Journal of Information Technology & Politics

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/witp20

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To cite this article: Hakan Hekim (2021) Ideological homophily or political interest: Factors affecting Twitter friendship network between politicians, Journal of Information Technology & Politics, 18:4, 371-386, DOI: 10.1080/19331681.2021.1881937

To link to this article: https://doi.org/10.1080/19331681.2021.1881937

Published online: 25 Feb 2021.

JOURNAL OF INFORMATION TECHNOLOGY & POLITICS
2021, VOL. 18, NO. 4, 371–386
https://doi.org/10.1080/19331681.2021.1881937

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ABSTRACT

The internet has been praised as a tool that would increase political participation and enhance dialogue between politicians and the public. In fact, the widespread use of social media has turned the internet into a valuable communication channel for both individuals and organizations. Notably, it presented many opportunities for politicians and political parties to reach their constituencies. However, studies on politicians' social media behaviors reported that they were using social media for broadcasting official political positions and self-promotion. In addition, the social media has become a tool to extend traditional politics into the cyberspace where interaction and exchange between rival political groups are rare and not very productive. As a result, ideological homophily was reported as the most crucial predictor of network formation on social media for politicians. This study explored that finding by analyzing Twitter friendships and retweeting networks of Turkish politicians. It found that political interests were more influential in politicians' social media networks than ideological homophily.

KEYWORDS

Social media; Twitter; Turkish politics; political parties; political communication

Introduction

Web 2.0 technologies have transformed the internet from a web of textual publications into an interactive environment. Social media platforms developed with those technologies have empowered users by customizing their internet experience and creating content as they like. As the average time spent on social media increases every year, it has changed people's information behavior. Empirical studies have found that people used social media platforms for information sharing, information seeking, communicating with peer groups, and entertainment purposes (Alhabash & Mengyan, 2017; Barker, 2009; Whiting & Williams, 2013).

Politicians embraced social media to connect with citizens and to promote their political views. Many observers argued that social media would increase dialogue between citizens and policymakers and enhance the quality of democracy. However, studies reported that politicians have been using social media to connect and communicate with like-minded people, and homophily was an essential factor in shaping their online social network. This study investigates whether that finding is valid for politicians' friendship with their fellow politicians on social media. The research question of this article is whether politicians make homophilous connections between themselves or are there other factors affecting their online friendship choices. This study investigates that question by collecting and analyzing Turkish politicians' Twitter data. It hypothesizes that although homophily has been reported as the most important factor affecting friendship networks of social media users, political alliances are more influential on politicians' online communications and friendship choices.

The primary significance of this study is that it provides new insight into politicians' online behavior. Social media studies have found that users tend to create homogeneous groups on social networks by making connections with like-minded people. There are a limited number of studies on politicians' inner friendship networks, and they reported similar findings. This study introduces political alliance as another factor that might affect online friendship network and tests whether it is a better predictor of a tie between politicians than homophily.

This study continues with a literature section where empirical studies on the homophily concept and politicians' online behavior are reviewed. The

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methodology section presents information about the sample, variables, data collection, and data analysis methods. Findings of social network analysis of politicians' Twitter data are presented and discussed in the results and discussion sections. It finishes with a conclusion section.

Related literature

Traditionally, politicians have been communicating with their audiences mainly through political speeches, news media coverage, or ordinary talks. The popularity and practicality of the internet and social media platforms have shifted them into multifunctional communication channels and politicians adopted them to connect with their supporters. There was a popular argument that the internet would strengthen democracy by increasing political participation and dialogue between rival groups. However, empirical research reported that despite their potential to increase political engagement and communication, online channels were used similar to traditional communication channels (Coleman, 2001; Schweitzer, 2005). Some studies reported increased use of interactive features of the web by the politicians and social media's broadening effect of space of political dialogue (Grant, Moon, & Grant, 2010; Trammell, Williams, Postelnicu, & Landreville, 2006). However, others reported that politicians are still using social media to broadcast their political views and prioritize topics like campaign-related events and self-promotion (Graham, Broersma, Hazelhoff, & Van'T Haar, 2013; Jackson & Lilleker, 2011; Jungherr, 2016; Stier, Bleier, Lietz, & Strohmaier, 2018).

Consistent with that homophily is cited as one of the most critical factors affecting individuals' relationship network and online social media behavior. Homophily can be described as a tendency to associate with similar others. It suggests that "a contact between similar people occurs at a higher rate than among dissimilar people" (McPherson, Smith-Lovin, & Cook, 2001, p. 416). Sometimes, this tendency results from the social structure which prevents people from interacting with different people. Homogeneity in one's social subunits causes homogeneity in her relationship pairings. This homogeneity is called *induced homophily*.

On the other hand, *choice homophily* denotes people's tendency to choose similar people as their peers. In another common classification, they are called *status* and *value* homophily, respectively. Induced homophily is a construct of the structural factors people were born with where the choice homophily is an extension or sometimes change to it due to individual-level factors.

Proximity is a significant cause of homophily because people are more likely to have relationships with those closest to them in space. Individual characteristics like gender, age, education, race, and ethnicity-based homophily are typical in social networks. In additions, group characteristics like family ties, organizational foci, occupational positions, domestic positions, informal roles, and need satisfaction are other causes of homophily in social relations (Chancellor, Layous, Margolis, & Lyubomirsky, 2017; McPherson et al., 2001). These are considered as the structural sources of the induced homophily. On the other hand, cognitive processes are effective in choice homophily. People tend to interact with people whom they think or believe are similar to them. Research studies have reported that choice homophily is an essential factor affecting both dyadic and triadic relationships on social media (Bakshy, Messing, & Adamic, 2015; Guo, Rohde, & Denis Wu, 2020; Huang, Tang, Liu, Luo, & Xiaoming, 2015; Laniado, Volkovich, Kappler, & Kaltenbrunner, 2016; Lou, Tang, Hopcroft, Fang, & Ding, 2013; Šćepanović, Mishkovski, Gonçalves, Nguyen, & Hui, 2017).

As a cause of choice homophily, ideology or ideological homophily was found influential in social media users' friendship networks (Caetano, Lima, Santos, & Marques-Neto, 2018; Gruzd & Roy, 2014; Halberstam & Knight, 2016; Huber & Malhotra, 2017; Zamal, Faiyaz, & Ruths, 2012). In addition, ideological homophily is also found to be influential on people's information behavior. It has been reported that people process information differently depending on the ideological position of the sources (Anderson, Goel, Huber, Malhotra, & Watts, 2014; Barberá, Jost, Nagler, Tucker, & Bonneau, 2015; Boutyline & Willer, 2017; Colleoni, Rozza, & Arvidsson, 2014). Another line of research investigated the origins of those differences. Despite the inconsistencies, empirical

research reported a relationship between personality traits and political opinions (Blais & St-Vincent, 2011; Gerber, Huber, Doherty, Dowling, & Ha, 2010; Mondak and Halperin, 2008; Riemann, Grubich, Hempel, Mergl, & Richter, 1993; Wang, 2016). Consequently, these findings suggest that people with similar personality traits tend to have similar political opinions, which eventually increases the likelihood of homophilous relationships between them.

Ideological homophily is influential on politicians' social networks too. Politicians' behavior is usually an outcome of party policies. Explanations of party behavior are mostly influenced by the rational choice approach which groups it into office-seeking, policy-seeking, and vote-seeking. Office-seeking parties "seek to maximize not their votes but their control over political office," policy-seeking parties seek to maximize their effect on public policy, and vote-seeking parties seek "to maximize their electoral support for the purpose of controlling government" (Strøm, 1990). Since vote-seeking behavior was generally seen as an instrumental goal (Zohlnhöfer & Bandau, 2020), office-seeking and policy-seeking behaviors received more attention in later research. There is mixed evidence on the adequacy of both office-seeking and policy-seeking approaches, which suggests that there are other factors affecting political parties' behavior (Moore, 2018); Steinert and Yordanova, 2016; Zohlnhöfer and Bandau, 2020).

We can observe office-seeking and policy-seeking behaviors on politicians' online activities. A policy-seeking attitude is expected to push politicians to interact with like-minded politicians to maximize their effect on public policy where an office-seeking attitude is expected to push them to interact with allied politicians to maximize their control of the political office. Therefore, policy-seeking behavior develops an affinity based on ideological homophily, whereas office-seeking behavior develops an affinity based on common interest.

Consistent with that empirical studies reported ideological homophily as an essential factor affecting politicians' online behavior. Rather than entering into a dialogue with rival groups, politicians were generally interacting with like-minded people on social media (Del, Esteve, & Bravo, 2018; Hemsley, Stromer-Galley, Semaan, & Tanupabrungsun, 2018; Koiranen, Koivula, Keipi, & Saarinen, 2019). On the other hand, office-seeking behavior was also found to be influential on politicians' online behavior too (Evans, 2018; Moore, 2018; Zohlnhöfer & Bandau, 2020). It was reported that politicians are motivated by the rewards and build their social networks according to their political interests. Therefore, this study contributes to that line of research by investigating if homophily or political alliance is more influential on politicians' social media behavior.

Theoretical framework

Politicians' office-seeking behavior is consistent with exchange theory, which argues that expected costs and rewards are influential on people's decision-making. Exchange theory can be viewed as a form of rational choice theory. Exchange theorists view social structure "as a configuration of social relations among actors (both individual and corporate), where the relations involve the exchange of valued items (which can be material, informational, symbolic, etc.)" (Cook & Whitmeyer, 1992, p. 110). Exchange theory is shaped mainly by the works of Homans, Blau, and Emerson. Homans (1974) perceived individual actions as reducible to psychological responses. He argued that social behavior could be explained in terms of psychological motives, and an individual's behavior is a function of its payoffs or its outcomes. Blau (1964) introduced microeconomic reasoning into his analysis and argued that the scope of exchange is "limited to actions that are contingent on rewarding reactions from others."

Emerson, in a way, reconciled these two views in his approach. He viewed social relations as an exchange network, which is "a set of actors linked together directly or indirectly through exchange relations," and an actor is "conceived as a point where many exchange relations connect" (Emerson, 1972). This network of relationships enables the exchange of valued resources between individuals and groups. Individuals' motivation to create ties with others is to minimize their dependence on others from whom they receive resources and maximize the dependence of others to whom they offer resources. Social relations are formed and

sustained as a result of these dependencies (Cook, 1977).

This study views political alliances as an exchange relationship in which politicians exchange resources to hold or get in the government. Therefore, it argues that political alliances should be more effective in politicians' online friendship choices than ideological homophily. This study has the following hypotheses:

H_{1a}: If a political party is not allied with any other political party, its politicians will have more online friends from ideologically close parties than ideologically distant parties.

Let *A, B, and C* be sets of politicians from three political parties where *A* and *B* are ideologically close to each other, but *C* is ideologically distant to them. Let F_A, F_B and F_C be sets of online friends of three politicians from *A, B, and C*, respectively. Then, the first hypothesis can be expressed in sets notation as follows:

$$|F_A \cap B| > |F_A \cap C| \tag{1}$$

which means that the cardinality of $F_A \cap B$ will be greater than the cardinality of $F_A \cap C$.

H_{1b}: If a political party is not allied with any other political party, its politicians will have more common online friends with politicians of ideologically close parties than ideologically distant parties. This can be expressed as follows:

$$|F_A \cap F_B| > |F_A \cap F_C| \tag{2}$$

H_{2a}: If a political party is allied with another political party, its politicians will have more online friends from the allied party than the ideologically close party. Let *A* and *C* be allied parties, then:

$$|F_A \cap C| > |F_A \cap B| \tag{3}$$

H_{2b}: If a political party is allied with another political party, its politicians will have more common online friends with the politicians of allied party than ideologically close party. Let *A* and *C* be allied parties again, then:

$$|F_A \cap F_C| > |F_A \cap F_B| \tag{4}$$

H_3: If a political party is not allied with any other political party, its politicians will send more retweet messages of politicians of ideologically close parties than politicians of ideologically distant parties.

R_A, R_B , and R_C are sets of retweets sent by politicians *A, B, C* where *A* and *B* are ideologically close to each other, but *C* is ideologically distant to them. Let $R_{A\to i}, R_{B\to i}, R_{C\to i}$ denote a particular group of *i*'s messages sent as a retweet where $(R_{A\to i} \subseteq R_A), (R_{B\to i} \subseteq R_B), (R_{C\to i} \subseteq R_C)$. In the absence of a political alliance, this study expects to find that a politician will retweet more messages sent by ideologically close parties' politicians than ideologically distant parties' politicians:

$$|R_{A\to B}| > |R_{A\to C}| \tag{5}$$

H_4: If a political party is allied with any other political party, its politicians will retweet more messages of politicians of allied parties than politicians of ideologically close parties. Let *A* and *C* be allied parties, then:

$$|R_{A\to C}| > |R_{A\to B}| \tag{6}$$

Methodology

Data

Turkish political parties are generally considered as cadre parties controlled by elite groups. They have a centralized structure, and power is concentrated in the hands of party leaders (Ayan, 2010). Party policies are shaped at the center by the leader and its close circle. Turkish political parties can be grouped along several overlapping ideological dimensions as presented in Table 1. They can be on the left or right, secular or Islamist and proponent of Turkish nationalism or Kurdish identity. Table 1 places major political parties on a left-right scale and lists their policy positions on major issues.

The most recent election for the Turkish Parliamentary was held on June 24, 2018. Just before the election, the ruling Justice and Development Party (AKP) and the extreme-right opposition Nationalist Movement Party (MHP) proposed an electoral alliance law. Although the law was widely criticized by other opposition parties, it was enacted as a result of the AKP and MHP's dominance in the Parliament. Two major alliances formed after this law. On the government side, the *Cumhur* alliance between AKP, MHP and BBP (Greater Unity Party, another nationalist party), and on the opposition side, *Millet* alliance

Table 1. Political parties placed on a left-right scale with their policy positions on major issues (adopted from Çarkoğlu & Kayalcıoğlu, 2007).

Extreme-Left	Center-Left	Pro-Islamist	Nationalist
HDP	CHP	SP, AKP	MHP, İP
Ethnic Kurdish	nationalist, pro-EU	Strictly secularist, pro-EU, relatively more étatist (state interventionist)	Islamic revivalist, relatively more Euro skeptic, state interventionist, populist in economic policy
Ethnic Turkish	nationalist, anti EU, populist in economic policy, relatively more state interventionist		

between social-democratic Republican People's Party (CHP), nationalist Good Party (İP), Islamist Felicity Party (SP) and center-right Democrat Party (DP) were formed. After the election, the Cumhur alliance won 53.6% and the Millet alliance won 33.9% of the vote. Not all allied parties could enter into the Parliament; AKP, CHP, HDP, MHP and IP shared seats in the Parliament. Alliances played a significant role during the 2018 elections, and partially continued in the 2019 local elections.

Kurdish ethnic-nationalist HDP had a peculiar situation in this setting. As a social-democratic party, HDP and its predecessors had ties with other social-democratic parties. Although HDP won 11.7% of the votes and 67 parliamentary seats in the 2018 general election, the Turkish judiciary had begun to file terrorism charges against its MPs following the 2016 coup attempt. Seven elected HDP politicians' MP status was revoked. Six HDP politicians, including the former leader of the party, are still in prison. This situation refrained opposition parties from forming an alliance with HDP. However, the existence of a covert alliance between HDP and CHP was circulated as a rumor in, especially, pro-government media outlets. Those claims were restated when HDP did not field candidates in some areas during the 2019 local elections to improve the chances of opposition parties' candidates. Actually, HDP's absence on the field played an important role in opposition parties' victories in some metropolitan areas.

Although AKP and MHP are both conservative parties, they had been very harsh at criticizing each other since the beginning of the AKP rule in 2003. The tension between the two parties escalated after the June 2015 elections when none of the parties obtained the majority of the seats. MHP declined to enter into negotiations to form a government that would include HDP. It also declined to form a government with the AKP unless the AKP agreed to investigate corruption allegations (Kalaycıoğlu, 2018). Therefore, a government could not be formed, and elections repeated in November 2015. However, developments following the 2016 coup attempt and foundation of nationalist İP in 2017 by MHP dissidents pushed them to form a coalition to prevent losing votes.

Allied parties were not very close to each other in terms of their policy positions. Figure 1 presents parties' 2018 Manifesto Project (Volkens et al., 2020) scores on seven major issues identified by Kumbaracıbaşı (2019). It shows that all parties have a similar stance toward free-market, EU accession, and decentralization, but they differ on religion, nationalism, human rights, and incentives. Pro-Islamist parties SP and AKP are closer to each other. On the other hand, CHP is closer to HDP on religion and nationalism, but closer to İP on human rights and incentives. CHP is generally distant to SP on many policy issues. Figure 1 suggests that if political parties were allied based on their policy positions, AKP should have allied with SP, and CHP should have allied with HDP.

Therefore, office-seeking attitude looks more influential on alliances between political parties than the policy positions or the ideology. This study argues that there is a similar mechanism behind politicians' online behavior. Office-seeking attitudes are expected to have more influence on politicians' friendship networks than ideological homophily. To investigate that claim, this study analyzes Twitter messages and friendship networks of 116 Turkish politicians serving at the top-management bodies of six major political parties who have seats in the Parliament. Although SP couldn't win any parliamentary seats in the 2018 elections, it is included in the sample because it represents an essential tradition in Turkish politics. Virtue Party MPs founded both AKP and SP after the Constitutional Court banned it in 2001. Since both party officials have a similar ideological background, they are expected to be closer to each other

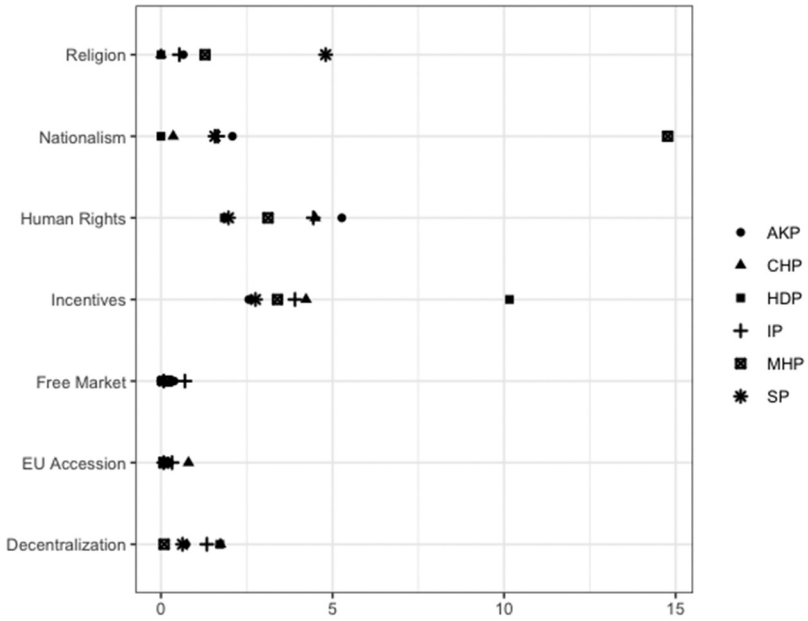

Figure 1. Political parties with their policy positions on major issues.

on social network platforms. Therefore, the inclusion of SP politicians is expected to contribute to this study.

Sampled politicians' Twitter account information, friendship information (people they are following), and messages were downloaded through Twitter API by using retweet package developed for R statistical software (Kearney, 2019). Individual friendship lists were combined into a large dataset. Since this study's focus was the interrelationship between top-level politicians of different parties, only connections between sampled politicians were included into the analysis. The final network data object had 116 vertices and 2009 directed edges.

Preliminary screenings of the data showed that one SP politician added almost all of the samples as his friend. Since this artificially put him at the center of the network and increased his party's parameter values, he was excluded from the sample. The distribution of the final sample grouped by the parties is presented in Table 2. In addition, a sample of Twitter messages was downloaded to analyze politicians' retweet networks. There were 130,865 messages in the sample, and 38,538 of them were retweets of another sampled politician's message.

Table 2. Number of politicians from parties sampled in the study.

AKP	CHP	HDP	İP	MHP	SP
25	18	24	17	16	16

Variables

The dependent variable of this study is sampled politicians' Twitter friendship status with each other. When user A follows user B on Twitter, user B becomes a friend of user A. Unless an account is protected, it can be followed by other accounts.

There are two independent variables in this study. Many factors could explain the existence of a tie between politicians. However, as presented in the literature review, ideological homophily is an essential factor affecting politicians' online friendship choices. Therefore, the first independent variable is party ideology. Party ideology was coded as a vertex attribute. AKP and SP are Islamist/traditionalist, MHP and IP are nationalist, and CHP and HDP are social-democratic parties. According to the ideological homophily argument, more ties are expected between those pairs than others.

The other independent variable that is expected to influence politicians' friendship network is the alliance between political parties. As presented in the literature review section, politicians from allied parties are expected to have more connections than

politicians from non-allied parties. Alliances were also coded as a vertex attribute.

Data analysis

This study employs social network analysis techniques to analyze the sampled data. In the first part of the results section, network statistics are calculated and presented with tables and graphs. This part aims to present the characteristics of the data from different perspectives and interpret it within the context of the study. Graphs and network statistics will also give an initial idea about the validity of the hypotheses of the study.

The second part of the results section investigates group formation dynamics by using exponential random graph modeling (ERGM). Group formation on social media is an important topic in social network studies. In a directed network like Twitter, relationships begin with the user X following user Y. If user Y follows back the user X, then a reciprocal relationship emerges. If both users are the same in some characteristics, then a homophilous relationship is formed. On the other hand, after becoming a follower of Y, X chooses to follow Z, who is also a follower of Y, then a transitive triad emerges. There are many other forms of relationships investigated in social network studies. ERGM was used to analyze how independent variables have weighted the probability of the given network configuration concerning the basic following, reciprocal and homophilous relationships between sampled politicians. Network analysis was conducted with *statnet* (Hunter et al., 2008) and *igraph* (Csardi & Nepusz, 2006) packages developed for R software.

Finally, politicians' retweet behavior is analyzed using exploratory social network analysis techniques. The frequency of retweet messages was shown with a table, and a discussion of the related hypothesis was presented.

Results

Exploratory analysis

The network data object has 116 vertices and 2009 edges. Table 3 shows the matrix of connections between parties. Rows of the table indicate the connections initiated from, and columns indicate connection incident to. The diagonal of the table has the largest figures, showing that politicians have made more connections with members of their parties. AKP is leading with 483 connections and followed by HDP and CHP with 315 and 276 connections. The number of connections between politicians from different parties is supporting H_{1a} and H_{2a}. As the only non-allied party, HDP politicians have more ties with ideologically close CHP politicians. Allied parties' politicians, on the other hand, have more ties with each other.

Table 3. Number of Twitter friendship connections between parties.

	AKP	CHP	HDP	İP	MHP	SP
AKP	483	12	5	3	18	1
CHP	13	276	36	43	8	13
HDP	13	46	315	6	2	5
İP	5	28	0	221	6	12
MHP	33	7	1	5	204	2
SP	27	20	1	16	6	116

Figure 2 visualizes Table 3. It shows six major groupings in the network. Vertices are colored by their parties and sized relative to in-degree scores. Party leaders were represented by triangle-shaped vertices. Except for HDP, all party leaders had higher in-degree scores. Types of the connection between politicians were shown with edge attributes. In-party ties were lightly colored. The connection between allied and ideologically close parties' politicians was emphasized in the graph. All groups looked densely connected within themselves. Particularly, AKP, HDP, and CHP had more ties within their parties. It is clear that connections between allied party members were denser than others. In addition, allied party leaders were located closer to each other. IP and SP leaders were located very close. CHP leader was also close to them. On the other hand, AKP and MHP leaders were located close to each other. Among ideologically close parties, CHP and HDP were densely connected. Connections between other ideologically close party members were not so dense. Particularly, members of different nationalist parties were less connected than other groups.

The graph's density was 0.15 which meant that out of all possible connections, 15% percent was

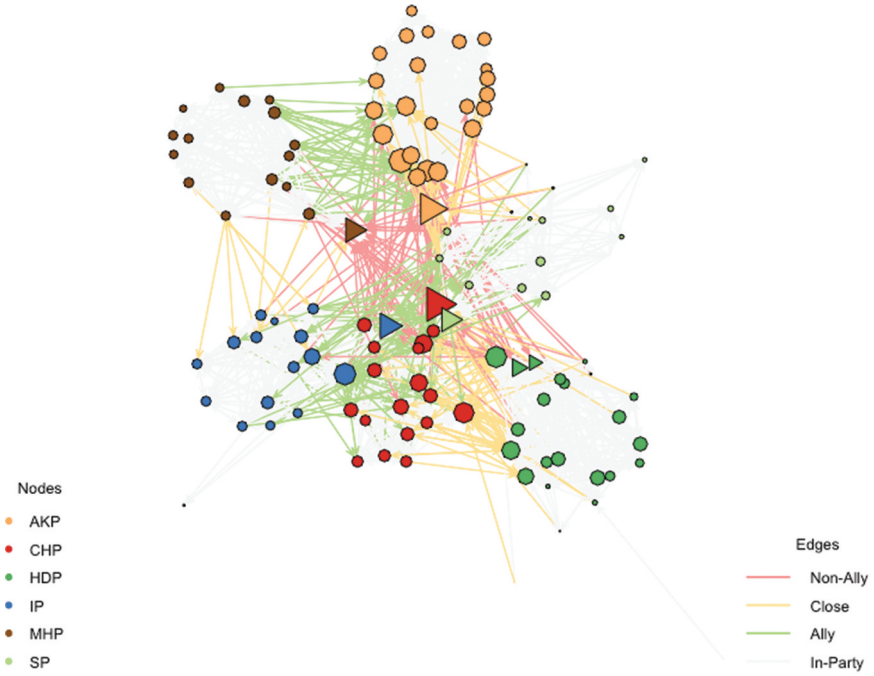

Figure 2. Twitter friendship network of political parties arranged by vertex and edge attributes.

realized in the network. There were 30,627 triads, 746 mutual connections, and 516 asymmetrical connections in the network. The high number of triads and mutual ties caused high transitivity and reciprocity scores of 0.59 and 0.74, respectively. Subgraphs showed that 646 of all mutual connections and 207 of all asymmetrical connections are initiated from and incident to the vertices of the same party. This structure implied that sampled Twitter network data were different from a random graph, and there was some type of dependency relationship among ties.

As presented in the literature review, homophily in social relationships increases the homogeneity of social networks. Table 4 reveals whether that was true for politicians' online friendship networks. Table 4 presents the total number of common friends each politician had as grouped by their parties. Consistent with H_{1b} Table 4 shows that non-allied HDP politicians had more common friends with ideologically close CHP politicians. Again consistent with H_{2b} allied politicians had more common friends. The only exception to that is CHP. CHP politicians had more common friends with ideologically close HDP.

Table 4. Number of common friends among parties.

	AKP	CHP	İP	MHP	HDP	SP
AKP	9812	658	290	893	317	332
CHP	658	4616	1235	275	1305	491
İP	290	1235	3052	202	202	405
MHP	893	275	202	2758	84	94
HDP	317	1305	202	84	4542	125
SP	332	491	405	94	125	984

Locations of individual network members were supporting the foregoing analysis. Centrality is a common set of measurements conveying how prominently connected an actor is in a network. There are various centrality degrees proposed in the social network analysis literature. For directed networks, degree centrality is helpful because it allows measurement of ties others have initiated with a user (popularity) or ties a user initiated with others (activity) which are appropriately named as in-degree and out-degree centralities (Himelboim, 2017; Kolaczyk & Csardi, 2014). Figure 3 shows the boxplots of different degree distributions for all politicians grouped by party.

Figure 3(a) shows degree distributions. Consistent with Figure 2, AKP and CHP's mean degree score was higher than the others. Except for SP, the other three parties' degree distributions were similar to each other. Figure 3(b, c) shows in-degree and out-degree distributions. AKP and CHP's in-degree and out-degree score distributions

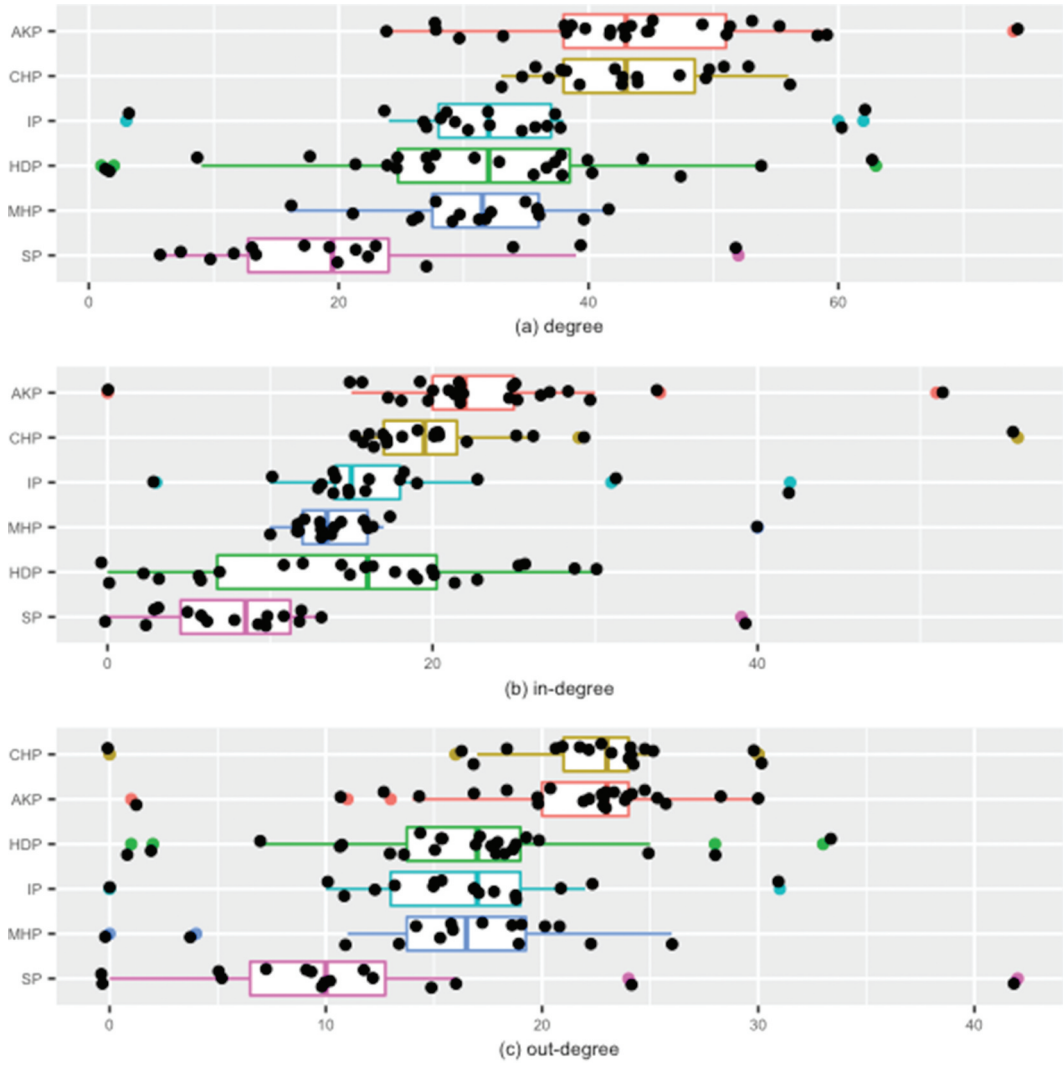

Figure 3. Degree scores of politicians grouped by party.

were high again. HDP had a different situation. Its in-degree distribution was at the leftmost part of the graph showing that they were not being followed as much as other politicians. However, its out-degree scores showed they were more active than IP, MHP and SP politicians in terms of following other politicians.

Other measures of centrality gave similar results. Correlation among degree, closeness, betweenness, and eigenvector is shown in Table 5. All correlation scores were positive and significant at $p < .001$ level. The degree was strongly correlated with the other three measures. Correlation between closeness and betweenness was also strong. Eigenvector had a weak correlation with closeness and betweenness compared to others.

Table 5. Correlation between major centrality scores.

	degree	closeness	betweenness	eigenvector
degree	1.00	0.75	0.63	0.65
closeness	0.75	1.00	0.59	0.35
betweenness	0.63	0.59	1.00	0.31
eigenvector	0.65	0.35	0.31	1.00

Figures 2 and 3 show that all politicians are densely connected with members of their parties. In order to better visualize out-party connections, in-party connections were taken out of the network data object. New data object is graphed in Figure 4. It had 97 vertices and 394 directed edges. Sixteen politicians didn't have a tie with any politician from another party, so they were automatically dropped from the sample. Vertices located close to the center had greater degree scores than vertices located close to the perimeter. Since the in-party edges were

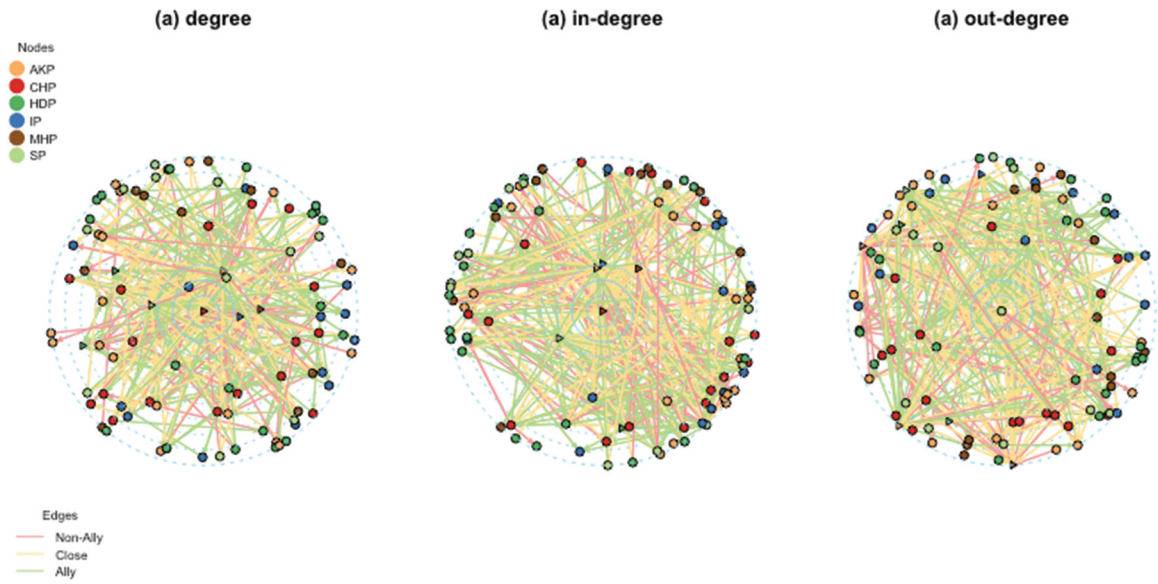

Figure 4. Twitter friendship network after in-party edges taken out.

taken out, there were not any apparent groupings in the network. Degree scores were changed too. Except for several outliers, all parties looked similar in terms of their politicians' degree scores. Party leaders were located closer to the center in these two graphs. For the out-degree scores, almost all politicians were located closer to the perimeter.

The density of the graph is reduced drastically from 0.15 to 0.04 when in-party connections were dropped. Also, the number of triadic and mutual connections was highly reduced. There were 222 triads, 63 mutual connections, and 267 asymmetrical connections in the network. Exploratory analyses revealed that the exogenous covariates, more specifically the formal party structure, might have influenced in-party connections rather than individual attributes. Since this study investigated the impact of individual attributes on politicians' network formation on Twitter, exogenous covariates would not contribute much to it. For that reason, ERGM analysis was conducted with this reduced dataset.

Exponential random graph modeling

Exploratory analysis showed that politicians were more likely to connect with members of allied party members than members of ideologically close parties. In this part, this finding is tested with exponential random graph modeling. Exponential random graph models are a family of statistical models used to understand how and why social network ties happen. A tie comes into place as a result of various factors attached to the existing local social environment. In other words, the local social environment, which has a complex network structure consisting of other ties and actor attributes, influences the presence or absence of a tie. A major element to understand the network configuration within a local social environment is the dependency between network ties. ERGM requires a theory of dependence to limit the types of patterns to consider. When the patterns are specified according to the theory, ERGM tries to model the effects of those patterns and find a distribution of graphs consistent with the observed one. In other words, ERGM predicts the presence of a network tie from the network configuration and model parameters (Lusher, Koskinen, & Robins, 2013).

The literature review showed that homophily was the most critical factor to understand politicians' Twitter friendship network. More specifically, a homophilous friendship structure based on ideology was expected to emerge in the network. In addition, political alliance is also expected to influence the network. Therefore, four models predicting dyadic and homophilous relationships were specified to test the hypothesis of this study. Results of the ERGM analysis are presented in Table 6. **Model 1** was the null model estimating a single homogeneous probability for all ties. Log-odds of a tie was −3.12 and the odds ratio was 0.04. The

Table 6. ERGM models.

	Model 1	Model 2	Model 3	Model 4
edges	− 3.12*** (0.05)	− 3.48*** (0.06)	− 3.33*** (0.08)	− 3.38*** (0.08)
mutual		2.73*** (0.17)		
Alliance			0.70*** (0.10)	
Ideology			− 0.18 (0.11)	
Cumhur alliance				0.85*** (0.17)
Millet alliance				0.79*** (0.11)
Islamist				− 0.60** (0.21)
Nationalist				− 1.24*** (0.31)
Social-democratic				0.33* (0.13)
AIC	3259.06	3079.31	3218.35	3186.57
BIC	3266.20	3093.59	3239.77	3229.40
Log Likelihood	− 1628.53	− 1537.66	− 1606.18	− 1587.28

***p< 0:001; ** p <0:01; *p< 0:05

corresponding probability was 0.04, which was equal to the network density of the graph. It showed the probability of a connection between any two vertices. Considering that the sample consisted of a group of fellow politicians, %4 was a very low probability.

Model 2 estimated the change in log-odds after adding a term for reciprocity of ties. The baseline log odds of a tie was −3.48, and the odds ratio was 0.03. The corresponding probability was 0.03. Since the probability of a tie was very small, the odds ratio and probability were very similar to each other. The mutuality effect was significant. Conditional log-odds of a mutual tie was −0.75, and its odds ratio was 0.47. The probability of a mutual tie was 0.32. Therefore, Model 2 showed that reciprocal relationships are significant for this network.

Independent variables *alliance* and *ideology* were tested in **Model 3**. The log-odds of the edge term was −3.33 with a probability of 0.03, which was similar to previous models. The alliance variable was significant. The log-odds of the alliance variable was 0.7 which suggested that odds of a homophilous tie was 2.04 times higher than a heterogeneous tie. The corresponding probability was 0.7. The ideology variable was not significant. The log-odds of ideology variable was −0.18. The negative log-odds value showed that the probability of a tie's presence is smaller than the probability of its absence between ideologically homophilous vertices. The odds of a homophilous tie in terms of ideology was 0.87, with a probability of 0.49. These probabilities showed that the probability of a homophilous tie in terms of an alliance is higher than a homophilous tie in terms of ideology.

In **Model 4**, categories of alliance and ideology variables were added into the model. Only the BIC value showed better progress compared to Model 3. Model 4 was also supporting the study's hypothesis. Both Cumhur and Millet alliance variables returned positive and significant. Log odds of the Cumhur alliance variable was higher than the Millet alliance variable. Corresponding probabilities were close to each other, 0.73 and 0.72, respectively. Islamist and nationalist categories of ideology variable became significant in Model 4. However, only the social-democratic category returned positive, and the other two variables were negative. The probability of social-democrat politicians to make a tie was 0.61. The score was 0.39 for Islamists and 0.26 for nationalists. Model 4 clearly showed that alliances were more influential in forming politicians' online friendship networks than ideology.

Retweet network

Table 7 presents a contingency table of the number of the retweets. Rows of the table indicate the sender of the retweet, and columns indicate the original owner of the message. The table's diagonal has the largest figures, showing that politicians have retweeted more messages of politicians from their parties. MHP and IP politicians sent more retweet messages with 12,195 and 11,303, respectively, than other parties. Except for HDP, parties' in-party retweet messages were higher than 3,500. HDP had the lowest in-party retweet number with 1,145 messages.

The number of cross-party retweet messages indicated that except for one party (İP), politicians did not frequently send or retweet other politicians' messages. Consistent with H_3, non-allied HDP politicians retweeted more messages of ideologically close CHP politicians. However, the number was meager, only

Table 7. Number of retweets grouped by parties.

	AKP	CHP	HDP	İP	MHP	SP
AKP	3971	0	0	1	12	0
CHP	0	4573	2	15	1	1
HDP	0	8	1145	1	0	0
İP	11	13	0	11,303	502	2
MHP	11	0	0	0	12,195	0
SP	0	0	0	2	0	4769

eight. Again consistent with H_4 AKP politicians retweeted more messages of MHP politicians, and MHP politicians retweeted more messages of AKP politicians. Although CHP politicians retweeted more messages of İP politicians, İP politicians retweeted more messages of ideologically close MHP politicians, which was not consistent with H_4. Therefore, because of the low number of retweet messages and inconsistent findings, there was partial support for H_3 and H_4.

Discussion

Findings support H_{1a} and H_{1b}, non-allied parties' politicians have more online friends from ideologically close parties, and they have more common online friends. The only party that is not a member of any alliance in the sample is the social-democratic HDP. HDP politicians have more friends from social-democratic CHP, and they have more common friends with CHP politicians. The mixing matrix presented in Table 3 shows that HDP politicians are connected with 315 CHP politicians, and the mixing matrix presented in Table 4 shows that they have 1,305 common friends. If we take out CHP politicians, HDP has only seven followers from other parties. As mentioned above, the Turkish judiciary filed terrorism charges against some HDP politicians, and some of HDP MPs are still under arrest. This factor might be influential on other politicians' choices to connect with HDP politicians. Additionally, in Model 2 of ERGM analysis, the mutuality effect was significant, and the probability of a reciprocal tie was 0.32. This finding shows that politician A is more likely to follow politician B when politician B follows politician A. In the absence of reciprocity, politician A chooses not to remain connected with politician B. Therefore, the absence of reciprocity might be influential in HDP politicians' friendship choices.

Findings generally support H_{2a} and H_{2b}. Politicians have more online friends from allied parties, and allied party politicians have more common online friends. Table 3 shows that politicians are more connected with allied politicians than ideologically close politicians. In the *Cumhur* alliance, AKP politicians made 18 connections with allied MHP politicians, but they made only one connection with Islamist SP politicians. Similarly, MHP politicians made 33 connections with allied AKP politicians, but they made only five connections with nationalist İP politicians. Table 4 shows that they had a higher number of common friends than other parties. In the *Millet* alliance, CHP politicians made 43 and 13 connections with allied İP and SP, respectively. They made 36 connections with social-democratic HDP politicians, which was also high. İP politicians made 28 and 12 connections with their allies CHP and SP, but they made only six connections with the nationalist MHP. SP made 20 and 16 connections with allied CHP and İP, respectively. SP politicians made the highest number of connections with ideologically close AKP with 27 connections. Additionally, except for CHP, İP and SP had a higher number of common friends with their allies than other parties. CHP had a higher number of common friends with social-democratic HDP. Both alliance and ideology attributes returned significantly in ERGM analysis. However, the probability of connection between allied politicians was 0.7 where the probability of connection between ideologically close politicians was 0.49. This finding suggests that allied politicians are more likely to connect than ideologically close politicians.

In Model 4 of ERGM analysis, both *Cumhur* and *Millet* alliance categories returned positive and significant. The probability of a tie between members of those alliances was 0.73 and 0.72, respectively. Islamist and nationalist categories returned significantly, but they were negative. The probability of a tie between social-democratic politicians was 0.61, between Islamist politicians was 0.39, and between nationalist politicians was 0.26. The probability of a tie between social-democratic politicians was higher than others because the only non-allied party in the sample was HDP and its politicians have more ties with ideologically close CHP. Model 4 showed that probabilities of a tie between alliances were higher than probabilities of a tie between ideological groups which supports H_{2a} and H_{2b}.

Findings partially support H_3 and H_4, members of non-allied parties send more retweet messages of ideologically close party politicians, and members of allied parties send more retweet messages of each other. Table 7 shows that politicians usually send retweet messages of the same party politicians'

messages, and they send only a few cross-party retweet messages. HDP politicians sent only nine retweet messages and eight of them were ideologically close CHP politicians' messages which is consistent with H_3. In the *Cumhur* alliance, AKP politicians sent 13 retweet messages, and 12 of them were allied MHP politicians' messages. A similar pattern exists for the *Millet* alliance except İP. İP politicians sent 502 retweet messages of ideologically close MHP politicians, which is inconsistent with H_4. Overall pattern of politicians' retweet behavior is consistent with Evans (2018)'s finding that formateur parties are more office-seeking and nonformateurs are more policy-seeking. Formateur AKP and MHP politicians sent more retweet messages of each other which can be considered as an office-seeking behavior while nonformateur İP sent more retweet messages of ideologically close MHP politicians which can be considered as an policy-seeking behavior.

Another interesting finding was that although statistically insignificant, politicians from social-democratic parties were found to be more likely to connect with each other than politicians from other ideological groups. Actually, this may be caused by a limitation in the data. The only non-allied party in the sample was the social-democratic HDP. Since non-allied party politicians tended to connect with ideologically close party politicians, HDP members had more ties with social-democratic CHP which inflated the difference between ideological groups. If there were non-allied parties from other ideological groups in the sample, there might be different results. Therefore, the difference between ideological groups should be interpreted by taking that limitation into consideration. Another limitation of this study is its cross-sectional data. Politics in general, Turkish politics in particular, is a highly turbulent field. As one of the Turkish presidents Süleyman Demirel said "In politics, sometimes 24 hours is very long, and sometimes 20 years is very short." Turkish politics can be very unstable or stagnant, contingent on the domestic and international affairs. Therefore, data collected at different points of time may improve the validity and reliability of results.

Finally, the findings of this study should be generalized by considering the idiosyncrasies of Turkish politics. Although electoral alliance law was accepted about three months before the June 24, 2018 election, alliances were not uncommon in Turkish politics. Because of the high electoral threshold (currently 10%), small parties have long been forced to form alliances to get into the Parliament. Before the electoral alliance law, if party A and party B form an alliance, candidates of party A were switching to the party B and they were submitting a joint electoral list. After the election, they resigned from party B and returned to party A. If they were elected, small parties got representation in the Parliament in this way. However, since the electoral threshold was not an issue for big parties, usually small parties were bargaining for an alliance. In Turkish political history, most of the election bargains did not result in an alliance, and even if it was successful, it was not strong enough to pass the electoral threshold either. Nevertheless, those practices have fostered a tradition or culture of political alliance in Turkish politics that still persists.

Conclusion

This study's findings showed that political alliances were more effective in Turkish politicians' online friendship choices than ideological homophily. Members of allied political parties were densely connected with each other, and they had more common friends. Similarly, members of the non-allied parties were densely connected with ideologically close parties. In addition, ERGM analysis found that the probability of a homophilous tie in terms of the alliance was 0.7 where the probability of a homophilous tie in terms of the ideology was 0.49. Analysis of the retweet network also gave a similar result. Although politicians send only a few cross-party retweet messages, members of allied parties send more messages of allied politicians, and members of non-allied parties send more messages of ideologically close politicians. These findings are consistent with exchange theory, which states that people's behavior is motivated by their interests.

This study contributed to the literature by providing insight into politicians' social media behavior. Previous research reported that ideological homophily was effective in politicians' social networks, and there was a limited number of studies

about politicians' online inner friendship networks. Unlike those studies, this study found that alliances, in other words, political interests are more influential on politicians' online friendship with each other.

This study has an important implication for political communication and social media studies. Although social media has the potential to increase the dialogue between rival political groups, this study found that political alliances are more influential on the formation of politicians' social networks. Like homophily, political alliances were also effective in turning social media into an *echo chamber* where people send and receive similar messages and communicate with like-minded people. Therefore, this study suggests that social media's present structure does not promote a true dialogue between rival politicians.

Notes on contributor

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