 1 focuses on echo chamber dynamics in fragmented communities, so the interaction patterns within each community and between communities are analyzed based on the activities of *accounts* in the communities. Hence, **A1**, *account-based approach* is used in testing it.

Hypothesis 2 and *3* focus on specific issues in affecting the dynamics of on-line fragmentation and polarization. Hence, tweets including *hashtags and keywords* specific to those issues are retrieved and analyzed, following **A2**, *the hashtag- and keyword-based approach*.

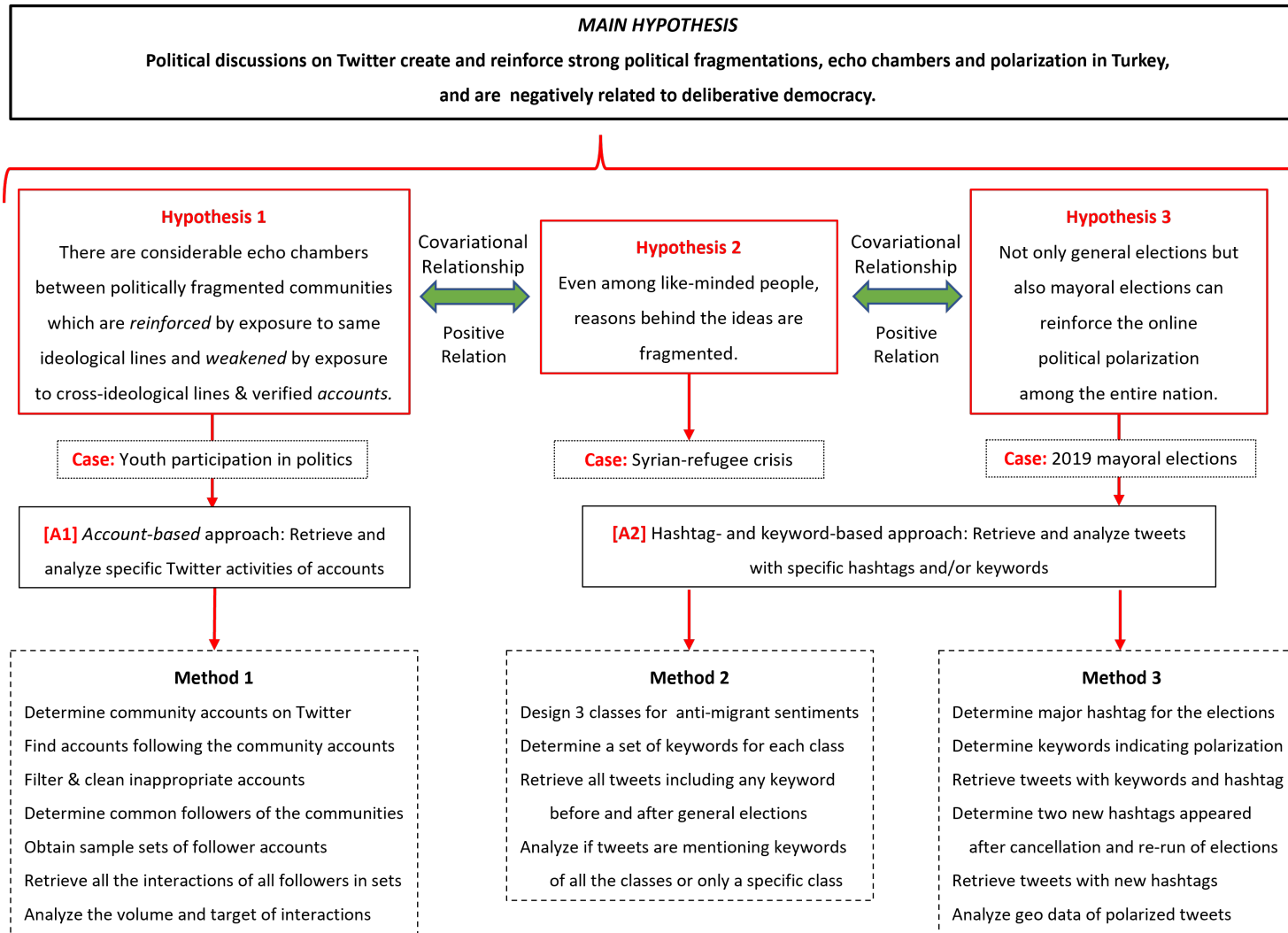


Figure 1.1: The composition of the main hypothesis into three hypotheses and the relations of variables in the hypotheses, approaches and methods for testing each hypothesis.

As will be detailed below, several aspects relatively unique to Turkey are analyzed, such as giving citizenship and right to vote to refugees. Online interactions among the followers of large scale youth groups are analyzed in two classes, official youth organizations of political parties, and non-party political youth group. Mayoral elections in Turkey are considered to be highly politicized and almost as important as general elections, and “hashtag wars” around the 2019 Mayoral Elections which might be a milestone in the political history of the country is analyzed.

In the first two approaches, **A1** and **A2**, to be free from criticism of Dahlberg (2007), the data to be retrieved and analyzed were aimed to constitute a big pool with tens of millions of tweets. However, the analyzed data is big only in its static volume. It does not increase exponentially with respect to time, hence it is not satisfying completely the first condition, i.e., *volume* of “six Vs of big-data” (Saggi and Jain, 2018). Arguments can be made on *variability*, *velocity*, *value* and *veracity*. However, because the data is from Twitter only, it does not satisfy the *variety* condition. Hence, failing to satisfy at least two conditions for being *big-data*, throughout the thesis, it will be called *big-pool-data* in accordance with the terminology of Dahlberg (2007).

Since social media have already become a prominent platform for studying politics and society, online political fragmentation, echo chambers, polarization and extremism of groups are among the hot research topics in the field. The interaction mechanism of offline and online polarization may not be perfectly modeled as a simple straight line. First of all, an already existing political fragmentation in society is considered to be reflecting into online communications. It might not be very reasonable to imagine a modern society with zero political fragmentation. So, it would be difficult to answer the question whether online communications can initiate polarization from scratch.

Nevertheless, depending on various factors such the cultural and political aspects of the society, online communications can potentially weaken or strengthen the existing offline fragmentation, which can be comprehended as a complex feedback mechanism, leading to the basic debate. As detailed in the Literature Review section, to support either side of this debate, a considerable research effort is devoted around the world to find evidences from various societies, usually focusing on a specific issue or interaction patterns between politically fragmented communities. Simply aggregating analyzing the results within a scenario, it is aimed to resolve the debate in an inductive way.

Analyses performed in the studies of the present thesis based on the main research question aim to shed light on the situation in Turkey. By finding results on polarization and echo chambers not only on several issues relatively unique to Turkey but also analyzing the overall interaction dynamics, it aims to find an overall result inductively.

When compared to traditional media, social media support the participation and engagement of citizens by presenting their ideas more, and the civic participation and engagement is increasing through social media especially for urban citizens (Benkler, 2006; Freelon et al., 2016). Boulianne (2018) has investigated the effects of digital media on civic and political participation in an interval of 20 years among 50 countries.

Political participation is also on the rise due to more frequent usage of Facebook and Twitter (Halpern, 2017). Focusing on the relations of citizens with the local government, Facebook is found to be preferred over Twitter in participating in the local government issues (Rosario, 2018).

Classification of the political orientation is found to be not an easy task through traditional approaches, and advanced techniques such as machine learning and content analysis techniques were utilized to predict the political orientations of Twitter users based on their tweets (Cohen, 2011; Colleoni et al, 2014).

Opinion leadership and opinion seeking in the conventional communications take place even in a stronger fashion on social media (Katz, 1955; Flynn, 1996). Hence, a direction for example is to find the opinion leaders and determine their influences as studied in (Merwe, 2009; Iyengar, 2011).

Opinion leaders are not people at the top of things but rather they are the people who carry information across the social boundaries between the communities (Burt, 1999). Twitter opinion leaders have a significant contribution to people's political engagement (Park, 2013). Nevertheless, analyzing 74 million activities of 1.6 million Twitter users, Bakshy et al. (2011) showed that everyone is an influencer, though the larger number of the followers, more influencing power a user has. In order to measure the influence of Twitter users, several algorithms are being developed (Weng, 2010).

Another direction in this field is to explore the diffusion dynamics on social networks (Valente, 1995; Newman, 2003; Young, 2003). Kreindler (2014) studied the conditions and bounds on diffusion speed of the spreading innovations.

Social media have also deep impacts on the dynamics of spreading of fake news (Spohr, 2017; Ribeiro et al., 2017; Vosoughi et al., 2018), raising many new questions and 2016 US presidential election has become a vital medium for studying fake news. During the last three months before the elections, the number of revealed fakes news for the benefit of Trump is almost four times of those for the benefit of Clinton, and that an average American adult was exposed to one or several fake news, believing to half of them on the average (Allcot and Gentzkow, 2017).

An important finding was that if the individual is in an ideologically fragmented social network, the probability of believing in the fake news which favors that ideology is likely to increase. The emergence of *social bots* has opened a new horizon in the field (Ferrara et al., 2016; Varol et al., 2017). Analyzing 14 million tweets, Shao (2018) showed that social bots played a key role in spreading the fake news during the 2016 US presidential election and campaigns.

As two or more political lines emerge, people gathering around these lines start politically fragmenting. However, fragmentation can be observed in several dimensions and layers, that even like-minded people can fall apart about a topic, making the field even more interesting. Whether individuals in the fragmented groups interact more within the group itself or with individuals from other groups is the key factor in forming, reinforcing or weakening the “echo chambers” within each group.

Hence, political communication dynamics among fragmented groups turns out to be important in political science and sociology, and whether the unprecedented opportunities of social network sites pave the way for reconciling the fragmented groups or on the contrary, for forming and reinforcing echo chambers becomes a research direction.

Being continuously exposed to similar ideologies in echo chambers, people gradually stick to their lines more strongly with the solid potential of becoming more polarized. On the one hand, sharpening polarization might lead to extremism, which is one of the greatest threats to democracy and public peace. On the other hand, these processes may not follow a straight line, that a reinforced echo chamber or a sharpened polarization can potentially lead to a positive or negative feedback to fragmentation.

What is more, due to cultural and political differences, the overall process may not take place in the same way in each country. Using SNS might lead to weakening the

fragmentation in one country, but to reinforcing in another, and the unique aspects of each country might shape the process in a unique way. This has motivated researchers of the field to focus not only on the general fragmentation around the world, but also on the case of each country.

In addition to the general political ecosystem in the long run, politically important incidents and their consequences play probably a more important role in the dynamics of fragmentation, echo chambers and polarization. An interesting example is that following the shooting of a late-term abortion doctor in the US in 2009, two hashtags appeared and became popular. Yardi and Boyd (2010) analyzed 30 thousand of those tweets to study group polarization and its dynamics, and the results showed that interactions between like-minded individuals, and different minded individuals strengthen and weaken the group polarization, respectively.

The same issue might matter more or not in another country and might result in way different fragmentation dynamics pointing out the cultural and political differences. Hence, focusing on issues which might matter a lot for each country or region, and more than that, finding unique issues or incidents have a great potential in understanding these dynamics.

Another important point is that in addition to such specific incidents, elections are the most popular to analyze these dynamics around the world. However, studies have focused only on the general elections, so far. This is understandable in general. Because, in most countries, general elections are far more politicized than the mayoral (or municipality) elections, and also, they are mostly localized that the mayoral elections in one region is usually concerned around that region. However, as stated above, there are some sharp exceptions such as in Turkey, that the mayoral elections sometimes play even a greater role in nationwide the politics.

On the other hand, political fragmentation and echo chambers around youth issues, or youth participation in politics can be considered overlooked. Focusing on Turkey, one can see that some specific incidents in the recent political history of the country potentially contributed to fragmentation and polarization.

Below, the studies in testing each hypothesis will be introduced. Various aspects of examining the hypotheses will be summarized in Tables 1.1, 1.2, and 1.3.

Table 1.1: Summary of examining *Hypothesis 1* via *A1 Approach* and specific data.

Hypothesis	1
Context	Political youth organizations and echo chambers
Case	Youth participation in politics in Turkey
Population	40 million tweets between the 30 thousand target accounts
Representative sample	5.5 million interactions (RTs, Replies, RTwComments)
Approach followed	A1, Account-based
Time period of the data	From January 1, 2016 to December 31, 2018
Retrieved data	Data of over 650 thousand Twitter accounts Data of over 40 million interactions
Analyzed data	Interaction patterns, Deliberative enclaves and cross-ideology exposure, Verified accounts
Conclusions	Considerable echo-chambers exists among followers of political youth organizations' Twitter accounts. Echo chambers are weakened (reinforced) through deliberative exposure to similar (cross) ideologies. Verified accounts help weakening echo-chambers.

Hypothesis 1: There are considerable echo chambers among politically fragmented groups which are reinforced by exposure to same ideological lines and weakened by exposure to cross-ideological lines and verified accounts.

Existence of considerable echo chambers

Around 1960s and 1970s, Turkish youth was politically very active. Left-wing and right-wing organizations were highly fragmented, their offline echo chambers were strong, leading to a polarization (Alper, 2010).

Although the Turkish youth might not be as politicized as before the military coup in 1980, it is said to be still very active (Alper, 2010). The military coups in particular,

and civil-military relationships in general have been discussed to be contributing to fragmented, or divided society in Turkey (Iwasaka, 2018).

The highly political environment of the nation might contribute to that. Hence, considering its population and political engagement, fragmentation and especially the echo chambers in youth participation in politics can be considered a noteworthy direction to study in this field.

On social media, a basic difficulty is to determine who is young. Hence, rather than focusing on young people directly, the strategy was to focus on the political youth organizations. In order to deepen the research, political youth organizations were considered in two categories,

- Official youth organizations of political parties, and
- Non-party political youth organizations.

The official youth organizations of the ruling party AKP and the main opposition party CHP, and the one of the largest non-party (independent) organizations, namely TGB (Youth Union of Turkey) were picked to form these categories, and were labeled as *A*, *C*, and *T*, respectively. Here, independency refers to be not being an official youth organization of any political party, though members of the organization might have various political orientations. Rather than determining the situation at one time, in order to reveal the dynamics of echo chambers with respect to time, *A1*, i.e., account-based approach was followed.

Social network interaction patterns among and between these three groups were analyzed spanning a three-year period. In particular, over 40 million tweets of a carefully selected 30 thousand followers of these three groups between 2016 and 2018 were retrieved. 5.5 million interactions among and between these three groups were extracted, which are Retweet, Retweet with Comment, and Reply.

The analyses revealed a considerable echo chambers among these groups, that almost all the interactions take place within the group itself. Also, the results showed that *A* (followers of youth organization of AKP) and *C* (followers of youth organization of CHP) record stronger echo chambers -*A* being the strongest- than that of *T* (non-party organization). The time-dependent analysis showed that for the first two group,

A and C, there is no significant weakening in the echo chambers, while there is a slight weakening in the echo chamber of T.

In summary, Hypothesis 1 regarding the existence of considerable echo chambers was tested among the three large scale political youth organizations, one being non-party for a three-year period. Findings suggest the existence of considerable echo chambers among fragmented political groups in Turkey among the followers of political youth organizations' Twitter accounts.

Reinforcing by exposure to the same ideological lines and weakening by exposure to cross-ideological lines

Unlike mass media where individuals are way more passive and are exposed to ideological lines by the mass media, in social media, individuals are more active and they can choose more what to be exposed. This choice can be in a negative or positive way, deliberately, following or interacting mostly the like-minded or unlike-minded others, respectively.

In order to test this part of the hypothesis, following the study above and using A1, i.e., account-based approach, the interaction patterns were analyzed in more detail. That is, it was determined which members of each group are following only that group and which follow the other groups as well, and the interactions were analyzed according to this classification.

The results suggested that the more deliberative enclave the individuals prefer, the stronger echo chambers are formed, and that echo chambers of individuals who follow more than one political group slightly weaken by time.

Weakening by verified accounts

While deliberative enclaves is expected to strengthen the echo chambers, deliberative exposure to cross-ideological lines is expected to contribute to the weakening the echo chambers, hence improving democracy.

Considering that they belong to journalists, celebrities and other well-known people, the hypothesis states that *verified accounts* are followed more by people in opposite-ideological lines than ordinary people with no verified accounts. Hence, through the exposure to opposite-ideological lines they create, verified accounts con-

tribute to weakening the echo chambers.

In order to test this hypothesis, A1, i.e., account-based approach is followed. The data gathered in testing the first two parts of the hypothesis was used. Verified accounts and the interactions they had were analyzed. It was found that unlike the accounts of ordinary people, the interactions with verified accounts span a larger ideological spectrum. In particular, they interact with all the three groups *A*, *C* and *T* considerably more than the individuals in each group.

For an average social media user, coming across the same post from a verified account potentially has a more penetration power and impact than from an ordinary person, even from a friend. Therefore, this result points out the opportunities that can be utilized by social media platforms by revising their content-ranking algorithms by highlighting the posts or reactions of verified accounts in the timelines of people with a wide spectrum of ideologies.

Table 1.2: Summary of examining *Hypothesis 2* via *A2 Approach* and specific data.

Hypothesis	2
Context	Anti-migrant sentiments and fragmentation
Case	Syrian refugees in Turkey
Population	Tweets with a specific hashtag and set of keywords
Representative sample	Tweets in pre- and post-election periods
Approach followed	A2, Hashtag- and keyword-based
Time period of the data	Before and after June 2018 Elections
Retrieved data	Data of around 65 thousand Tweets with specific hashtags
Analyzed data	Tweets with keywords associated with reasons behind anti-migrant sentiments
Conclusions	Finding that people sharing the same opinion have different reasons to have that opinion, and these reasons are fragmented, i.e., finding multi-layer fragmentation shows how considerable online political fragmentation is.

Hypothesis 2: Even among like-minded people, the reasons behind a particular opinion can be fragmented.

Fragmentation has been usually studied within the context of two opposite, or at least different ideologies. However, this hypothesis states that a considerable fragmentation can be observed not only among the opposite or different but also along the similar ideologies, or along the like-minded people. This is one of the assertions of the present thesis. In order to find indicators for testing this hypothesis, a political issue concerned by many people is needed.

An important political incident in Turkey, along with Middle East and Europe is the war Syria with millions of refugees spreading to neighboring and European countries with probably the largest number to Turkey. Each host country has been facing several serious problems due to large number of refugees. This fact is leading to anti-migrant sentiments among the people, Turkey is of no exception. However, Turkey has

some relatively unique aspects in this issue, that President Erdogan decided to give citizenship and right to vote to a large number of Syrian refugees. And it is no surprise that most of them might vote for Erdogan. Hence, unlike other host countries, in addition to economic and social problems, the citizenship and voting issue led to a relatively unique problem, and a source of conflict in Turkey. Some of the supporters of AKP and Erdogan support the voting issue because they have advantages in the elections, while others are raising anti-migrant sentiments because they care the social and economic consequences more than the elections results. Naturally, people who are against AKP and Erdogan believe to be suffering both from the general economic and social issues, and the voting issue. Therefore, among the people who have anti-Syrian sentiments (which means, like-minded people), the reasons might differ. Hence, a natural question arises: Are the reasons leading to the same sentiment fragmented. Another question is which reasons are more common than others leading to anti-Syrian sentiments, social and economic issues, or the voting issues.

In order to study this hypothesis and answer these questions, A2, i.e., hashtag- and keyword-based approach was used. Over 25 thousand and 38 thousand tweets including anti-Syrian sentiments, were retrieved before and after the 2018 Elections, respectively. Three classes were created, namely ‘Social and Crime’, ‘Economy’, and ‘Citizenship and Voting’, based on keywords. Each tweet was analyzed to find out which class it strictly belongs to. It was found that, the number of tweets belonging to two or three classes is practically insignificant, when compared to the number of tweets belonging to a specific class. This finding suggests that, the reasons leading to the same ideological line are fragmented. The time dependent analysis further showed that the ratio of ‘Citizenship and Voting’ class dropped from 78% in the pre-election term to 35%, in the post-election term.

Hence, it is clear that the voting issue plays a role in raising the anti-Syrian sentiments, even after the elections, and that the reasons leading to the same ideological lines are fragmented. Regardless of the question in consideration, research so far have usually focused on fragmented two or more communities (see Literature Review in Chapter 3). A relatively unique aspect of the present study that taking one of the fragmented communities, it has investigated the fragmentation within the community gathered around the same opinion.

Table 1.3: Summary of examining *Hypothesis 3* via *A2 Approach* and specific data.

Hypothesis	3
Context	Local elections and political polarization
Case	2019 mayoral elections in Turkey
Population	Tweets with a specific hashtag and set of keywords
Representative sample	Tweets within the specified period of time & geo-data
Approach followed	A2, Hashtag- and keyword-based
Time period of the data	After July 2019 Elections and re-run Istanbul elections
Retrieved data	Data of over 700 thousand Tweets
Analyzed data	Tweets with specific hashtags and geographical information
Conclusions	Not only general/presidential but also local elections can make a contribution to polarization. Local elections in a single region can polarize the nation.

Hypothesis 3: Not only general elections but also mayoral elections can reinforce online political polarization in the entire nation.

As explained below, unlike most other countries, mayoral elections in Turkey are highly politicized and not unusually, the result of a mayoral election determines the result of the next general election (please see subsection 2.4.1.6 in Chapter 2 for further information on mayoral elections in Turkey). Hence, as a relatively unique point to Turkey, online political polarization in Turkey due to mayoral elections was studied.

An interesting research opportunity arose when in the mayoral elections in 2019 the election in Istanbul, the largest and most important city of Turkey, went into re-run. Hence, this study had the opportunity to analyze not only whether mayoral elections have a considerable contribution to political polarization, but also whether contribution of the mayoral elections in one region to the polarization spreading nationwide.

Following A2, i.e., hashtag- and keyword-based approach, over 710 thousand

tweets were retrieved in two phases with respect to the canceled and re-run Istanbul mayoral elections. Based on hashtag analysis, it was found that while the nationwide mayoral elections already makes a considerable contribution to political polarization, the cancellation and re-run of Istanbul elections increased this contribution. What is more, based on geographical information included in more than 5 thousand tweets, it was found that the polarizing effect of elections in one region, namely Istanbul, spreads to the whole nation.

In summary, testing and proving the above mentioned three hypotheses, hence the main research question, it was suggested that political discussions on Twitter create and reinforce strong political fragmentation, echo chambers and polarization in Turkey, and are negatively related to deliberative democracy. Within this context, the new term, **“Echo Politics”** is introduced, which means the specific political communication science focusing on the echo chambers and polarization among fragmented groups.

These findings supporting the negative side of the major debate of the field, i.e. online political communication is hindering democracy are in accordance with the major part of the recent works in the literature in this field (see Chapter 3).

1.2 The Overall Findings of the Thesis

The overall findings of this thesis are as follows. The hypotheses analyze

- big-pool-data on several specific issues, such as local elections and refugee crisis, and
- interaction patterns of fragmented groups within a three-years period,

It is found that in Turkey, *online political communications are negatively related to deliberative democracy* by contributing to political polarization and echo chambers. In other words, it does not support but might even be hindering democracy. These findings appear to be in accordance with the recent literature on several countries around the world (see Chapter 3), aiming to narrow the gap regarding the case of Turkey.

1.3 Significance of the Study

Social media outlets have become popular platforms for studying politics and society. Political engagement and orientations, the influence of opinion leaders, diffusion of (fake) news and especially echo chambers, polarization and extremism in politically fragmented groups are among the hottest topics in the field. These new platforms led political parties, actors and organizations become more visible and accessible. Thus, people use social media platforms to show common interests, protest governments and form public opinions about the topics of public conscience such as woman rights, refugees etc.

Although the emergence of social media enables an efficient and convenience exposure to a wide spectrum of ideologies, as people gather around similar ideological lines on social media platforms, they form fragmented online communities. Interaction dynamics among communities potentially lead to echo chambers and contribute to polarization. The pattern of these dynamics depend on the cultural and political aspects of each country, and are affected by some specific discussion topics or incidents such as elections or political crises.

Consequently, academic efforts have been focusing on analyzing the case of each country or region, or a set of countries in a comparative manner, either analyzing the general interaction patterns or the reflection of specific issues on social media. Some researchers provide theoretical arguments (Papacharissi, 2002; Sunstein, 2002; Dahlberg, 2007). A considerable amount of researchers are in the quest for evidences through analyzing data retrieved from social media platforms, each filling a missing part in the big picture on finding whether social media usage is negatively or positively related to deliberative democracy (Casteltrione, 2014; Barbera, 2014; Barbera, 2015; Bright, 2018; Garcia-Marin, 2021; Chen and Wang, 2022).

Despite apparent difficulties due to language barrier and efforts required for a good command of political situation, research endeavors focusing on non-English speaking countries are fruitful for not only extending the volume of evidences but also exploring the unique issues and interaction patterns.

Due to the its population, high rank in social media usage, a dense political agenda and relatively unique political issues, the case of Turkey is promising for providing a set of indicators towards filling a missing part in the literature.

The hypotheses aim to make a contribution to the field along this vein. Not only data on specific issues relatively unique to the country but also long-term interaction patterns among fragmented groups have been analyzed.

The overall results in the first part suggest that the social media usage is negatively related to deliberative democracy by worsening the situation in fragmentation, polarization and echo chambers. These results are in accordance with the majority of recent findings in the literature in the field focusing on different countries around the world (see Literature Review in Chapter 3).

1.4 Purpose of the Thesis

The purpose of this thesis is to make a contribution to the field by providing indicators and insights from Turkey. In particular, as detailed in the literature review, a considerable debate attracting research efforts in the field of online political communications is whether social media usage is contributing positively or negatively to the development of an advanced democracy with well-informed citizens. Due to their relatively unique cultural and political aspects, the current situation and dynamics of political fragmentation, echo chambers, polarization and extremism are slightly different in each country. Also, not only the popularity but also the usage context of each social media platform contributes to determining the situation and dynamics of those. What is more, specific events and incidents or social problems might have potential to determine these dynamics. As a natural consequence, seminal works providing the most valuable contribution to the field are focusing on some or all the items below:

- a specific country, or a set of countries in a comparative approach,
- a specific social media platform or a set of platforms, and
- a specific issue such as general elections.

Regarding a specific research context consisting of above items, each work in the literature has found evidences supporting either side of the debate, being mostly negative side recently. In a single study it is not possible to analyze the situation and dynamics of the entire world on all the social media platforms. Hence, regardless of the side of the debate supported by the results, taking a picture of a society on a social media platform possibly on a specific issue, each work is completing some part of the big picture, supporting either side of the debate. This natural fact points out the open research problems in regards of the three items above. That is, an unexplored combination of a society, social media platform or an important issue turns to be cradle of research in the field with a potential of filling some missing parts in the big picture.

In this regard, studies leading to this thesis have focused on the following items:

- **Country/Society:** Although it has a dense political agenda and a relatively large population with a high rank of social media usage, Turkey has been partially overlooked in the specific research field of political fragmentation, polarization and especially echo chambers. Aiming to contribute to filling this gap, this thesis focuses on the case of Turkey. The large portion of the data retrieved and analyzed belongs to years experiencing harsh political happenings such as a failed military coup attempt, Erdogan's ruling party AKP has lost for the first time in all the metropolitan cities in the mayoral elections, and more than 6 million Syrian refugees are hosted.
- **Social Media Platform:** In Turkey, communication on Twitter is used mostly in a political context. What is more, a discussion on any issue soon ends up in a political context. Also, among the platforms, the dominant one on political communications is Twitter. Hence, Twitter was chosen as the source of data to be analyzed in the studies.
- **Specific Issue:** Here, a two-dimensional approach was followed. In the first dimension, following the trend in the literature of this field, specific issues were chosen, which are considerably unique to Turkey such as Syrian refugee issue leading to anti-migrant sentiments, and highly politicized mayoral or local elections. It can be observed that these issues are unexplored in the specific context of fragmentation, polarization and echo chambers. In the second dimension, in agreement with the criticism of Dahlberg (2007) that focusing on specific issues only may not reflect the general situation perfectly, the entire communication volume spanning three years among a carefully selected set of Twitter accounts belonging to three politically fragmented groups were analyzed.

In summary, through data-driven analyses, not only the current situation of political fragmentation, polarization and echo chambers but also their dynamics within a three-year period in one particular study were investigated from an objective perspective. The results are expected to complete some parts of the big picture of this field in the world, providing indicators from Turkey to support either side of the debate based on both specific issues and general interaction patterns on Twitter.

1.5 Outline of the Thesis

Before explaining the contents of each chapter, in order to grasp the outline of the thesis, the summarized table of contents is presented below, skipping the subsections.

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Below, the content of each chapter is summarized.

Chapter 1 introduces the main research question and the associated hypotheses to be examined, as well as their correspondence. Next, it briefly presents the approaches used in the analyses, which is then followed by a short discussion on the significance of the study. The chapter is finalized by explaining the purpose and the outline of the thesis.

Chapter 2 provides a brief introduction of the new media in Turkey, roots of the traditional media in the Ottoman Empire, as well as early republic and multi-party system era. Because it plays an important role in making social media platforms more popular especially in political context, Gezi Park protests is visited.

Next, following the brief explanation of the state-of-art social media in Turkey in various aspects, the political situation of the country is introduced. Aiming to provide a comprehensive grasp for a basis of online political communications in Turkey within the context of the thesis, political groups and significant issues yielding fragmentation and polarization are explained.

Chapter 3 presents a concise literature review. Firstly, it identifies the popular debate in the field, i.e., whether the social media usage is contributing positively or negatively to the development of an advanced democracy with well-informed citizens. This is also considered as creating and enlarging the public sphere as opposed to echo chambers.

Next, fragmentation, echo chambers, polarization and extremism are defined, together with theoretical discussions held on each concept. Major social media platforms such as blogs, Facebook YouTube, Instagram and finally Twitter are introduced in the context of political communications, presenting the seminal works of the field which focus on each platform and perform analyses based on data retrieved from each.

Each country or region around the globe has not only common but also some relatively unique cultural and political aspects which potentially contribute to determining the cases of political fragmentation, echo chambers, polarization and extremism. Hence, seminal and closely related results of data-driven research in this field have

focusing on either a single or a carefully designed set of countries are reviewed to motivation, and to constitute a basis for a research focusing on Turkey.

Chapter 4 describes each hypothesis studied in this thesis in detail. In addition to motivation for designing each hypothesis, its historical, political and dialectic background are introduced. Towards testing the first hypothesis, youth participation in politics and Turkish political youth organizations are presented. Verified accounts among the groups analyzed in the first two hypothesis and their activities, as well as their impact on the dynamics of echo chambers are presented for testing the third hypothesis. Regarding the second hypothesis, refugee crisis and anti-migrant sentiments are explained. For testing the third hypothesis, mayoral elections and in particular Istanbul elections held in 2019 are introduced.

Following the approaches for conducting the research for testing each hypothesis, the research outputs are listed.

Chapter 5 introduces the methods used to test each hypothesis is explained in detail. Methods for testing the hypotheses are briefly as follows:

- determining the dataset to be created and drawing its limits
- retrieving tweets by reading the timeline of the determined accounts,
- live streaming the tweets filtered by hashtags and keywords,
- analyzing the dataset according to the testing criteria of each hypothesis, and
- revealing the interaction patterns or geographical patterns.

Chapter 6 is devoted to presenting the results of testing each hypothesis in detail. Each result is discussed along with other works in the literature and in the light of the basic theories of the political communications.

Research on testing the first three hypotheses resulted in finding

- a fragmented and polarized society,
- considerable echo chambers,

- polarizing role of the local elections.

These results are suggesting the negative relation of social media activities to the deliberative democracy, supporting the negative side of the major debate of the field.

Chapter 7 presents discussions, covering the limitations and challenges, as well as the future prospects and generalizations the conducted research.

Chapter 8 is devoted to Conclusions, covering

- The background of the research field,
- where the conducted research fits in the literature,
- which gaps it aims to fill,
- examination of hypotheses,
- brief explanation of methods, and
- interpretation of results.

Following the **References**, the **Appendix** briefly presents the research conducted on contributing to the understanding of network structure through a quantification of significance of connections. It also presents the list of peer-reviewed original outputs of the research conducted in the thesis, i.e., three journal articles and five international conference presentations.

Chapter 2

Contextualizing the Study

Summary of Chapter 2

This chapter provides a brief representation of the new media in Turkey, as well as the roots of the traditional media in the Ottoman, the early Republic and the modern multi-party system era.

Next, Gezi Park protests are visited in the context of their role in the popularization of the new media, especially Twitter in political discussions.

Following the brief explanation of the state-of-art social media in Turkey in various aspects, the political situation of the country is introduced. Explaining the political groups and significant issues yielding fragmentation and polarization is aimed to provide a grasp for a basis of online political communications in Turkey within the context of the thesis.

2.1 Mass Media in Turkey

This section aims to share a basis for understanding the dynamics of social media in modern Turkey. To serve this purpose, it is necessary to grasp the evolution of the new media starting from its traditional counterpart. This evolution has roots in the Ottoman Era. Hence, starting from those roots, the development and transformation of traditional mass media will be presented, followed by the early-republic era and the multi-party system era. The Gezi Park protests have been a turning point in the media history of the country, that people lost their trust in traditional mass media and started to use social media actively, especially Twitter in political communications. Hence, Gezi Park protests will be presented in this context.

Mass media is one of the major sources of political communication. Newspapers and television broadcasting channels news play a key role conveying information to create and manipulate public opinion. When mass media outlets produce or highlight public opinion, it is anticipated that they make an effort to not only entertain people, but also to teach them social values, encourage education, and shape and support the political public sphere, among other things.

Media outlets give information to voters and might potentially lead to biased propaganda that can manipulate voters. These mass media establishments may serve different contents and be more or less informative according to particular issues. In the early 90's, studies showed that newspapers are highly informative and people gather information from newspapers more than television channels (Chaffee et al., 1994). Even though newspapers have been more informative, television has become the dominant source of information while scholars found that television news is simply not purely informative (Becker and Whitney, 1980; Berkowitz and Pritchard, 1989; Patterson and McClure, 1976; Pettey, 1988; Robinson and Levy, 1986). Also, the fact remains that television has a deep impact on the public during election campaigns. People develop empathy for the running candidates as a means of representers of their own and their ideologies on television. Sue (1994) found that the reliance of television news could foresee knowledge of citizens about the candidates.

There are two main arguments whether media has positive or negative effects on politics. Based on their findings, researchers have been highlighting these effects. In the 1930s, media was used as a propaganda instrument to affect public opinion and this was negatively related to democracy (Chaffee and Kanihan, 1997). However, Lazarsfeld et al. (1944) conducted empirical studies to show that mass media had variable impact on people's political choices which is called hypodermic needle theory. In fact, propaganda news are not able to change individuals' mind completely. Nowadays, the major ideology leads to mass media to exposure the society more political interest and this creates strong media discourse which can cause negativity.

In order to draw attention the roots of Turkish media, the following subsection starts with explaining it and presents its progressive and regressive aspects.

2.1.1 Ottoman Era

The emergence of the media in Ottoman Empire begin in 1831 and ran into its decline and regression. Before that, there were some foreign journals which were inspired of principles of French Revolution such as independence and freedom. Although these media establishment were owned by French and their goal was to spread the idea of the Revolution to other countries, they were of a great importance for the Ottoman press life (Akbulut, 2013). Thanks to these foreign journals, Sultan Mahmut II and his parliamentarians were convinced that some Ottoman journals should have been published and served in order to reverse the negative trend of the state. Media were founded and led by elites of society in Ottoman Empire and most of them were educated abroad (Baykal, 2019).

In the following years, the first Turkish newspaper was launched, named *Takvim-i Vekayi* in 1831. *Takvim-i Vekayi* was a state journal which was used as an instrument for announcing reforms to public with informational purposes and it was directly tied to Sultan Mahmut II (Benek, 2016). The second journal was a semi-private one named *Ceride-i Havadis* launched in 1840 by William Nosworthy Churchill, a British journalist. This journal included news from Ottoman Empire and foreign countries and also some state announcements. These two newspapers are quite important for the history of Turkish media.

However, in order to comprehend the origins of political media and journalism in Turkey, one must analyze one of the pivotal periods in Turkish history. During the Tanzimat period, a new newspaper named *Tercuman-i Ahval* was released in 1860. It was the first Turkish independent publication (Benek, 2016).

This journal not only published the first political news in its columns, but it also sparked the rise of the Young Ottomans. The increase of number of newspapers helped expressing different opinions. This could be one of the reasons to negatively impact the relationship between the media and the government (Ceylan, 2006; Benek, 2016).

Thus, there appeared conflicts and power struggles between journalists and the rule. Having constituted the core of the Turkish media history, these developments caused the censorship from Ottoman government. Moreover, government had made some regulations to control the contents of newspapers and magazines. This way, they could shut down them or punish and exile journalists (Yosmaoglu, 2003; Benek, 2016).

In 1876, The First Constitutional Era of the Ottoman Empire was the period of constitutional monarchy, there appeared temporary atmosphere which resulted in decreasing pressure on journalist and launching dozens of new journals. This era was one of the most libertarian time that supported by law ever since the emergence of the media in Ottoman Empire.

However, this free atmosphere did not last long. Sultan Abdulhamit II did not tolerate any insulting comment or political criticism that may affect the image of the country negatively. In addition, he did not allow to publish even humor magazines between 1877-1908 (Demir, 2015). Even under these circumstances, Ottoman media experience had continued to improve and be effective in politics. For instance, Young Turks, who dethroned Sultan Abdulhamit II in the next period, had to go abroad. Because, there was the political pressure but they still wanted to continue publishing their newspaper as a political instrument. This indicates how media has a significant role from past to present Turkish politic life (Benek, 2016).

The Second Constitutional Monarchy Era had started to politicize the society and many political organizations and parties were founded in this libertarian sphere around 1908. In that period, class struggles had raised, and conflicts were sharpened. Besides, when the society was experiencing multi-party life, media had taken on the role of

political participation and created public opinion in the Ottoman Empire (Topuz, 2005; Ceylan, 2006). Then the media had become the only tool between public and opposition for political participation. This relationship shows that the oppositions and the media were subjected to the pressure from the government together. Newspaper's democratic demands against the governments had made important this era for the Turkish media history.

2.1.2 Early Republic Era

The newly founded Turkish Republic entered the period of modernization which includes reconciling with European capitalism as a young anti-imperialist republic (Tuncay, 1999). Also, Turkish modernization led to a structural socioeconomic and cultural transformation and the recognition of new ruling system of the country. The government were in the need for introducing itself to not only the Turkish public but also foreign countries via media. Therefore, their approach was to develop communication policies for institutionalizing the media activities (Firat, 2010).

In this manner, this subsection aims to show the relation between the media and political power. The leaders of Turkish revolution, who had grasped the commanding power of media, published *Irade-i Milliye* (Decision of Nation), *Anadolu'nun Sesi* (The Voice of Anatolia) and *Hakimiyet-i Milliye* (Domination of Nation) to explain the situation of the country and to get support from public even during the war. *Hakimiyet-i Milliye* was one of the important newspapers to spread news about the developments of modern social life, education and health systems, economic spurt and so on for fourteen years.

The government established *Anadolu Ajansı* (Anatolian Agency), which is currently the state press agency, with the foundation of the new country to challenge the administration in the early republican period (Kologlu, 2010). In addition to the communication with the public, media were advisor to the government. In early republic era, there were multiple opposition movements, some of them were quite organized in parliamentary, and some were independent opponent journalists and newspapers (Tasmurat et al., 2018).

In 1931, they legislated the first extensive regulation, *Matbuat Kanunu* (press laws) which was the breaking point in the press life. This was a period in which opposition

media were under political pressure, journalists were arrested and many journals were shutdown. In the light of these situations, because of the lacking of an opposition party and an opposition movement, no one stood up for the press freedom and rights. It is clear that the existence an opposition media depends on existing oppositions in parliament in the democratic countries (Tasmurat et al., 2018).

2.1.3 Multiparty System Era

For the first time, the rule has changed its approach to press, and both the ruling and opposition parties were required to be in good relationships towards the next democratic elections (Ahmad, 2009; Tuncel, 1994). When USA Press Freedom Committee visited to Turkey, the concept of “freedom of press” was deliberated by officers in 1945. The members of the Committee declared that freedom of press is one of the most important conditions for peace, and censorship should not be an authority over journalists. In the multiparty era, the press was directly depended to the rule. Radio and Anatolia Agency was funded by the government and they were determining the contents of newspapers. In 1950, Democrat Party came to power and one of its first statements was the “freedom of press”. However, in a short time, they forgot their promise and enforced opponent newspapers both politically and economically (Utma, 2010; Sarioglu, 2020).

Although some argue that there have been positive developments about journalist rights and freedom of press due to the 1960 military coup, the repetition of military coups in 1971 and 1980 caused the regression of press freedom, closed the opposition newspapers, jailed or exiled the opposition journalists (Utma, 2010; Sarioglu, 2020). Between these coups, government attempted to monopolize the media via establishing TRT (the Turkish Radio and Television Corporation) in 1963. This situation lasted until 1990s when privately-owned TV channels started to appear.

Regarding Turkey’s specific case, it can be argued that mass media has been in a close relationship with politics and power in 1990s. Turkish press stands by with who has economic and political power (Burak, 2018; Kaya and Cakmur, 2010).

Despite the fact that the media has a strong relationship with the power and politicians under the censorship mechanism, big conglomerates own mass media such as newspapers and TV channels in Turkey, which are not particularly profitable, raising questions about the intentions of media owners at the first glance.

This is how it works: Media owners are members of the ruling elite, which allows them to earn status and access to government services. They have the ability to alter media material, create public opinion, and promote extremist viewpoints. They can make a fortune by capitalizing on popular culture (Aytaliyeva, 2010). Because of these, media owners desired excellent connections with governments in order to profit from their investments in other areas. As a result, governments rewarded media owners who continued to promote them through news, television shows, columns, and by other means (Erol, 2019). A typical example that the situation in Turkey was even beyond close relationship of some media owners and government is the following. Aydin Dogan who owned that time the two largest newspapers Milliyet and Hurriyet told Zaman newspaper that “*Milliyet is a bit on the left side but Hurriyet is more like the newspaper of the state*” (Dogan, 2008; Ozkir, 2013). One of the most important journalists writing in Hurriyet reinforced this claim by stating “*Hurriyet is the State. Hurriyet works for the State*” (Birand, 2011; Ozkir, 2013).

In this context, a closely related concept is the cross-media ownership (Murdock, 1982; Hoskins, 2004; Tuncel, 1994) which means that a single corporate owns multiple types of media companies such as television, newspaper, radio, websites, etc. For instance, the partnership between Time Warner and American Online is one of the most substantial media mergers in the world (NY Times, 2010).

From the perspective of deliberative democracy and expanded public sphere, cross-media ownership is one of the most negative merger types because it can directly form public opinion via using their power for publishing the “selected news”. In addition, they can monopolize the media contents and be anti-competitive (Murdock, 1982). The features of cross-media ownership brought self-censorship along with the censorship from the rule (Yetkin, 2014).

Turkish media have been leaning to cross-media ownership since 1990s. Dogan and Bilgin were the biggest investment groups and they owned newspapers and television channels. Dogan, Bilgin, Uzan, Ihlas and Aksoy were the cross-media owners who shared 80% of the media in 1998 (Seker, 2007). The reason leading to this is that the nature of stakeholders was promoting enlargement so that they can own businesses across a widespread sectors including financial institutions.

Media groups increased their investments in 2000s, bringing together the vari-

ous types of media outlets including TV and radio channels, publishing houses, music recording companies and internet service providers under one roof (Atilgan, 1999; Aytaliyeva, 2010). These big investments caused big debts to the state. Therefore, government founded TMSF (saving deposit insurance fund) that they can interfere such as confiscating to these media groups, and by this means, some cross-owned media groups changed hands and new stakeholders took position instead of them (Hoskins, 2004; Erdem, 2015).

2.1.4 AKP Era

After AKP came to power in 2002, these media groups eventually turned into its proponent. For instance, at the beginning, one of the most powerful media groups, Uzan Media Group, had challenged AKP and Erdogan via using its media power (Sozeri, 2009). In addition, Dogan Media Group was criticizing its politics in the first years and therefore, Dogan Media Group became the target of AKP. Besides, the power of cross-media ownership had faced off not only politics and media but also similar media groups though such as Uzan - Dogan conflicts. Eventually, AKP designed most of cross-media groups and started not to allow any critical voice (Sozeri, 2009; Kuyucu, 2013; Saran, 2014).

Next, it is necessary to explain another rising media group to understand the relationship politics and media in Turkey: Gulen Movement's media group (please see Subsection 2.4.1.3 for details on Gulen Movement). AKP came to power with partial support of Fetullah Gulen's movement. They had cooperated and integrated not only in ruling the country but also in founding and controlling media establishments (Arman and Unal, 2008). When they gained the power in economy and politics during the first eleven years of AKP period, Gulen's media group advanced its investments in this field. Gulen's media organizations are multipartite and wide but their prominent media group was Koza-Ipek which owned Samanyolu TV Channel and Zaman Newspaper (Kuru, 2007; Ozkan, 2017).

While mass media were going to under the control of the power, opponents of AKP have used alternative media to explain themselves to people. Also, people who do not support AKP have started to look for alternative TV channels and newspapers (Akveran, 2018). In this regard, dissident political parties and organizations founded

their media groups. These alternative TV channels and newspapers played a key role in providing different perspectives in many state-of-art political issues. Therefore, the media of political opposition became the target of the government (Ataman and Coban, 2018). Halk TV, Ulusal Channel, Sozcu Newspaper, Cumhuriyet Newspaper, Aydinlik Newspaper, OdaTV and Kanal Turk were among the most followed opposition media in that period. The liberty of press and freedom was restricted by the government especially since 2008 which peaked in 2011.

In this period, these restrictions, pressure and even imprisoning journalists were mostly aligned with the Ergenekon prosecutions. Police searched houses of many well-known journalists and arrested many (Milliyet, 2008; BBC, 2011a). These actions attracted reactions from the world. For example, European Parliament approved a report including heavy criticism of Turkey on freedom of the press, fair trial, police brutality and extended detention periods (BBC, 2011b). An investigation by the Committee to Protect Journalists published the following (CPJ, 2012):

- *“These Turkish journalists, several of whom have already spent several years behind bars, have been swept up by an overly broad prosecution that equates journalistic coverage unfavorable to the government with actual anti-state activities. ... The Ergenekon prosecution illustrates the overreach by the Turkish government that has made it the world’s leading jailer of journalists.”*

CPJ continued to criticize the sentencing of journalists in alleged Erkenekon plot (CPJ, 2013). In 2012, CNNTurk published a list of 104 arrested journalists mostly related to Ergenekon cases (CNNTurk, 2012), and PEN International declared heavy criticism on Ergenekon convictions (PEN, 2013).

2.1.5 Gezi Park Protests and Mass Media

Mass media played a significant role in triggering Gezi Park Protests. While such a big scale protest emerged spontaneously, mass media ignored or spread misinformation especially for the first week of protests. As explained above, mass media owners have investments in sectors such as energy (mining, oil, electricity), banking-finance, automotive, telecommunication, tourism, construction at the same time (Seker, 2007; Sozeri, 2009). Also, these corporations are bidding in the state contracts. Therefore, they are linked to the power with a strong tie. Having such relationships based on

self-interests, mass media became highly questionable and untrustworthy institutions (Bugra, 2013). It is expected that media should be fourth power to play crucial role in society especially in such big movements.

However, when police forces used intense violence against the protestors on May 31, CNN Turk which is the one of the top rated news channel, was broadcasting a documentary on penguins. Protests became the top news in the global mass media. While the television channels of foreign countries were broadcasting all news from the protests, Turkish mass media was keen on censoring them and playing blind. Media censorship and disinformation led to public indignation (Tugal, 2013; Benlisoy, 2013). Therefore, the relationship between media and government was protested by people in front of the television and newspaper media centers.

Furthermore, protesters targeted not only the media group's headquarters, but also its corporate entities. People withdrew their money from their banks and boycotted their products, for example. Following the public's reaction, the media began to broadcast news from protests, even if the majority of the news was subjective. (Akinhay, 2013).

Dogus Media Group CEO made a statement to the press that they accept criticism from the public (Hurriyet Daily News, 2013). Even the conservative columnists began to give advise to the government to listen to the demands of the public. However, Prime Minister Erdogan did not give up his position.

So that, mass media turned back from the proponent position eventually (Tugal, 2013; Benlisoy, 2013). It is crystal clear that Gezi Park Protests contributed to the rising of alternative media groups along with social media in Turkey. People followed news from opposition parties' news channels and opponent newspapers in this period. Also, protestors used these news channels' broadcastings but mostly social media for communication. Consequently, Gezi Park Protests were a breaking point about the credibility of mass media and led to unique fact that people used social media to organize mass movements including 78 cities. Through concrete examples, it was shown that social media and in particular Facebook and Twitter were used for organizing and information sharing (Chrona and Bee, 2017). Especially Twitter became the core of politics and political arena in communications (Ozen and Avci, 2013).

While there were international academic arguments about the role of social media especially in Arabian Spring and Wall Street protests, social media was used on a large

scale in Gezi Park Protests for the first time. As news about cutting the trees of the Park spread on social media, people rushed into Taksim to protect the park. Although social media platforms were widely used in these protests, Facebook was more popular in Arabian Spring while Twitter was more popular during the Gezi Park Protests especially for spreading information on where and how to take action in the protests (Bocu, 2015). As people started to lose their interest on the mass media, Twitter eventually became an important outpost for political communications.

Since the Gezi Park Protests, the circulation of newspapers has been declining sharply. While there was a 49.4% decrease in 10 years, 43.8% of it is within the last five years which started in 2013, the year of the Gezi Park Protests (Euronews, 2019).

These protests led to a unique organizational form. Especially young people came together via using new media technologies and their creativity contributed to mobilize the protests (Yildizoglu, 2013). The emergence of Gezi Park Protests was investigated within the context of youth participation and activism in politics, and it is argued that the Protests can yield a seed for a “new Turkey” (Gumus and Volkan, 2015). Because the Protests have changed a lot in the social and political dynamics especially when young people are concerned, the youth participation in politics after this breaking point was to be studied extensively. It was found that while only 9% of youth is a member or is taking an active role in a political party, 27% is a member of a NGO or a university club (KONDA, 2014).

Social networking sites have evolved into a political tool as a result of young people’s active use of the internet. In this context, Twitter in particular was utilized as a medium for disseminating information regarding protest logistics, such as knowing the most prominent meeting spots and sheltering from police attacks, among other things. Also, Twitter was used as a real live-stream information source for posting footages and photos along with tweets (Haciyakupoglu and Weiyu, 2015).

Research showed that first two weeks of the protests around 143 million 795 hundred thousand 432 Turkish contents were tweeted about Gezi Park Protests, and according to Pew Research Center, 35 percent of Turkish people was using social media from December, 2012 (Pew Research Center, 2012). While the number of Twitter users were 1 million 800 thousand, from the day of the starting of the protests on 29 May, it increased to about 9 million 500 thousand users by June 10. The most massive meeting

day, June 1, people posted around 18 million 935 thousand tweets and as of June 3, the average of daily tweet numbers were 9.8 million. During the protests, the most used hashtags were as follows (Radikal Newspaper, 2013):

- #direngeziparkı (Resist Gezi Park): 2.140.709 tweets,
- #direngeziparki (Resist Gezi Park): 1.611.029 tweets,
- #direnankara (Resist Ankara): 1.114.267,
- #occupygezi (Occupy Gezi): 846.020,
- #direngaziparki (Resist Gazi Park): 617.384,
- #sesvertürkiyebuülkesahipsizdeğil (Shout out Turkey, this country is not derelict): 589.118,
- #direnizmir (Resist Izmir): 438,813,
- #tayipistifa (Tayyip resign): 403,050,
- #direnbesiktas (Resist Besiktas): 382.252,
- #takipedenitakipederim (I follow who follows me): 372.852.

The role of social media was vital in coordinating the mass movements and encouraging the unorganized individuals for participating to Gezi Park Protests. When social media started to fill the gap left by mass media, the Gezi Protests hashtags became trendy topics worldwide and anti-government demonstrations took the first place. After all, Prime Minister Erdogan said “There is now a menace which is called Twitter. The best examples of lies can be found there. To me, social media is the worst menace to society” (Haberturk Daily, 2013). Based on his discourse, it is widely argued that Erdogan is using the Gezi Park Protests for further polarizing and fragmenting the society (Bocu, 2015).

Targeting social media in this way showed that new media had a crucial position to improve and sharpen the protests and turn them to resistance against the authoritarian government. Gezi Park Protests provided a basis for a new style of oppositions. Researchers studied all aspects of relations of social media and these protests such

as political, sociological and technical. In the following years, Twitter continued the prominent way to create political public opinion in Turkish society. Some political incidents which formed public opinion on Twitter with the presented hypotheses will be examined in the next chapters.

2.2 Social Media Usage in Turkey

Mayfield identified the five basic characteristics of social media which are participants, community, connectedness, conversation and openness (Mayfield, 2008), as

Participants: This is one of the major characteristics of social media that gives users an opportunity to communicate with others. The distance between media and audience becomes unclear in the process. According to Mayfield, contributions and getting feedback from interested groups are the results of social media encouragements.

Community: Forming communities in social media occur quickly and these communities represent their common interests with people who are willing to interact with. The effective groups which based on common interests, provide a sphere for users that can share their ideas easily about politics or social life.

Connectedness: Social media provides mobilization to be linked with other websites, resources and people to its users. Also, users are more social connected when they move from one link to another about news or videos or information.

Openness: This characteristics is about being open to feedback and participation which are the core of social media. Social media services stimulate its users for voting, commenting and sharing the information if there is not a barrier to access information such as the contents of protected accounts.

Social media platforms evolve continuously into new forms (Cohen, 2011). These platforms may include different types of applications all in one. According to Mayfield, it can be stated that there are basically six kinds of social media which are

- **Social Networks:** Facebook, Google+, LinkedIn, MySpace, Bebo, etc.
- **Blogs:** Blogger, Wordpress, TypePad, etc.,

- **Wikis:** Wikipedia, Quantiki, etc.
- **Podcasts:** Apple iTunes, Podomatic, SoundCloud, etc.
- **Forums:** Dgroups, Google Groups, etc.
- **Content Communities:** Youtube, Flickr, Delicieuus, Vimeo, etc.
- **Microblogs:** Twitter, Tumblr, etc. (Mayfield, 2008).

Before explaining the terms of social media, it is vital to look at people's connectivity with digital realm. According to We Are Social "Digital 2020 Global Overview Report", global and country-based comparative statistics will be introduced. Firstly, there are 4.54 billion people use the Internet and 3.80 billion of them are social media users in 2020. Considering that people sleep 8 hours in a day, internet users spare more than 40% of their daily time on the Internet and the average spending time is 6 hours and 43 minutes. In addition, mobile's share of total internet time is 50.1% while 92% of people are connecting the internet by mobile devices (Global Web Index, 2020; We Are Social, 2020).

According to the GlobalWebIndex, a person spends an average of 2 hours and 24 minutes in a day on social media. Country-based statistics are quite variant from one to other. For example, Filipinos are the number one who spend almost 4 hours per day while Japanese are end of the list. Turks and Russians are over the worldwide average by spending 2 hours 24 minutes and 2 hours 26 minutes, respectively. Also, we see that Americans and Canadians are under the worldwide average with 2 hours 3 minutes and 1 hour 49 minutes on social media (Global Web Index, 2020). Although Facebook started to descend some audiences in the last years, it still has the most power among them. The global top ten mobile apps are WhatsApp, Facebook, Facebook Messenger, WeChat, Instagram, TikTok, AliPay, QQ, Taobao and Baidu. The five most visited websites in the world are google.com, youtube.com, tmall.com, facebook.com, baidu.com. We see the domination of Chinese active users in all rankings as well. There are rising concerns about misinformation and fake news on the internet. 85% of Brazilian, 67% of Americans, 63% of Turks, 61% of Canadians and 51% Japanese who say they are concerned about what is real and what is fake on the Internet, while the worldwide average is 55%. YouTube is the main source for online content along

with increasing TV contents on the internet such as Netflix. GlobalWebIndex report that two-thirds of internet users watch streaming TV via internet (Global Web Index, 2020; We Are Social, 2020).

By 2020, the population of Turkey was 83.88 million with 75% Internet users and 64% active social media users. In the last year, with respect to a 1.2% growth in the population, growth of Internet users is 4%, and growth of active social media users is 4.2%. By 2019, average time spent daily in Turkey are Internet (any device): 7h,29m Social Media (any device): 2h,51m TV (broadcasting, Internet): 3h,04m

Turkey ranks 15th in mobile Internet usage in the world. Change in mass media: 87% of the population gets the news from the Internet, from Facebook (51%), YouTube (41%), Twitter (35%). Turkey is the rank 1 country (with 73% of the world) to request content removal from Turkey, which are mostly political contents.

Turkey ranks 7th in total number of active Twitter users in the world. Normalizing total number of users with respect to the total population of the countries, Turkey is very active on Twitter. Daily tweet number from Turkey is 7 million. Most tweets are from Istanbul, Ankara and Izmir, the three largest cities.

YouTube is becoming more popular in general. However, YouTube channels of the leaders are not popular and their videos are not viewed that much. The most common queries that people entered into YouTube's search tool is mostly about songs, music, movies, and some entertainment channels and this trend does not vary much from one country to another. Although it does not mean that politics is not a growing trend on YouTube, people still prefer to use other SNS to reach politicians more directly (Dijilopedi, 2020).

The data presented in Table 2.1 below are from the Digital 2020 reports of *We are Social* on each country, which are Digital 2020 US (2020), Digital 2020 Japan (2020), Digital 2020 Deutschland (2020), Digital 2020 Turkey (2020), Digital 2020 Italy (2020), Digital 2020 Spain (2020), Digital 2020 Canada (2020) and Digital 2020 Sweden (2020).

Table 2.1: Countries Leading in Social Media Usage

Country	General Information				Daily Time Spent with Media			Social Network Sites			
	Population	Mobile Phone	Internet Users	Social Media Users	Internet	Social Media	TV	Most Used Platforms	Facebook	Twitter	Instagram
USA	330 Million 82 % urbanisation	353.2 Million 107 % of population	288.1 Million 87% penetration	230 Million 70% penetration	6H 42M	2H 3M	4H 20M	YouTube Facebook Instagram Twitter	59.35 Million 65%	120 Million 21%	180 Million 43%
Japan	126 Million 92% urbanisation	191.7 Million 151% of population	116.5 Million 92% penetration	82 Million 65% penetration	4H 22M	45M	2H 26M	YouTube Line Twitter Instagram Facebook	18 Million 16%	45 Million 40%	29 Million 26%
Germany	83.65 Million 77% urbanisation	110.7 Million 132% of population	77.79 Million 93% penetration	38 Million 45% penetration	4H 52M	1H 19M	3H 6M	Whatsapp YouTube Facebook Instagram Twitter	28 Million 38%	5.25 Million 7.1%	21 Million 29%

Country	General Information				Daily Time Spent with Media			Social Network Sites			
	Population	Mobile Phone	Internet Users	Social Media Users	Internet	Social Media	TV	Most Used Platforms	Facebook	Twitter	Instagram
Turkey	83.88 Million 75% urbanisation	77.39 Million 92% of population	62.07 Million 74% penetration	54 Million 64% penetration	7H 29M	2H 51M	3H 4M	YouTube Instagram Whatsapp Facebook Twitter	37 Million 56%	11.80 Million 18%	38 Million 57%
Italy	60.51 Million 70% urbanisation	80.40 Million 133% of population	49.48 Million 82% penetration	35 Million 58% penetration	6H	1H 57M	3H 7M	YouTube Whatsapp Facebook Instagram Twitter	29 Million 54%	3.17 Million 5.9%	20 Million 37%
Spain	46.75 Million 80% urbanisation	54.11 Million 116% of population	42.40 Million 91% penetration	29 Million 62% penetration	5H 41M	1H 51M	3H 11M	YouTube Whatsapp Facebook Instagram Twitter	21 Million 51%	7.50 Million 18%	16 Million 39%

Country	General Information				Daily Time Spent with Media			Social Network Sites			
	Population	Mobile Phone	Internet Users	Social Media Users	Internet	Social Media	TV	Most Used Platforms	Facebook	Twitter	Instagram
Canada	37.58 Million 81% urbanisation	36.23 Million 96% of population	35.32 Million 94% penetration	25 Million 67% penetration	5H 53M	1H 49M	3H 20M	YouTube Facebook Instagram Twitter	23 Million 65%	6.88 Million 21%	13 Million 40%
Sweden	10.07 Million 87% urbanisation	14.67 Million 146% of population	9.67 Million 96% penetration	7.3 Million 73% penetration	5H 56M	1H 49M	2H 49M	YouTube Facebook Instagram Twitter	4.8 Million 56%	1.85 Million 22%	4.80 Million 56%

According to a study on factors impacting the social media usage in Turkey (Dag-
itmac, 2015), Twitter usage with respect to ages are

- 6%: 45+
- 22%: 35 – 44
- 30%: 25 – 34
- 30%: 18 – 24
- 12%: 14 – 17.

The percentages of Twitter usage with respect to education levels are

- 44.4%: Low-level
- 59.3%: Mid-level
- 64.0%: High-level,

i.e., 64.0 out of every 100 people with high-level education are using Twitter. This finding that the Twitter usage increases with the education level is in accordance with the study on the social statues and welfare (Akbulut and Celik, 2018).

The percentages of Twitter usage with respect to areas are

- 64.2%: Metropolitans
- 51.0%: Other cities.

The percentages of Twitter usage with respect to gender are

- 63.6%: Male
- 50.3%: Female.

2.3 Social Media, Laws and Government in Turkey

The importance of social media in today's society is growing. Therefore, the government has implemented some regulations and policies to deal with social media users in Turkey in order to control SNS such as Twitter, Facebook, and Instagram (Digital 2021 Turkey, 2022). To begin with, regardless of whether the platform is physical or online, existing laws are effective in cases of hate speech, harassment, and so on. Nonetheless, additional laws and regulations pertaining to social media cases have been enacted. It is helpful to recall some relevant incidents in order to comprehend the dispute between the Turkish government and social media platforms. Let's have a look at the Turkish Internet Law no. 5651 which became effective in 2007. After SNS platforms became popular, 'Social Media Regulations' were established with The Law on the Regulation of Broadcasts via Internet and Prevention of Crimes Committed through Such Broadcasts since 31.07.2020, with the law 7253, also known as the social media law reform (Kaya, 2021).

This law consists of 4 main topics which are

- the legal, criminal and administrative liability of Internet actors, such as content providers, hosting providers, ISPs, public use providers, and social network providers;
- the access restriction procedure for certain crimes, and the further details for combating such crimes, especially in cases of emergency;
- the notice and take down procedures, the removal of content and blocking access to such content, in cases of violation of personal rights, due to Internet content;
- the filtering techniques and surveillance of the Internet.

New media technologies have been transforming the social function of the traditional media. When compared to new media, the traditional mass media can be considered to have failed to protect democracy and chronic problems about freedom of speech

and the freedom of press has become complicated. Social media have brought a new opportunities and perspectives for people to express their opinions. In general, social media laws are restricting the access to harmful contents. However, regulation of internet contents is not an easy task for defining social media and freedom of speech in terms of public sphere. Curran and Witschge pointed out global web sites as a international public sphere to improve public communication (Curran and Witschge, 2011).

Because social media and in particular Facebook and Twitter has played a crucial role not only in the events and protests during the Arabian Spring but also Gezi Park protests started in Taksim square, the heart of Istanbul and expanded to the entire country, respectively, AKP and Erdogan have reservations on Twitter. This is also one of the indicators why Twitter is more important in the online political communications in Turkey and a strong justification of why the studies in this thesis have focused on Twitter, rather than other platforms.

In more detail, although Facebook and Instagram are very popular in Turkey, when compared to Twitter, they are not used in the primarily in the political context. Turkey is ranked #7 in the world in Twitter usage and Twitter has become the major platform for online political communications (Statista 2021). The rise of Twitter in political communications skyrocketed during the Gezi Park Protests in Summer 2013. During the protests, mass media failed to provide comprehensive news, and Twitter became the major communication media.

One indicator of the fact that Twitter is dominant over other platforms in political communication in Turkey is the set of actions Erdogan (and ruling party AKP) is taking for limiting or even banning SNS. These actions have mostly targeted Twitter. The discourse of Erdogan and AKP highlights this too. For example, after Twitter closed over 7 thousand accounts which were working in favor of AKP, F. Altun, the Presidency Communications Director said “(This) has demonstrated yet again that Twitter is no mere social media company, but a propaganda machine with certain political and ideological inclinations,” (Reuters, 2020). Also, in 2014, Erdogan banned Twitter in Turkey. However, setting VPN, people continued using it and Twitter usage showed a huge increase (Taylor, 2014). The reason of this banning was that Twitter was used actively by the opposition parties and their supporters, and a corruption scandal appeared which was highlighted by the opposition.

2.4 Political Situation in Turkey

Turkey's multi-party competitive politics can be divided into two major political lines: right and left. Right and left do not have the same meaning in Turkish society, and they are not associated with socioeconomic policy or political party tendencies. In contrast, people who support centralist, ultranationalist, Islamist, or laicist parties in Turkey are associated with the right and left sides. While the right side refers to conservative with religious roots, the left side refers fundamentally to secularism.

Since AKP came to power in 2002, Turkish party system has been still based on these two lines, but political actors were very limited. Gradually increasing political fragmentation among people was around the ruling and main opposition party being conservative and secular, respectively. This main conflict brought polarization into the society that people experienced difficult political situations during the last decade.

The next section will touch on the recent politics of Turkey such as the rise of political Islam through AKP (Adalet ve Kalkinma Partisi, Justice and Development Party) and Gulen movement, Syrian war and immigration issues, elections and consequences, Gezi Park Protests in 2013, the conflict appeared between AKP and Gulen movement which resulted in a failed coup attempt in 2016, and the changing of the regime from parliamentary to a so-called "Turkish-style presidential" in 2018, which are the significant issues that led to a fragmentation and polarization among people, parties and various organization (Ozbudun, 2006).

2.4.1 Recent Political History of Turkey

2.4.1.1 Secularism and The Rise of Political Islam

This subsection examines the roots of Turkish political Islam that emerged in the 1970s and 80s and continued until now. Political Islam is the domination of the state using Islam in both social and political life. Financiers of political Islam funded the economic investments to the state for political support. Political Islam has expanded its power with the influencing state and society as an ideologically (Rabasa and Larrabee, 2008).

In 1970s, National Order Party (Milli Nizam Partisi in Turkish) was founded as an Islamic party which embraced nationalism and religious discourse. It must be mentioned here about Necmettin Erbakan who was the long-serving dominant leader of the

political Islam. This leader and his party are very important because its roots gave rise to AKP and today's political situation in Turkey.

They have claimed "secularism" to be anti-religion although it means the separation of religion from the state. As a consequence of being against the secular nature of the state, National Order Party was shut down after a military intervention in March 12, 1971. The successors of National Order Party came together under the roof of "National View" (Milli Gorus in Turkish) which would then be associated with political Islam.

With the lifting bans in 1987, Erbakan turned back to politics, founding the Welfare Party (RP, Refah Partisi in Turkish). This period was the resurrection of political Islam (Rabasa and Larrabee, 2008).

Political Islam was victorious in the local elections in 1994. Welfare Party (RP) obtained the majority of the votes and won in 28 municipalities including Istanbul and Ankara which are the two biggest cities of Turkey. Political Islam had never lost in these two cities until 2019 mayoral elections. In the following year in 1995, Welfare Party was ranked first in the general elections and Necmettin Erbakan became the prime minister. The results of these two elections are quite significant and the reasons will be explained in the next subsection on Mayoral Elections.

Following the February 28 process, the Virtue Party (FP, Fazilet Partisi in Turkish) was founded as the successor to the Welfare Party, and this party was also closed down by the Constitutional Court due to reactionary actions. This was a critical period for the National View because there was a debate within the party that fragmented them into modernists and reformists.

While Recep Tayyip Erdogan and his close friends were coming up with the new approaches as a modernists such as democracy, human rights, accession of Turkey to European Union, and the relations with USA, traditionalists wanted to stick to the Islamist agenda. Besides, they criticized Erbakan claiming that he became authoritarian in the party. This conflict led to a split in the party so that Recep Tayyip Erdogan and Abdullah Gul founded a new, so-called "conservative democratic" party named Justice and Development Party (AKP) while others founded Felicity Party (SP, Saadet Partisi in Turkish) in 2001.

2.4.1.2 Gezi Park Protests in 2013

There were multiple movements that people occupied the public spaces, protested governments, took over the streets and utilized social networks sites along with them such as Arabian Spring in Egypt and Tunisia (2011), Wall Street Occupation in USA (2011), European protests in Spain and Greece (2011), Gezi Park Protests in Turkey (2013) in the world in 2010's (Vatikiotis and Yoruk, 2016). This subsection will address the basis of Gezi Park Protests, its collective dynamics and political results. Gezi Park Protests are one of the most impactful demonstrations in Turkey in the last decades. In May 2013, the civil protests were triggered by the government over building plans and removing the trees in Gezi Park, located in Taksim Square which is the heart of Istanbul. A wave of demonstrations spread nationwide. The re-construction of Taksim Artillery Barracks as a commercial center and a large mosque, the government developed a project called as "Project for pedestrianization of Taksim". After attempting to remove the trees for this project, around twenty people have started to camp for fight them back in Gezi Park.

Before explaining the dynamics of Gezi Park protests, it is necessary to show the political environment in the emergence of these protests. First, AKP was providing some economic conveniences to who had close politic relations with the government. Thus, they could consolidate their power even though the fundamental state strategy was neoliberal market capitalism. Second, conservative - democrat structure of AKP has turned to a religion-based conservatism with an authoritarian leadership style over time. This style made them intolerant receiving any criticism about their governance. In this undemocratic circumstance, protests that started against the commercialization and privatization of Taksim, Gezi Park, spread to 78 cities and mobilized around 5 million people.

Objections to the project for pedestrianization of Taksim Square were established under the leadership of Taksim Solidarity consisting of 124 trade unions, political parties, sports club fan groups, community groups and initiatives embracing diversity and expressing demands in a peaceful, democratic way around one year before the protests. Although the Taksim Solidarity followed a peaceful path obeying the laws such as organizing petition campaigns, guard keeping to save the trees and the nature of Gezi Park, the power (AKP) had disregard these demands and initiated the project. Police is

said to used disproportionate force on people who were against the destruction works within this project in Gezi Park such as removing trees. This violence and ignoring the basic democratic demands have triggered mass protests nationwide unexpectedly. According to Konda Survey, 84.4 percent of people heard the disproportionate force of the police via social media or friends (Konda, 2013).

Also, while 49.1% of people participated this protest due to the police violence, 14.2% participated because of Erdogan's self opinionated discourses and authoritarian leadership style (Konda, 2013). The participants' average age was 28 and most of them were university or high school students. It grew up inside political people and youth constitutively. It can be considered that Gezi Park Protests were the youth movements above all and people call them as a "Y generation" or "digital generation". This made the protests more significant. In addition, economic difficulties and class participation played an important role in these protests. Rising unemployment and low-paid jobs took to the streets with many underpaid labors and unemployed people. Lastly, people who felt pressure about their culture and lifestyle participated the protest along political parties, NGO's, women, environmentalists etc (Konda, 2013; Ayata, 2014).

Moreover, Erdogan labeled to insult the protestors as a "capulcu" which means *freeloader*. After the protests spread across the nation rapidly, Erdogan had to give up from this discourse to break the opposition block. AKP showed a tendency to consider specific demands about Gezi Park even though social demands of people were already beyond them. Most of the protesters are not active in politics and they participated individually. Besides, there were protesters who came together from quite different ideologies and political groups because they were up against the politics of AKP (Ayata, 2014).

2.4.1.3 Gulen Movement

Fethullah Gulen is the leader of the religious organization Gulen Movement. Until the failed military coup attempt in 2016, and partially until 2013, Gulen Movement was said to be in close relationship or even in a strong and long-standing collaboration with AKP and Erdogan (Gul and Yilmaz 2017). Gulen Movement was pioneering the so-called interfaith dialogues, and was claimed to be promoting moderate Islam (Tas, 2017).

15.846 followers of the Gulen Movement were detained because of initiating or participating in the failed military coup attempt in 2016, judged and sentenced to several years in prison, including 1.481 judiciary members and soldiers (Haberturk, 2016; Ministry of Foreign Affairs 2021).

2.4.1.4 Syrian War and Refugee Issues

This subsection explains the relationship between Syria and Turkey and mainly the refugee crisis in the recent years. In particular, it focuses on processes consisting of deteriorating relations and anti-migrant sentiment in the Turkish society after 2011. Turkish foreign policy which was trying to keep away from the Middle Eastern issues before, took yet another turn with AKP in 2000s. Turkey's new foreign policy was "zero problems with the neighbors".

Regarding this, Turkey and Syria had improved relations until the Arabian Spring triggered anti-Esad government protests and civil conflict in Syria. Turkey has been directly impacted by the AKP's established foreign policy. In respect to this, the impact of Syrian crises has caused serious problems such as economic, sociological and political. Due to the civil war, millions of Syrian people leaved from their homes and migrated to neighboring countries.

Open-door policy of the AKP government has turned the influx of Syrian to Turkey. Turkey has been hosting around 3 million 500 thousands Syrian immigrants in the first place. In Turkey, only 8% of immigrants are living in refugee camps and the others are living in the city centers (Ekici, 2019). In 2019, the official number of Syrian who were live in Turkey is 3.674.000 while all European countries were hosting 800.000 in total. 47% of Syrian population in Turkey are under 18 years old and of 25% of them are 19 to 29 years old (UN Refugee Agency, 2018).

Such a big scale immigration wave resulted in some serious economic and integration problems. Turkish society showed great hospitality and silence in accepting about four million immigrants. However, economic and social incidents have started to create negative public opinions. Difficulties in living together with Syrian immigrants has raised anti-migrant sentiments in Turkish society.

2.4.1.5 General Elections

In Turkey, there are three major forms of electoral processes: general, local (mayoral), and, most recently, presidential elections. Only political parties that receive more than 10% of total votes (which is recently updated to 7% to be effective from April 2023) in general elections are eligible to become Members of Parliament in the Grand National Assembly. Candidates can run as members of a political party or as independent candidates in national and municipal elections.

There are requirements to meet in order to compete in elections, according to the law on political parties. Political parties must establish party structures and hold a congress in at least half of all cities six months before the elections, or they must have a group of at least three members in the Turkish Parliament.

In the single-party era, elections were held in every four years, i.e., in 1923, 1927, 1931 and 1935, respectively. Apart from the independent candidates, The Republican People's Party was the only participating party in those elections. The general elections became more operational with the multiparty-era in the 1950s.

The first electoral system was based on the majority rule until 1961. Within the multi-party democracy, political parties which reached at least 5% of all the votes started to get grants from state treasury. These grants are distributed to political parties every year for using election expenses and party works according to the percentage of votes they took in the latest elections. Also, opposition parties has the right to establish or use existing radio stations to reach the public.

However, this system was considered to be unjust and it was not welcomed by the public so that a party-list proportional representation style which is also the current system was put into effect. Turkey's proportional representation system allows voters to select a political party or individual candidate in divided 85 districts. Below, the elections in 2002 that AKP's ruling period started will be briefly presented.

November 2002 Elections

The election results on November 3, 2002 are crucial in understanding how the AKP came to power without forming a coalition. Turkey was in a tough economic and political situation as it approached the General Elections on November 3. Between 2000 and 2001, Turkey's people endured two of the country's most severe economic crises. The

breakdown of the DSP-MHP-ANAP coalition government triggered a catastrophe, with the Turkish economy contracting by 9.4% and per capita income falling to the low 90s. Government measures failed to fix the situation, resulting in societal desperation as a result of the financial instability. November 3 General Elections was held in the light of these facts, and the government coalition parties failed to pass the 10% threshold. Also, elections resulted in triumph of AKP for the first time.

The reaction of Turkish voters reflected to the election results so that some people gave protest votes against to parliament parties or did not vote at all. Because of the protests for the previous coalition governments in the government, Erdogan and AKP became easily the first single party government since 1961. At the same time, this election had the least valid votes and the highest ratio of abstentionist. Among 41.4 million register voters, only 31.5 million voted making 79.14% while it was 87.09% in the previous election in 1999 (Gokce et al., 2002).

Table 2.2 presents the general election results since 2002 (Sabah, 2020).

Table 2.2: Election Results

Political Parties	3 Nov 2002	22 Jul 2007	12 Jun 2011	7 Jun 2015	1 Nov 2015	24 Jun 2018
Justice and Development Party	34.28%	46.58%	49.83%	40.87%	49.50%	42.56%
CHP Republican People's Party	10.68%	20.87%	25.98%	24.95%	25.32%	22.65%
MHP Nationalist Movement Party	9.62%	2.34%	13.01%	16.29%	11.90%	11.10%
HDP People's Democratic Party (Independents)	-	5.2%	6.57%	13.12%	10.76%	11.70%
IYI Good Party	-	-	-	-	-	9.96%
SP Felicity Party	2.49%	2.34%	1.27%	2.06%	1.38%	1.34%

2.4.1.6 Mayoral Elections

Following the important political incidents such as general elections, below, the story of the 2019 Mayoral Elections will be discussed, as they have been extensively researched in this thesis, particularly in Istanbul. The general or presidential elections are the most politically powerful elections in most countries. In comparison to general or presidential elections, mayoral, local, and municipal elections have less influence on national politics.

However, in a few nations such as Turkey, mayoral elections become as crucial as general elections from time to time. The obvious reason is because, with a few exceptions throughout Turkey's history, political parties compete in mayoral elections, with the candidate chosen by the party's leader. Each political party sees local government as an opportunity to demonstrate their work service to the public in order to acquire approbation, or at the very least, to win people's hearts and votes in the general elections.

The bigger the city, the bigger opportunity is seen in the mayoral elections by the political parties, and history showed that this idea really works. What is more, not only the winning party in metropolitan cities in the mayoral elections potentially wins in the following general elections, but also the mayor of Istanbul becomes the favorite candidate running for president. In accordance with this trend, Recep Tayyip Erdogan was the mayor of Istanbul, well before he founded AKP as a continuation of RP of Erbakan, though with slight changes in the ideology of National Order.

Hence, different from most countries around the world, in Turkey, local or mayoral elections are highly politicized at least as much as the general elections. Because general elections have been studied intensely in the literature (as explained in detailed in Literature Review in Chapter 3) and found to be contributing to political polarization, keeping in mind this unique aspect of Turkey, the following question is raised: Do mayoral elections make a significant, or at least an observable contribution to political polarization too? Therefore, mayoral elections in Turkey become one of the focuses of the studies in this thesis.

2019 mayoral elections became a milestone in the history because AKP lost in Istanbul and Ankara for the first time since 1994. The elections were held in all 81 cities, 30 being officially categorized as metropolitan municipalities due to their size in area, population and development level and welfare. Two electoral coalitions emerged among largest four parties, which look like to continue with slight changes in the next general elections to be held around 2023. These coalitions were

- PA (Cumhur İttifakı, People Alliance):
 - AKP (Adalet ve Kalkınma Partisi, Justice and Development Party), and
 - MHP (Milliyetçi Hareket Partisi, Nationalist Action Party)
- NA (Millet İttifakı, Nation Alliance):
 - CHP (Cumhuriyet Halk Partisi, Republican People’s Party), and
 - İYİ Parti (Good Party)

Some of the other parties competed independently, while some supported one of these coalitions. An interesting case was of HDP (Halkların Demokrasi Partisi, Peoples’ Democracy Party). While competing in the southeastern cities independently, HDP supported NA in the metropolitan cities against PA. The alliances are illustrated in Fig. 5.3.

Following the failed military coup attempt in 2016, Erdogan reportedly requested the resignations of both Ankara Mayor Melih Gokcek and Istanbul Mayor Kadir Topbas in 2017. Both mayors were winning the elections since 1994 and 2004, respectively. Not only in Istanbul and Ankara but also nationwide the election campaigns of AKP were run by Erdogan who was on the stage during the campaigns in every city (Sabah, 2019).

The strategy of Erdogan during the election campaigns was discussed to be exploiting the existing polarization and even pushing it further (McCoy et al., 2018). Historically, the polarizing factor between the so-called mildly Islamist AKP or its predecessor and more conservatively Islamist RP and the opposition parties, in particular republican and secular CHP is obviously along secularism versus Islamism. (Atikcan and Oge, 2012; Aydin-Duzgit and Balta, 2018).

In order to further strengthen the group identification and polarization, Erdoğan's labeled the 2019 Elections as a "survival issue" for the country. He also categorized voters as

- "patriots", who will vote for PA, and
- "enemies" or "traitors", who will vote for NA.

He claimed that if NA wins the mayoral elections, the country would be invaded by *enemies*, the national flag would be taken down and the prayers would be silenced. He even made a wordplay joke, calling NA which originally reads

- 'Millet İttifakı' meaning 'Natioan Alliance' as
- 'İllet ve Zillet İttifakı', meaning 'Contempt and Shame Alliance'.

Campaign strategy of NA was to blame Erdoğan and AKP for example of

- the economic crisis in 2018,
- the increasing inflation and unemployment rate,
- hosting millions of Syrian refugees leading to not social and economic problems,
- giving the Syrian refugees Turkish citizenship and right to vote in the elections.

One of the studies in this thesis found that the last item is a significant cause of anti-migrant sentiments among Turkish voters (Yurtcicek Ozaydin, 2018). The strategy of NA in a nutshell was to build the campaign on the daily problems of every citizen, hoping to take votes even from supporters of AKP and Erdogan.

For the first time since 1994 as RP, or since 2001 when AKP was founded, they lost in the major metropolitan cities. Although winning in general, losing in Ankara, Izmir, Antalya, Mersin, and in particularly Istanbul was a defeat for AKP. CHP won in almost all the coastal cities, except for eastern Black Sea coast, where Erdogan and a majority of AKP's executives are from.

Nevertheless, the gap between AKP and the winner CHP was very small, only 13 thousand votes. The vote counting process was questioned and went into crises, mostly driven by AKP not accepting the defeat. Eventually, the elections in Istanbul went

into a rerun for the metropolitan municipality (see Esen and Gumuscu, 2019 for more details). Meanwhile, social media platforms, especially Twitter was full of posts. As detailed in the relevant sections, sharply polarized tweets appeared. Finally, NA/CHP's candidate Ekrem Imamoglu won the elections, increasing the gap to 806 thousand.

2.4.2 Ruling Party AKP and Main Opposition Party CHP

AKP

AKP was founded in 2001 and has been in power since the elections of 2002. AKP describes itself as a “conservative democratic party” with Islam as its main value. At the first glance, the founders of AKP did not utilize an agenda against the secular society for political survival. They did, however, adopt Western politics and liberal market principles. Supporters of the party, which is located in the center right, do not adhere to a specific ideological line, but rather span a broad ideological spectrum.

Secularism, the headscarf debate, Kemalism, Turkish-Kurdish tensions, human rights, the Syrian migration crisis, youth politics, and the economy are the key concerns dividing the Turkish people. AKP has been at the center of these debates, and has frequently been chastised for ideologically polarizing the public (Newstime, 2008).

There have been a lot of arguments about AKP's ideology whether it is a pro-Islamic party which has the religious-center politics or a liberal party which is close to Western politics such as accession to European Union. Although the founders and supporters of AKP are religious and conservative people, they put forward pro-Western politics like free market economy, human rights, equal citizenship, freedom of belief etc. between 2001-2011 (Yilmaz, 2015).

The February 28 Process is very important to comprehend how AKP became AKP in terms of its ideologies. The founders of AKP did not want to detect as a threat by secular state institutions such as Turkish Army or Constitutional Court. Therefore, they implemented neo-liberal politics and had close relations with USA and European Countries at first glance. The leader of this “new synthesis” Recep Tayyip Erdogan declared himself Muslim Democrat along with other members of AKP. Cosar and Ozman argued that there are three factors for identifying AKP's conservative democracy (Cosar and Ozman, 2004). Firstly, AKP implemented neo-liberal principles. Secondly,

a huge number of members have association with National View. Thirdly, Islam still dominates crucial places when it comes for approaching to democracy.

CHP

CHP (The Republican People's Party) is the founding party of the modern Turkish Republic, claiming to follow Kemal Ataturk's six basic principles of Republicanism, Populism, Secularism, Reformism, Nationalism, and Statism. It was founded in 1923 and has undergone several transformations over the last century. Therefore, in the previous decade, the CHP has been accused of abandoning these values, particularly in terms of candidates and political coalitions during elections. As a center-left party, the CHP encompasses a wide range of ideas, mostly social democrats, but also a spectrum of radical leftists to persons who identify as neither leftists nor republicans.

CHP has been leading opposition against AKP by forming alliances with other large and small scale opposition parties.

2.4.3 Political Youth Organizations

2.4.3.1 Official Youth Organizations of Political Parties

Firstly, some relevant statistical data about youth population will serve to understand why Turkish Youth is important regarding the politics of the country. The population distribution of age in Turkey by year 2021 is presented in Table 2.3. While the unemployment rate of young people 25.3%, employment rate is 29.2%. Among the employment Turkish young people were employed in agriculture sector, industry sector and service sector with 20.7%, 28.3% and 51.0%, respectively. According to TUIK, or Turkish Statistical Institute, 31.3% of the youth population is in the 20-22 age group. Also, comparing the proportion of youth population among the EU member countries, it is seen that Turkey's youth is higher than others with 15.4% (TUIK, 2021). It comes after Greek Cypriot Administration of Southern Cyprus, Ireland, Denmark, Netherlands with 12.7%, 12.5%, 12.3%, respectively. In addition, analyzing the member of 27 EU countries youth population, the countries have the lowest proportion are Bulgaria, Czechia and Latvia with 8.8%, 9.0%, 9.1%, respectively (see Figure 2.1).

Table 2.3: Statistical data on population in Turkey. Data is taken from TUIK (2021).

Total Population	85.042.736	100%
Young Population	20.044,300	23.57%
Working Age Population	57.101.853	67.14%
Elderly Population	7.896.583	9.29%

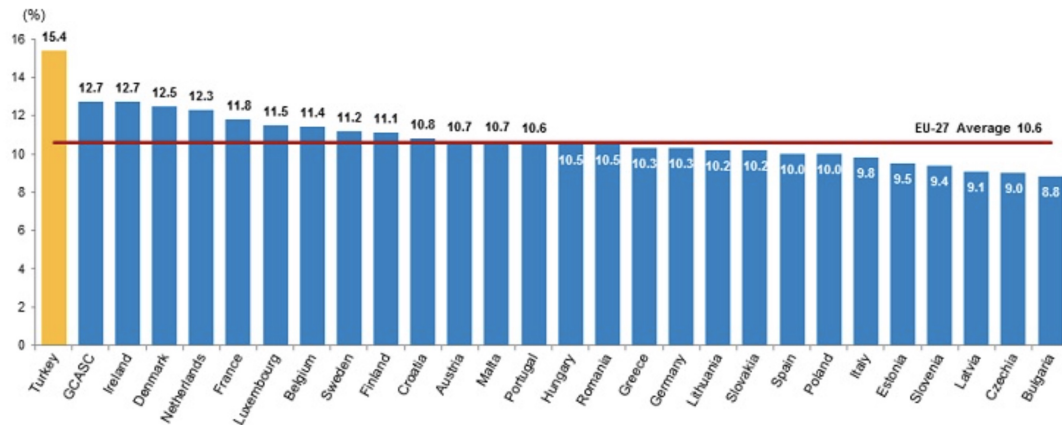


Figure 2.1: Age distribution in countries. Figure is taken from TUIK (2021).

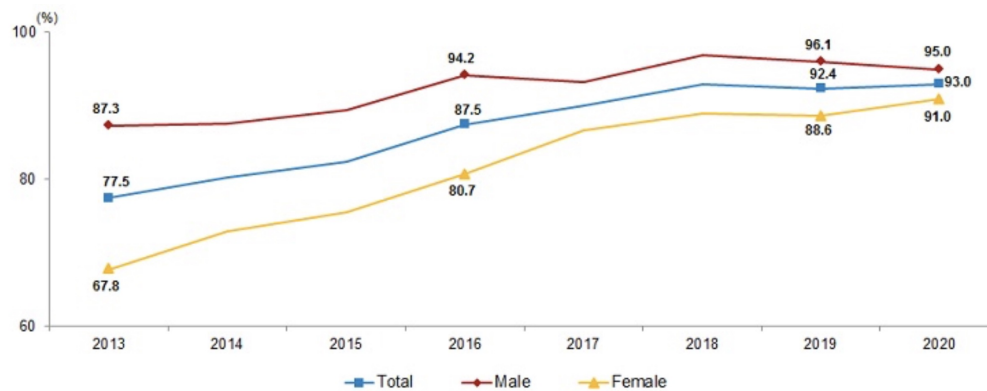


Figure 2.2: Internet usage statistics for genders with respect to recent years. Figure is taken from TUIK (2021).

Besides, 59.5% of young people satisfied from their level of education according to life satisfaction survey and 47.2% of young people claimed themselves as they are happy. The Internet usage rate of young people who are between 16-24 years old is 93.0%. According to the results of information and communication technology usage survey, 96.1% of young males are using the Internet, while females are using 91%. Please see Figure 2.2.

AK Genclik (AKP)

People under the age of 29 have been able to join the AK Party Youth Organization since 2002, according to the party constitution. Its structure is as follows: headquarters, provincial, district, and so on. Administrative and executive board members are approved by their party's provincial organization when it comes to the responsibility of the duty. Youth Branches of AKP are organized as "the Presidency of Political and Legal Affairs, Directorate of Organization Affairs, Directorate of Electoral Affairs, Presidency of Promotion Media, Foreign Relations Department, Presidency of Social Policies, Universities Presidency, NGO and Public Relations Department, Directorate of Local Governments, Directorate of R and D and Education, Directorate of Financial and Administrative Affairs, Directorate of Environment, City and Culture, Directorate of Human Rights, and General Secretary" (Dom, 2020). Here are some of their slogans:

- Keske her dogan olsa Erdogan - We wish every newborn to be another Erdogan
- Dik dur egilme Ak gencler seninle - Stand tall! Don't get down! AK Youth is with you.
- Liderimizle omuz omuza - Shoulder to shoulder with our leader (Erdogan)
- Demokrasi icin biz de variz - We are here too for democracy.
- Okuyan, yazan ak genclik - Educated AK Youth
- Menzili hak yolu - in the God's way.

CHP Youth Organization (CHP)

In Turkey, the first youth organization was founded in 1953 by the CHP. The CHP youth organization aims to prepare secular and democratic youth to be faithful to Ataturk's principles and reforms in political life. It organizes to introduce young people to the CHP's principles of pluralistic democracy and secularism.

Youth Branches of CHP are organized as "Social Policies, Foreign Relations and Foreign Organizations, Black Sea Regional Manager, Aegean Regional Manager, Directorate for the Organization, Information/Communication Technologies and R&D,

Human Rights, Marmara Regional Manager, East-Anatolian Regional Manager, South Eastern Anatolia, Media and Public Relations, Democratic Mass Organizations, Activity Organizations, Mediterranean Regional Manager, Central Anatolia Regional Manager, Administration and Financial Affairs, Education Secretary, Local Governments, and Law and Election Affairs” (Dom, 2020).

As Youth Organizations, CHP Youth Organization has a right of representation in headquarter of parties but they do not have right to vote.

Here are some slogans of CHP Youth:

- Ataturkcu Genclik - Ataturkist Youth
- Demokrasinin mesalesini yakacagiz - We light torch of democracy
- Calisa calisa kazanacagiz - We will win as putting in work
- El ele, kol kola, omuz omuza - stand hand to hand, arm in arm, shoulder to shoulder
- Cumhuriyetin Bekcileriyiz - We are the guardians of the republic
- Laik Genclik - Secular Youth
- Cumhuriyetci Genclik - Republican Youth
- Demokrat ve laik bir Turkiye icin genclik goreve - Youth stands up for democratic and secular Turkey.

According to the employment data of the interviewees, AKP has the most unemployed young members, followed by GOFOR (Youth Organizations Forum) and CHP (Dom, 2020).

2.4.3.2 TGB: The Turkish Youth Union

TGB is one of the country's largest political youth organizations. It is run mainly by student clubs at universities and high schools. It professes to be Kemalist, nationalist, patriotic, secular, and anti-imperialist and is currently organized in over 70 cities. Because it is not an official party organization, it is referred to as “non-party” or “independent”. Although majority of its members are close to VP (Vatan Party), some support CHP, MHP, TKP and AKP. Note that the official youth organization of VP is “Oncu Genclik” (Vanguard Youth).

TGB's ideological line may appear to be similar to, and even partially overlapping with the (alleged) line of CHP up to a degree, while being strictly opposed to the line of AKP at first appearance. However, in daily politics, severe problems arise between TGB and CHP, and TGB and AKP reconcile. Because of these conflicts and reconciliations throughout time, a varying volume of face-to-face and online interactions between these fragmented groups can be predicted, which is examined in this thesis.

Here are some slogans of TGB:

- Ozgur Bilim, Otonom Universite (Free Science, Autonomous University)
- Ataturk Gencligi Gorev Basinda (Ataturk's Youth is on Duty)
- Genclik Birlige, Tam Bagimsiz Turkiye (United Youth, Independent Turkey)

2.4.3.3 Rationale of Choosing The Youth Groups

In examining echo chambers among political youth groups in Turkey, two classes were considered. First being official party organizations, and the second being non-party organization. In the first class, organizations of the two biggest political parties are chosen: AK Genclik and CHP Youth Organization, first being the right-wing ruling party's and the second being the republican major opposition party's organization. In the second class, TGB was chosen because although it is very close to VP and majority of members are considered to be supporting VP, it is not the party's official organization. Also, unlike AK Genclik and CHP Youth Organization, it has members supporting various other parties. Being a non-party organization, TGB has been one of the large political youth organizations. It has been politically very active in streets and even

in front of courthouses especially during the Ergenekon convictions, also during Gezi Park Protests.

Ulku Ocaklari, the official organization of the third largest party MHP was not considered in these studies. The main reason of not choosing Ulku Ocaklari is that similar to AKP, MHP is a right-wing party -though AKP is more Islamist and MHP is more nationalist- and also, it formed political alliance with AKP. Before the alliance, MHP was an opposition party. Therefore, collecting data from years of MHP's transition from opposition to alliance with AKP and comparing it against data of AKP could potentially lead to not very clear results, despite huge efforts for retrieving and analyzing millions of tweet data.

Ataturkist Thought Clubs (Ataturkcu Dusunce Topluluklari, ADTs) are organized in many universities. They were not chosen in these studies because unlike the above-mentioned groups, they do not have a single Twitter account with hundreds of thousands of followers. However, a nation-wide research based on data from Twitter accounts of ADTs in different universities would be interesting.

Chapter 3

Literature Review

Summary of Chapter 3

In order to establish the theoretical framework of the thesis, this chapter reviews relevant seminal works in the field of media studies, identifying the major debate in the field, i.e., whether the social media usage is contributing positively or negatively to the development of an advanced democracy with well-informed citizens. The definitions of fragmentation, echo chambers, polarization and extremism are introduced, together with theoretical discussions held on each concept.

Next, major SNS, i.e., blogs, Facebook YouTube, Instagram and finally Twitter are introduced within the context of political communications, presenting the seminal works of the field performing analyses on each. Because fragmentation, echo chambers, polarization and extremism dynamics have some relatively unique aspects in each country, especially data-driven research in this field has focused on specific countries is presented, aiming to constitute a basis for a research focusing on Turkey.

Finally, relevant research on social network analysis is reviewed.

3.1 Online Political Communications

Historically, mass media has shaped and transformed political communication. A key aspect of mass media is that the diffusion of ideologies and biased or unbiased considerations and interpretations of political situations are mostly controlled by media outlets. People are mostly passive in the sense that their role is limited to choosing which source to consume. Hence, political communications through mass media can be considered as a one-way communication from media outlets to people.

However, thanks to the advances in the information and communication technologies (ICT), social network sites (SNS) has taken the political communication to another level. The nature of SNS is that they not only enable but also are based on two-way communications between individuals. A SNS platform such as Twitter is not a media outlet in the traditional sense anymore, and the content is mostly -if not completely- created and shared by people, with the exception that the traditional media outlets are sharing their usual contents on SNS as well. Therefore, the dynamics of basic concepts such as opinion leadership and diffusion of ideologies are subject to an unprecedented change, re-shaping the social and political transformations, requiring to redefine the concepts as detailed in the below subsection.

The readers of a newspaper of a particular ideological line might choose not to read another newspaper of a different ideological line. Hence, this deliberative enclave results in being exposed only to a single ideological line most of the time. On the other hand, due to the two-way nature of communications on social media, individuals following mostly others in the same ideology share and react to similar contents, possibly amplifying the same ideological line. Nevertheless, undeliberately -such as through the reaction of a “friend” to someone else’s post- or deliberately, individuals can be exposed to different ideologies, smoothing their own sharp point of views. This common scenario with two possible and contrary results led to probably the hottest debate in online political communication, whether the Internet and use of social media improves or hinders the democracy in a society.

3.1.1 Political Fragmentation, Echo Chambers, Polarization and Extremism

Fragmentation: This term is commonly used in various disciplines to refer to the process of breaking or separation of something into pieces. In the context of political communications, it is used to explain the following common scenario. Individuals tend to gather around similar ideological lines. Regardless of how strong or weak, each line has a potential of finding supporters, a few or many. Hence, within each society, political *groups* are formed (Bright, 2018). When compared to a hypothetical society where everyone thinks exactly the same way about every issue, i.e. a society as a single political group, the natural case with several groups is considered as a fragmented society. As will be more clear in the discussion about polarization, not only the former case at one extreme but also too much fragmentation within a society at the other extreme are not desired for a well-established democracy (Dahlberg, 2007; Casteltrione, 2014). The literature has mostly focused on fragmentation among different minded groups. However, as will be detailed later, one of the findings of the present study is that even in a group of people in the same opinion about a specific issue, the reasons that make those people think that way can be found to be significantly fragmented, providing evidence to support the negative side of the debate (Yurtcicek Ozaydin, 2018).

Echo Chambers: The general dictionary definition of this term, “*an environment in which somebody encounters only opinions and beliefs similar to their own, and does not have to consider alternatives*” (Oxford Learner’s Dictionaries, 2022) well applies to both face-to-face (Lazarsfeld and Merton, 1954) and online communications (Colleoni et al., 2014) where individuals mostly encounter opinions that reflect and further reinforce their own. Commonly considered relevant examples to the former are the cases in school classrooms or company meeting rooms (Lazarsfeld and Merton, 1954). Although individuals in such an environment can interact with others having any opinion or perspective, they might tend to limit their interactions towards only similar-minded others. Therefore, the observation of interactions within similar-minded people being dominant over interactions with different-minded people indicates the existence of face-to-face or offline echo chambers. When compared to online communications, face-to-face communications are limited regarding not only the number of people but

also the physical range a person can interact within a day. Hence, in addition to common attributes, online echo chambers can be considered to be more complex than their offline counterparts.

Because they can emerge within different minded groups, echo chambers can be considered as a possible consequence of fragmentation. Nevertheless, in every society, in addition to concrete groups, there are a lot of individuals who are not strongly tied to any group. If there are strong echo chambers in the groups, they can be more attractive and more capable of a faster attachment for those individuals, behaving as a sink. Hence, in addition to studies on its contribution to polarization, it might be interesting to study the contribution of echo chambers to reinforcing the political fragmentation in a society. A concept sometimes being conceived together and has partial overlaps with the consequences of echo chambers is the filter bubbles, which are considered mostly as resulting from the personalization of the online information. The algorithms of SNS and search engines play the crucial role in creating and manipulating the filter bubbles (Pariser, 2011; Kelly and Francois, 2018). However, echo chambers are considered mostly as a result of the deliberative actions of the individuals: Deliberative enclave, or deliberative exposure to same or different ideologies contribute to the forming and the dynamics of echo chambers. Therefore, although they might lead to similar results in specific cases, echo chambers are in the focus of the present study.

Though being the most frequent and mostly studied, online political communication is not the only context where echo chambers can emerge. Studying scientific pages and conspiracy theory pages on Facebook, Quattrociocchi et al. (2016) found quantitative evidence of echo chambers among Facebook users who follow these groups. Analyzing data on online news consumption, Cardenal et al. (2019) found evidence of echo chambers. Due to similarities of echo chambers and filter bubbles (Pariser, 2011; Kelly and Francois, 2018), online news consumption is actually a fruitful area to explore within this context (Flaxman et al., 2016). As social media marketing is flourishing, consumption of not only online news but also goods is attracting attention in echo chamber studies with a recent example on book co-purchases (Shi et al., 2017).

Polarization: This term refers to the increase in the political opposition over time (DiMaggio et al. 1996). As in fragmentation, neither no polarization, nor too much polarization is desired for a deliberative democracy, seeking to create a society of well-

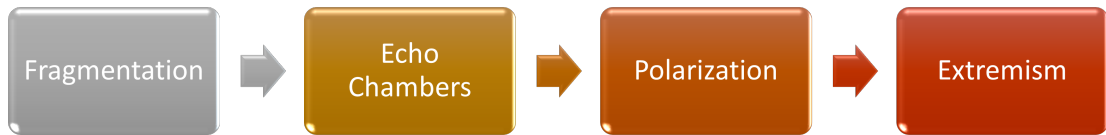


Figure 3.1: Commonly conjectured mechanism toward extremism.

informed citizens being not only tolerant to but also looking forward to others' opinions (Sunstein 2002; Bright, 2018). A moderate level polarization could enable the synthesis of political theses and anti-theses. As long as the social networks help this purpose, democracy is improved. However, a considerable amount of research outputs point out to the contrary, as will be detailed in this chapter. Polarization is also considered as a driving force for reasonable democratic pluralism, though might be jeopardizing if it turns to a problem which requires some actions to mitigate this problem (Giacomini and Paura, 2022).

Extremism: The further level of political polarization is considered as the extremism of ideologies of a group, making it interact less with other groups and threatening the democracy in a society (Bright, 2018). Beyond degrading the democracy or a democratic backsliding, individuals of groups with extreme ideologies have a greater chance to be radical, paving the way for terrorism. The contribution of an easier and more efficient access to any kind of opinions on the Internet and in particular on SNS to accelerate going extreme cannot be overlooked in the online political communication studies towards an improved democracy.

The commonly conjectured mechanism (Bright, 2018) as illustrated in Fig. 3.1 considers that a strong political fragmentation in a society might yield echo chambers; echo chambers might make a significant contribution to political polarization; and it can pave the way for extremism.

However, the mechanism might be more complex than this. One such complex example is illustrated in Fig. 3.2. For example, as mentioned above, forming and reinforcing of echo chambers might create an attraction for moderate individuals who are not strongly tied to a particular group. That is, there might a feedback mechanism between echo chambers and fragmentation. Another example recalling Goebbels is that the more extreme the ideas are, a greater attaching power can be achieved on more

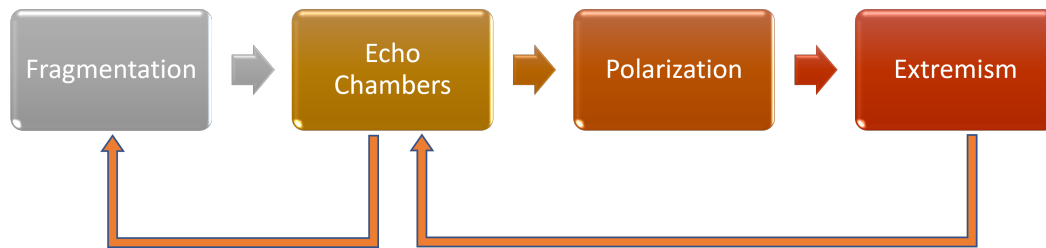


Figure 3.2: The mechanism toward extremism might be more complex than the commonly conjectured version (see Fig. 3.1), consisting of possible feedback.

people. An increase in the extremism might also create a feedback in the mechanism in reinforcing and expanding echo chambers, narrowing the public sphere. Hence, because most studies in the literature -which will be detailed below- focus on some specific incident on some specific time, the basic mechanism in online political communications toward extremism deserves more detailed analyses, preferably extended to a time span of few years period.

The relations of these concepts, i.e., fragmentation, echo chambers and polarization are in the heart of designing the hypotheses and approaches for testing the hypotheses. As explained in detail in Subsection 4.0.2, changes in one are observed along with changes in others. Therefore, it is straight forward to identify that they *co-vary*. A change in one might be inducing a change in another.

However, because these are not the only concepts in social and political sciences that can have impacts on each other, and due to complexity of political preferences, interaction dynamics and social incidents, when two concepts are observed to be changing together, it is usually impossible to prove that one is the *cause* of the other. Therefore, the possibility of *causal relationships* between the hypotheses is ruled out.

While other incidents and concepts might also be in charge in inducing changes in these concepts, it is not possible to prove that the changes in any pair of these concepts are purely because of a change in such other concept. Therefore, the possibility of *spurious relationships* between the hypotheses is also ruled out.

Having ruled out the two possible relationships, the hypotheses are identified to be in ***covariational relationship***.

Because an increase (or decrease) in the strength of one of the concepts, fragmentation, echo chambers and polarization is along with an increase (or decrease) in the

strength of another, *positive relationships* are identified between the hypotheses. These relationships are discussed in more detail in Subsection 4.0.2, and also illustrated in Figure 1.1.

Majority of studies in the field have been finding evidences -in good agreement with the findings of the present study- supporting the negative side of the debate, that the Internet and social media are contributing to political fragmentation, forming and cementing echo chambers, and increasing polarization more than weakening them. Studies are based on theoretical arguments or data analyses. The latter uses various data sources, mainly SNS platforms such as Facebook or Twitter. The relevant data is generated by social and political issues and incidents, and elections are a major data source to analyze the contribution to the polarization among a country.

In 2002, Papacharissi has discussed the emerging public sphere on the Internet, mainly in three major points. First of all, people's literacy level of the Internet and social media is an important issue. There is still a huge population around the world without internet connection. However, beyond the accessibility, the issue is also about the ability and way of people to use SNS platforms. Next, Papacharissi refers to the fact that the capability of connecting with anyone efficiently eases to further fragmentation. Finally, due to dominant global capitalism, the ICT might fall short in creating its original culture and finds itself within the existing political culture.

In an early and seminal work by Dahlberg (2007), the common perception of the public sphere in the Internet era is criticized. It is argued that creating a public sphere by reaching consensus through the elimination of political polarizations cannot be successful for developing a deliberative democracy. According to Dahlberg (2007) the different mindedness should be welcome with respect in a true democracy.

Dahlberg further points out to the flaws in the data retrieval methods such as surveys and content-based approaches, such as, people tend to give biased answers and be more positive than reality in surveys. Also, a significant amount of studies -regardless of finding evidences supporting which side of the debate- are based on not a sufficiently large data set, or rather than the actual case in general, they focus on very specific and significant issues that can lead to misinterpretation of the results.

Exposure to opinions and various contents on social media in similar or different ideological lines is crucial in determining the level of fragmentation, echo chambers

and polarization, and Sunstein has contributed to the field significantly by describing or discussing these basic concepts in detail (see Sunstein, 2002; Sunstein, 2017). According to Sunstein, exposure can be classified as unplanned or unwanted. For example, coming across some sports game or a political protest is an unplanned exposure.

Regardless of how much one enjoys the game or whether one supports or opposes the protest, an unexpected exposure can be readily endured. Meeting a persistent street seller, on the other hand, is usually an unpleasant experience. Another way to categorize exposure is if it is an experience or a debate.

Coming across different lives of other people on social media provides some experience to the individuals. Nevertheless, people often come across different arguments too, and such as exposure has a potential to affect their opinions.

Unlike communication through traditional media outlets such as newspapers that consumers were exposed to a limited set of articles in a regular basis, SNS are now providing an incredibly huge volume of articles with a single click, making it difficult and even infeasible for consumers to access articles as well as for media outlets to reach their consumers and have them engaged. This natural consequence of emergence of SNS certainly affects the deliberative exposure of consumers. In order to solve this problem and make the reach and engagement more feasible, developing a learning-to-rank algorithm, Kouroggi et al. (2015) have proposed an identification method for highlighting headlines that could be attractive for their target consumers.

While people can search for any content on a SNS in theory, such as a specific hashtag on Twitter, this is not the case in general because people tend to follow a particular hashtag on a given issue (Sunstein, 2017). Hence, such a deliberate enclave appears to be a major reason of echo chambers. Another natural and major reason is that people tend to be exposed to “appropriately slanted” contents about a specific issue (Sunstein, 2017). Supporter of a political party, for example, prefers to consume positive sources more than the negative ones. What is more, members of some groups, such as religious groups prefer to experience self-segregate. Though being tolerant, they would like not to interact with other ideologies or life styles, and to live their own way. There are also groups more conscious about building walls around them, especially if they have an agenda for converting others and reinforcing the attachments of existing members. Unless they find a great opportunity to fool their opponent, they

do not share or propagate others' arguments. Sunstein further argues that not only terrorist groups but also political parties usually act this way.

In this context, a natural question arises on how to measure the negative relation between the social media usage and deliberative democracy. First of all, democracy is not something that everyone thinks the same way with no political fragmentation (Sunstein, 2017), but rather different ideologies exist attracting people. So, fragmentation is actually a necessary condition for a deliberative democracy. However, in principle, its strength and potential consequences *might* jeopardize democracy, which is determined by the deliberative actions of the people: If people choose to interact mostly with same- or at least similar-minded people, echo chambers might form and reinforce, people may become more polarized and even extreme, which is conjectured to be hindering democracy. However, if people pay regard to interacting with different-minded people as well, echo chambers, polarization and extremism could be softened, which is conjectured to be good for democracy. What is more, the relation of social media usage and democracy might not be possible to measure directly, and attempts might not be considered reliable due to several reasons such as when asked, people tend to give more positive answers than reality (Dahlberg, 2007).

Therefore, as the consequences of deliberative actions are obvious and a reliable direct measurement might not be applicable, following the above conjectures, the question is usually understood by scholars supporting either side of the main debate (Sunstein, 2002; Yardi and Boyd, 2010; Casteltrione, 2014; Barbera, 2015; Bright, 2018) as *how to measure people's deliberative actions*, i.e., do they mostly choose the former or the latter, and network structure and content traffic appear as two basic indicators for measuring the intensity of deliberative actions towards either side (Scott, 1988; Girvan and Newman, 2002; Freeman, 2004).

The subsections below present the seminal and relevant works in the field, sorted by the social media platform the study is based on.

3.1.2 Blogs

Historically, microblogs appeared and became popular well before SNS such as Facebook or Twitter. Hence, they were constituting an important source of data in studying online political communications. One of the seminal works based on microblog data

in the field studied the US presidential elections held in 2004, finding solid evidence for echo chambers (Adamic and Glance, 2005). It is found among 1000 political blogs that, blogs around the similar ideology are linking to each other significantly more than blogs which are in the opposite ideology.

Utilizing not only quantitative but also qualitative methods, Hargittai et al. (2008) studied the interactions among top liberal bloggers and top conservative bloggers. Supporting the positive side of the debate a little, it is found that their deliberative enclave does not worsen by time. However, the significant finding indicating a strong echo chamber is that the popular blogs are linking to similar-minded blogs.

Lawrence et al. (2010) found that political blog reading is positively correlated with participation in politics. However, blog readers are reading mostly the blogs in similar ideology. They are also significantly more polarized than non-blog readers or those who are exposed to political news through TV programs. Probably the most interesting result of Lawrence et al. (2010) is that political blog readers are polarized as much as senators.

3.1.3 Facebook

A finding supporting the positive side of the debate comes from a study on Facebook by Casteltrione (2014). Surveying around a total 500 Facebook users from UK and Italy, Facebook contacts, selective exposure and political engagement were analyzed. It was found that communication on Facebook can help reducing the selectivity of exposures, and can serve as an antidote to fragmentation and polarization.

Jacobson et al. (2015) performed a hyperlink-based analysis on two partisan Facebook pages, one being the liberal and the other, conservative. First, it was found that most of the traffic is generated via only a small number of information sources. It was also found that, the two partisan pages on each side share only a very small set of common sources. Showing that the dominant approach is the selective exposure, this result supports the negative side of the debate.

A comprehensive analysis on Facebook was done by Bakshy et al. (2015). Activities of more than 10 million Facebook users in US were analyzed. In particular, users' clicking the Facebook's algorithmic ranked news feed behavior is monitored. It was found that, users' clicking preferences are dominant over the algorithmic ranking,

limiting the cross-exposure.

Another substantial study finding echo chambers on Facebook based on the activities of both Italian and US users was conducted by Quattrociocchi (2016). A comparison was made between the scientific pages and the conspiracy pages. The biased preference of users affect their fact checking and determine their content spreading. Eventually, filtered exposure and group polarization are reinforced.

3.1.4 YouTube

Algorithmic ranking for suggesting content to the users is not specific to Facebook. Videos on YouTube to be suggested to users are selected by its advanced algorithm, learning the preferences of users. While such algorithms are aiming to increase the traffic -such as content or video views- hence the ad revenues, an inevitable consequence is that the users are exposed to videos according to their preferences, i.e. videos similar to their minds, most of the time. Not surprisingly, this might lead to forming and reinforcing echo chambers. While algorithmic content ranking has been studied extensively, this was not the case for YouTube. To fill this gap, Bessi et al. (2016) has performed a comparative analysis on Facebook and YouTube on a dataset of more than 12 million users. It was found that the driving force of echo chambers on both platforms are the content itself. It was also found that the formation of echo chambers can be predicted accurately by observing the commenting patterns of the users. This comprehensive study is a strong evidence for the negative side of the debate.

Not only extreme discourse but also fake news, and even contents which have not been subjected to a fact-checking are considered to be making contribution to selective exposure and forming of echo chambers. To test this consideration on the political videos on YouTube, Ham and Lee (2021) have recently studied the dynamics of political polarization with respect to selective exposure. It is found that the political identification which leads to a stronger antipathy to the different-minded users consolidate the polarization due to selective exposure.

As in the above study, users' commenting patterns on YouTube videos are attracting attention due to their impact on the echo chamber and polarization dynamics. Recently, Garcia-Marin (2021) has undertaken a comparative on traditional mass media and YouTube. Analyzing over 80 thousand comments on around 200 videos and

comparing the result with more than 10 thousand news stories, it is found that YouTube is significantly more polarized than traditional media platforms.

Because they provide opportunities in studies in the field, elections are not studied only on Twitter. Political videos on YouTube around the elections receive an intense traffic. Very recently, Chen and Wang (2022) focused on the US presidential elections held in 2020 and focused on the comments to the election campaign videos. Basic mechanisms on YouTube's video viewing, commenting and replying to comments were studied, which are inter-group interaction, imitation, as well as reciprocity. The last mechanism was found to be dominant in giving rise to incivility in the communication. It was also found that YouTube's ranking algorithm is a major source of it, and it was argued that it should be revised, taking into account the caused harm and trying to consolidate a civil reciprocity.

Echo chambers and group polarization are beyond pure political communications. Big social or economic issues have a potential to affect the dynamics of echo chambers and to contribute to weakening or reinforcing the polarization, and global pandemics are of no exception. With the emergence of COVID-19, several issues such as the origin of the pandemics and vaccination received an intense attraction around the globe. Conspiracy theories have skyrocketed and fact checking has frequently degraded and even interrupted. The reflections of all these have motivated the researchers in this field. In a recent work, using several indexes for political bias and fact checking, Di Marco et al. (2021) have studied the video views and interactions on YouTube in a large scale. Also, the relation between the information exposure and political bias of each user in the dataset is examined. The study has proven echo chambers on YouTube. Also the forming and reinforcing of the echo chambers highly depend on the preferences of users that if the interaction patterns of users are randomized, it is not possible to observe echo chambers.

3.1.5 Instagram

Although it is not a social media platform as political as others, Instagram is of no exception for online political communications. To reach a wider audience, especially to younger people, politicians are usually active on Instagram during the elections. For example, in the Brazilian elections in 2018, Fernando Haddad, the candidate of the

Workers' Party (Partido dos Trabalhadores, or PT) and Jair Bolsonaro, the candidate of Social Liberal Party (Partido Social Liberal, or PSL) ran campaigns on Instagram too. Fernandes et al. (2020) studied the Instagram campaigns of Haddad and Bosonaro during the second round, as one of the pioneering works regarding Instagram in the context of political polarization. The dynamics of polarization and electoral communications are examined, which rises motivation for further research on Instagram.

Boy and Uitermak (2020) has conducted a very interesting research on Instagram and lifestyles. During over a 6-months period, analyzing around 35 million Instagram interactions of users in Amsterdam, they studied the fragmentation level at the interface of the digital and the urban life. They found that users are forming groups and clusters, leading to fragmentation. However, through tagging, the level of interactions between different groups are not limited as much as other platforms or other application areas, that Instagram has a potential to promote cross-group communications.

The intensive works on analyzing the echo chambers, selective exposure and avoidance were extended to Instagram by Parmelee and Roman (2020). The surveys with people who are active on Instagram aimed to measure how often they are deliberately exposed to similar-minded or different-minded political actors. It was found that the surveyed individuals practice mostly a selective avoidance, indicating a strong echo chamber. Classifying the individuals showed that people who form and cement echo chambers are usually very ideological, conservative and female.

3.1.6 Twitter

Other platforms are being used in various contexts, including political communication to some extent in each country around the world. However, Twitter has become the dominant platform of the new media around the globe for online political communications, hence for the studies in this field, together with advanced techniques. For example, Conover et al. (2011) showed that it is possible to predict the political alignment of users based on their Twitter activities with a higher performance achieving 91% accuracy if support vector machine (SVM) training (Noble, 2006) is employed on the hashtag metadata.

Because each country has some unique cultural and political aspects, not only the basic theory but also country-specific works make a considerable contribution to the

field. For example, Sweden is a small-size country with a fragmented political party system, and has a solid federal systems. These unique aspects of Sweden motivated researchers to study the Swiss politicians Twitter activities, and analyzed the potential of the parliament's characteristics for influencing the SNS usage (Rauchfleisch and Metag, 2015).

To study political echo chambers and polarization on Twitter, Barbera (2015) developed a Bayesian Spatial Following model and applied the model to political parties and voters in the societies of several countries including US, UK, Netherlands, Italy and Spain, as well as to several cases such as the US presidential elections in 2012. The results of this extensive study clearly showed that online communications take place mostly between people falling into the same range in the political spectrum, i.e., quoting from its title, “birds of the same feather tweet together”.

Not only direct political events but also social and even criminal incidents with possible impacts on politics are fruitful for understanding the dynamics of polarization and echo chambers, and hashtag wars help examining the situation. For example, the shooting of a late-term abortion doctor named George Tiller, two types of hashtags appeared, neutral, i.e. #Tiller, and nonneutral, i.e. #pro-life, and #pro-choice. Retrieving 30.000 tweets, and analyzing the group polarization based on the replies between these tweets, Yardi and Boyd (2010) found that the group identity is reinforced through replies between similar-minded people, while the group affiliations are reinforced through different-minded groups. They found that replies between like-minded individuals strengthen group identity, whereas replies between different-minded individuals reinforce in-group and out-group affiliation. Their results show that people are exposed to broader viewpoints than they were before but are limited in their ability to engage in meaningful discussion. They conclude with implications for different kinds of social participation on Twitter more generally.

One of the most cited research along this line was conducted by Colleoni et al. (2014). Advanced techniques such as machine learning and social network analysis were used to analyze the big data, and political homophily was measured among Republicans and Democrats in the USA. It was found that Democrats are more homophilic than Republicans, while the opposite is true for Republicans following official accounts of Republicans. It was also found that reciprocated following leads to an increased ho-

mophily.

Although the field has been attracting an intense attention producing numerous results for many years, the debate is even getting hotter, initiating even more works. This is understandable since the number of users, the volume of created content and the traffic of SNS keeps increasing, resulting in more sophisticated ranking algorithms and communication patterns.

In a recent work by Wheatley and Vatnoey (2022), mass blocklists were studied. Historically, mass blocklists were used in the past for protection against problems such as harassment. In this study based on a metaphor analyses, the retrieved more than two thousand tweets revealed that people are considering Twitter as not only a personal space but also a battlefield in a sense that they confront with opposite ideologies. Hence, they want to draw solid walls around to protect their personal spaces, and mass blocklists, which were onced used mainly for their original purpose have recently become a major tool for isolation from different-minded opinions. This finding also points out the fact that although the shared content and the personal preferences can be considered as the major source of echo chambers through deliberative enclaves, technological tools raise new capabilities to practice the enclaves. These tools might be serving this problem being used as designed such as the algorithmic rankings, and also being used other than their original purposes such as mass blocklisting.

Sentiment analyses on retrieved tweets through advanced techniques such as artificial intelligence, natural language processing, and machine learning techniques provide delicate insights in political context. Bose et al. (2019) used a deep learning tool to determine sentiments of tweets categorizing them as positive, negative, and neutral. The study successfully extract individuals' sentiments and showed the contribution of these analyses in decision making processes.

Khatua et al. (2020) retrieved 2.4 million tweets of around 150 thousand users about 2014 Indian General Elections. Using neural network-based algorithms, they showed the possibility of predicting political orientations of Twitter users with high accuracy.

Focusing on the refugee crisis in Turkey and retrieving approximately 2.4 million tweets in both Turkish and English, Ozturk and Ayvaz (2018) performed a comparative sentiment analysis. They found that tweets in Turkish have considerably more positive

sentiments than tweets in English, while largest number of neutral tweets were found in English.

Automated accounts, also known as bot accounts are used widely on social networks, especially on Twitter not only in marketing but also political context. Therefore, detecting and identifying activities of bot accounts is vital in online political communication studies within various contexts. Efthimion et al. (2018) developed a complex machine learning algorithm for detecting bot accounts. Their algorithm utilizes features such as the length of user names, reposting rates, temporal patterns, sentiment expression, and followers-to-friends ratio. They found that the algorithm is capable of detecting bots with almost a unit probability.

Caldarelli et al. (2020) have studied tweets concerning the flux of refugees to Italy. They found that strongest hubs have a large number of bot accounts as their followers, retweeting their tweets, thus creating a significant content traffic within a specific political tendency.

Martini et al. (2021) compared the performance of three major techniques, i.e., Botometer, Tweetbotornot, and Heavy Automation in detecting bot accounts. It was found that, although all three techniques are able to detect a set of bot accounts with respect to political discourses, they generate very different results, suggesting researchers in online political communication studies to be careful in selecting the bot detection techniques.

The role of digital propaganda and political polarization in India due to traffic created through bot accounts on Twitter was studied by Neyazi (2020). Focusing on international conflicts, it was shown that how bot accounts are used to manipulate public opinion on Twitter.

Najafi et al. (2022) have created a public dataset named “Secim2023” (Elections2023) for Twitter data on the upcoming 2023 Elections in Turkey, which is publicly available on Github, and updated and maintained frequently. Information in various dimensions can be extracted from Secim2023 dataset including political trends, campaigns, bot activities, etc.

The political Twitter sphere in Norway was studied by Enjolras and Salway (2023) regarding elections in 2017 to analyze ideological homophily, polarization and echo chambers. Despite ideological homophily a significant degree of polarization, they did

not find evidence of echo chambers.

Ramaciotti Morales (2023) proposed a new method using natural language processing to reveal the political stance based on Twitter data. Analyzing the content traffic in the social graph of 2 million users, it was found that there emerges new social cleavages beyond the usual liberal-conservative divides.

3.1.7 Affect Theory in New Media

The foremost distinction of online communications from offline is probably its power in reaching others with arbitrary ideologies from all over the world and initiating interactions with an unprecedented effectiveness. Due to changes during the interactions and even later on, opinions and emotions of individuals cannot be considered as constant. Every interaction potentially *affects* both sides in some way causing changes in the opinions and emotions, naturally triggering slight changes in the future interactions with both objective and subjective attributes. Because all these interactions, therefore changes occur in a network of individuals, and to quote Massumi (1995) “*affect and direct perception are not confined within a human subject, but are 'transindividual' and spread across the nature-culture continuum*”, his *affect theory* poses a great potential in understanding the network dynamics towards changes in polarization and echo chambers. Furthermore, these interactions leading to *affects* occur in networks with fragmented communities, which will potentially open new insights in the field. Because, Massumi (2015) argues that the affect is transversal which cuts through the objective and subjective realms constituting the two facets of the same interaction which were previously considered separate, and Ahmed (2014) stated in his *stickiness* concept that, though people are exposed to the same objective affect, they develop their subjective emotions and these emotions circulate in the network. In addition, Papacharissi (2015) states that the network-generated affects can contribute to reinforcing a collective emotion.

3.1.8 New Forms of Capitalism and New Media

Information and communication technologies (ICT), and in particular e-commerce and especially social media marketing have been transforming capitalism itself (Tornberg and Uitermark, 2022). Not only advertising but also the planning, design and produc-

tion processes are becoming data-driven in the first place, and social media has become the major source of data (Harari, 2016). As data is now considered as a commodity, the relationship of data and capitalism has appeared as a central research topic in the data-driven political analyses (Tornberg and Uitermark, 2022). Beyond this relationship, arguing fantasies of abundance, activity and wholeness, Dean (2005) asserts the depoliticizing role of networked ICT as *communicative capitalism* (Dean, 2002). Fuchs (2010) argues that the notion of *class* requires rethinking because in the *informational capitalism*, the notion of production has expanded due to content generators on the Internet, which would contribute to deepening our understanding of politics and new media.

Manipulating societies through social network engineering practices such as content ranking and new connection suggestions algorithms rely on the generated social network data. In their article on *surveillance capitalism*, based on concrete examples in the US, Foster and McChesney (2014) state that the information extracted from social network data are organized into categories of premium proprietary behavioral insights, which is shared with US governmental institutions such as FBI, Pentagon and Homeland Security. As citizens become more aware and concerned of this fact, they might tend to practice self-control on their social network interactions. As this would inevitably affect the dynamics of polarization and echo chambers, the *surveillance capitalism* can be considered as a key concept in online political communication studies. In a similar fashion, the concepts of *platform capitalism* (Srnicek, 2017) and *digital capitalism* (Sadowski, 2020) deserves a particular attention in this field.

3.2 Related Works on Other Countries

Each social media platform or SNS has its own dynamics of deliberative enclaves, echo chambers and polarization. Here, an interesting feature of SNS in general around the world is that the intensity of online political communication on each platform slightly depends on the country. That is, although Twitter is dominant for political communication in most countries, Facebook or Instagram might be used in political context in some countries more than others.

Also, some platforms have been popular in their first years, but this was not the case for all countries. In this regard, blogs are a good example: They were popular in US more than most countries. In some countries, such as in Turkey, blogs have never been popular enough to provide statistically reliable data for research in the context of echo chambers. Hence, due to the popularity level of each SNS for political communications in each country, regardless of which SNS is used as the major data source, researchers have been drawing geographical borders especially when conducting data analyses. In some studies such as in by Barbera (2015), the developed models are applied to several countries in a comparative way.

What might be even more critical than the popularity of a particular SNS for online political communication, each country or region has a unique cultural and political aspects with an unimitable history of politics and political communication by means of traditional media, which have undeniable impacts on the new media. The unique conditions of each country provides a valuable data source for studies in the field.

As explained in the Chapter 1, Turkey is a cradle of research in the field, due to facts such as the high usage rate of SNS, a dense political agenda, a sharply fragmented society and a history of political media since the Ottoman Era. Before focusing on the case of Turkey constituting the basis of the present thesis in the following chapters, research specific to countries will be explained. Some of the works have been already addressed from a different perspective, such as the particular SNS. However, not only for the sake of thoroughness but also to give a clear picture regarding the level of fragmentation, polarization and echo chambers in each country, a quick review is given below, summarizing the results in Table 3.1.

3.2.1 The Case of USA

Because many previous works presented throughout this thesis are from USA, not to repeat them again, only a few works will be presented in this section regarding the case of USA.

In addition to five European countries, the Bayesian Spatial Following model developed by Barbera (2015) was applied to US, in particular to some specific cases in the 2012 presidential elections. The result of the following model put forward that people are interacting mostly with other people who share similar and even the same ideology. Another work on US of which title partially overlaps with the above one, starting with “birds of the same feather tweet together”, was conducted by Himelboim et al. (2013). In this study, in order to reveal the political orientations, major litigious political topics, cluster of similar ideology individuals and links are mapped and both network analysis and content analysis were made. Major finding of this study was that although Twitter users are following some different-minded users, they are not likely to be exposed to the content from their clusters of the users they are following.

Among many others, studying the US elections in 2016, Grover et al. (2019) found evidences of a significant polarization on Twitter. Also, the voting groups were found to be practicing in-group acculturation, and the election campaigns are contributing to and even producing political polarization.

3.2.2 The Case of Japan

To study the case of Japan, based on multivariate quantitative analyses, Kobayashi and Ikeda (2009) has investigated the exposure and political tolerance in web browsing, as well as the cases leading to selective exposure. The data is collected through panel surveys based on interviews in person, before and after the national House of Representatives elections in 2005. On the contrary of the majority of the studies in the field, this study showed that, besides a level of selective exposure, the importance of the issue is a determining factor in selecting the exposure. According to the study, the Internet is being used for accessing to cross-ideologies and no basis for the fear of a fragmented society was found which is resulted from selective exposure. Hence, supporting the positive side of the principle debate, this interesting work has been attracting a particular attention. It also raises the motivation to conduct more research focusing on Japan,

especially utilizing wide-spread data collection methods, such as from Twitter. Based on data from Pew Internet & American Life Project in 2014, this study also found similar results for the case of US.

Another key study on not only Japan but also South Korea and US asked a vital question whether the diffusion of extreme opinions is more than the moderate opinions. The result of this study conducted by Yamaguchi (2023) was affirmative, also finding that the worst in this regard is US, then Japan, and then South Korea, the last two being close to each other, and in each country, the more extreme an opinion is, the more it is shared on SNS.

On the other hand, The Prime Minister's Office of Japan is using Instagram actively with the account *kantei*, with approximately 300 thousand followers (in 2022). Although this account is not in a direct political discussion, using the platform as a one-way communication means, the likes and especially the comments always have a potential to consist of complex communication patterns. Hence, it can be argued that official and unofficial Japanese political accounts on Instagram deserves research for revealing the dynamics of political polarization and echo chambers.

Although mayoral or local elections have been mostly overlooked in the literature in the context of polarization and echo chamber, Fujishiro et al. (2020) analyzed the fact-checking and xenophobia during the 2018 local gubernatorial elections in Okinawa Prefecture in Japan. Focusing on xenophobia against China and South Korea, it was found that in the online sphere on Twitter, the fragmentation is among the liberal and xenophobic more than simply on partisanship regarding liberals and conservatives, which is closely related to fact-checking that can also help curing the problem.

3.2.3 The Case of Canada

One of the earliest studies in the field on the importance of Twitter in the field is provided by Small (2011). Based on political hashtag analyses, the study discussed the intersection of microblogging in Canada. Those years, the internet was thought to be the best place to contribute to democracy by exposure to different topics, news, and ideologies. However, Small (2011) found that political Twitter users share their relevant contents with a specific hashtag to spread their political ideologies. Contrary to expectations, political dialogue and reporting was found to be not frequent, which can

be considered to be supporting the negative side of the future debate.

One of the mostly referred works focusing on the Canadian case analyzed the online political polarization focusing on the federal election in 2011 by Gruzd and Roy (2014). Around six thousand tweets of around fifteen hundred accounts were retrieved. The first finding is the existence of clusters around political ideologies. It was also found that wider debates are excited by cross-ideological interactions. Finally, interactions on Twitter is increasing the partisanship and the level of polarization, supporting the negative side of the debate.

Negative campaigning is popular in online societies. Small (2017) focused on two elections held in 2011 in Canada. This study shows the characteristics of Canadian opponents on Twitter via empirical analyzes on Twitter. Therefore, in this study the data retrieved from Canadian party leaders who produced negative messages on Twitter. Even though Small (2017) expects contrary results, study found that Canadian party leaders do not attack opponents on Twitter in general. Their less than 10% of tweets are negative and they found that opponents use Twitter to go negative more than incumbents.

In a later work, Gintova (2019) provided information about how Canadian government social media users use Twitter and Facebook to communicate with public. This study analyzed the Canadian federal government agency Immigration, Refugees and Citizenship Canada (IRCC) approaches to social media as a customer services, and found that the immigrants are also using social media for communication as an information tool with government agencies.

3.2.4 The Case of Switzerland

Rather than general social media platforms which contain any kind of communication including politics, an interesting work by Garcia et al. (2015) on the political polarization in Sweden focused on an political platform, PolitNetz. Swiss politicians are communicating through creating and sharing links, liking the posts and commenting, i.e. activities supported by other platforms. Intra-party cohesion is analyzed with respect to the inter-party connectivity. A considerable polarization in the political network is found, which is dominantly driven by likes towards the elections.

Studying tweets of 3.000 users about the Swiss Nuclear Withdrawal Initiative in

2016, Arlt et al. (2019) identified online fragmented communities. Finding that the users in communities interact not only within the community but with other communities as well, this study supports the positive side of the debate, though it is based on a “small pool” data when compared to evidences found supporting the negative side by analyzing tweets of hundreds of thousands of users.

A recent work on the case of Switzerland was conducted by Reveilhac and Eisnar (2022). Collecting data about the women’s strike that took place in Switzerland in June 2019, and analyzing the actor groups, they observed polarizing effect on social media. They also observed that this effect is between actors with left and right-wing oriented ideologies.

3.2.5 The Case of Spain

Twitter data was analyzed towards the national elections in Spain in 2011 by Aragon et al. (2013) to reveal various communication dynamics of the country. In particular, retweet and replies were analyzed in detail. It was found that, political parties were still using the social media platform as a one-way communication, as if it were a traditional media. Also, in accordance with findings on other countries favoring the negative side of the debate, a fragmentation, or *balkanization* trend was observed in the political ecosystem of Spanish politics. The above mentioned work of Barbera (2015) which applied the developed Bayesian Spatial Following model not only to US but also five European countries including Spain found similar results to those of the work of Aragon et al. (2013).

In order to provide a better understanding of digital influence, Casero-Ripolles (2020) applied machine learning and social network analyses on a dataset of over 127 million tweets. The tweets are categorized according to their territorial coverage, perceived ideological position, nature, and type. Despite high values in activity and popularity, this comprehensive study found a lack of authority, which questions the efficacy of influences on political debate.

Using advanced natural language processing techniques, Casan (2022) analyzed several axes of polarizations related to different topics discusses in online society. As opposed to the most works in the literature considering a simple left-right orientation, more complex and multi-dimensional polarization was found.

3.2.6 The Case of Italy

An early study on Italian case was conducted by Mancini (2013) which found a *dramatized* polarization. This work identified the sources of this polarization to be well-established historical attitudes, a crowded media market and new technologies, as well as the tendency of the society towards a dramatized polarization. It was also found that coming of Berlusconi to power did not smooth but instead sharply increased the polarization.

A work analyzing the case of Italy was conducted based on Facebook pages, together with the case of US by Quattrocioni et al. (2016). This work analyzed the dynamics of conspiracy theory pages with respect to scientific pages. The work found strong echo chambers among communications on Facebook pages in the country.

Italy is also among the European countries studied in the work of Barbera (2015) and fragmentation, selective exposure, echo chambers are found in Italy too, providing support for the negative side of the debate.

Campanale and Caldarola (2018) retrieved 1.2 million tweets about 2016 Italian Constitutional Referendum. Applying Naive Bayes Multinomial Text classification algorithm, they classified the retrieved tweets according to their orientations. They found that Italians are using Twitter in a deliberative political manner massively. They showed that the result of the referendum can be predicted by performing analyses, even simple count-based analyses on the tweets. They also showed that tweets regarding both sides are in alignment with the language used by politicians.

Predicting political orientation of Italian society was also studied by Cardaioli et al. (2020), focusing on the Movimento 5 Stelle, an Italian political party claimed to be not showing a clear political leaning. Retrieving approximately 10 million tweets of 7 thousand users who were manually labeled, Cardaioli et al. applied classifiers and showed that the political orientation of voters can be determined on the left-right spectrum with a very high uncertainty.

3.2.7 The Case of Germany

Around 70 thousand tweets which mention political parties were retrieved by Feller et al. (2011) and analyzed in a wide range of contexts, including the network structure, i.e. the following and interacting patterns, and the discussed topics. First of all, it was ob-

served clearly that Twitter users are following mostly other like-minded users, and that the members of a formed cluster tend to the same political line upon interacting with each other for some time. Another finding is that the majority of topics are discussed by users of a wide spectrum of political ideologies.

In another work, Vaccari et al. (2016) studied German and Italian representatives' online survey to investigate Twitter users communication with supportive, oppositional, and mixed political network. Their results suggest that social media should explain in a wider approach. They analyzed tweets of people who posted at least one tweet about elections in Germany and Italy in 2013. According to their findings, even though homophily is in the center of the field, disagreement takes place too.

Schunemann et al. (2019) studied German federal elections held in 2017 and studied political partisanship. They found no support for the hypothesis of echo chambers. They failed to observe selective exposure due to partisanship for political camps. Nevertheless, they found evidences for issue based online political polarization.

Burghartswieser and Rothmund (2021) studied deliberative enclaves through conducting an online survey with around a thousand users about the migration crises. They found that around one third of the surveyees are practicing selective political exposure that they are mostly interacting with confirmative information environment. They also argued that this is related to the conservatism of the surveyees.

Table 3.1: Some of the findings on political fragmentation, echo Chamber, polarization and extremism in different countries

Country	Findings
USA	Political tendency creates Echo Chamber behavior on Twitter. Like-minded (Echo chamber) people create group polarization. People are mostly exposed to the same ideological content because they mostly follow similar political ideologies.
Japan	Sensitive issues create extremism and this is negative for online society. Selective exposure does not have a negative effect on political tolerance in web browsing. The distribution of posts on social media is distorted compared to the opinion distribution in society.
Canada	Political partisanship contributes to polarization especially election times. Twitter usage at present is likely to further embed partisan loyalties during electoral periods rather than loosen them; a dynamic that would seemingly contribute to polarization.
Switzerland	If parties are close ideologically, they connect more on twitter and polarize by time. Online social structure of a party is related to its ideology and reveal that the degree of connectivity across two parties increases when they are close in the ideological space of a multi-party system.
Spain	Political parties have strong fragmentation on Twitter. They observe political parties, and especially the major traditional parties, still tend to use Twitter just as a one-way flow communication tool.
Italy	Conspiracy theory pages more echo chamber than scientific pages. They provide empirical evidence that because they focus on their preferred narratives, users tend to assimilate only confirming claims and to ignore apparent refutations.
Germany	They investigated the network structure of political micro bloggers with respect to first, their party preference and, second, the topics they discuss. There is fragmentation according to party preference on Germany.

Chapter 4

Research Design

Summary of Chapter 4

In this chapter, each of the three hypotheses, their relations and corresponding research approaches are explained in detail. Motivation for designing each hypothesis, as well as its historical, political and dialectic background, in particular,

- youth participation in politics and Turkish political youth organizations, and
- the verified accounts among the groups and their activities, as well as their impact on the echo chambers for testing **Hypothesis 1**,
- refugee crisis and anti-migrant sentiments for testing **Hypothesis 2**, and
- mayoral elections and in particular Istanbul elections held in 2019 for testing **Hypothesis 3**

are introduced.

Selection process of these cases are stated.

Research outputs corresponding to each hypothesis are briefly presented.

The main research question of this thesis is “*Do Twitter interactions lead to weakening or reinforcing political fragmentation, echo chambers and polarization in Turkey?*” In order to study this research question in detail, the following hypothesis is put forward.

- “Political discussions on Twitter create and reinforce considerable political fragmentations, echo chambers and polarization in Turkey, and are negatively related to deliberative democracy.”

and three hypotheses below are designed for a systematic investigation of the main hypothesis.

- **Hypothesis 1:** There are considerable echo chambers among politically fragmented groups which are reinforced by exposure to same ideological lines and weakened by exposure to cross-ideological lines and verified accounts.
- **Hypothesis 2:** Even among like-minded people, the reasons behind a particular opinion can be fragmented.
- **Hypothesis 3:** Not only general elections but also mayoral elections can reinforce online political polarization in the entire nation.

Figure 1.1 illustrates the relation of the hypotheses with the main hypothesis regarding the main research question of thesis.

4.0.1 Designing the Research

Because science is based on facts, an informal approach would unavoidably fall short in providing accurate and complete results. Hence, it is necessary to practice a systematic research. The purpose of any conducted research is either to *describe reality* or to *explain* it, and research efforts can be categorized as (Brians, 2016; Rich et al., 2018)

- descriptive, and
- explanatory.

Usually, the initial purpose of a research is to obtain valuable facts, which is vital for developing and improving the understanding of the world and societies. The descriptive research can put forward accurately what is and what is not, based on the described facts. However, although a set of fact-based descriptions is necessary, explanatory research is also required to understand the reasons of those facts.

In this thesis, although explanatory research too is conducted where applicable, the majority of the conducted research is *descriptive*. The hypotheses are designed to reveal facts. Finding evidences indicating the existence strong fragmentation, echo chambers and polarization in the focused populations describe the situation.

The descriptions made in this thesis, however, are not regarding only an instance of time. Rather, the data spanning a three-years period of the Twitter interactions, or how the tweets are polarized before and after a specific political event are describing the evolution of the examined facts from a dynamic point of view.

The process of generalizing from the facts is called *induction* (Rich et al., 2018). Because these facts are based on observed realities, the theory built through inductive approach is grounded empirically. The induction consists of a *base* and *inductive steps*. The *base* is basically a proposition, i.e. a sentence which is either *true* or *false* but not both.

Although various propositions can be made in general, for scientific purposes, the proposition has to be a valid one: It should be objective, not subjective and not ambiguous (Ross and Wright, 1985). The propositions which the hypotheses in this study is based on are valid and scientific, because they are objective and their truth values do not depend on one's preferences or ideological lines. They rely on numerical facts.

The negative relation between political discussions on Twitter and deliberative democracy in Turkey is the main subject and quaesitum of the hypotheses. Each hypothesis in the first group is questioning one of the three pillars of negative trend: Fragmentation, echo chambers and polarization. Results from these hypotheses lead to the conclusion of the negative relation between online political discussions and deliberative democracy in an inductive way.

Next, relations and links between the hypotheses will be presented.

4.0.2 Relations of Hypotheses

In social and political sciences, relationships are generally categorized as (Rich et al., 2018)

- covariational relationships,
- causal relationships,
- spurious relationships.

During the research efforts, besides the developed theory about the political phenomena, it is essential to state a *measurement theory* that sets out why the indicators are expected to be related to the concepts. What dependencies are explored, is a central question for identifying the relationships between the concepts, and particularly the hypotheses.

The relationship categories can be summarized briefly as follows.

Covariational relationship is the case where two or more concepts tend to change together: As one increases (or decreases) the other increases (or decreases). In other words, two concepts *co-vary*. This type of relationship does not state what the cause of this covariance is. One concept might be independent and the other dependent variable such that when there is a change in the independent variable, the dependent variable also changes positively or negatively. Another scenario is that there is a third concept which results in the change of the two concepts in hand together.

Causal relationship is the case where a change in one concept drives changes in the other concept. In other words, the change in one *causes* changes in the other, and the interdependence is usually one way, especially if there is no feedback mechanism. For example, smoking causes lung cancer, while there is no scientific evidence that lung cancer causes smoking.

When compared to social and political sciences, in natural sciences and engineering fields, because both the number of variables and concepts can be limited and their ranges can be controlled, it is usually more feasible to identify whether the relationship

is causal. In order to claim causality, first, covariational relationship should be proven. Next, it should be proven if the cause precedes the effect, and then, a causal link between the cause and the effect should be observed. However in social and political sciences, due to number of concepts, and complexity of human behavior and social tendencies, when two concepts are observed to be changing together, it is usually difficult to prove that one is the cause of the other.

Spurious relationship is the case when there is a third concept of which changes result in changes in the two concepts in hand. The two concepts changes in a covariational way but only if the third concept changes. Existence of spurious relationships in social and political sciences poses additional difficulty in identifying whether the relationship is causal.

Sometimes, one concept cannot exist without the other. For example, *echo chambers* can form in a society only if it is *fragmented*. Nevertheless, the latter only constitutes a basis for several concepts like echo chambers to form. Once the fragmentation communities emerge in a society, depending on the communication patterns, echo chambers might form. Changes in the level of fragmentation and in the strength of echo chambers might be related. However, it is difficult to claim that fragmentation is clearly the *cause* of echo chambers.

A similar argument can be considered for the relation between *fragmentation and polarization* as well. That is, fragmentation can be claimed to be the basis for polarization to form. However, the relation between *echo chambers and polarization* is different. Polarization can be observed in a society where echo chambers have or have not formed. Existence of echo chambers is likely to increase the level of echo chambers. Increasing polarization can contribute to forming and cementing of echo chambers.

Discussions and possible feedback mechanisms have been presented in Section 3, where Figure 3.1 illustrates the simple conception from fragmentation towards extremism, and Figure 3.2 illustrates possible feedback mechanisms between extremism and echo chambers, and echo chambers and fragmentation.

Positive vs. negative relationship. In the above mentioned relationships, if both concepts increase or decrease together, i.e., if the change is in the same direction, it is

a positive relationship. If one decreases while the other increases, indicating a change in opposite directions, it is a negative relationship.

Relations between hypotheses

Each of the three concepts, i.e., fragmentation, echo chambers and polarization change with another. It is not surprising that the strength of echo chambers and polarization increases (or decreases) as fragmentation increases (or decreases). A similar case is plausible for polarization and echo chambers. Hence, because each concept change together with the others, *covariational relationships* are identified between pairs of hypotheses. However, as briefly explained above, beyond covariational, a relationship might be causal or spurious if it satisfies certain conditions, as will be elaborated below.

Causal relationship is easily ruled out. Because, none of the concepts fragmentation, echo chambers and polarization can be considered as the pure cause of others. There are several others concepts having impact on all, such as political events in the society. Also, feedback mechanisms can exist among any pair of the concepts in hand, making that one cannot be the pure cause of other.

Spurious relationship is also ruled out. Because, although any other concept can have impacts on the concepts of three hypotheses, it cannot be the only reason behind them. Without the existence of a third concept, or without any change in the existing third concept, due to their interdependencies and online dynamics, there can be changes fragmentation, echo chambers and polarization.

In summary, because they co-vary, the three hypotheses are considered to be in *covariational relationship*. Because the changes are all in the same direction, i.e., with respect to an increase in one concept, the others will increase too. Therefore, the hypotheses are in *positive relationship*. These relationships are illustrated in Figure 1.1.

4.0.3 Rationale of Selecting the Cases

As presented in the Literature Review in Chapter 3, to find answers to the question whether online political communications is weakening or reinforcing political fragmentation, polarization and echo chambers in each country or region, relevant cases are considered. Then the data to be collected is determined and the data collection and analysis methods are designed.

The cases are expected to satisfy *some* of the requirements below.

- Provide valuable information about the research question.
- Be of particular importance for that society.
- Have some unique aspects to provide new insights.
- Have some unexplored features to provide novelty.
- Be suitable for collecting sufficient and high quality of data to enable a solid data-driven research.

Considering the discussions of Sunstein (2001, 2017) and Dahlberg (2007), from theoretical point of view, the last item can be considered to have a special feature for finding a reasonable insight for the society's tendencies towards a public sphere (Habermas, 1989).

Along this vein, a case preferably allows data collection methods beyond surveys, because according to Dahlberg (2007), surveyees might tend to give more positive answers than reality, potentially biasing the results. In addition to surveys, any data collection method is preferred to allow a sufficient amount of data so that not the research is not performed in a "small pool of data" (Dahlberg, 2007). Therefore, as one of the popular platforms for online political communications in Turkey, due to possibility of accessing a good amount of data, Twitter is chosen as the data source. Below, rationale of selecting the case for testing each hypothesis will be discussed.

4.0.3.1 **Case 1: Youth Participation in Politics**

Reason 1. This topic has been attracting a general attention in social and political research. However, in the new media and online political communication studies, and in particular in the research on political fragmentation, polarization and echo chambers, it can be argued that this topic has not yet received sufficient interest. Therefore, a research gap can be identified here maybe not for all but some of the societies.

Reason 2. Naturally, youth in different countries can be observed to be at different degrees of politicization. Studying youth participation in politics in each country could

potentially yield interesting and valuable results per se. However, when it comes to attempts in finding indicators on the degree of echo chambers, a plausible way might be to focus on a country with relatively a high level of politicized youth. As discussed in more detail in Chapter 4.1, youth in Turkey can be considered to be a suitable candidate for investigating possible online echo chambers.

Due to these two reasons, official Twitter accounts of political youth organizations are chosen for searching indicators for possible echo chambers. Extracting more than 5 million interactions from over 40 million collected tweets spanning a three-years period rather than a single time instance could also provide information about not only the existence but also the evolution of echo chambers.

4.0.3.2 **Case 2: Syrian refugee crises**

Reason. In the literature of the field, fragmentation in a society is searched usually among different and especially opposite minded communities. However, Hypothesis 2 is for searching indicators of layered fragmentation in a sense that it asks whether fragmentation can be observed among similar-minded people. A multi-dimensional complex social issue could be suitable for such a search.

Syrian refugee crises was considered to be a candidate case for this research. On the one hand, many other countries have been hosting refugees, though Turkey has been hosting millions of them. On the other hand, towards 2018 Elections in Turkey, Erdogan initiated a new process for giving Syrian refugees the citizenship and right to vote. This can be considered an issue unique to Turkey. Therefore, in addition to some already existing social and economic problems, the right to vote became a source for anti-refugee sentiments among many people. Moreover, among people with anti-refugee sentiments, some might have been concerned in one of the specific issues rather than any arbitrary problem.

Therefore, Syrian refugee crises is chosen as the case for finding indicators for potential fragmentation among people who share the same mind about refugees, however due to different reasons.

Because one of the three main categories of reasons for anti-sentiments is the citizenship and voting issue, rather than any arbitrary time, the suitable time period for

collecting data was considered to be around the elections. Furthermore, in order to find out whether the anti-refugee sentiments due to voting issue flared up only before the elections or it is retained in a longer period, the data collection was implemented both before and after the elections.

Note that this study does not claim that the Syrian refugee issue was the most important issue in the elections. Rather, because the refugee issue has a voting aspect, the study was implemented around the elections.

4.0.3.3 **Case 3: Mayoral Elections**

Reason. Following the first two cases investigating the echo chambers and fragmentation in Turkey, when it comes to investigating online political polarization, a suitable issue was required. Furthermore, if an issue can be found which is relatively unique to the country, it would have a potential to make a contribution to the field due to its uniqueness.

As detailed in Literature Review in Chapter 3, a popular and fruitful issue worldwide for finding whether it is contributing to online political polarization is elections. Because usually, general or presidential elections are more politicized than mayoral elections in a local scale, it is not surprising that researchers around the world focus on general elections to search for polarization, and a research gap could be observed regarding the polarization due to mayoral elections. Besides, in some countries such as in Turkey, as discussed in detail in 2.4.1.6, mayoral elections are also highly politicized. Therefore, mayoral elections were considered to be a decent case to search for potential indicators to be making contribution to online political polarization.

4.0.4 **Approaches and Their Relations**

A data-driven political study on a social network can retrieve several types of data from it. These types fall into two categories in general (Scott, 1988; Girvan and Newman, 2002; Freeman, 2004) as

- content traffic, and
- network structure.

From the point of view of fragmentation, polarization, and echo chambers, the most fundamental and informative types of data types in the first category can be considered as

- which accounts are in interaction with what intensity, and
- what is the level of polarization of shared contents.

Data in each type cannot be independent from each other, and each has potential to provide valuable insight about some important aspects of the social network. In order to gather an understanding of the political situation in a social network as complete as possible, it is necessary to collect various types of data and to analyze them through combining the results.

Hence, the above mentioned data types are in a *complementing* each other.

Aligned with the two categories above, the hypotheses in this thesis are designed in two groups, and the approaches followed to test the hypotheses are associated with these groups.

Therefore, the approaches are in *complementary relationship*.

Below, approaches corresponding to the hypotheses are presented. Hypotheses, approaches and their relationships, and methods are illustrated in Figure 1.1 for reference.

- **A1:** Account-based approach: Retrieve and analyze specific Twitter activities of selected accounts.
- **A2:** Hashtag- and keyword-based approach: Retrieve and analyze tweets with specific hashtags and/or keywords.

The nature of each hypothesis requires a particular approaches. For example, **A2**, *Hashtag- and keyword-based approach* is required for studying Hashtag Wars in testing **Hypothesis 3**.

Population, Sample, Representative Sample

In order to examine the hypotheses, it is necessary to visit the formal definitions of relevant concepts in the data-driven political analyses (Rich et al., 2018).

Table 4.1: Approaches used for testing the hypotheses. Please see Fig. 1.1 for details.

	A1 Approach	A2 Approach
Hypothesis 1	✓	
Hypothesis 2		✓
Hypothesis 3		✓

Population: Any group of people, organizations, objects, or events in the general sense about which we want to draw conclusions. Within the context of this thesis, the general population is the group of Twitter accounts or political events that attract interaction on Twitter.

Sample: Any subgroup of a population of cases that is identified for analysis.

Representative sample: A sample in which every major attribute of the larger population from which the sample is drawn is present in roughly the proportion and frequency with which those attributes occur in that larger population.

Purposive sampling: Purposive samples are used when the researcher needs to identify cases which have a specific attributes. Purposive sampling allows for collecting data on cases that have extremely particular characteristics but sometimes which are rare to be chosen at random from the general population.

For example, in Hypothesis 3, to test the spread of polarization due to one region to the entire nation, among the population, the sample tweets are taken only which contains geographical location information.

4.1 Examination of Hypothesis 1

Hypothesis 1: *There are considerable echo chambers among politically fragmented groups which are reinforced by exposure to same ideological lines and weakened by exposure to cross-ideological lines and verified accounts.*

To test this hypothesis, the following research was conducted. Firstly, a target set of politically fragmented groups is required to focus on. As explained in the Literature Review chapter, several studies have considered typical online communities in the world. Because this thesis is considering the relatively unique cultural and political aspects in analyzing the political fragmentation and echo chambers, the target set is chosen to be reflecting these aspects.

Turkish youth has been politically active at variable degrees since Ottoman era. There was even an politically active group called Young Turks (Aksin, 1980). Especially right after Ittihat ve Terakki came to power in 1908, several political youth groups emerged such as Talebe-i Hukuk Cemiyeti in 1910, Darulfunun Talebe Cemiyeti in 1910, Turk Ocagi in 1912, Turk Gucu Cemiyeti in 1913, and Osmanli Genclik Dernekleri in 1916 (Acarer, 2010).

Going back to the foundation of Turkish Republic, Mustafa Kemal Atatürk has always emphasized the role of Turkish youth in the independence war and the revolutions towards a developed republic. He made several speeches about the forthcoming youth and stated, such as “*All my hope is in the youth*”. Hence, not a passive and apolitical but an active and responsible youth has been the main desire of the young Turkish Republic.

During the cold war and the periods that youth around the world was politically active, Turkish youth was not an exception. A lot of young people were politically divided as leftist and rightist, and being neutral was almost an exception. Both groups further divided into several fractions and further to sub-fractions. Street fights were very common among groups.

National Turkish Student Union (MTTB, Milli Turk Talebe Birligi) was founded

in 1916 (though some argue that it is the continuation of University Students Union founded in 1922). As a right-wing and Islamist group, their main motivation was anti-communism. MTTB has always been very active in politics and especially in 1960s and 1970s, and been closely related to most right-wing political parties (Duman and Yorgancilar, 2008). Leftist groups were on the rise in 1960s and 1970s among youth. Important ones in 1960s are Yön Çevresi, Türkiye İsci Partisi, FKF (Fikir Kulübü Federasyonu), DEV-GENÇ (Türkiye Devrimci Gençlik Federasyonu) and MDD (Milli Demokratik Devrim) Hareketi. In 1970s, major groups were THKO (Türk Halk Kurtulu Ordusu), THKP-C (Türk Halk Kurtulus Partisi Cephesi), TKP (Türkiye Komünist Partisi), SP (Sosyalist Parti) and DEV-YOL (Acarer, 2010).

Political leaders today, especially the ones in AKP, including Recep Tayyip Erdoğan and the former president, Abdullah Gül were active and popular members of youth groups (such as MTTB) in those years. Following such a politically intense history, youth groups in Turkey have unique aspects that can potentially lead to significant results in the online political communications studies. What is more, young people were mostly in the center of the recent political developments, such as Gezi Park Protests as discussed in Hacıyakupoglu and Weiyu (2015), Ogan and Varol (2017), Varol et al. (2014), and Budak and Duncan (2015).

Until the Gezi Park Protests, streets have been the major political arena for decades, but after that with a peak during the Protests, social media, especially Twitter became more popular. Following the failed coup attempt in June 2016, due to restrictions on the street protests, social media became even a more popular arena.

Because the age information cannot be reliably retrieved from social media as shown by Sloan et al. (2015), in particular, the followers of three major political youth groups' Twitter accounts were chosen, and the follower of each group is treated as a group. Two of these groups are the official youth organization of ruling party AKP and of the main opposition party CHP, and the third one is TGB, the non-party or independent and one of the largest political youth groups. TGB is considered as independent in the sense that it is not an official organization of any political party, and although majority might be voting for VP, it has members supporting various parties.

Because youth groups of AKP and CHP are naturally fragmented, and TGB is also a non-party political group, it can be expected to observe echo chambers among

these groups. However, the level of echo chamber strength is to be evaluated. What is more, as time marches on in the hot political agenda of the country and as social media and Twitter becomes even more popular, are there any changes in the strength of echo chambers among fragmented political youth groups is an important issue.

Existence of strong echo chambers

The following research questions were considered.

- Are there strong echo chambers among followers of political youth groups?
- Are the echo chambers reinforce or weaken over time?

In order to find reliable answers to these questions, critics raised by Dahlberg (2007) have been considered. In that study, Dahlberg criticizes the vast majority of studies in the field to be focusing on significant issues only, and using a data set too small when compared to the actual data space.

Hence, in this study, rather than a topic or a hashtag basis or a content analysis on a significant issue, all the interactions of about 40 million tweets between the 30 thousand target accounts are analyzed. In this study,

- the focused **case** is the youth participation in politics,
- the **population** is the Twitter interactions of followers of the three large-scale political youth organizations.
- the **representative sample** is the dataset of 40 million tweets between the 30 thousand target accounts.

Please see the Methodology chapter for the details on how these accounts are picked, how tweets are retrieved and analyzed. The interactions spanning a period of 36 months are retrieved and analyzed to find an answer to the second research question, above. Analyses showed these politically fragmented groups interact mostly within the group, but not with the other groups, implying the existence of considerable echo chambers. Also, the strength of echo chambers did not exhibit a significant change within the 36-months period, with the exception of TGB as will be detailed in the next section.

In summary, A1 approach was used in testing the first part of **Hypothesis 1**, following the instructions of Dahlberg (2007). The study focused on the followers of official accounts of three largest political youth groups of Turkey. Because there is not many studies on fragmentation and echo chambers regarding youth participation in politics, this can be considered a relatively unique point investigated in this study. Twitter activities of these accounts were analyzed in a period of 36 months. According to detailed analysis of interactions within and between each group, considerable echo chambers between politically fragmented youth groups are found and observed to be staying considerable.

Reinforcing by exposure to same ideological lines and weakening by exposure to cross-ideological lines

To test the second part of **Hypothesis 1**, the following research was conducted as an extension of the research explained above part. Analyzing the in-group and cross-group interactions within a small time window would provide information about the state of echo chambers at that time instance, but would not say anything about the dynamics of it. However, interaction data of a long period of time need to be analyzed to understand whether the echo chambers are weakened or cemented over time, and a more detailed analysis can shed light onto the reasons behind this dynamics.

Therefore, the 36-month period is chosen to grasp the dynamics of echo chambers. Firstly, it is found that the followers of youth organizations of AKP and CHP are mostly following accounts within their groups, while followers of TGB are following accounts of other groups as well, though at a small fraction but significantly more than the first two groups. Secondly, over the three years period, on the contrary to the first two groups, a slight weakening of the echo chamber of TGB is observed.

This can be understood as follows analogue to a vortex in the sense that, as individuals are exposed mostly to similar ideological lines, their level of closed-mindedness is enhanced. As a result, their political polarization gets sharper, and they want to be exposed to more similar and even to same ideological lines, implying a deliberative enclave. On the contrary, as individuals are exposed to cross-ideological lines, their horizon is widened. Their level of open-mindedness is enhanced, and they tend to see different ideologies more tolerable and even interesting that they can improve their

interactions with different-minded people.

In summary, A1 approach was used. Following the previous research, the interactions of followers of three major political youth groups' accounts spanning a 3-year period is analyzed. It is found that, echo chambers of individuals who follow more than one political group slightly weaken by time.

Weakening by verified accounts

To test the last part of **Hypothesis 1**, the following research was conducted. The motivation of this part is to contribute to studies in exploring the ways for weakening echo chambers. There might be various such ways. One is considered to be finding accounts with significant potential for weakening echo chambers, thus, decreasing the level of polarization, and even the level of fragmentation. Having tested this part of the hypothesis, i.e. having found that echo chamber in a group can be weakened if its members are exposed to cross-ideological lines, the present hypothesis extends the research question from members of a particular group to people who are in interaction with people from various ideological lines.

In this phase, A1 approach was used. Twitter activities and specific attributes of accounts which were focused on for the study for testing first two hypotheses were analyzed. There, it was found that the followers of the youth group of the ruling party AKP has a significantly stronger echo chamber than that of the opposition party CHP. First, the volume of Twitter activities were analyzed. It was found that the ratio of CHP is much higher (they are more active). Next, the verified accounts who follow these groups were analyzed, because, verified accounts are followed by too many people and their activities have a higher chance to propagate in the social network. This is expected to weaken the echo chamber, and it was found that considerably more verified accounts are following the account of the official youth group of the opposition party, then the ruling party. Therefore, the last part of **Hypothesis 1** too is proven true.

4.2 Examination of Hypothesis 2

Hypothesis 2: *Even among like-minded people, the reasons behind a particular opinion can be fragmented.*

To test this hypothesis, the following research was conducted. In the literature, common approach to test fragmentation is to consider two or more groups fragmented around ideological lines. However, according to this hypothesis, even in a single group of like-minded people, i.e. although they are of the same opinion, or they reached consensus on an issue, they have different reasons to come to the same point. What is more, people in the same group are fragmented around these reasons. To test this hypothesis, an application area relatively unique to the country was needed, which is also sophisticated with several dimensions so that various reasons could potentially lead to the same conclusion.

One of the biggest recent issues in the world, and in particular in the region is the refugee, or migrant issue. Due to the war in Syria, millions of Syrians had to leave their homes and migrate to other countries. Turkey is hosting more than 6 million Syrian migrants for almost a decade. The Syrian migrants are living in harsh conditions among the country, not only in refugee camps but also in the sub-urbans and city centers. The issue is getting more complicated everyday. There are a lot of people against to AKP's policies in hosting millions of migrants with various reasons. Besides the increasing crime rate, one is obviously the economic aspects of the issue. President Erdogan claimed several times that the money spent to Syrian migrants exceeded 35 billion US dollars. Besides, because Syrian migrants are employed almost everywhere in poor conditions with small salaries and even without social insurances, employers try to take the advantage of this, and claims such as "if Syrians return, Turkish economy will go into a crises" are not uncommon. So, the economic aspect is complicated. On the one hand, government is spending a huge amount of money to the migrants, but on the other hand, the economics of daily life is exploiting the migrants.

AGE	MAN	WOMAN	TOTAL
TOTAL	1.927.877	1.627.587	3.555.464
0-4	280.856	262.213	543.069
5-9	246.423	231.262	477.685
10-14	191.280	175.633	366.913
15-18	159.127	127.196	286.323
19-24	312.944	222.724	535.668
25-29	196.021	141.057	337.078
30-34	162.222	120.750	282.972
35-39	113.264	89.498	202.762
40-44	76.192	69.200	145.392
45-49	57.592	54.018	111.610
50-54	46.624	44.700	91.324
55-59	31.160	31.292	62.452
60-64	22.402	23.094	45.496
65-69	14.534	14.629	29.163
70-74	8.078	8.911	16.989
75-79	4.566	5.510	10.076
80-84	2.567	3.317	5.884
85-89	1.328	1.678	3.006
90+	697	905	1.602

Figure 4.1: Age distribution of Syrian immigrants in Turkey shows that almost half is below 18 years old. Data is from Directorate General of Migration Management (2018).

Another issue is the birth rate of the migrants. Figure 4.1 shows that almost half of Syrian migrants living in Turkey are below 18 years old. This issue too contributes to the anti-migrant sentiments with the fear that in a few decades, Syrian migrants might be dominant in the overall population of the country. Therefore, besides a lot of people against the Syrian migrants, there is also a population who support them.

Various issues have sparked tensions between Turkish society and Syrian immigrants, as well as a lack of support from even AKP sympathizers. Surveys show that the majority of Turkish society wishes them to return, even though the government is implementing new policies to adapt them to the society.

According to H. Ekici, the Turkish society considers Syrian immigrants as threads in the following categories (Ekici, 2019):

- cultural, social and moral,
- economic,
- security and crime, and
- access to basic service areas.

These categories will be introduced within the context of anti-migrant sentiments.

A reason why Turkish society have negative attitudes towards Syrian immigrants is the cultural differences such as language barrier, traditions, dressing, and so on. Research shows that 45.3% of society is keeping cultural distance between immigrants and 66.3% do not believe that Syrian immigrants oriented themselves to Turkish society. In addition, when there appeared a demographic gap between locals and immigrants, it contributed to anti-migrant sentiments against Syrians (Erdogan, 2014).

Furthermore, religious differences between natives and immigrants raise concerns about boosting Arabian culture and religious qualities, particularly in bordering communities like Hatay and Gaziantep (Orhan and Gundogar, 2015).

The second reason of negative attitudes towards Syrian immigrants is the social and moral differences such as family dynamics, gender relations, the social role of women, marriage and dealing with children, etc.

On the contrary to Turkey, polygamy and child marriage are not regarded as abnormal in Syria. Rising divorce rates and polygamy in the cities hosting the immigrants, causes reactions in the society especially by Turkish women. For instance, 20% divorce rate in Kilis, Hatay has resulted due to the Syrian immigrants (Orhan and Gundogar, 2015). Also, the illegal marriage in exchange for money with woman including very young ages increased. Therefore, child and woman abuse among Syrian immigrants attracted reactions the society into them.

The third reason of that is the security threat to social peace. Turkish society regard Syrian immigrants as a source of terror and crime. The society believes that 62% of immigrants are associated with violence, robbery, drugs and prostitution. Especially, 70% of locals in the southern east region which is hosting most of the immigrants, see

them as a security threat because of the feeling vulnerable to terrorist attacks (Erdogan, 2014).

The fourth reason of that is the economic concerns such as unemployment, underground economy, allocated resources for immigrants and high cost of living in hosting cities and also child workers. Syrian immigrants who worked legally or illegally in the cities are creating low-cost labour. The worries of becoming unemployed causes conflicts between locals and immigrants. Between 40 and 100% of the society thinks that they will be out of the economy because of the Syrian immigrants (Orhan, 2014).

This rate is up to higher in the hosting cities of immigrants as well. Also, underground economy consists of child workers and Syrian entrepreneurs who do not have to pay tax. Therefore, the society feels unfair competent. Despite the fact that Turkish economy is not stable, allocating resources for immigrant causes anti-migrant sentiments as well. Turkish economy was already in difficult situation before the mass migration (Orhan, 2014).

However, increasing unemployment in the cities which hosted the most immigrants such as Gaziantep, Hatay, Diyarbakir, Sanliurfa and Istanbul has triggered the protests against them. High cost of living in hosting cities is a big concern. For instance, due to immigrants, house prices were doubled as a result of increasing the demand for accommodations. Another reason increasing the rents is that several families live communally in a single house so they can afford high house rents (Hurriyet, 2014).

The fifth reason raising anti-migrant sentiments against Syrians is that access to basic things such as the fundamental public services is being limited especially for people who need education and healthcare. Without family planning, substantial increase of the Syrian immigrant population caused municipal services to be insufficient or even interrupted. Also, there appeared capacity problems in education and healthcare systems. For instance, state-run hospitals provide between 30 and 40% of their entire services to Syrian immigrants (Kaypak and Bimay 2016).

Besides, mass media's approach to immigrants contributed to raising the concerns of Turkish people about hosting them. Newspapers and television news discussed the Syrian immigrant issues in negative contexts along with the war, social unrest and sheltering capacity of Turkey. Also, every media group presented immigrant issues in alignment with their political sense. Accepting Syrian immigrants to Turkey became

a prominent argument between the government and the opponents in the first place. While pro-AKP people were legitimating the foreign policy in Middle East, anti-AKP people were resisting to it. Therefore, political tendency of media groups affected their editorial policies. For instance, discriminative and critical discourse are dominant in the newspapers or journalists in the anti-government position. Likewise, supportive discourse is hegemonic in the media groups in the pro-government position.

However, there is one thing independent from political ideology. Syrian immigrants are introduced in media in “unfavorable” content and discourse due to different political reasons. Especially, economic reasons were mentioned along with crime, chaos and conflict. This indicates the politicization of media organizations clearly.

Apart from the mass media groups, alternative media presented the immigrant issue from the point of fundamental human rights. According to research, Syrian immigrant discourse was discussed as a victim in *Hurriyet* and *Haberturk* which are the mass media groups, but alternative media organizations, *Bianet* and *Sendika.org* focused on the difficulties of living as an immigrant (Sen, 2017). Another research examined the news about Syrian immigrants on the internet via retrieved data. According to this study, othering discourse reflects the comments under the news along with provided economic and social opportunities and some incidents (Turk, 2019).

In addition to these problems which are common worldwide, in Turkey, there is a relatively unique aspect of the issue that President Erdogan decided to give citizenship and right to vote a significant number of Syrian migrants. The rationale is that the new Turkish citizen Syrian migrants are expected to vote for Erdogan, and in the interviews, migrants claim this openly (Smith, 2018). On the contrary to supporters of AKP and President Erdogan, this is naturally an understandable reason for the opposition to be against the migrants. Hence, the citizenship and voting issue is expected to contribute significantly to the fragmentation of Turkish people being for and against Syrian migrants.

Nevertheless, as explained above, this research phase focused not on the ideologically fragmented groups but rather on a single side of the fragmentation. First part is dedicated to find out which reason is dominant in making Turkish people against Syrian migrants. and research conducted in this phase found that the voting issue is one of the major reasons.

In summary, *A2, Hashtag- and keyword-based approach* was followed in this phase. One of the most intense political issues in Turkey is the anti-Syrian-migrant sentiments. The sentiments were classified according to the reasons (sources) behind: Crime, Economy, and Voting, as detailed in the Methodology section. All the tweets with hashtag “#Syrian” within a specific period of time, before the elections were retrieved and mapped to the classes of reasons. Hence, in this study,

- the focused **case** is the immigrant issues, in particular Syrian refugees in Turkey,
- the **population** is the tweets with a specific hashtag and set of keywords,
- the **representative sample** is the dataset of tweets within the specified period of time. Note that the sampling is conducted with respect to a time interval, not on the created dataset. So, the population is the entire dataset.

It is found that for Turkish people with anti-Syrian-migrant sentiments, one of the major reasons of these sentiments is the voting issue.

After the elections resulted in the victory of Erdogan first, the above study is repeated by retrieving a new set of tweets as detailed in the Methodology and Results sections to reveal the difference between pre-elections and post-elections period. So, the new **representative sample** in this phase of the study is based on the second time interval, which is after the elections. Then, fragmentation among the reasons behind the anti-migrant sentiments is searched through the tweets. It was found that, people who tweet about one reason, i.e. crime, economic or voting are tweeting mostly about the same reason, but not about the other reasons. That is, people who are concerned about one reason are mostly concerned about that single reason. This indicates the fragmentation along these reasons, although the resulting political idea is the same.

4.3 Examination of Hypothesis 3

Hypothesis 3: *Not only general elections but also mayoral elections can reinforce online political polarization in the entire nation.*

To test this hypothesis, firstly, the following research was conducted. In the literature, an effort has been devoted to study general elections in the context of fragmentation, echo chambers and especially political polarization, and it has been shown with examples from several countries that general elections can make a significant contribution to political polarization. This is understandable, since all parties and their supporters go sharper, making a general election is naturally a major source of polarization.

However, the same might not be observed for local or mayoral elections. This is understandable too, because mayoral elections are not that politicized in most countries. They are more about each region's specific issues such as infrastructure, and usually have nothing to do with the political parties, or general political agenda of the country. Hence, at least at the first glance, it might be expected that mayoral elections do not make a considerable contribution to the political polarization of a country.

Nevertheless, in some countries, mayoral elections are more politicized, and Turkey can be considered one of them.

Throughout the political history of Turkish Republic, the results of mayoral elections in metropolitan cities such as Istanbul and Ankara have been probably even more determining than the results of general elections. It has become a kind of tradition that the party which wins the mayoral elections in metropolitan cities, wins in the following general elections. This is how RP (Refah Partisi, the predecessor of AKP) came into power in the first place.

In more detail, in 1994, RP won for the first time in history not only in Ankara but also in Istanbul with candidates Melih Gokcek and Recep Tayyip Erdogan, respectively. Since then, RP or its successor AKP had never lost in major metropolitan cities, until 2019. That victory in 1994 paved the way for the general elections in various ways. For example, a lot of people were not satisfied by the governing of the previous mayors,

and they were looking for a better service, regardless of the political ideology.

Mayors of RP, later AKP were good at either providing better municipality services or at least showing it that way. What is more, governing the major metropolitan cities, they ruled billions of dollars every year within the budget, and supported their party organizations and close companies, being alleged by a lot of people for corruption. In summary, on the one hand, when the service of the existing mayor is not satisfying, regardless of the political ideology, people sometimes vote for the party which they were expecting better service. On the other hand, when things go bad, especially economy, then regardless of the municipality services, people sometimes vote in the mayoral elections for the opposition parties, hoping to change the ruling party in the following general elections.

As AKP started to lose its support clearly first time since its foundation and becoming the ruling party in 2002, mayoral elections in 2019 were considered as one of the most important mayoral elections in the history of the country.

Two political alliances were formed, one on the ruling party AKP side, and one on the opposition side. As detailed in the Literature Review chapter, towards the elections, both alliances went sharper in their discourse. Large scale campaigns were organized. Although the candidate mayors show up normally in the campaigns in mayoral elections, due to its importance this time, President Erdogan showed up on the stage in the campaigns not only in the metropolitan cities but also in almost all the cities and even small towns of the country.

While raising expectations on the opposition side, the pre-election period led to an increasing tension on the AKP side, arising the natural question: Can mayoral elections have a potential to contribute to the political polarization? Because it was considered as a turning point in the political history of Turkey, in this phase of the research, the mayoral elections on March 31, 2019 was studied. Not very surprisingly, for the first time during the last several decades, the ruling party AKP lost against the main opposition party in all the major cities (Istanbul, Ankara, etc). This election was also the one that people used Twitter a lot, and also the offline polarization became very sharp. For examining its reflections to the online polarization, exactly on the election day (when the voting ended and vote counting started), a live streaming process was started for retrieving tweets related to the elections. These tweets are from people from all the

ideologies. Therefore, this data is very valuable to study polarization.

In order to study polarization, the most common and trendy polarized keywords on both mass media and social media were chosen. Tweets with the hashtag #secim2019 (#elections2019) and containing one of these keywords were retrieved. Hence, in this study,

- the focused **case** is the 2019 mayoral elections in Turkey,
- the **population** is the tweets with a specific hashtag and set of keywords,
- the **representative sample** is the dataset of tweets within the specified period of time. Note that the sampling is conducted with respect to a time interval, not on the created dataset. So, the population is the entire dataset.

Finding a remarkable number of sharply polarized tweets only in 24 hours, it was observed that the mayoral elections can contribute to the polarization.

Considering that previous related studies were usually about the general elections, and the present work is on the mayoral/local elections, it can be regarded as a relatively unique point of this work. What is more, the question whether these polarized tweets are mostly from only those major cities, or nationwide is examined. Analyzing the geographical locations of the tweets, it was found that these polarized tweets are from the entire nation.

In Istanbul, although AKP lost, the gap between the winner CHP and loser AKP was so close. AKP objected to the results. The vote counting process went into crises. Finally, the Istanbul election was canceled and re-run, this time with victory of the opposition party CHP. However, during that crisis, supporters of ruling and opposition party became even more active on Twitter. This was probably the election event which polarized the people the most. Two polarized hashtags appeared and stayed the trend during the crisis. Hence, in this phase of the research, started a new tweet retrieval was performed.

A huge number of tweets with those two polarized hashtags were retrieved. Even only the number of the sharply polarized tweets clearly shows that the cancellation and re-run process indeed contributed remarkably to the political polarization. Because

this re-run was not nationwide but only for one city (Istanbul), this time, the question whether these polarized tweets are mostly from Istanbul or from nationwide became more important. Hence, in this study,

- the focused **case** is the canceled and re-run 2019 Istanbul mayoral elections,
- the **population** is the tweets with a specific hashtag and set of keywords,
- the **representative sample** is the dataset of tweets within the specified period of time which contain the geo-data information.

Analyzing the geographical locations, it was found that these sharply polarized tweets are from all the country. Therefore, it was found again, in addition the general elections, the mayoral elections can contribute to the political polarization. But more interestingly, that election in one city can also spread the polarization nationwide.

Chapter 5

Methodology

Summary of Chapter 5

In this chapter, the methods used to test the hypotheses are explained in detail. These methods for are briefly as follows:

- Determining the dataset to be created and drawing its limits
- Retrieving tweets by reading the timeline of the determined accounts,
- Live streaming the tweets filtered by hashtags and keywords,
- Analyzing the dataset according to the testing criteria of each hypothesis, and
- Revealing the interaction patterns or geographical patterns.

This chapter starts with brief descriptions of methods for testing the hypotheses. Next, a general overview of the methodology is presented in a theoretical basis and providing examples from the conducted research. The chapter finalizes by presenting all the methodologies in full detail.

5.0.1 Overview of the Methods

5.0.1.1 Methodology for Hypothesis 1

The following methodology is designed for testing Hypothesis 1, which is on the existence of considerable and their dynamics with respect to exposure to same or different ideological lines:

- Twitter accounts of the three political youth organizations in consideration are determined
- Twitter accounts of all the followers of these three groups are determined
- Before starting the data retrieval process, specific sets of follower accounts are filtered
- The common followers of the groups were detected and labeled
- Purposive sampling is applied
- The interactions (Retweets, Retweets with comment, Replies) in a 3-year period of every account in the subsets are retrieved.
- Each retrieved interaction is checked if it is a Retweet, a Retweet with a comment, or a Reply.

These interactions are then categorized to measure the communications within each group and between groups to evaluate the strength of echo chambers. The interactions of accounts following more than one group, i.e., being exposed to cross-ideological lines, as well as the verified accounts are analyzed to measure the effect of cross-ideological exposure in weakening echo chambers towards a deliberative democracy.

5.0.1.2 Methodology for Hypothesis 2

The following methodology is designed for testing Hypothesis 2, which is on finding fragmentation even among the like-minded people, studying the case of anti-migrant sentiments, in particular the anti-Syrian-refugee sentiments:

- The core hashtag is determined
- Sentiments are grouped in three categories
- Keywords in each category are determined
- All the tweets in two specified time intervals, including the hashtag and at least one of the keywords are retrieved.
- Based on the keywords, each tweet is categorized. Word frequency counts and category counts are performed.
- Based on distribution of tweets in each category, fragmentation among the categories of anti-migrant sentiments is observed.

5.0.1.3 Methodology for Hypothesis 3

The following methodology is designed for testing Hypothesis 3, which is on finding not only general elections but also whether local elections contribute to political polarization, and whether local election in a single region polarizes the entire country:

- The specific periods of time for data retrieval are determined
- Specific hashtags and keywords which claim sharp polarization are determined
- Tweets containing the hashtags and at least one of the determined sharply polarized keywords are retrieved
- Purposive sampling is performed based on geographical information (geo-data)
- Hashtags with geo-data are located on the map of the country
- The spread of polarization to the country due to elections in a single region is analyzed.

5.0.1.4 Relationships between Methods

There are basically two types of related data that can be acquired from a social network, especially in the context of political communications (Brains, 2016; Rich et al., 2018):

- Content-traffic data, for example on Twitter,
 - Tweets,
 - Reactions such as Replies, ReTweets, ReTweets with Comment, Likes, and
- Network structure data.

The content-traffic data can be studied from two basic perspectives (Rich et al., 2018):

- The entire set of interactions between target samples,
- Interactions about specific issues or events, i.e. “event data” .

Accordingly, the categories of the methods applied in this thesis are as follows:

- Method 1: Content-traffic, entire set of interactions
- Method 2: Content-traffic, event data
- Method 3: Content-traffic, event data

The above categorization allows for exploring the relationships between the methods. In the light of the relationships of the approaches (A1, A2, A3) which leads to the three methods, each aiming to acquire operationally meaningful information from a typical data towards constructing a systematic understanding of the big picture.

Hence, following the approaches, the methods are in *complementary relationships*.

5.0.2 General Methodology

Quantitative research aims to establish cause-and-effect linkages, whereas qualitative research focuses on characterizing individuals or events as they happen organically. As a result, qualitative research is significantly less likely to stress research designs that allow researchers to keep constant some variables in order to draw causal conclusions. In general, a qualitative research design will focus on who or what will be observed, in what circumstances they will be seen, how observations will be conducted, and how data will be recorded.

Quantitative research will necessitate a strategy that generates standardized data about a representative (or at least typical) group of examples (people, interactions, events, etc.) in such a way that another researcher can replicate the findings. The focus is on collecting precise and objective variable measurements across a set of examples. Typically, this entails conceptually isolating a variety of case features for measurement. Therefore, considering the hypotheses and the approaches and methods for testing the hypotheses, the conducted research throughout this thesis is *quantitative research*.

The systematic counting, assessing, and interpreting of the form and contents of communication is known as *content analysis* (Rich et al., 2018). Researchers can systematically study direct physical evidence of the behaviors and relationships among many types of political players using content analysis, which offers researchers with a set of methodologies. To handle a population of millions of members, obtain a purposive sample, clean and finally and analyze the data, *computer-based content analysis* is required. Basic text analysis services, such as word frequency counts and category frequency counts, are provided by computer programs.

Word frequency counts provide a list of all the words in a text and how many times they appear. In most of these tools, text may be divided into sub-parts and examined visually or statistically to check if certain terms are spoken more frequently in one part than the other. Another benefit of computer programs is that they can employ synonym lists to combine word counts. Rather than counting all words in a document,

the algorithm can first remove the grammatical structure before counting words that share the same stem as identical. For example, “politics” and “political” would be counted as the same word in such a frequency count.

Category frequency counts, on the other hand, group a set of words or phrases into categories before the computer indicates how many times each category appears in the document. For example, the category “election” could include the phrases voting, vote, voter, election, electorate, choice, participation, and ballot, all of which would be classified as a single category. Because users can build more complicated content models, category counts allow for a slightly more advanced text analysis.

In testing the hypotheses, the computer-based content analyses are utilized, and the above definition and example for the *word frequency counts* and *category counts* are directly applicable to the methods of the thesis.

For example, to test **Hypothesis 2** on the case of Syrian-refugee crisis, the hashtag- and keyword-based approaches are followed. Categories for the keywords are defined. For each keyword, words that can possibly share the same stem are identified and they are associated. Finally, word frequency and category frequency counts are implemented.

In order to analyze whether online political conversations in a society is driven to echo chambers or public sphere (Habermas, 1989), there are basic methods of data collection and analysis. For example, asking to people directly by surveys is one of the methods. However, this method is criticized in several dimensions. First is that the ability to make surveys with many people is limited, which ends up in creating a “pool” of data too small to provide reliable information analysis. Second is that, when asked, people tend to give more positive answers than the reality. This has a potential to bias the results. An alternative method is to collect existing interaction data from social networking sites (SNS). This method is free from the second disadvantage of the survey method. However, there may be problems in this method as well. A lot of research supporting each side (echo chamber or public sphere side) of the debate are criticized by some researchers (Dahlberg, 2007) that usually “small pool of data” is collected and analyzed. Therefore, in order to create not a small but a sufficiently “big pool of data”, sufficiently many tweets were retrieved from Twitter. Also, not asking people their opinions about their interactions but rather collecting the actual data of the

interactions, this method is made safe from that source of bias.

In compliance with these thumb rules, in order to acquire a sufficiently “big-pool” of data, for example in **Hypothesis 1**, the entire set of interactions between the target accounts within a three-years period are retrieved and analyzed.

The basic steps in the research based on data retrieval and analyses are as follows.

- Quantitative and comparative analysis are performed on the retrieved data.
- Politically fragmented groups are determined and observed.
- Online political conversations, i.e. the interactions inside each group and interactions between the groups were analyzed.
- The interactions are compared. These interactions show the strength of echo chambers within each group. These observations are performed not in arbitrary time instances but in carefully selected periods of time.
- Forming and reinforcing echo chambers by time leads to group polarization (Sunstein, 2002) in political discussions, which is hindering the improvement of democracy. Therefore, aiming to reveal the political echo chambers and polarization in Turkey, the theoretical framework of this thesis is determined as:
 - “Echo-Politics” as stated in the hypothesis “Political discussions on Twitter create and reinforce strong political fragmentation, echo chambers and polarization in Turkey, and are negatively related to deliberative democracy.”

General limitations and precautions of this research

- Twitter is deleting some tweets, and suspending some political accounts,
 - because governments are requesting, or Twitter itself is deciding to do so, and
 - these are mostly political accounts or tweets.
- Some accounts are protected, that one cannot retrieve their tweets,
 - but the ratio of protected accounts in each fragmented group provides valuable information about the level of echo chamber of that group. This has been studied this as a research question.

- Advanced technical content analyses based on AI and Natural Language Processing are not used but rather, the interactions (retweets, retweets with comment, replies) are analyzed, and the content analysis is based on hashtag and keywords.
- Automated accounts (bots) could introduce bias to the research, because
 - automated bot accounts are detected and their interactions are excluded from the data.

5.1 Methodology for Hypothesis 1

Hypothesis 1: *There are considerable echo chambers among politically fragmented groups which are reinforced by exposure to same ideological lines and weakened by exposure to cross-ideological lines and verified accounts.*

In order to analyze the existence and degree of echo chambers in the selected groups, observing the interactions about a particular political issue would be biasing the results. Therefore, the method followed in this research makes no assumptions on the content or the political sensitivity of the interactions. Rather, the total volume of interactions within each group and the total volume of interactions between groups are considered to test the first two parts of Hypothesis 1.

To analyze the dynamics of potential echo chambers with respect to time, a period spanning three years is chosen between January 1, 2016 and December 31, 2018. Finding that the interactions inside a group is dominant over the interactions between that group and another group indicates the existence of echo chamber in that group. What is more, the greater the ratio of in-group interactions to the inter-group interactions, the stronger the echo chamber is. Because, interactions within the same group implies that individuals of the group are exposed to the same ideology, while interactions with another group implies that individuals of that group are exposed to different ideologies and viewpoints. For retrieving and analyzing the data, first, Twitter account settings were made to allow connecting to Twitter API, and Python programming language is used with Tweepy library (Tweepy, 2010). The major steps of the method for analyzing the interactions of the followers of three political youth groups' accounts are as follows, which can be found in more detail in the relevant research output (Yurtcicek Ozaydin and Nishida, 2021)

Step I: Twitter accounts of the three political youth organizations in consideration are determined to be

- *@AKGenclikGM*: Official youth organization of AKP, the ruling party,
- *@chpgenclikgm*: Official youth organization of CHP, the major opposition party,
- *@genclikbirliigi*: TGB, the non-party political youth organization.

Although MHP (Milliyetci Hareket Partisi / Nationalist Movement Party) has been an important actor and the strong ally of AKP in the last decade, it does not have an official organization for young people. Therefore, MHP is not in the scope of this research.

The third group TGB is regarded non-party, or even independent because it does not have official bonds with political party. While a considerable number of members are considered to be close to VP (Vatan Partisi), supporters of other parties not only AKP, CHP and MHP but also other small and mostly leftist parties are not uncommon in TGB.

Step II: Twitter accounts of all the followers of these three groups, i.e. over 650 thousand accounts are determined.

Step III: Before starting the data retrieval process, specific sets of follower accounts are filtered as follows

- Because they are usually politicians, celebrities, journalists, etc., verified accounts can not be considered as regular followers of the youth organizations. Therefore, verified accounts (with blue tick) are filtered.
- Bot and troll accounts maintained automatically can not be considered as regular followers of the youth organizations. It is easy to detect most of these accounts based on specific patterns. For example, their screen names consists of eight consecutive digits. Therefore, among the followers of the three target youth organization accounts, such accounts are filtered.

- If the screen name of an account includes specific abbreviations such as AKP, CHP, TGB, etc., most probably it belongs to an official, hence, it cannot be considered as an ordinary individual, and such accounts are filtered.

Step IV: The common followers of the groups were detected and labeled as

- *A*: Following only @AKGenlikGM
- *C*: Following only @chpgenlikgm
- *T*: Following only @genlikbirligi
- *AC*: Following @AKGenlikGM and @chpgenlikgm but not @genlikbirligi
- *AT*: Following @AKGenlikGM and @genlikbirligi but not @chpgenlikgm
- *CT*: Following @chpgenlikgm and @genlikbirligi but not @AKGenlikGM
- *ACT*: Following all three accounts.

Number of followers in each set is listed in Table 6.1 in the Results chapter.

Step V: Total number of followers in the sets created in Step IV exceeds half million. Because Twitter API constrains the data retrieval rate, retrieving the interactions (Tweets, ReTweets, Comments) in a 3-year period of more than half million accounts would be practically infeasible. Therefore, a commensurate subset of each set needs to be considered. The important point here is that picking a subset should not bias the results, but rather protect the results from any bias, if possible. Intense observations on the tweets of the followers in each set showed that some have very little tweets, while some have too many, which is not the most natural case for an ordinary account. Followers in each set was sorted by the number of their tweets. There is a trade-off between the number of followers to select from each group and the time required to retrieve their tweets in the 3-year period, constrained by Twitter's rate limits. Setting the upper bound of total tweets in 3-years to 30.000 (i.e. around 30 tweets per day), 5% of each group is found to be an optimal point for selecting followers to create the subsets, A^s of *A*, C^s of *C*, and T^s of *T*, resulting in comparable number of interactions.

Step VI: The interactions (Retweets, Retweets with comment, Replies) in a 3-year period of every account in the subsets A^s , C^s and T^s are retrieved. Interactions of accounts in the intersection sets are not retrieved. Because, if an account is following two or more group, it is not possible to determine which group the account belongs to, but also following the other group. Interactions from each subset to all the sets are illustrated in Figure 5.1.

Step VII: Each retrieved interaction was checked if it is a Retweet, a Retweet with a comment, or a Reply. The target account is determined and searched in the seven sets. If the target is found in one of the sets, the relevant counter is incremented by one.

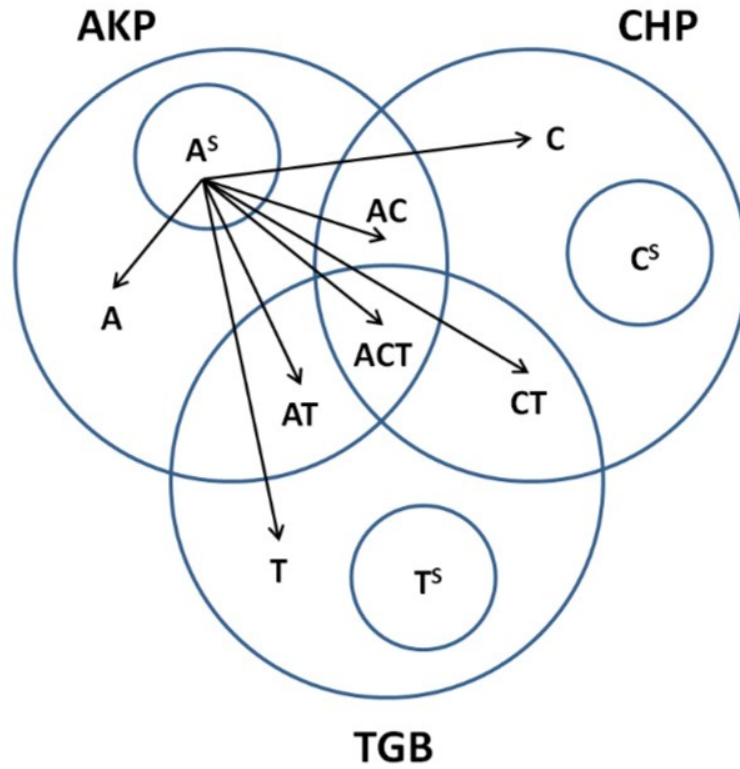


Figure 5.1: Sets of the followers of Twitter accounts of official youth organizations of ruling party AKP, opposition party CHP, and the non-party group TGB, after the filtering. For detailed explanation for the sets, see Table 6.1. Each arrow (shown only the ones from A^s for clarity) denotes the interactions from the source subset to each target set.

Weakening by verified accounts

To test this part of Hypothesis 1, first, the followers of the official youth organizations of two major political parties of the country, AKP and CHP are chosen. Before analyzing the level of deliberative enclaves of these groups, their Twitter activities are analyzed. Focusing on each follower of each group, their number of followers and followed accounts are counted. In a window of 3 year between January 2016 and December 2018, their tweets and favorites are counted with the help of Tweepy library for Python language.

On the one hand, only the accepted followers of a protected account can view the tweets. It is natural to expect that the accepted followers of an account are the ones mostly in the similar or same ideologies. Therefore, the interaction with the different-minded individuals are mostly interrupted by protecting the account, and turns out to be a fact that protected accounts contribute to cementing the echo chambers. So, to shed light on to the contribution of such a deliberative enclave to echo chambers, it was checked for each account whether it is a protected account or not.

On the other hand, some accounts verified verified, i.e. they received the *blue tick* from Twitter. Among the conditions to meet to get verified, one is to have a significant amount of followers. People with verified accounts are well-known politicians, journalists, celebrities, etc., and they are followed by not only similar-minded but also different-minded people. Therefore, more important than having a great number of followers, having them from a wide range of political ideologies, verified accounts are expected in this hypothesis to help weakening the echo chambers. Factors considered in this study is schematically illustrated in Figure 5.2. Taking the official Twitter account of each youth organization, in addition to number of verified accounts and protected accounts, for each follower of the group, numbers of

- Followers
- Following, i.e. followed accounts
- Tweets, and
- Favs, i.e. tweets that were *favourited*

are found. Both the total numbers and the normalized numbers are used to determine not only the influence of the group on Twitter, but also the level of deliberative enclaves and echo chambers. One group may have a greater number of followers. However, the activities of the members are more important in determining the fragmentation, diffusion of ideologies, and forming and cementing echo chambers. Therefore, not only the total volume of activities to determine the overall impact, but also the normalized volume of activities averaged is obtained to understand the impact of each user. These activities include the favorited tweets (favs) and Tweets: Tweets, Retweets, Retweet with Comments, and Replies.

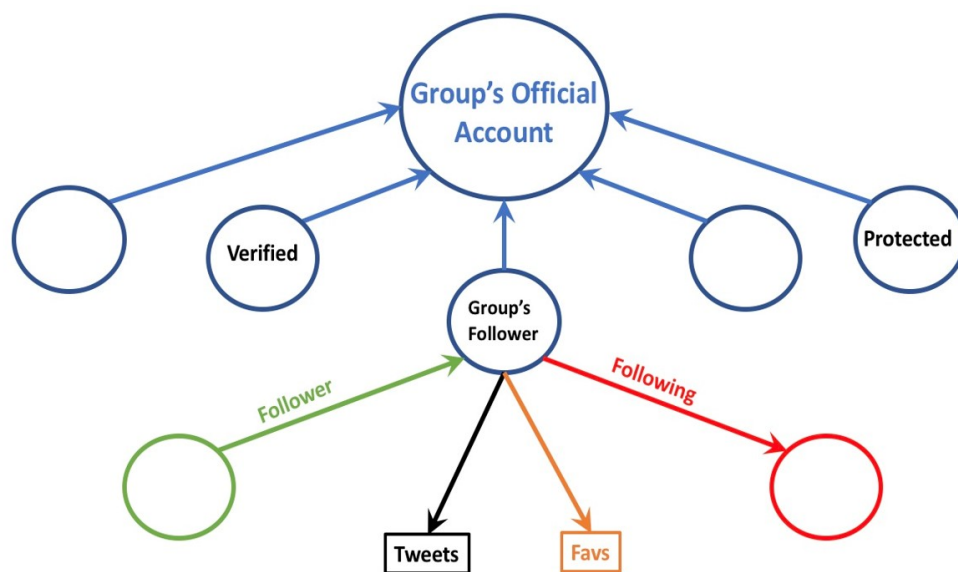


Figure 5.2: Among the followers of each official account of official youth organization of the political party, we count the number of verified accounts and protected accounts to shed light onto the level of deliberative enclaves and echo chambers.

5.2 Methodology for Hypothesis 2

Hypothesis 2: *Even among like-minded people, the reasons behind a particular opinion can be fragmented.*

Exploring the fragmentation of different-minded people, such as communities in a network has been attracting a particular attention. Nevertheless, fragmentation within a community in the same ideological line, or the same opinion has not been researched a lot. The basic question here is what actually is fragmented among the similar-minded people, exploring such a fragmentation is expected to be less obvious.

In order to explore such a fragmentation, in the field, a sophisticated political issue would be chosen. As explained in detail in the Literature Review in Chapter 3 and in Section 4.2 on examining Hypothesis 2, the Syrian migrant issue is chosen which has aspects unique to Turkey.

The major source of fragmentation is determined to be the *reasons* leading to the anti-migrant-sentiments. That is, there is already a fragmentation between the two communities who are for and against the Syrian migrants in Turkey. However, *picking the latter community*, the present study aims to explore whether there is a fragmented pattern regarding the reasons leading to anti-migrant-sentiments in the same community who are all against the migrants.

The first step of the method in this work is to classify the sentiments. Worldwide, common anti-migrant sentiments fall generally in two classes, which are about the economic issues, and the social life associated with the crimes. These two sentiments well apply to the case of Turkey. However, an issue relatively unique to Turkey is that President Erdogan decided to start giving citizenship of Turkish Republic, with the right of vote in the elections. Because Syrian migrants are expected to vote for the ruling party AKP and (Smith, 2018) especially Erdogan, this action was appreciated by some of the AKP supporters.

However, though being AKP supporters, a lot of people were against this action. Counting the entire opposition naturally against it, the expectation would be that the voting issue rises as an additional source anti-migrant sentiments. Hence, the natural question is whether the contribution of this source is comparable to that of the two other sources (or reasons), which are *economy* and *crime*.

In order to answer to this question for classifying the sentiments, firstly, three sets of keywords are determined, for Crime Class, Economy Class, and Voting Class. These keywords are chosen upon long and careful observations of not only tweets but the news and discussions on mass media. The sets of keywords are presented in Tables 5.1,5.2,5.3 with their Turkish and English meanings.

Next step is to collect data by retrieving the tweets. Using the Tweepy library for Python, tweets are retrieved through Twitter's API. Because the June 2018 Elections were approaching, considering that the citizens can feel more concerned about the voting issue, the first data set is created in the pre-election period between May 1 and May 4, 2018. In order to retrieve only but all the desired tweets, the hashtag #Suriyeli (#Syrian) and the variants with prefixes and suffixes of the words in the three sets were used as filters. The first data set is used to determine whether the voting issue is a comparable source to the other two sources in leading to anti-migrant sentiments.

As can be seen in the Results chapter, the answer is affirmative. Therefore, the second data set is created by retrieving tweets in the post-election period, between September 28 and October 6, 2018, using the same hashtag and keywords.

Finally, tweets falling into each class, i.e. Crime, Economy and Voting and into their intersections are counted. The possible fragmentation is explored as follows. Tweets and their owners are determined. In particular, the number of people who are tweeting about all of these issues (sources), and the number of people who are tweeting about a single issue are determined.

If the former is dominant, then there is no fragmentation in the reasons (sources) of anti-migrant sentiments. However, if the latter is dominant, then it is inferred that a fragmentation exists between people who are concerned about one of these specific issues.

Table 5.1: Set of keywords for the Crime Class

suç (crime)	tecavüz (rape)
kavga (fight)	saldırgan (attacker)
yaralama (hurt/injure)	çete (gang)
namus (honor/pudicity)	mafya (mafia)
bıçak (knife/stabbing)	fuhuş (prostitution)
ırz (purity/chastity)	fahişe (prostitute)
mahalle (neighborhood)	gasp (seizure)
taciz (harassment)	haraç (tribute)

Table 5.2: Set of keywords for the Economy Class

işsiz (unemployed)	enflasyon (inflation)
açlık (hunger)	sigorta (insurance)
ekonomik kriz (economic crisis)	borç (debt)
yoksul (poor)	zam (price rise)
sıkıntı (financial difficulty)	faiz (interest)
vergi (tax)	esnaf (artisan)
kira (rent)	maddi destek (financial support)
maaş (salary)	pahalı (expensive)

Table 5.3: Set of keywords for the Election Class

oy (vote)
seç (election)
vatandaş (citizen)
vekil (deputy)
cumhurbaşkanı (president)
aday (candidate)

5.3 Methodology for Hypothesis 3

Hypothesis 3: *Not only general elections but also mayoral elections can reinforce online political polarization in the entire nation.*

The method determined in this study is **A2: Hashtag- and keyword-based**. In particular, a comparative sentiment analysis is performed for interpreting and classifying the sentiments indicating polarization from the hashtags of the retrieved tweets.

During this study aiming to explore political polarization induced by mayoral elections, extraordinary moments were experienced in the political history of the country. First of all, two alliances were formed before the elections. It was considered mostly as electoral alliances, but they lasted so far until the writing of this thesis. The alliances with strong and weak ties are illustrated in Figure 5.3. Next, and most importantly, elections in Istanbul, the biggest city of the country were canceled due to objections, and re-run. In this phase, new hashtags appeared, which have been probably the sharpest hashtags used in a nationwide scale by both the political parties, mass media, and public. This led to revising the methods. At first, a specific set of tweets were to be retrieved right after the regular elections.

However, due to the crisis in Istanbul elections, a second data set was also created, leading to more prominent and unique findings. The first data set was created by retrieving tweets in the live stream using the Tweepy library for Python programming language. Data retrieval was performed during the first 24 hours starting from the election process was over and the vote-counting started.

In addition to the hashtag #Secim2019 (#Elections2019) unique to the mayoral elections this time, tweets to retrieve were filtered by the keywords (and their versions with appropriate prefixes or suffixes according to Turkish language) in the Table 5.4 with their explanations or English in parentheses.

Reason of picking these specific words are as follows, and note that these words were among the most popular ones used when tweeting about 2019 Elections, and do not reflect any opinion of the author of this thesis.

Table 5.4: Keywords for filtering the tweets to be retrieved with hashtag #Secim2019 (#Elections2019), during the first 24 hours in live stream, right after the mayoral elections are over and the vote counting started.

“FETO” (“Gulen Movement”)	oy çalmak (stealing votes)
Fethullah (leader of “Gulen Movement”)	hırsız (thief)
“PKK”	gayrimeşru (illegitimate / unjustified)
terör (terror)	şaibe (blemish)
hain (traitor)	anti demokrat (anti-democrat)
beka (survival)	anti demokrasi (anti-democracy)
zillet ittifakı (Shame Alliance)	diktatör (dictator)
tek parti (one-party rule)	faşist/faşizm (fascist/fascism)

FETO: It was widely known as “*Gulen Movement*”, or “*Hizmet*” meaning “service” or “mission” as they have been defining themselves especially during years that AKP and “Gulen Movement” were collaborating. However, after the collaboration was over, AKP and a lot of people started to call it “Fethullahist Terrorist Organization” or “FETO” for short, and they also started to claim that CHP began collaboration with the “Gulen Movement”. Therefore, the “FETO” became a popular word among both sides when tweeting and using this word shows how polarized that tweet is.

Fethullah: Fethullah Gülen is the founder and has been the leader of “Gulen Movement”. If a tweet is mentioning “FETO” or “Fethullah” within the context of elections, it can be considered as a sharply polarized one.

PKK: The word “PKK” was used in the 2019 election tweets by alliances to blame the other side of being in contact with “terrorism”. Hence, a tweet including this word is considered to be polarized.

Terror: This word was used in the tweets during the election campaigns to accuse each other of having collaborations with “terrorist groups”. Obviously, this too is a very strong claim.

Hain (traitor): One of the sharpest words used during the election campaigns was *traitor*. That is, each side accused the other of being a traitor.

Beka (survival): This word used mostly by AKP and its supporters. They claimed that this particular election is actually an issue of survival of the country: If AKP loses, the country may not survive in the following years, i.e. if CHP wins, it will be the end of the country. Obviously this is a very polarizing claim too, and this word was also used by CHP to make fun of AKP.

Zillet ittifakı (Shame Alliance): CHP and İYİP called their alliance as “Millet Alliance” (meaning “Nation Alliance”). However, to blame them, changing the first letter of the word, AKP started to call them as “Zillet (Shame) Alliance”, or even “İllet ve Zillet (Contempt and Shame) Alliance”. Therefore, the word “zillet” is also picked in this study for indicating a polarization.

Tek parti (one-party rule): On the one hand, AKP and in general the rightists and Islamist groups have been blaming the first few decades of the modern Turkish Republic because of conducting a one-party rule. On the other hand, in the recent years, opposition has been blaming AKP of currently conducting the one-party rule. Therefore, this word was also used a lot in the mass media and social media during the election campaigns for blaming each other.

Oy çalmak (stealing votes): Until the elections in 2019, opposition have always claimed that AKP is stealing votes through illegitimate practices. This time, however, observing that their votes are decreasing, AKP started to response with the same claim against opposition alliance. Therefore, both sides accused each other of stealing the votes, so that this word is also picked in this study.

Hırsız (thief): Because each side was accusing the other of stealing the votes, they were calling each other thief, the word commonly used on social media.

Gayrimeşru (illegitimate / unjustified): Together with the claim of stolen votes, the claim that the elections were not illegitimate was a polarized keyword commonly used in tweets.

Şaibe (blemish): Related to vote stealing, each side blamed the other of blemish during voting and vote counting process.

Anti demokrat (anti-democrat): and the word anti-democracy was used mostly by the opposition to claim that AKP has been taking anti-democrat actions.

Diktatör (dictator): This word became popular among opposition to claim that Erdogan turned to a dictator by time.

Faşist/faşizm (fascist/fascism): This word too became popular among opposition to claim “dictator Erdogan has been evolving to become more fascist, or to practice fascism”.

In the first phase of the study, as the elections were over and the vote counting started, tweets meeting the criteria above were retrieved in live. All the tweets were checked if they contained the geographical information (geo-info), because this information will be considered in the nationwide polarization. Next, lat-lon coordinates of the tweets with geo-info are visualized on the map, as shown in Figure 5.4 as an example.

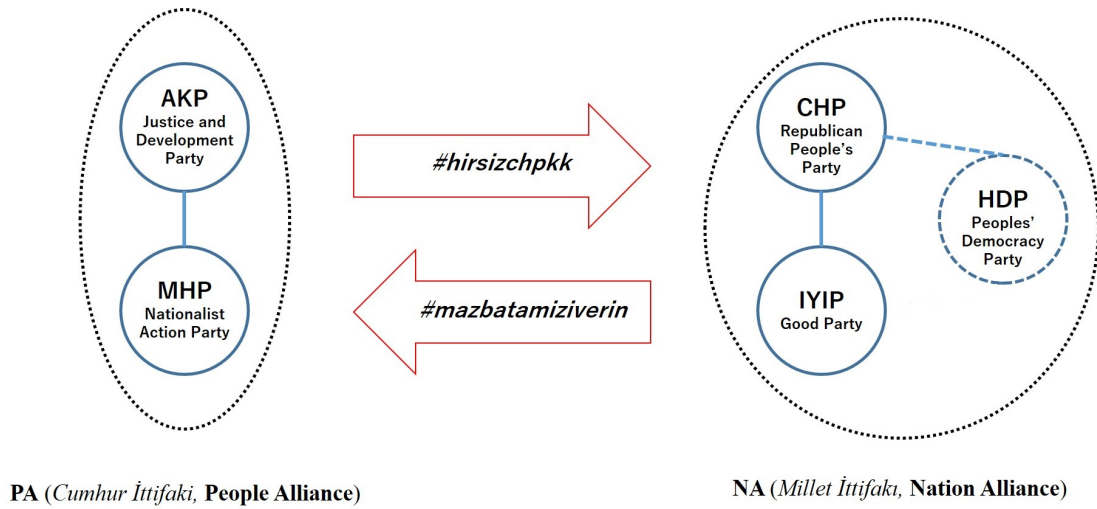


Figure 5.3: Electoral alliances formed before the nation-wide mayoral elections in 2019 in Turkey and the major polarized hashtags appeared after the elections in Istanbul went into crises.

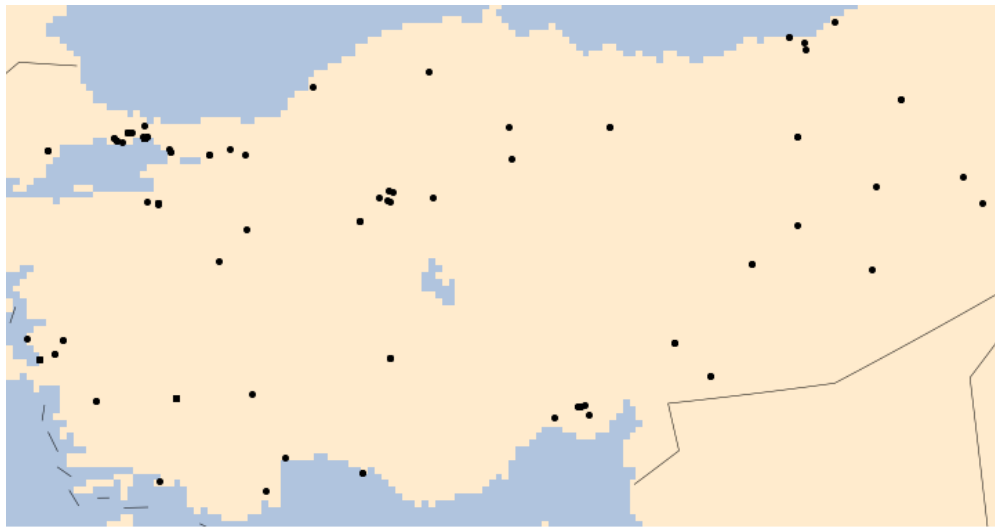


Figure 5.4: Locating the tweets on the map using the lat-lon geographical of Tweets, if applicable. Each black point represents one or more tweets (on the average, ten tweets) with the hashtag #Secim2019 (#Elections2019) and one of the keywords in Table 5.4

As the elections in Istanbul went into crises (as explained in detail in the first chapter), the alliances are cemented and two new hashtags appeared, starting the Hashtag

Wars. In the illustration in Figure 5.3, on the left is shown the **PA** (by the ruling party AKP, and MHP) and on the right is shown the **NA** (by the major opposition party CHP, and IYIP). Independently competing in eastern and southeastern cities of the country, HDP supported CHP in metropolitans, therefore it is located in the NA but with dashed lines to show the weak ties.

Plausibly the sharpest yet one of the most common hashtags appeared ever is the #hirsizchpkk (#thief-chpkk). This hashtag blames NA to be not only vote-thieves, but also terrorists due to the collaboration with HDP, claiming that it is the political extension of PKK. Please remark that the two words CHP and PKK are concatenated and dropping one of the ‘P’ letters, CHPKK word is made up.

Though not sounding that sharp, the “fighting” hashtag of the NA Alliance, #mazbatamiziverin means “give us our certificate of election”, i.e. “we won the elections but you are stealing our victory”.

In order to be able to compare the level of polarization due to the first (scheduled) elections which was canceled, and the re-run elections in Istanbul, the first data set of retrieved tweets require filtering, because the hashtag #Secim2019 (#Elections2019) was relevant to the mayoral elections. Although the mayoral election in one region is local per se, the elections were held nation-wide in all the cities and towns. Therefore, a tweet with #Secim2019 hashtag could be about any city/town, or in general without mentioning a particular region.

Filtering the already retrieved tweets only about elections in Istanbul in the first round was achieved as follows. Keywords specific to Istanbul were determined, including the obvious word Istanbul. The two favorite candidates were Binali Yildirim (AKP, PA) and Ekrem Imamoglu (CHP, NA). The lastname Yildirim, and the first name Ekrem are common words in Turkish language. Therefore, a tweet with hashtag #Secim2019 (#Elections2019) and the keyword Yildirim, or Ekrem might be about any region. But firstname Binali and last name Imamoglu are distinctive, that especially around the elections, any tweet with that hashtag and the keyword Binali, or Imamoglu would be about the elections in Istanbul, with almost a unit probability.

In the second round (the re-run elections), because it was held only in Istanbul, no such filtering was required. In addition to the existing polarized hashtags in Table 5.4, tweets with hashtags #hirsizchpkk and #mazbatamiziverin were retrieved. About the

geography, there are two issues. First, whether the tweet is about Istanbul, and second, whether it was tweeted from Istanbul or from elsewhere. The first is determined according to the filtering, and the second, based on the geographical location data (geo-data) of the tweet, if it exists. In the majority of tweets, it does not exist because the user has disabled the geo-data. If not disabled, the latitude-longitude (lat-lon) data exist in the tweet. The approximate coordinates of Istanbul are latitudes 40.80 and 41.5, and longitudes 28 and 29.3, making it straightforward to classify tweets by whether they are tweeted from Istanbul or elsewhere.

Having created two data sets, analyses were performed to measure the number of sharply polarized tweets to see if they increased, and the location to see if the local elections in one region can make a significant contribution to the entire country.

Although tweets were retrieved in live streaming, i.e. whenever there is a new tweet with the specified hashtag and containing at least one of the keywords, it is automatically retrieved through Twitter API, this method is inherently subject to basic limitations as follows.

- First of all, the rate of retrievable tweets is limited by Twitter. Because the tweets are retrieved in a live fashion, if too many tweets appear within a very small time window, some of them cannot be retrieved due to rate limits of Twitter.
- It is not an easy task to decide whether a tweet is really about one particular city (Istanbul, in the current study). Without practicing advanced artificial intelligence (AI) and natural language processing (NLP) techniques but using only keywords, some tweets might be missed. For example, if the tweet does not contain any specified keywords such as ‘Istanbul’, but says, for example, ‘Ottoman Empire’s capital’, the current method misses it.
- Creating the second data set, two dominant polarized hashtags appeared, which were focused on in this study. However, there might have appeared some other sharply polarized tweets, though not being that popular, missed in this study.
- In the geographical analysis, only the tweets enabled the geo-info can be considered. Although they might contain sharply polarized keywords, geo-info disabled tweets cannot be considered in the geography-based analysis.

Nevertheless, the aim of this study is to measure the polarization. In particular, the contribution of the mayoral elections to the polarization. All the missed tweets imply that the actual online polarization is more than what was measured in this study. Hence, the level of polarization explored in this study can be considered as a lower bound on the actual level. That is, the more sharply polarized tweets are missed, the more contribution is made due to mayoral elections, proving the hypothesis in a more solid and clear way.

Chapter 6

Results

Summary of Chapter 6

In this chapter, results of testing each hypothesis are explained in detail and discussed along with other works in the literature and in the light of the the basic theories of the field. The conducted research on testing the first three hypotheses have resulted in finding

- a fragmented and polarized society,
- considerable echo chambers,
- polarizing role of the local elections.

These results are suggesting the negative relation of social media activities to the deliberative democracy, supporting the negative side of the above-mentioned debate of the field.

6.1 Results of testing Hypothesis 1

Hypothesis 1: *There are considerable echo chambers among politically fragmented groups which are reinforced by exposure to same ideological lines and weakened by exposure to cross-ideological lines and verified accounts.*

In accordance with the Examination and Methods sections, results of testing Hypothesis 1 will be presented in three parts in a systematic way.

Figures and Tables presented below are taken from Yurtcicek and Nishida (2021).

6.1.1 Existence of strong echo chambers and reinforcing or weakening by exposure to same or cross-ideological lines

At the time of data retrieval, the number of followers of each youth organization's account and the number after filtering were as follows

- @AKGenclikGM (AKP): 391.662 $\rightarrow$ 339.155
- @chpgenclikgm (CHP): 60.505 $\rightarrow$ 56.366
- @genclikbirligi (TGB): 205.552 $\rightarrow$ 198.145,

yielding reductions by 15.4%, 7.3% and 3.7%, respectively, according to the methods explained in *Section 5.1, Methodology of Hypothesis 1*. These reductions show that unnatural accounts exist by far in *A*, then in *C* and the least in *T*. Filtering process excluded accounts in three classes. The first two are the verified accounts (with blue ticks), and accounts with screen names including abbreviations of political party names, which are relatively low. The third class is the bots, or automated accounts with the greatest number of excluded accounts, suggesting that the followers of @AKGenclikGM, the official youth organization of AKP contain the greatest number of bots or automated accounts.

Number of follower accounts in each subset by taking approximately 5% of the corresponding sets are as follows.

- A^s : 16.767,
- C^s : 2.538,
- T^s : 9.587.

Twitter API allows retrieving a maximum of 3.200 tweets from the timeline of each account. Hence, retrieving up to 3.200 tweets (interactions) of each account, number of tweets retrieved from each group are as follows.

- A^s : 24.361.415,
- C^s : 3.812.329,
- T^s : 12.193.410

summing up to more than 40 million interactions. Following the target account search operation (as explained in the Methods Section, Step V), number of detected interactions within the 3-years period are found to be

- 3.756.220 for A^s
- 383.025 for C^s ,
- 1.353.917 for T^s .

In Step IV of Methodology for Hypothesis 1, followers and common followers of the groups were detected. The result is presented in Table 6.1

Table 6.1: Sets of Twitter users under consideration. See Figure 5.1 for the illustration of the sets.

Set	Explanation	Number of Followers
A	Following only AKP (@AKGenclikGM)	335.345
C	Following only CHP (@chpgenclikgm)	50.766
T	Following only TGB (@genclikbirligi)	191.750
AC	Following AKP and CHP	1.432
AT	Following AKP and TGB	2.227
CT	Following CHP and TGB	4.017
ACT	Following AKP, CHP and TGB	148

6.1.1.1 Results for the followers of @AKGenclikGM of AKP

Having the most number of followers, also being the official youth organization of the ruling party AKP, first, the results for the @AKGenclikGM are analyzed. The percentages of interactions are illustrated in Figure 6.1 with colors red, green and blue for the years 2016, 2017 and 2018, respectively. Numbers of interactions from A^s to A, T and C, and to AC, AT, CT, and ACT are presented in Table 6.2 and in Table 6.3, respectively. Note that the interactions are taken from the subset A^s to not the subsets but to the entire sets. Among these interactions, *Retweets with Comment* and *Replies* can be neutral, against or for the original tweet. However, a *Retweet* usually supports the original tweet and also contributes to the spreading of it. This result shows that, the interactions from A^s are mostly to A, that is the subset of followers of @AKGenclikGM interact with each other, mostly.

The high percentage of interactions from A^s to A indicate the considerable echo chamber within A. Although there is a small decrease in *Retweets with Comment* and a small fluctuation in *Replies* with respect to years, almost no change is observed in the percentage of *Retweets*.

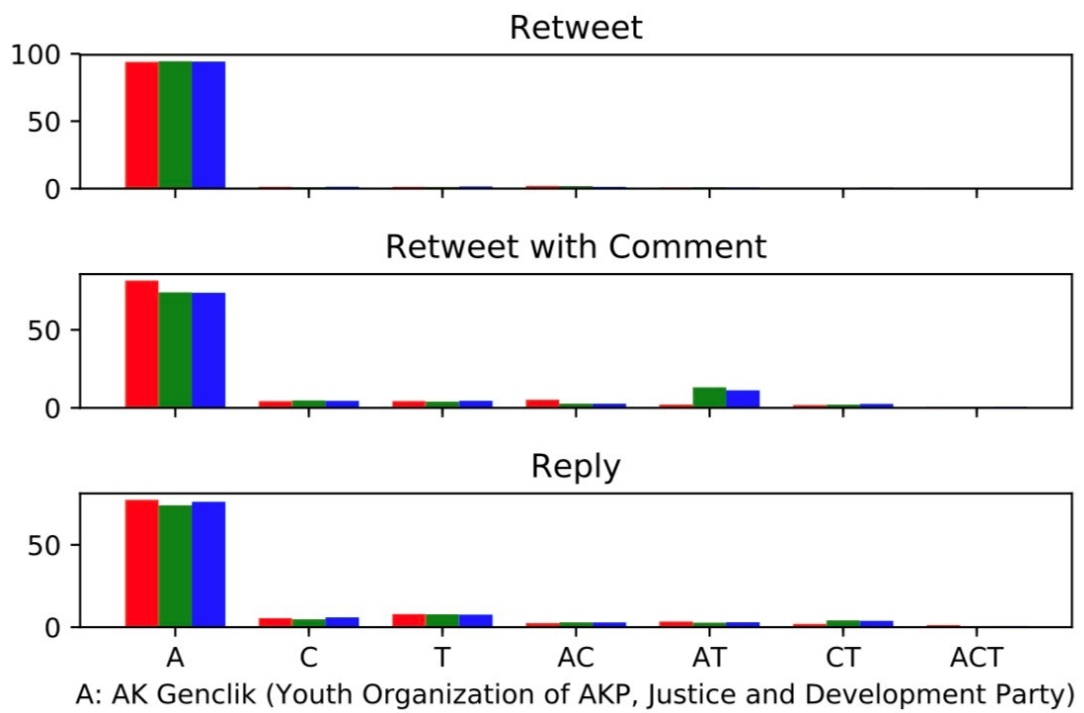


Figure 6.1: Percentage of interactions from A^s to each distinct set of group, where the years 2016, 2017 and 2018 are shown in red, green and blue, respectively.

Table 6.2: Number of interactions from A^s to groups A , C and D over years.

		A^s		
		2016	2017	2018
A	Retweet	611846	869731	1643179
	RT with Comment	7512	12929	26539
	Reply	59919	89043	141418
C	Retweet	8628	8798	23577
	RT with Comment	397	596	1612
	Reply	4259	5526	11053
T	Retweet	8652	11090	27279
	RT with Comment	400	697	1625
	Reply	6166	9030	14112

Table 6.3: Number of interactions from A^s to groups AC , AT , CD and ACT over years.

		A^s		
		2016	2017	2018
AC	Retweet	12826	16929	22141
	RT with Comment	479	471	957
	Reply	1922	3391	5353
AT	Retweet	4392	8376	11827
	RT with Comment	197	2298	4042
	Reply	2661	3169	5521
CT	Retweet	1325	3144	9934
	RT with Comment	168	370	910
	Reply	1548	4779	7089
ACT	Retweet	2980	2134	5885
	RT with Comment	49	102	291
	Reply	988	732	1227

6.1.1.2 Results for the followers of @chpgenclikgm of CHP

Although @chpgenclikgm, the official youth organization of CHP has the least number of followers among the three groups in consideration, because CHP is the major opposition party, and to consider two official party organizations' followers consequently, next, the case of @chpgenclikgm is analyzed.

The percentages of interactions are illustrated in Figure 6.2 with colors red, green and blue for the years 2016, 2017 and 2018, respectively. Numbers of interactions from C^s to A , T and C , and to AC , AT , CT , and ACT are presented in Table 6.4 and in Table 6.5, respectively. Note that the interactions are taken from the subset C^s to not the subsets but to the entire sets.

This result shows that, although the interactions from C^s are mostly to C , that is the subset of followers of @chpgenclikgm interact with each other, mostly, indicating a strong echo chamber, it is not as strong as the echo chamber of @AKGenclikGM. As will be discussed later, this is interpreted by the fact that with its supporters are from a wider spectrum than that of AKP and TGB.

A quick observation shows that second largest volume of the interactions from C is to T and CT , especially in *Retweet with Comments* and *Replies*. This can be understood by considering that unlike AKP, followers of CHP and TGB share more opinions not only about the basic concepts of the republic, but also daily conversations. Because *Retweet with Comments* and *Replies* do not imply a direct support or an objection (without a content analysis), this result shows that the followers of two groups have frequent discussions.

The result showing the considerable volume of *Retweets* from C to A is interesting because a Retweet usually indicates a direct support, or an agreement with the content of the original tweet. Hence, the non-reciprocal volume of *Retweets* deserve more attention.

Dynamics of interactions show that, though not very significant, a decrease is observed in the echo chamber of C , along with an increasing volume of interactions with CT , the intersection set of common followers of C and T .

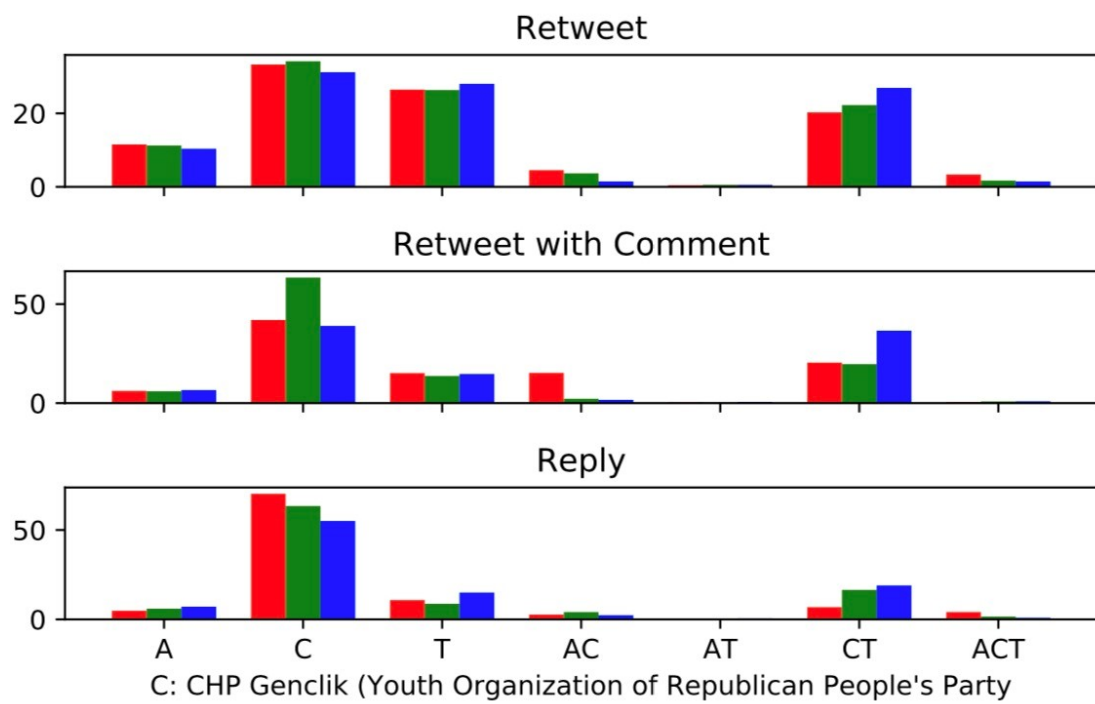


Figure 6.2: Percentage of interactions from C^s to each distinct set of group, where the years 2016, 2017 and 2018 are shown in red, green and blue, respectively.

Table 6.4: Number of interactions from C^S to A , C and D over years.

		C^S		
		2016	2017	2018
A	Retweet	3583	6327	16933
	RT with Comment	127	294	917
	Reply	830	1461	4711
C	Retweet	10322	19210	50957
	RT with Comment	861	2804	5422
	Reply	12037	17851	36530
T	Retweet	8201	14812	45807
	RT with Comment	311	672	2047
	Reply	1852	2459	9962

Table 6.5: Number of interactions from C^s to AC , AT , CT and ACT over years.

		C^s		
		2016	2017	2018
AC	Retweet	1409	2073	2394
	RT with Comment	313	108	230
	Reply	459	1153	1547
AT	Retweet	142	312	884
	RT with Comment	8	13	79
	Reply	73	136	414
CT	Retweet	6283	12510	43980
	RT with Comment	420	965	5089
	Reply	1173	4644	12589
ACT	Retweet	1044	962	2381
	RT with Comment	10	42	127
	Reply	708	444	607

6.1.1.3 Results for the followers of @*genclikbirligi* of TGB

Following the official youth organizations of two political parties, next group to analyze is the followers of @*genclikbirligi*, Twitter account of the non-party political youth organization TGB (Turkiye Genclik Birligi / Turkish Youth Union). The percentages of interactions are illustrated in Figure 6.3 with colors red, green and blue for the years 2016, 2017 and 2018, respectively. Numbers of interactions from T^s to A , T and C , and to AC , AT , CT , and ACT are presented in Table 6.6 and in Table 6.7, respectively. Note that the interactions are taken from the subset T^s to not the subsets but to the entire sets.

Results show that the strength of echo chamber in the follower group of @*genclikbirligi* (TGB) is weaker than that of @*AKGenclikGM* (AKP). While it looks at the first glance that it is stronger than that of @*chpgenclikgm* (CHP), normalizing the numbers result in comparable percentages of interactions, hence, comparable strength of echo chamber.

Although members or followers of TGB are supporting not a single party, the ideological line of TGB is stricter and narrower with no tolerance in independence. However, TGB is achieving a weaker echo chamber than AKP and a comparable echo chamber to CHP. This can be interpreted as a result of being a non-party organization.

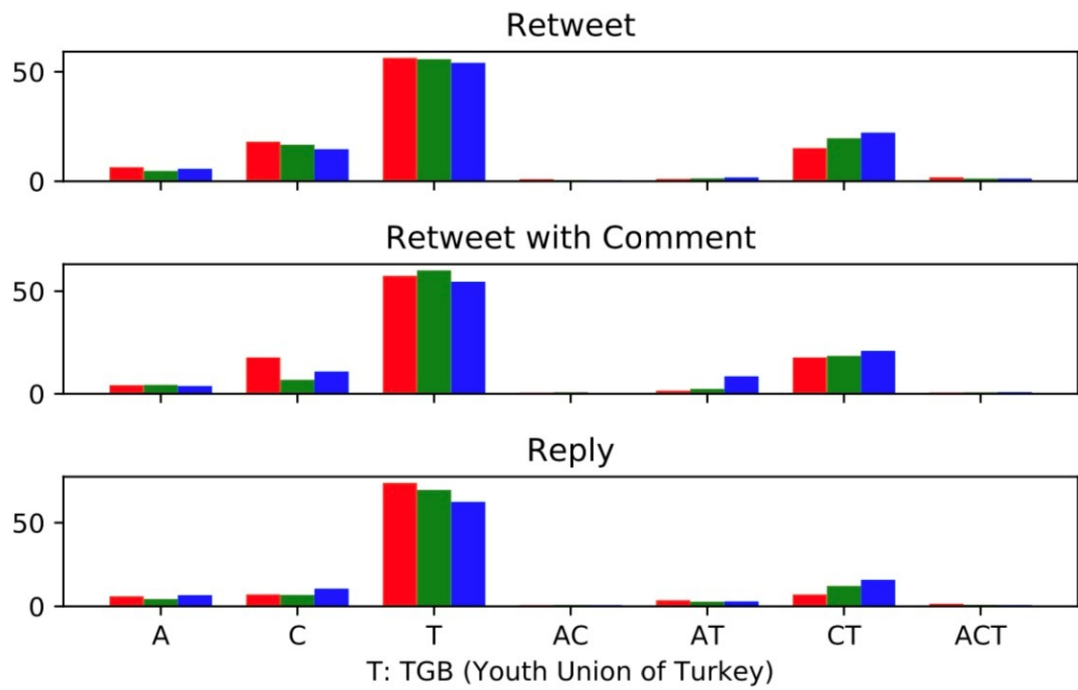


Figure 6.3: Percentage of interactions from T^s to each distinct set of group, where the years 2016, 2017 and 2018 are shown in red, green and blue, respectively.

Table 6.6: Number of interactions from T^s to groups A, C and T over years.

		T^s		
		2016	2017	2018
A	Retweet	8707	10526	33363
	RT with Comment	302	584	1725
	Reply	3514	5966	13265
C	Retweet	24420	37137	85903
	RT with Comment	1271	1760	4911
	Reply	4149	5968	20987
T	Retweet	76122	124093	317200
	RT with Comment	4119	8063	24704
	Reply	42945	60817	123914

Table 6.7: Number of interactions from T^s to groups AC , AT , CT and ACT over years.

		T^s		
		2016	2017	2018
AC	Retweet	1345	1293	2322
	RT with Comment	41	102	195
	Reply	398	719	1404
AT	Retweet	1478	2986	10291
	RT with Comment	112	322	3865
	Reply	2142	2451	5879
CT	Retweet	20507	43750	130233
	RT with Comment	1271	2478	9465
	Reply	4135	10657	31477
ACT	Retweet	2492	2788	7231
	RT with Comment	45	95	365
	Reply	897	782	1469

6.1.1.4 Analyzing the results together

Data used in the illustrative Figures 6.1, 6.2 and 6.3 are presented in the Tables 6.8 and 6.9. A small part of the data is given as an example, below, for the interactions from the subset A^s to each set A , C and T in 2016.

<i>Retweets:</i>	94.04% to A ,	1.33% to C ,	1.33% to T and so on,
<i>RT with Comment:</i>	81.63% to A ,	4.31% to C ,	4.35% to T and so on,
<i>Reply:</i>	77.35% to A ,	5.50% to C ,	7.96% to T and so on.

Considering 90% interactions within the group as a very strong, while above 60% as a strong echo chamber, these results show the existence of very strong and strong echo chambers in the follower groups of the youth organizations' accounts. The strongest echo chamber is found in the follower group of @AKGenclikGM of AKP. This is because the similar-minded individuals prefer being more deliberative enclaves, strengthening their group positions (Sunstein, 2001; Dahlberg, 2007). Discourse of AKP and mainly President Erdogan has been observed to be more polarizing and marginalizing. What is more, it is told that there is a "troll army" of AKP on social media and mostly on Twitter, who are paid to defense the AKP policies and attacking others very sharply, which can help understanding the reason of finding the strongest echo chamber in the followers of its official youth organization's Twitter account.

The echo chamber in @chpgenclikgm of CHP is found to be strong but at the same time, exhibiting a small weakening over time, towards an improved democracy by expanding the public sphere. According to Habermas (1989) and Dahlberg (2007), this is mostly due to the individuals interacting with other groups. In the last decades, CHP has been trying to cover a wider range of ideologies, and this can be considered as a factor in resulting a relatively weaker echo chamber in the target group.

On the one hand, these two groups are tied to political parties, the ruling party AKP and major opposition party CHP which locate themselves in the center of right, and in the center of left, respectively, claiming to play the role of a political umbrella. Hence, although tied to a particular political party, individuals in each group are spanning a relatively wide range of ideologies.

On the other hand, TGB is not a party organization. It has members supporting various parties, including VP (Vatan Partisi), CHP, MHP, AKP and even marginal leftist or rightist parties. However, regarding the basic concepts such as independence, terrorism and secularism, the ideological line of TGB is well-defined and solid and narrow. Nevertheless, despite of the narrow ideological line and strong like-mindedness, follower group of @genclikbirliği of TGB exhibit relatively weak echo chamber. This point should be noted as a unique result with a potential to open new insights in our understanding of the like-mindedness and echo chambers. It is interesting to find that followers of TGB tend to deliberative interactions with the different-minded groups, rather than a deliberative enclave. Such a rational deliberation contributes to avoiding the group polarization and cementing of echo chambers, and to supporting the deliberative democracy.

Observing no significant weakening of echo chambers in the 3-year period might look negative at first glance for improving the democracy. Nevertheless, this specific period of time had a very dense political agenda, including even a failed military coup, and a transition of the regime to a presidential system, all contributing to the political polarization of the people. Therefore, no increase but even a small decrease in the strength of echo chambers could be appreciated.

With its aspects unique to the country, and being a pioneering work in the studies on political polarization, echo chambers and youth participation in politics, these results are in accordance with the recent research pointing out the inevitability of forming and cementing echo chambers in fragmented politically fragmented groups, see Sasahara (2021), for example.

An important result to be emphasized is that echo chambers in group of which individuals are interacting with more than one political group tends to weaken by time.

These results were published in *Yurtcicek Ozaydin and Nishida (2021)*.

Table 6.8: Percentages of the interactions over years from A^s , C^s and T^s to A , C and T .

		A^s			C^s			T^s		
		2016	2017	2018	2016	2017	2018	2016	2017	2018
A	Retweet	94.04	94.52	94.23	11.56	11.26	10.37	6.45	4.73	5.69
	RT with Comment	81.63	74.04	73.77	6.2	6.0	6.59	4.22	4.36	3.81
	Reply	77.35	76.98	76.12	4.84	5.19	7.1	6.04	6.83	6.69
C	Retweet	1.33	0.96	1.35	33.31	34.18	31.2	18.08	16.69	14.65
	RT with Comment	4.31	3.41	4.48	42.0	57.25	38.98	17.75	13.13	10.86
	Reply	5.5	4.78	5.95	70.26	63.42	55.05	7.13	6.83	10.58
T	Retweet	1.33	1.21	1.56	26.47	26.35	28.04	56.36	55.75	54.08
	RT with Comment	4.35	3.99	4.52	15.17	13.72	14.71	57.52	60.15	54.62
	Reply	7.96	7.81	7.6	10.81	8.74	15.01	73.81	69.62	62.46

Table 6.9: Percentages of the interactions over years from A^s , C^s and T^s to AC , AT , CT and ACT .

		A^s			C^s			T^s		
		2016	2017	2018	2016	2017	2018	2016	2017	2018
AC	Retweet	1.97	1.84	1.27	4.55	3.69	1.47	1.0	0.58	0.4
	RT with Comment	5.21	2.7	2.66	15.27	2.2	1.65	0.57	0.76	0.43
	Reply	2.48	2.93	2.88	2.68	4.1	2.33	0.68	0.82	0.71
AT	Retweet	0.68	0.91	0.68	0.46	0.56	0.54	1.09	1.34	1.75
	RT with Comment	2.14	13.16	11.24	0.39	0.27	0.57	1.56	2.4	8.55
	Reply	3.44	2.74	2.97	0.43	0.48	0.62	3.68	2.81	2.96
CT	Retweet	0.2	0.34	0.57	20.28	22.26	26.93	15.18	19.66	22.2
	RT with Comment	1.83	2.12	2.53	20.49	19.7	36.58	17.75	18.49	20.93
	Reply	2.0	4.13	3.82	6.85	16.5	18.97	7.11	12.2	15.87
ACT	Retweet	0.46	0.23	0.34	3.37	1.71	1.46	1.84	1.25	1.23
	RT with Comment	0.53	0.58	0.81	0.49	0.86	0.91	0.63	0.71	0.81
	Reply	1.28	0.63	0.66	4.13	1.58	0.91	1.54	0.9	0.74

6.1.2 Weakening by verified accounts

In order to test the last part of Hypothesis 1, the followers of the official youth organizations of the two largest political parties of Turkey are chosen, namely AKP, the ruling party of President Erdogan, and CHP, the major opposition party. CHP is the party which founded the modern Turkish Republic in the leadership of Mustafa Kemal Atatürk, and AKP was founded in 2001 as an extension of RP (Refah Partisi) of Erbakan. However, AKP has been managing to beat CHP since the 2002 General Elections, which was hold only one year AKP was found. The victory of AKP against CHP is presented in the Figure 6.4, showing the results of 6 elections since 2002.

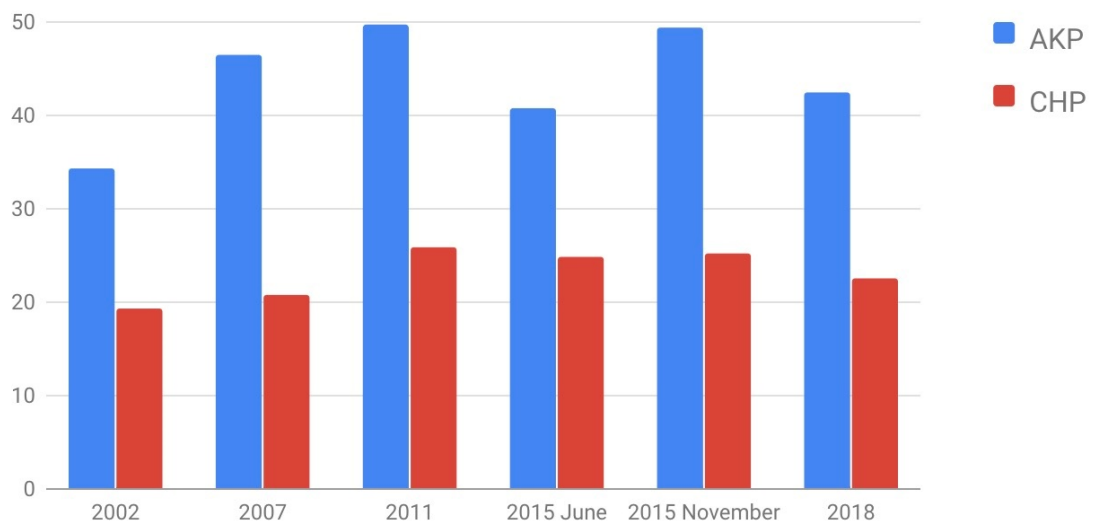


Figure 6.4: Percentage of votes in the general elections for the ruling party AKP and the main opposition party CHP, since 2002, the first elections of AKP right after it was founded in 2001.

The first obtained data is the total number of followers of Twitter accounts of the official youth organizations of each party, @AKGenclikGM of AKP and @chpgenclikgm of CHP. As plotted in Figure 6.5, the number of their followers were 391.663 and 60.606, respectively, at the time of this study, May 2019. By the time of writing this thesis, December 2019, the numbers turned to 447.3 thousand and to 106.6 thousand, respectively, showing that with respect to the percentage of new followers, @chpgenclikgm significantly outperformed @AKGenclikGM.

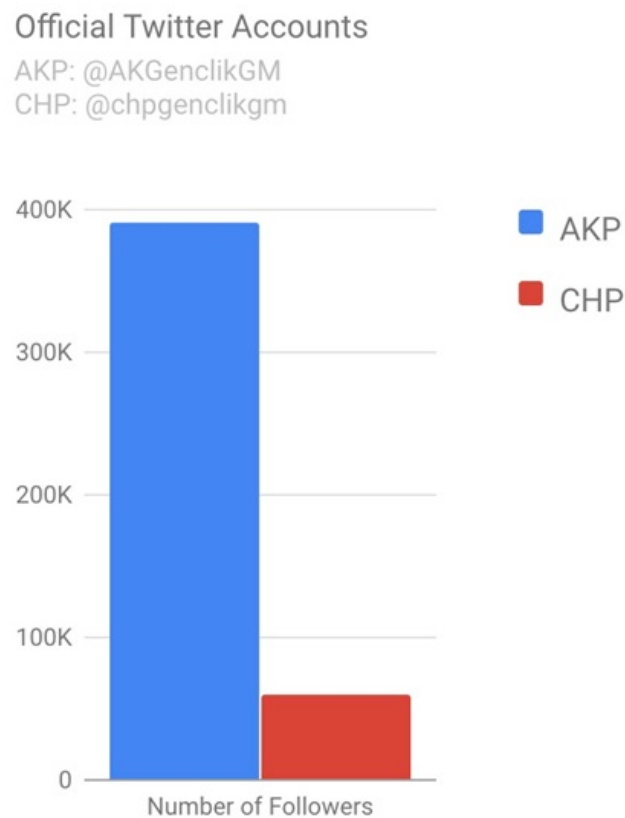


Figure 6.5: Number of followers of the official Twitter accounts @AKGenclikGM and @chpgenclikgm, the official youth organizations of the ruling party AKP and main opposition party CHP, respectively, by May 2019.

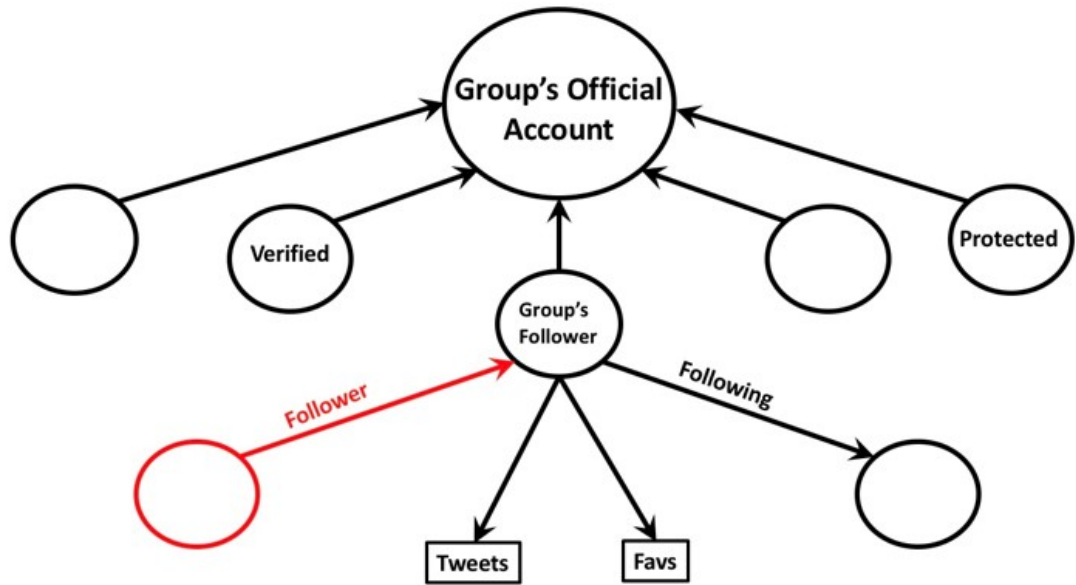


Figure 6.6: The total number of followers of the followers of the official account is calculated.

6.1.2.1 Results for followers

For each follower of the target group's official Twitter account, as illustrated in Figure 6.6 for one "groups's follower", the number of followers is obtained. By the time of the study, the numbers are 144.812.114 for @AKGenlikGM of AKP, and 62.518.629 for @chpgenclikgm of CHP. This means that, although the number of followers of the youth organization's account of AKP was 6.5 times of CHP, this ratio drops to around 2.3 for the number of their followers. Further normalizing the number of followers with respect to the total number of youth organization's followers, it is found that on the average each follower of @AKGenlikGM of AKP and @chpgenclikgm of CHP is followed by 378 and 1.031 accounts. This shows that, although @AKGenlikGM of AKP has more followers than @chpgenclikgm of CHP, followers of the latter are followed around 3 times more than the former, on the average, as shown in Figure 6.7.

Followers of Official Twitter Accounts

AKP: @AKGenclikGM

CHP: @chpgenclikgm

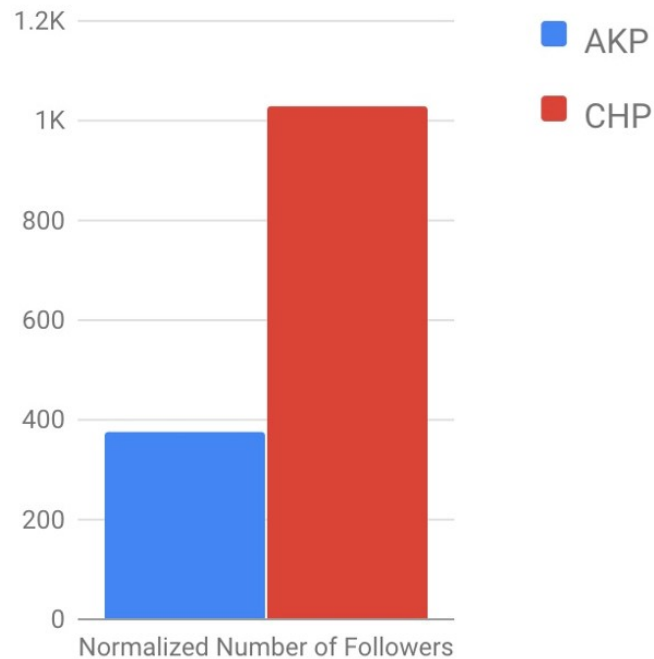


Figure 6.7: Normalized results for each group show that the followers of the official youth organization’s account of CHP are followed by three times more than that of AKP.

6.1.2.2 Results for the followed accounts

Because diffusion of ideologies depends on each account in a two-fold mechanism, i.e. on the followers, and on the followed accounts, next data to analyze is the number of followed accounts by each follower of the youth organization’s Twitter account. This scenario is illustrated in Figure 6.8 for the “Following” of a single “groups’s follower” as an example.

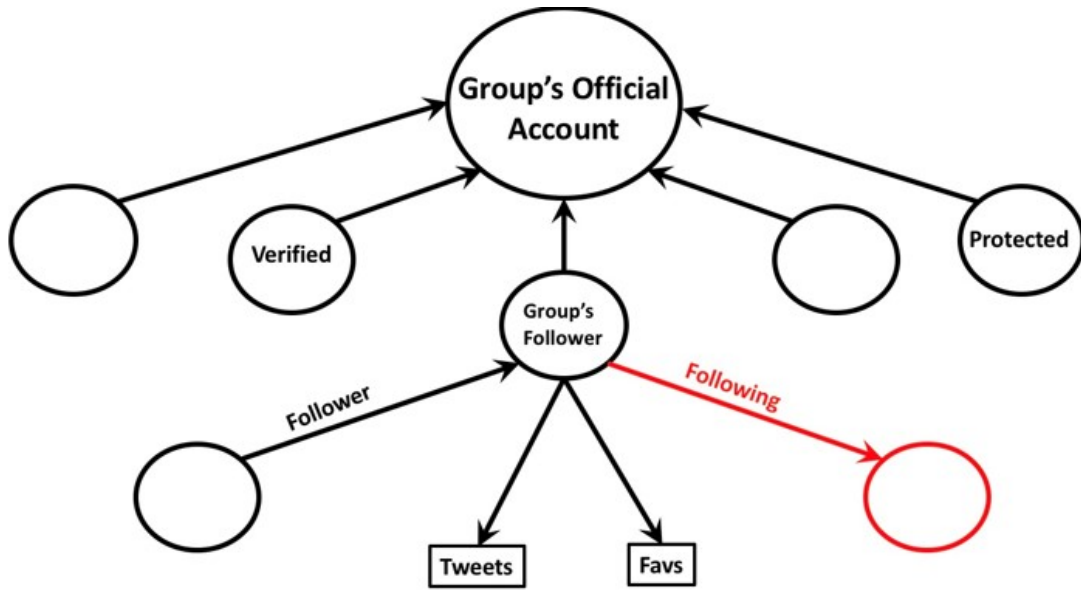


Figure 6.8: The total number of accounts followed by the followers of the official account is calculated.

Number of followed accounts by the followers of @AKGenlikGM of AKP and by the followers of @chpgenclikgm of CHP is found to be 173.944.466 and 50.032.657, respectively. Similar to the followers result, the ratio 6.5 drops to 3.5. Normalizing these results, it is found that each follower in the first set is following 444 accounts, while each follower in the second set is following 825 accounts. That is, on the average, each follower of @chpgenclikgm is following two times more accounts of each follower of @AKGenlikGM. As shown in Figure 6.9, this result shows that at least in following others, followers of @chpgenclikgm are two times more active than the followers of @AKGenlikGM. This much information is certainly not sufficient to judge whether they are following similar-minded or different-minded people. It might be the case that, though a smaller number, one might be following people with diverse ideologies, or just on the contrary, following too many people but with the same ideologies. Therefore, the last two set of findings reveal information only about the activity levels of these two groups.

Followers of Official Twitter Accounts

AKP: @AKGenclikGM

CHP: @chpgenclikgm

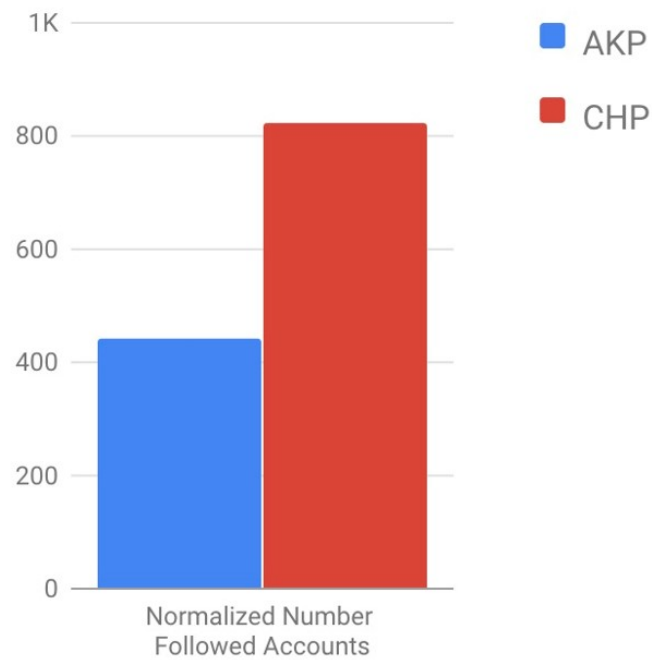


Figure 6.9: Normalized results for each group show that the followers of the official youth organization’s account of CHP are following other accounts around two times more than that of AKP.

6.1.2.3 Results for the Tweets

Having found that each follower of *@chpgenclikgm* is followed three times, and following two times of each follower of *@AKGenclikGM*, on the average, next data to analyze is the volume of their Tweets, as illustrated in Figure 6.10 for a single ‘groups’s follower’ as an example.

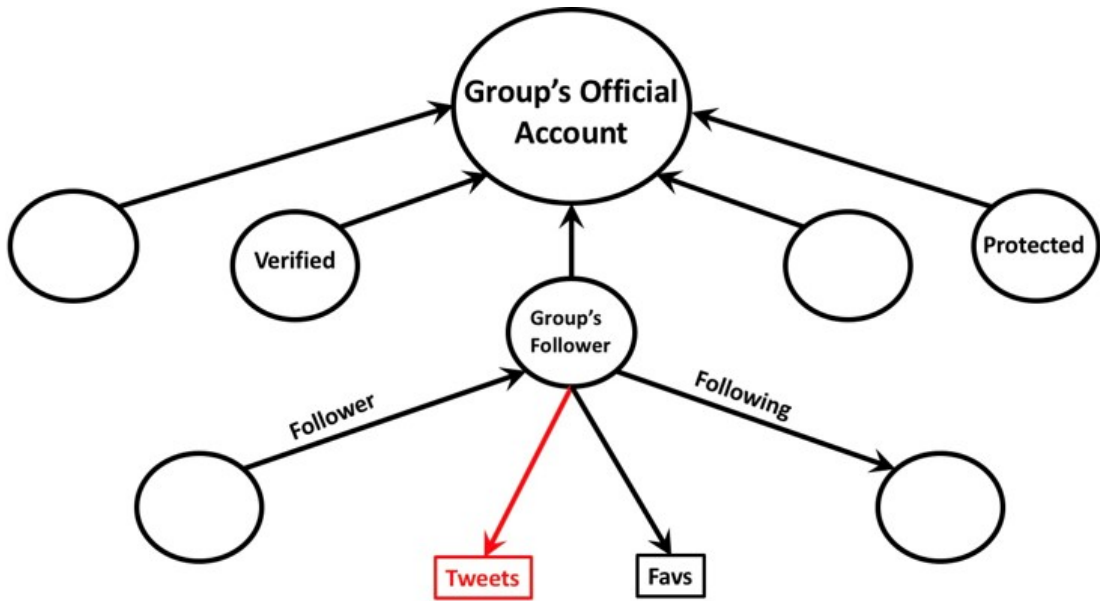


Figure 6.10: The total number of tweets by the followers of the official account is calculated.

In this analysis, to measure the tweeting activity, Tweets, Retweets, Retweets with Comment and Replies are all considered as a Tweet. It is found that within the three-year period from January 2016 to December 2018, 391.663 followers of *@AKGenclikGM* tweeted 340.418.948 times, while 60.606 followers of *@chpgenclikgm* tweeted 158.627.894 times. That is, although *@AKGenclikGM*'s number of followers is approximately 6.5 times of the followers of *@chpgenclikgm*'s, they tweeted only two times more, roughly. Normalizing the number of tweets by the number of accounts in each group, it is found that on the average, each follower of *@AKGenclikGM* tweeted 869 times, and each follower of *@chpgenclikgm* tweeted 2.617. Therefore, as shown in Figure 6.11, followers of the latter group is 3 times more active than the former group.

Followers of Official Twitter Accounts

AKP: @AKGenclikGM

CHP: @chpgenclikgm

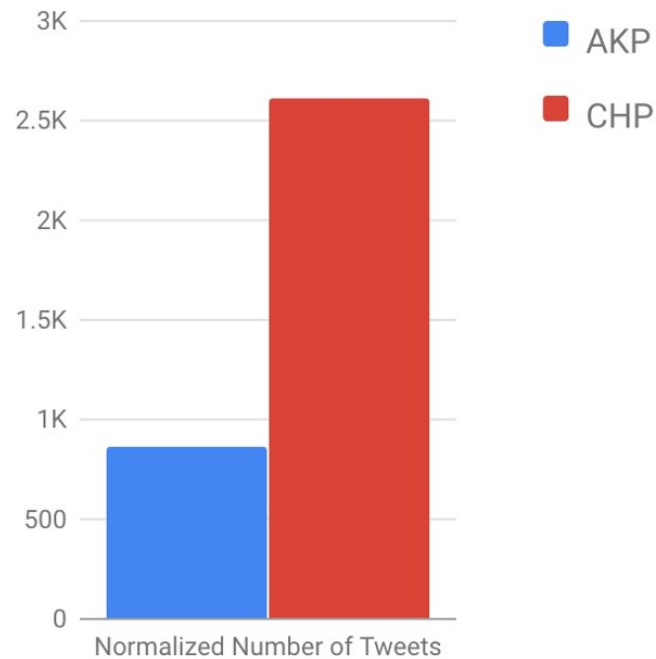


Figure 6.11: Normalized results for each group show that the followers of the official youth organization's account of CHP are tweeting around three times more than that of AKP.

6.1.2.4 Results for the Favs

Next data to analyze for measuring the activity level of each group is the number of favs, i.e. how many tweets were favorited by the followers of the two groups in concern. Figure 6.12 illustrates this scenario with a single follower as an example.

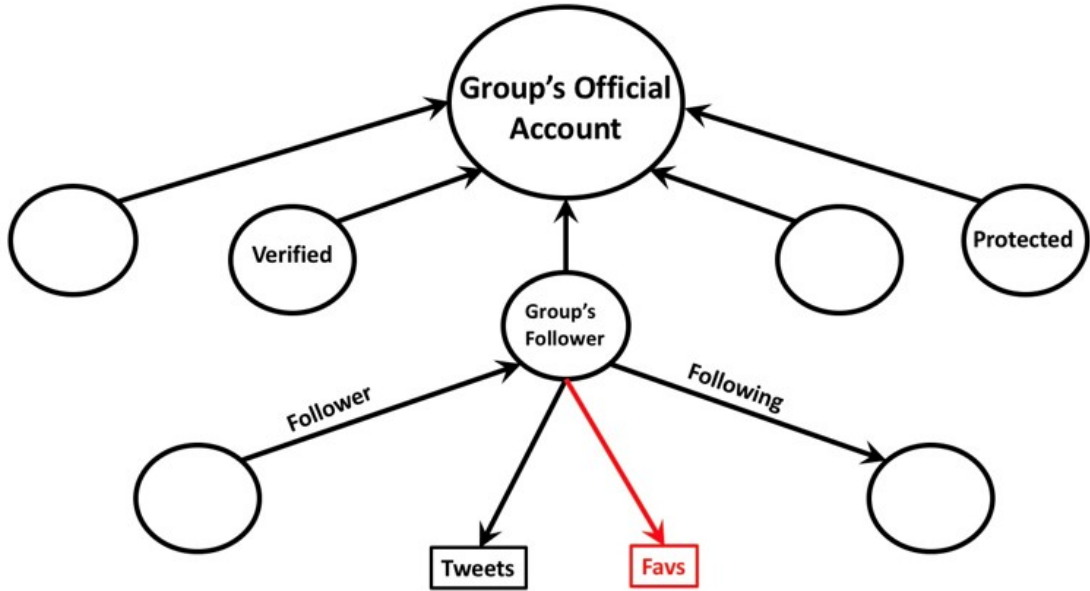


Figure 6.12: The total number of tweets favorited by the followers of the official account is calculated.

It is found that the total number of favorites of the followers of *@AKGenlikGM* and of the followers of *@chpgenlikgm* within the three years period are 400.283.104 and 132.196.076, respectively, corresponding to the normalized results as 1.022 and 2.181, respectively. This result, as shown in Figure 6.13 puts forward that when it comes to favs, a follower of the latter account is more than two times active than a follower of the former account, on the average.

In summary, regarding the number of followers, followed accounts, tweets and favs, on the average, a follower of *@chpgenlikgm* of CHP, the major opposition party is two or three times of a follower of *@AKGenlikGM* of AKP, the ruling party.

Followers of Official Twitter Accounts

AKP: @AKGenclikGM

CHP: @chpgenclikgm

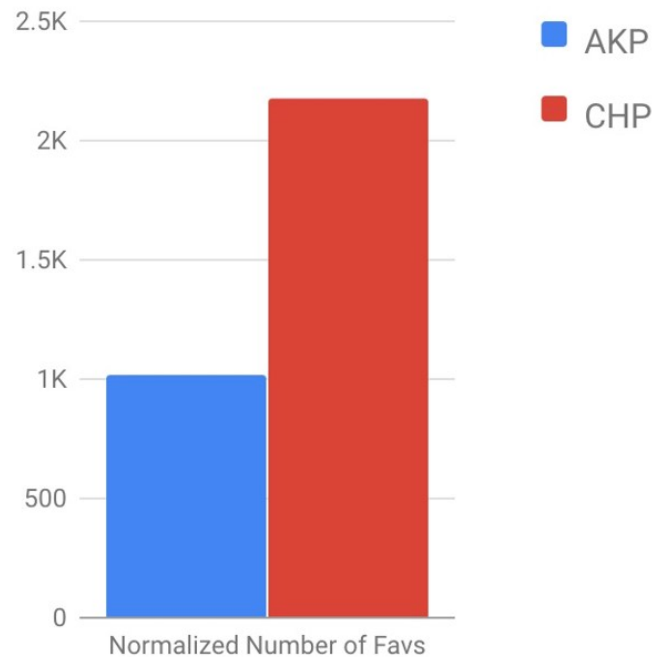


Figure 6.13: Normalized results for each group show that the followers of the official youth organization's account of CHP are favoriting others' tweets around two times more than that of AKP.

6.1.2.5 Results for the Verified Accounts

Having grasped the fact that, total number of followers of @AKGenclikGM being 6.5 times of the total number of followers of @chpgenclikgm, the number of followers and followed accounts, and more importantly the activities in tweeting and favoriting of the latter group is 2 or 3 times of the former group, it is time to work on the key point in this study. This scenario is illustrated in Figure 6.14: Total number of verified accounts among the followers of each account of the official youth organizations of the ruling party AKP and the major opposition party, CHP are found.

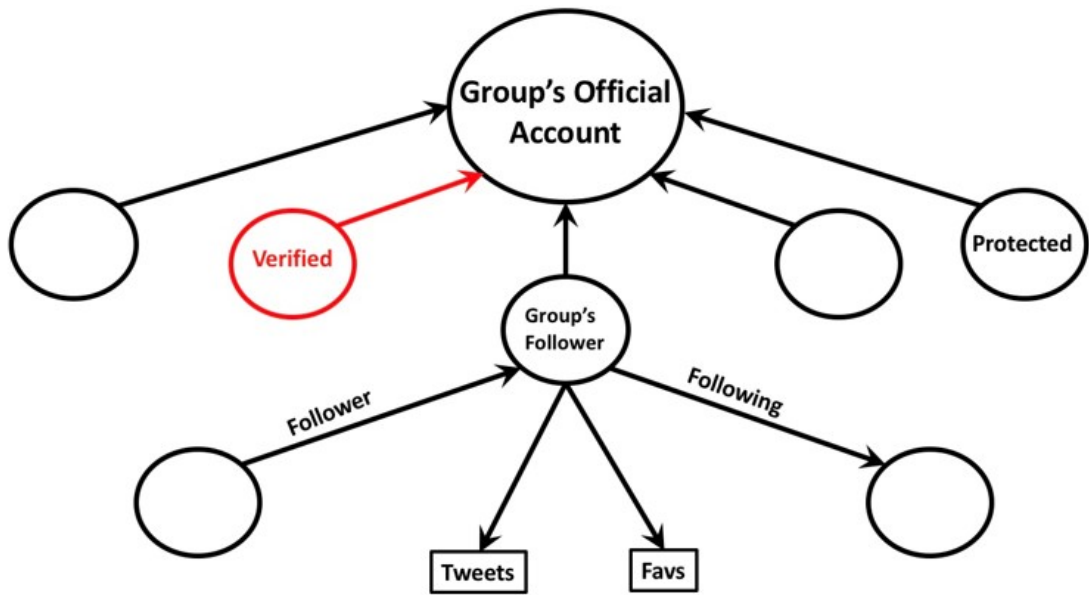


Figure 6.14: The total number of verified accounts among the followers of the official account is calculated.

It is found that, accounts of 340 followers of *@AKGenclikGM*, are verified, while this number is 169 for *@chpgenclikgm*. As plotted in Figure 6.15, the percentages are 0.09 and 0.28, respectively. Hence, regarding the total number, the former is outperforming the former, and the opposite is true for an average follower.

Because verified accounts belong to famous and important people such as politicians, journalists, celebrities, etc., not only they have a lot of followers but also, their followers span a wide range of the political spectrum. Therefore, they are expected to be more effective in reaching large audiences not necessarily in a specific ideology.

Plausibly the more important point than the ability to reach people is as follows. Considering that an average user on social media sees a post, or a tweet with a content with a slightly different ideology. It can be more convincing if this tweet is from someone with a verified account that the user knows from media. Hence, as studied in the literature, verified accounts can be considered as opinion leaders, what makes them valuable in weakening the echo chambers among fragmented political communities.

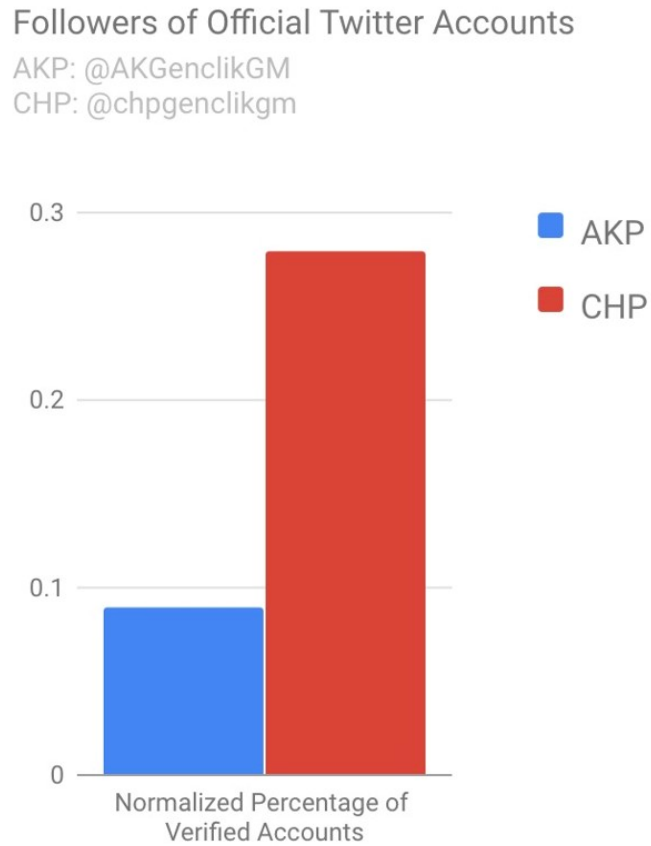


Figure 6.15: Normalized results for each group show that the number of verified accounts among the followers of the official youth organization's account of CHP are around three times more than that of AKP.

6.1.2.6 Results for the Protected Accounts

On the contrary to the verified accounts which potentially contribute to weakening of echo chambers, the protected accounts are argued to contribute to forming and cementing echo chambers, and therefore, to increasing the polarization. Therefore, the final data to consider is the number and percentage of protected accounts among the followers of the two political youth organization groups' Twitter accounts, as illustrated in Figure 6.16.

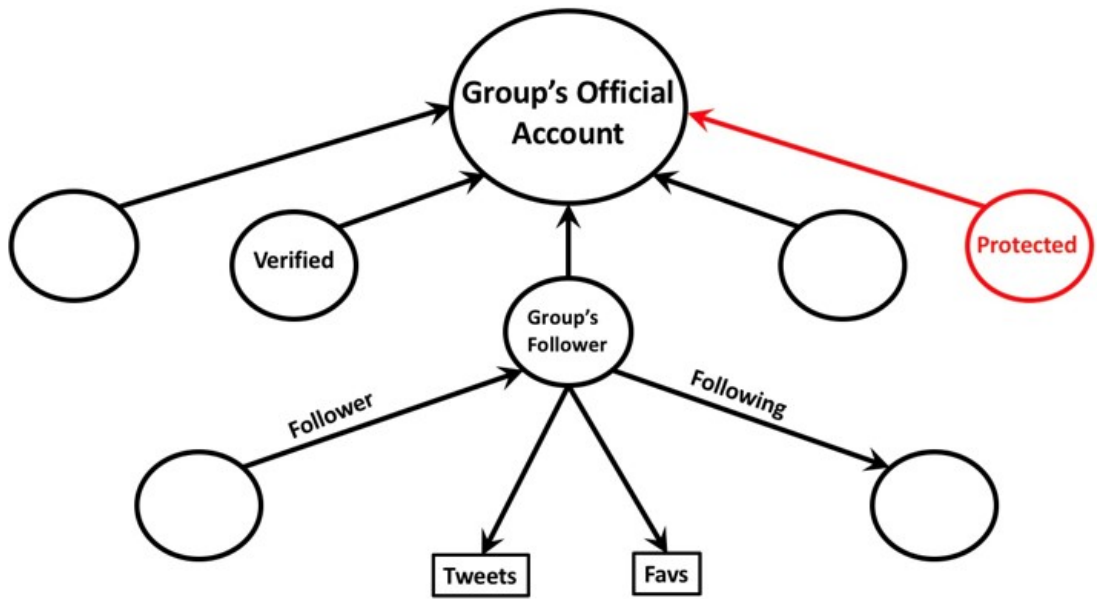


Figure 6.16: The total number of protected accounts among the followers of the official account is calculated.

Unlike the other measures, interestingly, followers of both @AKGenlikGM and @chpgenclikgm have almost an equal normalized percentage of protected accounts, around 14% as shown in Figure 6.17. Therefore, the level of deliberative enclaves within both groups of followers are found to be comparable.

In summary, besides the comparable rate of protected accounts, the overall results on the level of activities, and the percentage of verified accounts show that the followers of @chpgenclikgm, the official youth organization of major opposition party CHP are more active and open for communication with diverse ideologies than the followers of @AKGenlikGM, the official youth organization of the ruling party AKP. Because content analysis was not in the scope of this study, no interpretation can be made for the polarization. However, these results are in accordance with the results for testing the parts of the hypothesis that exist strong echo chambers in the target groups, though the ones more open to communication such as through a higher rate of verified accounts exhibit a weakening of the echo chamber by a time span of a few years.

These results were presented in Yurtcicek Ozaydin (2019).

Followers of Official Twitter Accounts

AKP: @AKGenclikGM

CHP: @chpgenclikgm

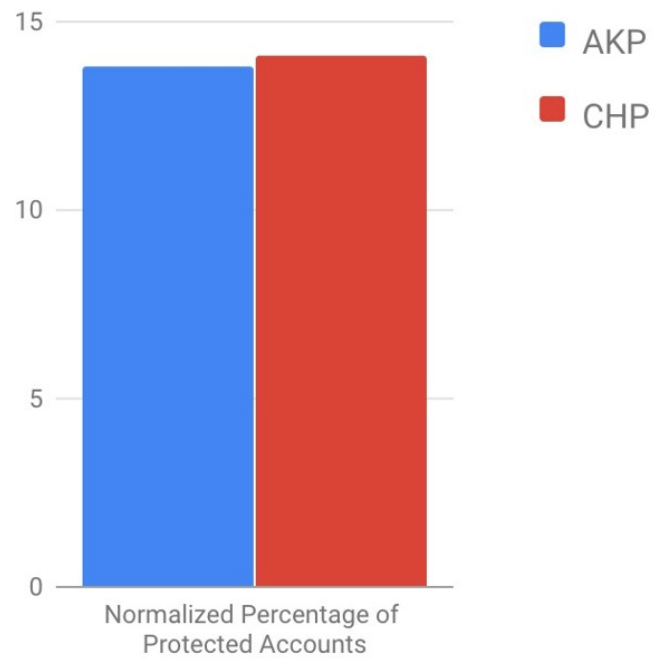


Figure 6.17: Normalized results for each group show that the number of verified accounts among the followers of the official youth organization's account of CHP is almost the same with that of AKP.

6.2 Result of testing Hypothesis 2

Hypothesis 2: *Even among like-minded people, the reasons behind a particular opinion can be fragmented.*

Following the methods explained in Section 5.2, the first data set was created before the June 2018 elections by retrieving the tweets with hashtag #Suriyeli (#Syrian). Among the retrieved around 25 thousand tweets, 4885 included at least one of the keywords from the classes of reasons behind the anti-migrant sentiments as follows: 501 in Crime, 595 in Economy, and 3789 tweets in the Voting class, corresponding to percentages 10.3%, 12.2% and 77.6%, respectively. The distribution of tweets to the classes is shown in pie chart in Figure 6.18.

Because this data set is created by retrieving tweets just before the elections, the high sensitivity of people about the voting issue is understandable. However, considering the common fact among the world that people of a country have anti-migrant sentiments due to economic and social issues (in particular about the increasing crime rates), finding that in Turkey, the major source of anti-migrant sentiments at least before the elections are due to the voting issue is a unique result in online political communication studies.

This result was presented in *Yurtcicek Ozaydin (2018a)*.

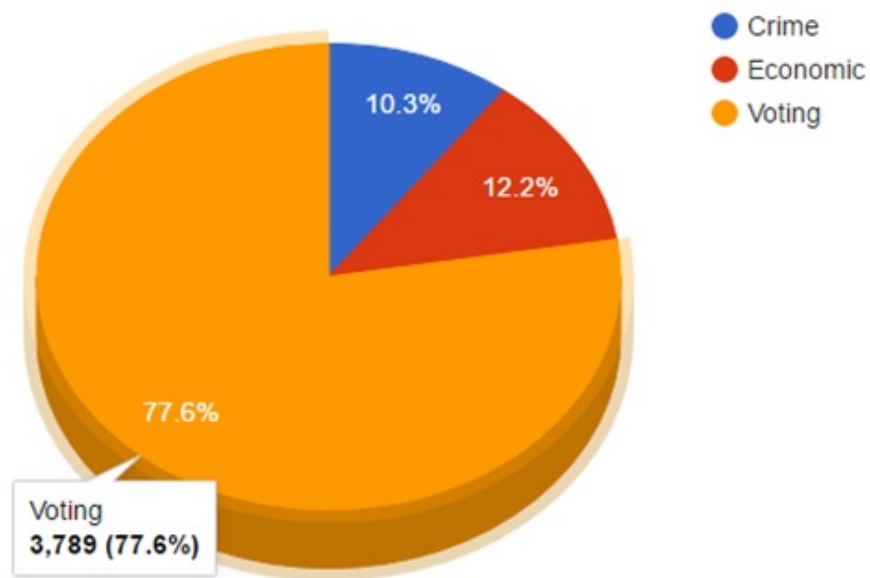


Figure 6.18: 4885 tweets out of around 25.000 retrieved before June 2018 elections were found to have anti-Syrian sentiments with the given percentages in each class.

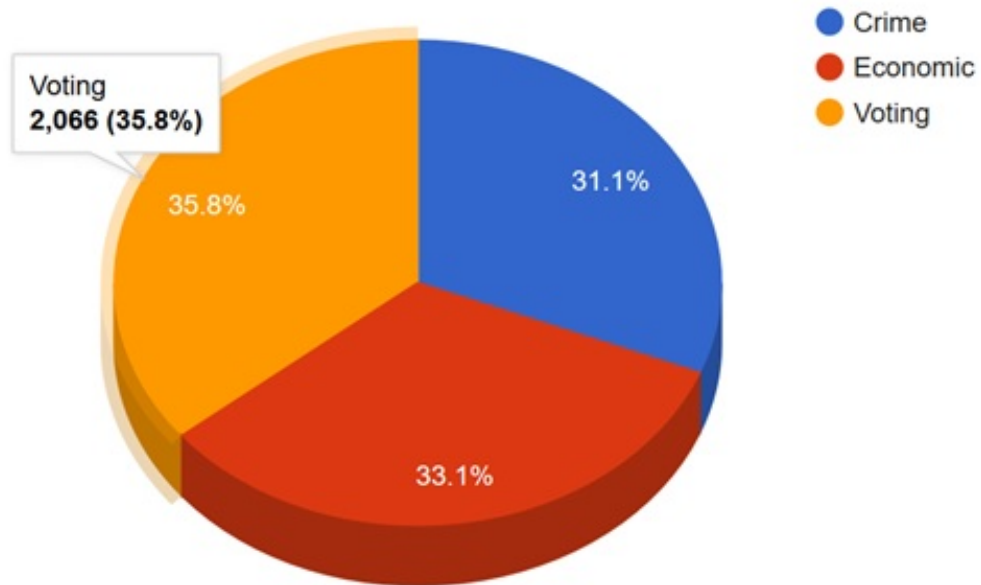


Figure 6.19: 5682 tweets out of around 38.000 retrieved after June 2018 elections were found to have anti-Syrian sentiments with the given percentages in each class.

Having observed that the Voting issue is also a major source of anti-migrant sentiments before the elections, next step is to analyze the post-election case. After the elections in which Recep Tayyip Erdogan became the first president of the country in the new presidential regime, the second data set was created. This time, over 38 thousand tweets were retrieved containing the hashtag #Suriyeli (#Syrian). 5682 of them were found to fall into at least one of the classes Crime, Economy and Voting as a source of anti-migrant sentiments, with numbers 1709, 1907 and 2066, and corresponding percentages 31.1%, 33.1% and 35.8%. The percentages are shown in pie chart in Figure 6.19.

The change of the relative volume of tweets mentioning the Voting issue as can be seen in the difference between Figure 6.18 and Figure 6.19 can be linked to the increased sensitivity of people before the elections, and exhibiting a decrease after the elections. In both periods, the Voting issue is found to be the major reason behind the anti-migrant sentiments in Turkey, against Syrian migrants.

In order to find whether these reasons are fragmented or not, unique accounts who tweeted these tweets are identified. The result is that 5682 tweets in the three classes of reasons belong to 5082 distinct users. As shown in Figure 6.20, first of all, 105 users are found to be mentioning about all three reasons, i.e. using keywords in all the sets.

When compared to the total number of tweets in the data set, 5682, this number, 105 is so small, implying that among people tweeting with anti-migrant sentiments, only a small minority of about 1.84% is concerned about all the three issues. Although Voting issue received the greatest number of users, 1742 in total, excluding the intersections, Crime issue received the greatest number of tweets from distinct users (i.e. only about Crime), 1279. This shows that, people who are concerned about the Crime issue are mostly concentrated on it. This can also be inferred from the number of users tweeting in the intersecting sets with the Crime set, which are 106, 105 and 148, whereas there are 598 users tweeted in the intersection of Economy and Voting issues.

Crime and Economy issues have 211 users in common, Crime and Voting issues have 253 users, whereas Economy and Voting issues have 703 users in common. This shows that people who are concerned about Voting issue are concerned about Economy issue more than the Crime issue, and vice-a-versa.

The punchline of these results is that the number of users in the intersections are so small when compared to the users tweeting about a single issue, i.e. one particular reason behind the anti-migrant sentiments. Therefore, this study shows that, even among like-minded people, the reasons behind the ideas can be fragmented.

These results were presented in *Yurtcicek Ozaydin (2018a)*.

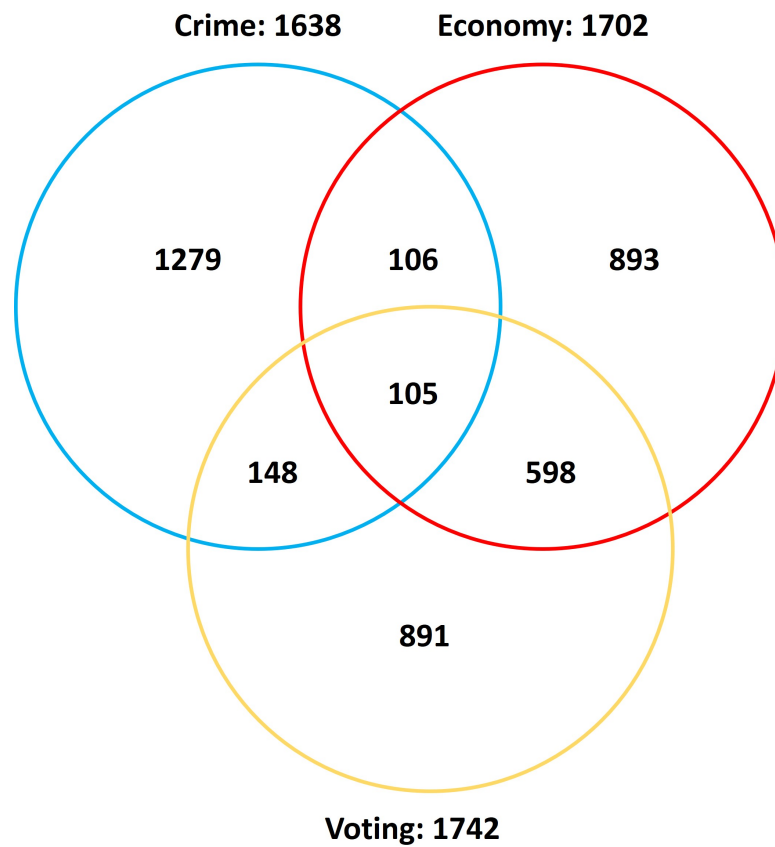


Figure 6.20: Fragmentation between the reasons raising the anti-Syrian sentiments in Turkey on Twitter. Numbers represent distinct Twitter users tweeting in each class.

6.3 Result of testing Hypothesis 3

Hypothesis 3: *Not only general elections but also mayoral elections can reinforce online political polarization in the entire nation.*

Following the methods explained in Chapter 5.3, the first data set is created with the retrieved tweets which contain the hashtag #Secim2019 (#Elections2019), and at least one of the keywords presented in the Table 5.4. As the voting ended and vote counting started, tweets were retrieved using Twitter API through live streaming for the following 24 hours. A total number of 457.396 tweets were retrieved, and 23.700 tweets of them contained at least of the polarized keywords, with 505 tweet including the geo-info.

Having retrieved such a significant number of tweets with polarized hashtags in only 24 hours is considered to be showing clearly the contribution of mayoral elections to the political polarization. Because the previous studies in the literature focused on the general elections only, the present finding on the mayoral, or local elections is relatively unique in the online political communication studies.

Next, 505 polarized tweets including the geo-info data are pinned on the map using their coordinates, as shown in Figure 6.21. This is to explore if the polarized tweets are mostly from the metropolitans, only, or from the entire country. Each black point on the map corresponds to one or more, and on the average, 10 tweets from the vicinity, and visualizing the tweets on the map suggests the latter, that the polarized tweets are from the entire country.

These results were presented in *Yurtcicek Ozaydin (2020)*.

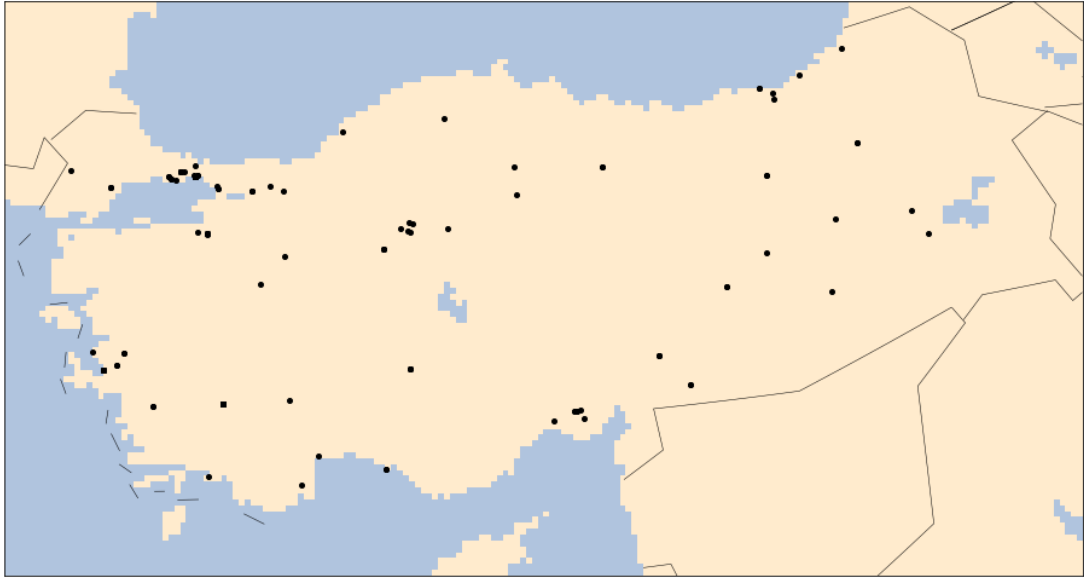


Figure 6.21: Each dot representing one or more (avg. 10) tweets both with #Secim2019 (#Elections2019), and polarized keywords.

In Istanbul, Ekrem Imamoglu, the candidate of CHP in NA Alliance won with a small difference of 13 thousand votes only against Binali Yildirim, the candidate of AKP in PA Alliance, who was also a former Prime Minister. This has been an unexpected result for AKP. RP (Refah Partisi led by Professor Necmettin Erbakan) which can be considered as the roots of AKP won the Istanbul Mayoral Elections in 1994 with candidate Recep Tayyip Erdogan, who became the Istanbul Mayor, that time. In the same elections in 1994, Melih Gokcek, the candidate of RP won the elections in the capital Ankara. Since then, RP or AKP have never lost Istanbul or Ankara. Fourth largest city, Izmir has always been the castle of CHP, so there is no remarkable change in Izmir. But, next comes Antalya, which changed hands a few times, but recently governed by AKP. However in 2019 Elections, AKP lost in these major cities altogether. The small difference of 13 thousand votes raised objections on PA side, led the hashtag #hirsizchpkk. On the contrary to the previous general and mayoral elections, for the first time, AKP was blaming CHP of stealing the votes. The elections in Istanbul went into a deep crises. It was eventually canceled and decided to be re-run, not surprisingly, raising anger not only in NA Alliance but also among some of the AKP supporters.

Meanwhile, the two polarized hashtags emerged, founding the basis for the continuation of the study with the second stage data retrieval again in live stream for a carefully chosen 24 hours period. This time, all the tweets are obviously about the elections in Istanbul, therefore no additional filtering is required. Also, rather than retrieving the tweets and then searching polarized hashtags, this time, only the tweets with polarized hashtags are retrieved. Number of such tweets is 252.890, 3.485 including the geo-info. Results of data retrieval and filtering operations are presented in Table 6.10

Table 6.10: Number of tweets in each dataset with specified hashtags and geographical locations. Data of the table is taken from Yurtcicek Ozaydin (2021).

	Total Number of Tweets	About Istanbul Elections	With Geographical Location	From Istanbul	From Elsewhere
1st Dataset	457396	82829*	1735	1087	648
2st Dataset	252890	252890**	3485	2237	1248

In the table,

- Tweets in both data sets contain #Secim2019 (#Elections2019) hashtag.
- * These are all the tweets retrieved about Istanbul elections containing relevant hashtags such as, #Istanbul, #Binali or #Imamoglu, without filtering for any specific polarized hashtag.
- ** All tweets in the second data set are about the canceled and re-run Istanbul elections and contain sharply polarized hashtags such as #hirsizchpkk (claiming the others to be vote thieves and terrorists) appeared after the canceled elections.
- The substantial increase in the number of tweets which also contain sharply polarized hashtags about Istanbul elections, and that more than one third of these tweets are from all other regions show that the online political polarization due to mayoral elections in one region spreads to the entire nation.

Next, the tweets in the first data set including the geo-info were pinned on the map of Turkey, as visualized in Figure 6.22.

Lastly, the tweets in the second data set including the geo-info were pinned on the map of Turkey, as visualized in Figure 6.23. The final findings suggest that, although the elections at this time is in Istanbul only for electing the next mayor, the polarized tweets originate not only from Istanbul but also any region of the country.

These results were presented in *Yurtcicek Ozaydin (2021)*.

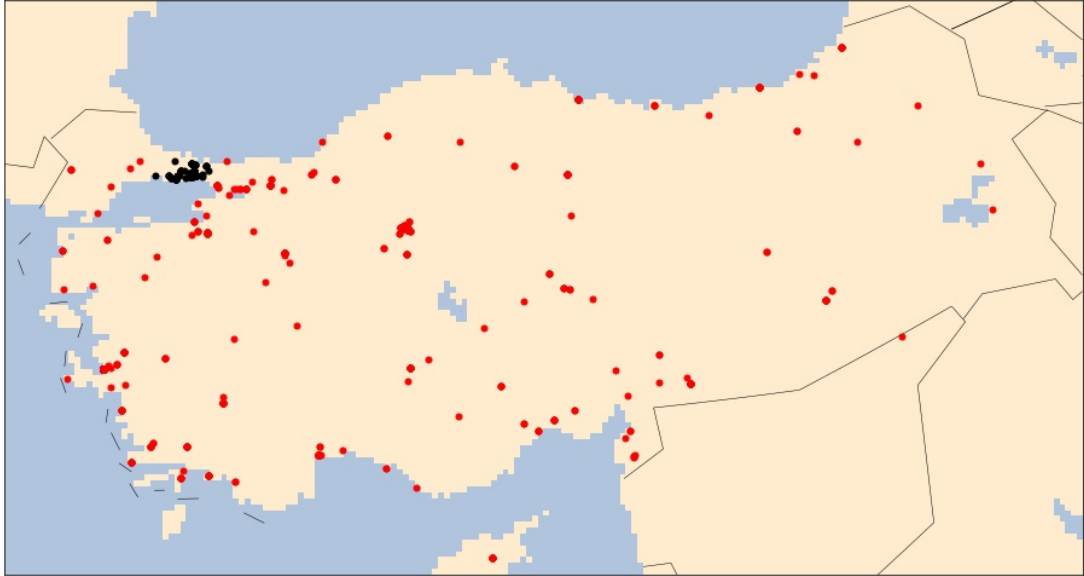


Figure 6.22: Distribution of tweets in the 1st data set with #Secim2019 (#Elections2019) hashtag and geographical information, filtered for Istanbul elections (in the first run) with keywords explained in the text, but not for any specific hashtags. Therefore, these are all the tweets retrieved about the Istanbul elections. Black dots represent 1087 tweets from Istanbul, and red dots represent 648 tweets from other regions.

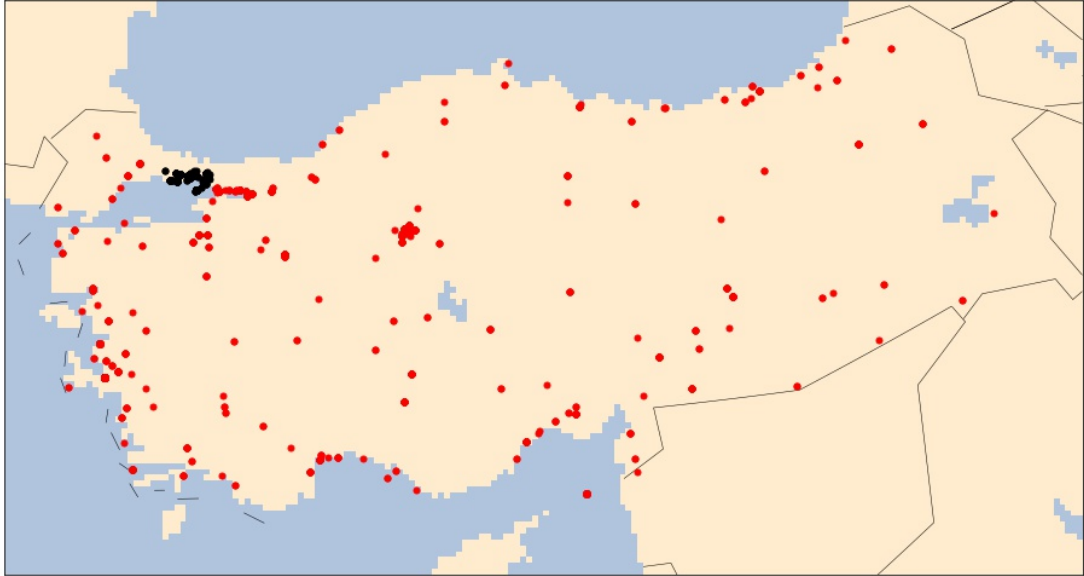


Figure 6.23: Distribution of tweets in the 2nd data set with polarized hashtags and geographical information, all related to Istanbul elections around the vote counting crisis. This dataset includes tweets only with the sharply polarized hashtags. Black dots represent 2237 tweets from Istanbul, and red dots represent 1248 tweets from other regions.

6.4 Overall Results

In summary, when considered from a general perspective, results show that in Turkey,

- strong echo chambers exist and they do not seem to weaken significantly over time,
- the slightly weakening of echo chambers is due to people who practices deliberative exposure to cross-ideologies,
- verified accounts are positively related to weaker echo chambers due to interacting with diverse ideological lines,
- strong fragmentation exists that even among people who share the same opinion, the reasons behind the opinions can be highly fragmented, and
- mayoral or local elections can make a significant contribution to online polarization.

In accordance with the majority of recent works in this field on other countries (see Literature Review in Chapter 3), the findings in these studies through data-driven analyses support negative side of the debate. That is, rather than weakening through the opportunity of more convenient access to cross-line ideologies, online political communications reinforces fragmentation, echo chambers and polarization through more convenient gathering around and being exposed to similar ideologies.

Chapter 7

Discussions

Studies in this thesis aimed to contribute to understanding the consequences of online political communications on political fragmentation, echo chambers and polarization in the online society in Turkey. This was done through data-driven political analyses for searching indicators. In the literature of the field, similar previous studies can be found focusing on various specific issues in several countries. While some of the findings indicate a positive trend, majority of findings have been indicating a negative trend, that is although individuals gradually have a greater opportunity to be exposed to a wider spectrum of opinions, they tend to choose to be exposed more to similar opinions. As a consequence, through online political communications, the degree of political fragmentation, echo chambers and polarization tends to get worse by time, or by specific happenings such as elections.

While democracy could flourish via a positive trend towards an expanded public sphere, the opposite is usually associated with hindering the democracy thorough deliberative enclaves (Sunstein, 2002). Therefore, finding evidences from each country on specific issues indicating a positive or a negative trend is one of the popular research directions in this field (Bakshy et al., 2015).

Below, the findings of the present thesis will be discussed in relation to previous works including a comparative approach.

7.1 Relations of findings with previous works

7.1.1 Hypothesis 1

Existence of echo chambers have been considered for both offline societies such as classrooms and meeting rooms (Lazarsfeld and Merton, 1954) and online communications (Colleoni et al., 2014). Regarding the latter, many recent works have found evidences for echo chambers not only in the pure political context but also in various areas on SNS.

By collecting and analyzing Facebook data, Quattrociocchi et al. (2016) found evidence for echo chambers among followers of specific Facebook. Cardenal et al. (2019) found echo chambers in followers of news outlets. Book co-purchase relationship is another field that evidence for echo chambers are found (Shi et al., 2017). Examining the relation between information exposure and political bias of followers of YouTube news channels, echo chambers were found in political video views on YouTube (Di Marco et al., 2021).

Testing Hypothesis 1 found that the followers political youth groups' Twitter accounts are interacting mostly within themselves, and rarely with the followers of other groups, which indicates the existence of echo chambers. Therefore, this finding is in agreement with previous works finding echo chambers among various groups on SNS.

The distinction of the present study can be considered to be that it focused on the youth participation in politics within the context of echo chambers, which is yet to attract more attention in the field. Therefore, as future research, indicators for echo chambers in youth participation in politics in other countries and comparing the results with youth in Turkey could be interesting.

7.1.2 Hypothesis 2

Gathering around similar ideologies is a tendency of individuals observed on social networks, resulting in fragmentation of the society into groups of different-minded people. Such observations have been done by researchers, indicating fragmentation in different countries. Regarding the case of USA, studying specific cases in 2012 presidential elections, Barbera (2015) found fragmentation that people tend to gather with others who share similar opinions. Himmelboim et al. (2013) observed fragmentation on Twit-

ter and that even if people are following others in different-minded clusters, they are limiting exposure from them.

An interesting study in the field focused on fragmentation in online Japanese society, finding no evidence, hence supporting the positive side was conducted by Kobayashi and Ikeda (2009). It also points out the importance of studying various countries and regions due to different cultures and social media usage habits.

Analyzing tweets and connections three thousand users about the Swiss Nuclear Withdrawal Initiative in 2016, Arlt et al. (2019) found basically two things about the case of Switzerland: Fragmentation was clearly observed, but at the same time users were interacting with others having different opinions.

Studying Hypothesis 2 found indicators for fragmentation, which is in agreement with majority of the previous studies.

The distinct point of the present study can be considered as follows. Previous works have usually searched for a fragmentation of a society into groups of different or even opposite opinions. However, the present study aimed to find the fragmentation of a group of same opinion due to different reasons leading to the same opinion.

Finding various other sophisticated issues from other countries that layered fragmentation can be observed might be highlighted for possible future research.

7.1.3 Hypothesis 3

Many works in the literature have found specific issues around the world which make observable contributions to online political polarization and further to extremism. The recent work of Yamaguchi (2023) showed a relation between diffusion of opinions and the degree of extremism. It was found that the more people have extreme opinions, they post more on SNS and the posts spread the more.

One of the main issues for studying the contribution to polarization is the elections. An early study finding polarization due to elections is conducted by Gruz and Roy (2014), analyzing 6 thousand tweets about 2011 Canadian Federal Elections. Campanale and Caldarola (2018) found how 2016 Italian Constitutional Referendum contributed to online political polarization. Studying 2017 German Federal Elections, Schunemann et al. (2019) found evidences on the contribution to polarization.

Findings of Hypothesis 3 is in agreement with previous works from other countries in finding the contribution of elections to online political polarization.

While the studied issue is the elections, a point differentiates it from previous works is that it focused on not the nation-wide general or presidential elections, but mayoral elections. Finding that elections in one region can contribute to polarization in not only that region but also to the entire nation can be considered as the key finding of the study.

This study was based on hashtags, and its theoretical foundation is based on Sunstein's "Hashtag Wars" arguments on group polarization (Sunstein, 2002). Hashtag Wars is becoming a recognized direction for investigating online political polarization (Lai, 2015; Soares and Recuero, 2021; Chagas et al., 2022; Gil de Zuniga, 2022).

7.2 Limitations and Challenges

Limitations encountered in testing the Hypotheses are as follows. First of all, due to its own policies or requests by governments, time to time, Twitter deletes some tweets and even suspends some accounts so that the entire tweet history of suspended accounts become inaccessible. In addition, some accounts are *protected*, that their tweets cannot be accessed by an arbitrary account or through Twitter API in general. Because these tweets are mostly in political context, having no access to them is a limiting factor on any studies based on Twitter data.

The exception to this is the study on mayoral or local elections in 2019 because in that study, tweets satisfying certain conditions were retrieved in live stream, i.e. immediately when they were tweeted. Therefore, in that study no data is missed due to above mentioned limitations. Because protecting the Twitter account, i.e., making tweets inaccessible by accounts other than the approved ones directly affects the diffusion of opinions and exposure dynamics, this issue is also addressed in the studies.

Another issue that might potentially bias the results is the activity of *bot* accounts. Based on observations on the general attributes of automated bot accounts such as the screenname following special patterns, their tweets were filtered in the studies. However, some bot accounts not following any pattern and controlled by advanced

algorithms for mimicking a real human might have been missed in the filtering process.

In addition to limitations in data retrieval process, the analysis processes were subject to a limitation as follows. Advanced artificial intelligence (AI) and natural language processing (NLP) techniques were not utilized to grasp the sentiments in tweets but rather interaction patterns and keyword- or hashtag-based analyses were performed. This limitation highlights the prominence of collaborations between social and political scientists, and computer scientists.

Challenges

Partially overlapping with the limitations in typical points, several challenges are experienced in testing the hypotheses, as will be summarized, below.

- **Hypothesis 1:** Focusing on the entire set of interactions, especially in a long-period of time is the biggest challenge in data-driven political analysis. For testing Hypothesis 1, the total number of accounts determined to be following any of the target account of political youth organization exceeded 650 thousand. Retrieving last 3.200 tweets of each constituting the “population” posed a serious challenge being both time- and CPU-demanding. To overcome this challenge, commensurate subsets of the follower groups were created by “sampling”.
- **Hypothesis 2:** The biggest challenge in testing Hypothesis 2 was to determine the keywords for the three categories. One interesting reason is that in Turkish is an *agglutinative language*, and the meanings of words can vary a lot depending on how they end. To overcome this challenge, an intense effort was devoted to prepare thorough categories of keywords.
- **Hypothesis 3:** Because only a fraction of all Twitter accounts enabled their geo-location attribute, the volume of tweets with geo-data was not a challenge. However, determining the keywords in focus as “polarizing” was a true challenge. Although two hashtags emerged to be by far two TT (top trending), several other keywords could provide valuable insights too, which is a challenge to capture.

7.3 Future Prospects and Generalizations

Possible Future prospects of this research are as follows. Research conducted within the scope of the thesis was limited to online data. However, various data from offline communications in daily life are also valuable in determining the dynamics of fragmentation, echo chambers and polarization in two way: Offline events and communications have reflections on online communications, and *vice versa*. Hence, designing new research projects for unifying offline and online political communications constitutes a major quest in the field.

Throughout this research, for a clear understanding of the tendencies and behavior of individuals constituting the online society, the impact of automated bot accounts -where applicable- were eliminated as much as it was possible. However, such bot accounts have an undeniable effect in contributing to the dynamics of fragmentation, echo chambers and polarization. Hence, a future prospect shall be on identifying, retrieving and analyzing the impact of both accounts.

Generalization of findings of the thesis can be considered in several ways. First of all, the studied issues in testing the hypotheses can find applications in other countries as well. For example, in addition to Turkey, though at different levels, some other countries are experiencing refugee crises and highly politicized mayoral elections, and have a high level of youth participation in politics. Therefore, studies of this thesis can be generalized to such countries. Beyond these topics, these studies can be generalized to terrorism as a consequence of polarization and extremism, fragmentation and echo chambers in religious groups, echo chambers in consumption, and so on.

Chapter 8

Conclusions

This thesis aimed to contribute to political science in the social media era. Traditional media has played a role in the political fragmentation, polarization and extremism in both positive and negative ways. With the emergence of the Internet, websites of traditional media organizations have played a similar role as online media outlets. Apart from the convenience, efficiency and frequent updating capability, these online outlets were not too different from their traditional counterparts in the sense that they were still providing a one-way communication, from the outlet as the source, and people as consumers.

However, as blogs and then various social media platforms or SNS appeared, the communication turned to a two- and even a multi-way that in addition to re-posting, liking/disliking and commenting to the shared contents, individuals acquired the capability of creating and sharing their original contents. This has undeniably changed the dynamics of political fragmentation, echo chambers, polarization and extremism around the globe.

On the one hand, an unprecedented opportunity in the history of the human race has appeared for not only reaching but also gaining a potential to affect opinions in the widest spectrum, from one extreme to the other. This is a great chance for creating an advanced democracy with well-informed citizens, as each individual has an opportunity to search, find and examine various opinions. Beyond a deliberative exposure, due to the structure of social network sites (SNS), individuals are subject to not only unplanned but also unwanted exposure, which are also argument-based or experience-based, as discussed by Sunstein (2017). A public sphere is expected to arise due to more convenient access to a wide range of ideologies (Habermas, 1989[1962]).

On the other hand, one more thing has become more convenient and efficient as ever: Gathering with others around similar opinions, or political ideologies. This can be a consequence of not only deliberative enclave but also due to technological tools such as algorithmic ranking of SNS and mass blocklisting. The society is fragmented as similar minded individuals gather around their ideological lines, forming clusters, or groups. The dynamics of in-group and out-group interactions then become a determining factor for forming and reinforcing echo chambers, if the former is dominant, where similar opinions are amplified within a group through circulating and reflecting back. Existence and reinforcement of echo chambers have a serious potential to contribute to political polarization, and the increasing polarization might lead to extremism of ideas, which is an obvious threat to democracy.

These two potential results has led to probably the hottest debate in online political communications: Does the social media usage contribute to improving or hindering the democracy. In order to shed light on the problem, researchers around the world has devoted intense effort in various directions. One is to focus on specific significant political and social incidents to analyze the potential contribution to cementing the echo chambers and political polarization. Another is to focus on a specific country, or to perform a comparative study on several countries carefully selected due to their unique aspects with potential to provide salutary insights. Besides theoretical discussions, data-driven analysis has been a major method for enabling not only qualitative but also quantitative findings.

As explained in the Literature Review in Chapter 3, as evidences are found supporting either side of the debate, yet, the negative side being dominant. That is, as more results are found with respect to each social media platform or each country, it becomes more clear in an inductive way that the Internet and social network usage is negatively affecting the political fragmentation, echo chambers and polarization. Nevertheless, even more research is needed because (i) the internet and communication technologies are advancing, so are the people's preferences and interaction patterns with the online culture, (ii) in addition to existing but unexplored issues such as youth participation in politics, and local elections; new issues and problems are arising such as the refugees crises, and (iii) analyses on several countries with a dense political agenda are lacking.

In this thesis, a new term is introduced: Echo-Politics, referring to the intensifying field of research examining fragmentation, polarization and especially echo chambers in online political communications.

This thesis focuses on a specific country with specific and relatively unexplored issues in an inductive manner. Regarding each of these issues, a large dataset is acquired and analyzed, and not only the current situation as is but the dynamics are revealed within a time span.

This thesis is based on the **main hypothesis**, i.e.

- “Political discussions on Twitter create and reinforce considerable political fragmentations, echo chambers and polarization in Turkey, and are negatively related to deliberative democracy.”

Handling several critical issues, for the sake of clarity and a good systematization, the above main-hypothesis is studied within four hypotheses, as explained in the relevant chapters.

Youth participation in politics, with political youth organizations in focus has been addressed as a relatively unique application area in the literature in testing **Hypothesis 1**, the first two parts.

Three groups of political ideologies are considered, which are the followers of official Twitter accounts of three political youth organizations, i.e., the organizations of the ruling party AKP (Adalet ve Kalkınma Partisi / Justice and Development Party) and major opposition party CHP (Cumhuriyet Halk Partisi / Republican People’s Party), and the non-party political organization, TGB (Türkiye Gençlik Birliği / Turkish Youth Union). More than 40 million Twitter interactions within a period of highly political three-years among the users in these three follower groups are analyzed to find out if users are mostly interacting with others in the same group. Echo chambers were found because almost all the interactions take place within the group itself. Furthermore, a user who is following the account of a single group is mostly interacting within the same group, but a user who is following more than one group is interacting with users from other groups as well, supporting the negative side of the debate.

The dataset used in the first two parts of Hypothesis 1 is of 30 thousand Twitter

users including a considerable number of users with verified accounts, which was used to test the third part, i.e.

- Because they interact with diverse ideologies more, verified accounts help weakening the echo chambers.

The verified accounts were analyzed along with the interaction patterns. The analyses showed that for any of the groups in consideration, the interaction patterns of verified accounts contribute to weakening the echo chamber of that group.

The Syrian refugee crisis in Turkey is studied for testing the **Hypothesis 2**, i.e.,

- Even among like-minded people, the reasons behind a particular opinion can be fragmented.

There are social and economical problems common to in any country hosting a considerable number of refugees, raising anti-migrant sentiments in the society. However, in addition to hosting more than 6 million Syrian refugees, or migrants, an issue unique to Turkey is that President Erdogan is giving citizenship and right to vote to Syrian migrants, expecting that they will vote for him. Different from the usual studies in the literature analyzing opposite opinions trying to detect a possible fragmentation, this study focused on the same opinion. The anti-migrant sentiments on Twitter were classified by their reasons behind and analyzed systematically. It was found that, even considering the same opinion, or ideological line, the reasons behind can be fragmented.

Hypothesis 3 focused on an issue relatively unique to Turkey, too: Polarization due to local elections. In the world in general, as found in many studies as listed in the literature review, general or presidential elections have been found to be contributing to the polarization of the society. However, local or mayoral elections are not as politicized as general elections, with the exception of probably a few countries, Turkey being the leader. In Turkey, winning the general elections mostly, if not always, depends on the last mayoral elections in metropolitan cities. The 2019 mayoral elections have been a turning point in the political history of the country, that AKP, for the last several decades, have lost in all the metropolitans. Furthermore, Istanbul elections went into a

crises, and then canceled and re-run. Polarizing hashtags appeared during the election campaigns, and the ones in the second run were even sharper and became more and more popular. Retrieving a half and a quarter million of tweets in the two rounds, respectively, and performing geographical analyses on the tweets containing the geographical information, it was found that local elections can contribute to the polarization too, and the elections in a single region can polarize the entire country.

In summary, the present thesis aimed to make a contribution to online political communications. Focusing on specific groups and several issues relatively unique to Turkey, analyzing the retrieved tens of millions of tweets aligned with Sunstein's echo chamber theory (Sunstein, 2017) in each study, considerable fragmentation, polarization and echo chambers are found.

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Appendix

Social Network Analysis

Understanding the structure and dynamics of a real life entity that can be modeled as a network might help identifying and improving the shortcomings and problems in that entity, which could be the network of power grids (Zio et al., 2012; Guruprakash, 2020), spreading of viruses (Pastor-Satorras and Vespignani, 2001; Newman, 2002), etc. Social networks are also suitable for modeling as a network. Each account on a SNS can be considered as a *node* or *peer*, and the friendship or following/followed relationship between accounts can be considered as a *connection*, or *edge*, as shown in Figure A1. Regarding connectedness or reachability, two nodes might be found in one of the three cases:

- Directly connected, for example n_2 and n_3 in Figure A1,
- Indirectly connected through other nodes, or
- Disconnected (unreachable).

When an account posts on the social network, the directly connected nodes might find greater chance to interact with that post than indirectly connected nodes, whereas disconnected nodes would not have such a chance. Therefore, the connectedness can be considered as playing a role in the diffusion of ideologies in social networks (Koide et al., 2013; Okada et al., 2014).

In the political context, because people sometimes tend to follow accounts with similar ideologies more than different ideologies, communities might emerge on social

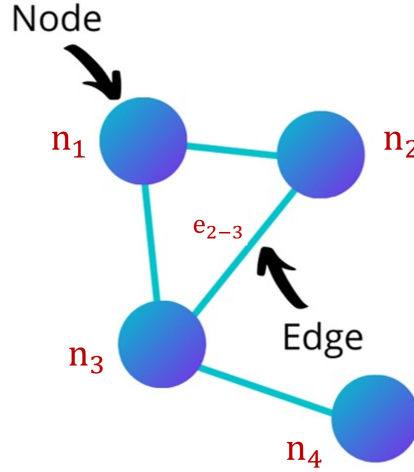


Figure A1. Modeling a social network consisting of peers (nodes) and their connections (edges). Here, edge e_{2-3} is connecting nodes n_2 and n_3 .

networks (Gruzd and Roy, 2014). Therefore, the connectedness can also be considered for political groups, suggesting a relation between the social network structure and the existence and dynamics of online political fragmentation, echo chambers and polarization.

This has motivated researchers to understand the social network structure for analyzing social and political attributes. From the perspective of diffusion of ideologies which could have impact on the dynamics of fragmentation and echo chambers, edges connecting different communities (i.e. constituting a bridge between communities) can be considered as more *significant* than edges within the same community (Newman, 2002). Therefore, quantifying the significance of edges in a social networks might help understanding the dynamics of political fragmentation and echo chambers.

Justification of the relevance of the edge significance studies in this thesis to the hypotheses of the thesis: The concept of significance of nodes or edges depend on the context and application. That is, the conceptualization, mathematical formulation and calculation of the significance usually vary due to the specific application field. The edge significance studied in this thesis is specific to the online political communications and in particular, fragmentation and echo chambers. The conceptualization of the quantification method herein is based on the global connectivity of nodes and communities in a fragmented online society, and the spread or diffusion of ideologies.

Among many works in the literature on edge significance quantification problem

for in social networks (Girvan and Newman, 2002; Wang and Chen, 2008; Chen et al., 2010; De Meo et al., 2012), the recent method called Link Entropy (LE) have been found successful in quantifying the edge significance within this context (Qian et al., 2017). The LE method starts with exploring the communities in a fragmented social network by using the method of Wang et al. (2011). This exploration step provides the probability of each node to be belonging to each community. Then, to calculate the significance of edge e_{2-3} , the probability distribution of n_2 and n_3 are used.

Previous studies of this thesis for testing the hypotheses suggested that the other connected nodes of n_2 (i.e., n_1) and the other connected nodes of n_3 (i.e., n_1 and n_4) might also play a role in determining the significance of edge e_{2-3} . This idea can be considered as a slight improvement of the Link Entropy method, and it is coined Deep Link Entropy (DLE) method. Following the conceptualization of this assertion, the mathematical formulation and computer simulations were done by the collaborator. The results suggested that the DLE method might provide a slightly improved quantification of edge significance in social networks from the perspective of fragmentation and especially echo chambers.

The results were presented in Yurtcicek Ozaydin and Ozaydin (2021).

Political Secession is considered as follows. In a fragmented society, two directly connected communities might become indirectly connected, if the corresponding nodes break the edge. The breaking of an edge can be associated with unfriending on Facebook, or unfollowing on Twitter or Instagram, for example. These two communities might not be completely disconnected from each other, or disintegrated from the society. So they can still be indirectly connected through some other communities. In this case, the spread of ideologies and exposure to cross-minded ideologies might not be completely cut, but also might not be as efficient as if they were directly connected.

Examining the political secession process might help understanding the dynamics of echo chambers in fragmented online societies. Therefore, the political secession was studied using the Link Entropy and Deep Link Entropy methods. Results suggested that the latter might provide slightly better output.

The results were presented in Ozaydin and Yurtcicek Ozaydin (2021).

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