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Three dimensions of the public sphere on Facebook

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ABSTRACT

The article provides an empirical analysis of the online public sphere in the three dimensions introduced by Dahlgren (2005): structural, representational and interactional. The main subject of analysis is the largest social networking site – Facebook – and Polish users' activity on the Facebook Pages of political parties and politicians. The researchers analysed data about all users active on those Pages during two 4-month periods in 2013 and 2015. The results of the study show that only a small fraction of Facebook users are active in public political discussions that take place on political Facebook Pages (structural dimension). However, the level of engagement depends on the current political events taking place within the public sphere offline, and users are more active during electoral campaigns. Moreover, Facebook does not provide an alternative public sphere for political actors that are less present in mainstream media. Parties and politicians that are visible in traditional media are also attracting active fans in social media (representational dimension). Nonetheless, non-parliamentary groups have more active fans than would result only from their popularity in mainstream media. Finally, the online public on Facebook is fragmented and clustered into homogenous political groups (interactional dimension), thus supporting the hypothesis on 'echo chambers' presented by Sunstein (2001). The divisions are smaller when there are significantly more users involved. However, most of these cross-cutting links are the result of the electoral campaign.

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Introduction

For more than a decade, scholars have argued whether the emergence of the Internet would empower the development of democracy and public debate (Dahlgren, 2005). The utopian rhetoric connected to new technologies alleges that they will facilitate the democratization of post-industrial society (Papacharissi, 2002) by providing space for personal expression and encouraging citizen activity (Kling, 1996; Rheingold, 1993). The Internet offers tools that enable the public to play a larger role in political spaces. The emergence of online political discussion groups, blogs and activist initiatives proves the growing political use of the Internet (Barlow, 1996; Bowen, 1996; Negroponete, 1996). Sceptics bring up the uneven accessibility to new technologies, the low quality of political

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online discussion, the fragmentation of such discussion and, in consequence, polarization. They claim that the Internet is far from revitalizing the public sphere, and quite often, it instead adapts to the current status quo (Morozov, 2011; Papacharissi, 2002; Pariser, 2011; Shirky, 2010).

The emergence of social networking sites (SNSs) that grew in popularity after 2004 started a new discussion about the affordances of the digital public sphere. Web 2.0 platforms allowed for grassroots content creation, dynamic interactions and community building. SNSs such as Twitter and Facebook have been used in grassroots civic events, including the Arab Spring in Iran, Turkey and Egypt; protests against the SOPA and PIPA in the U.S.A. and ACTA in Poland; and Spanish 'Indignados' movement (Castells, 2013; Khondker, 2011; Lim, 2012; Tufekci & Wilson, 2012). They have also played a key role in election campaigns in developed and emerging democracies alike (Diamond & Plattner, 2012). The increasing political role of SNSs worldwide has reactivated academic debate around the impact of information and communication technology (ICT) on the public sphere and democracy.

In this paper, we focus on more specific issues within the landscape of the digital public sphere in an attempt to characterize its existence within SNSs. To accomplish that, we apply the framework of Dahlgren (2005), who established three dimensions of the public sphere: structural, representational and interactional. For each of these dimensions, we analyse one problem, respectively: diversity of subjective activity, participation division between mainstream media and social media (or SNSs) and fragmentation. The ultimate goal of this analysis is to characterize how the public sphere manifests itself within SNSs.

Most of the existing research on the public sphere in social media has focused on Twitter (Tufekci, 2014). Relatively little research concerns the importance of Facebook (Larsson, 2015). Therefore, to examine this topic, we collected data from the Facebook Pages of Polish political parties and politicians as well as clippings from traditional media. We analysed users' activity on Facebook Pages and the structure of the network of coactivity on different pages. Moreover, we compared the parties' and politicians' popularity on SNSs with the number of mentions in traditional media in order to verify the existence of an alternative public sphere on Facebook. Prior to presenting the outcome of our empirical research, we review the existing theoretical framework on the public sphere as well as the existing research regarding this field, conducted both in offline and online media.

Public sphere challenge

The concept of 'public' derives from democratic ideals that assume citizen participation in public affairs. 'Public' is understood, in opposition to 'private', as accessible to all. Peter Dahlgren (2005, p. 148) proposed the modern definition of 'public sphere', describing it as 'a constellation of communicative spaces in society that permit the circulation of information, ideas, debates – ideally in an unfettered manner – and also the formation of political will (i.e., public opinion)'. The public sphere is therefore a space in which citizens must be provided with the information, ideas and debates around public affairs so as to secure 'informed opinion and participation in democratic politics' (Dahlgren, 2009, p. 34).

Academic discussion over the concept of the public sphere arose after the English publication of Habermas' philosophical treatise (Lunt & Livingstone, 2013). The German

philosopher addressed this notion as a part of social life in which citizens express public opinion through rational public discourse (Habermas, 1989). The most important premise of the public sphere is to facilitate diverse debate on issues that are common among the public. In *Structural Transformation*, Habermas argues that mass media, which was supposed to provide a space for the public sphere, failed due to its commercialization and the influence of public relations (Habermas, 1989).

The normative model of the public sphere Habermas proposed received wide criticism. Lyotard (1984) argued that it is disagreement, rather than rational accord, that leads to healthy democracy. Fraser (1990) criticized the exclusion of minorities, especially women, from Habermas' concept. She also contributed an important premise to the public sphere debate: the existence of many public spheres, rather than just one, that represent different interest groups. Calhoun, on the other hand, argued that the consequences of the mass media were not solely negative and that the system based on it provides space for 'alternative democratic media strategies' (Calhoun, 1992, p. 33). Calhoun sees this opportunity from two perspectives: either groups of citizens can impact the mass media, or they can establish alternative public spheres (p. 37). Other critics refer to the very basic question of whether modern society can even provide the realm of the public sphere. According to Carey (1995), it cannot, because the commercial culture created by mass media has replaced the public sphere. Similarly, Putnam (1995) attributed the current decline of the public sphere to the increasing role of television in the everyday life.

Three dimensions of the online public sphere

In order to conceptualize the public sphere better and to use its merits for empirical research, we apply the three dimensions of analysis Dahlgren (2005) introduced: structural, representational and interactional.

The structural dimension of the public sphere refers to the manner of organization of a particular communicative space – that is, issues of access, freedom of speech and the dynamic of inclusivity/exclusivity (Dahlgren, 2005). According to Habermas, all participants of deliberation on public affairs should be equal and should not be limited by inequalities or from outside – anyone who has an opinion on the matter of discussion should be allowed to present it (1996). With regard to the Internet, particularly SNSs, the structural dimension points to analysis on how these spaces are configured, focusing on their legal, social, economic and technical features. A structure that provides openness and accessibility is the prerequisite to the second dimension of a healthy public sphere – the representational one.

The representational dimension refers to different media outputs in the public sphere (Dahlgren, 2005). This dimension includes the issues of agenda-setting (McCombs & Shaw, 1972), pluralism of views, accuracy of coverage and others. With reference to SNSs, in this dimension one could look at what groups the online discourse is representing and how this representation is related to other media channels, especially mainstream ones. Many scholars have shown that online communities can serve as alternative discussion forums to traditional media discourse since some opinion-holders experience exclusion from mainstream discussions on politics. This phenomenon is largely observed in authoritarian countries (Etling, Roberts, & Faris, 2014). However, scholars point to the fact that online communities serve mainstream discourse as they are highly

commercialized and supportive of the interests of elite opinion holders (Fuchs, 2013; Papacharissi, 2002). Furthermore there is a problem of inclusiveness and the Internet's content being highly partisan (Iosifidis, 2011).

The last dimension, the interactional one, is connected to one of the main premises of public sphere theory – that it has to be an exchange of views and opinions among citizens (Dewey, 1954; Habermas, 1996). This democratic ideal has been lost in the progress of mass communication. Media messages are full of information on public matters that give the citizens the illusion of engagement in the public sphere without any actual participation in it (Hart, 1999). This is especially strengthened by the television (Putnam, 1995). As Derrida concluded, the mechanism of illusion is reinforced by methods of public opinion polling, which builds the agenda of important matters and demands from the citizens only positive or negative attitudes (Derrida, 1992). The original approach to the public sphere in its normative model was to base it on a dialogue between citizens (Habermas, 1996).

Dahlgren (2005) differentiates two aspects of interaction: between citizens and the media and between citizens themselves. More importantly, in the normative model of the public sphere Habermas (1996) proposed, citizens of opposite views engage in a common debate about public matters. A lack of this interaction leads to the fragmentation of public discourse. In terms of online discussion, it is essential to verify within this dimension whether actors of the public sphere (citizens, media outlets) engage in an exchange of opinions or whether their communication is one-sided and limited to a group of people and media that have the same views.

Audience fragmentation derives from the interaction between media and audiences (Webster & Ksiazek, 2012). Limited public attention combined with an increasing number of information sources in the era of media digitalization has led to an 'attention economy' in which attracting the audience leads to achieving social, economic or political goals (Davenport & Beck, 2001; Webster, 2011). Furthermore, the members of the audience prefer media that provides opinion-reinforcing information and avoid opinion challenges. This tendency is known as 'selective exposure' (Garrett, 2009). However, online and especially on SNSs, people interact not only with media outlets competing for their attention, but also with other users. These users are also information sources, having a significant role in sharing and filtering information, similar to the role played by media. Therefore, fragmentation derives from two processes: homophily and selective exposure.

The principle of homophily assumes that similarity fosters connection. It results in homogenous networks of connections with regard to various sociodemographic, intrapersonal and behavioural characteristics (McPherson, Smith-Lovin, & Cook, 2001). Scholars discovered that people who interact with each other more often are more likely to be similar to each other in some regards and therefore are more likely to have similar information sources (Bakshy, Rosenn, Marlow, & Adamic, 2012). The architecture of SNSs allows people to quickly find other users and communities that have similar views and opinions. Online communities are rather homogeneous in terms of values and viewpoints (Dahlberg, 2001), and their participants often hold similar political perspectives (Wilhelm, 1998). Davis (1998), who studied Usenet, found that people engaging in online political discussion groups tend to gravitate to groups agreeing with their own views. Even if the deliberation does happen, online political groups usually evolve into homogenous communities of people thinking alike (Hill & Hughes, 1998; Wilhelm, 1998). Other scholars,

such as Adamic and Glance, measured the degree of interaction between liberal and conservative blogs in the U.S.A., showing that like-minded people create homogenous communities (Adamic & Glance, 2005).

Lazarsfeld *et al.* linked selective exposure to Festinger's theory of cognitive dissonance (Lazarsfeld, Berelson, & Gaudet, 1968). People avoid information that contradicts their pre-existing beliefs and seek and engage with information that confirms it (Mutz, 2006). Patterns of selective exposure are also found among the readership of blogs (Lawrence, Sides, & Farrell, 2010) and on Twitter (Himmelboim, McCreery, & Smith, 2013). However, according to (Garrett, 2009), the effect of selective exposure is small, and on the Internet, users are exposed to other ideas and opinion-challenging information. Also experiments conducted by Messing and Westwood (2014) suggest that social media should be expected to increase users' exposure to a variety of news and politically diverse information.

However, the algorithms Internet companies craft to meet users' individual preferences strengthen selective exposure (Brossard & Scheufele, 2013). For example, Google uses its algorithms to adjust the search results to our preferences, which often results in two people receiving different search results despite using the same query (Pariser, 2011). Similarly, Facebook uses algorithms to filter every user's news stream to show only the content that it determines the user is most interested in (Bakshy, Messing, & Adamic, 2015). The power of algorithms that major Internet companies apply suggests that with the online world, it is much easier to avoid opposing positions in comparison to the offline world, where we have less influence on the situations we are exposed to (Dahlberg, 2007). Sunstein (2001) goes one step further by saying that the Internet contributes to the fragmentation of the public sphere by creating 'deliberative enclaves' or 'echo chambers', due to the individual choice that users have in terms of content selection. Although numerous people use new media to expand their horizons, many others do exactly the opposite, creating a 'daily me' that is compliant with their convictions. They also choose group discussion of like-minded users which minimalizes diversity.

Many scholars have opposed the argument that the Internet reinforces fragmentation, therefore limiting deliberation based on the interactions between people of opposite views. Benkler (2006) has made one of the most recent critiques and concluded that the 'daily me' theory Sunstein (2001) proposes is false. In his *Wealth of Networks*, Benkler discusses how different web-based applications enrich democracy by facilitating a networked public sphere. He claims that Internet architecture does not support fragmentation. Instead, the networked public sphere is highly connected, allowing important information to diffuse (Benkler, 2006).

Issues within the structural, representational and interactional dimensions of the public sphere have been only partially investigated with regard to SNSs, which we examine in the next part of this paper.

SNSs and the concept of the public sphere

The phenomenon of SNSs and its rapid development after 2004 have attracted the attention of many scholars. As boyd and Ellison point out (2007), SNSs are similar to many other genres of online communities that support computer-mediated communication, but what differentiates them is a set of specific features. They allow individuals to (1)

construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system' (boyd & Ellison, 2007). boyd points to four types of these features that help to establish communication that is public among its users: friends lists, public commenting tools, profiles and stream-based updates (boyd, 2007).

Facebook.com is the biggest SNS in the world. In March 2015, it accounted for 936 million daily users (Facebook, 2015). In Poland in June 2013, there were 10.8 million users of Facebook (Sotrender, 2013), which accounts for 60% of the Internet-using population. In June 2015, there were 13.3 million Facebook users (Sotrender, 2015), which represents 62% of the Internet-using population in Poland in 2015.

Facebook usage became the topic of political science analysis after Barack Obama's 2008 campaign, in which new media played an important role in collecting funds, disseminating messages and initiating collective activities (Robertson, Vatrappu, & Medina, 2010b; Williams & Gulati, 2009; Woolley, Limperos, & Oliver, 2010).

Some scholars (Robertson, Vatrappu, & Medina, 2010a; Westling, 2011) proposed a premise that SNSs are a form of online 'public sphere' or 'networked public', which is closer to scholars' theoretical models than to other types of Internet forums and discussion groups. They allow freedom of expression, participation, interaction and identity creation (boyd, 2007; Robertson et al., 2010a).

The issues of structure, representation and interaction within SNSs with regard to the public sphere have been subjected to many studies. Kushin and Kitchener showed that the popularity of SNSs along with the decreasing cost of Internet access brings larger populations into online political debates (Kushin & Kitchener, 2009). Research also shows that political discussions on SNSs, particularly on Facebook, present a more egalitarian distribution of comments between citizens engaged in discussions and a higher level of civility in their messages (Halpern & Gibbs, 2013). With regard to the interactional dimension, scholars have conducted some studies to investigate the fragmentation issue on SNSs. The main subject of investigation was Twitter – different studies have shown that political discussions are definitely grouped into clusters of likeminded users and that meaningful discussion is limited (Choi, Park, & Park, 2012; Himelboim et al., 2013; Yardi & Boyd, 2010). Scholars have also found some proof of the existence of an echo chamber for Facebook. Robertson et al. (2010a) found that political candidates link only to their own websites on their Facebook Pages, while some other scholars have reached the conclusion that individuals may be more likely to exhibit the same behaviour as their friends because of homophily rather than as a result of a peer influence (Bakshy et al., 2015). Another study shows that SNSs are important sources of news for their users (Hermida, 2012) who, particularly on Facebook, use a limited number of news sources. Furthermore, partisan groups most often make references to different sources of information in online discussions (Jacobson, Myung, & Johnson, 2015).

With reference to the definition of SNSs, we can differentiate two types of communication between users. One happens within the networks of their friends (semi-private), and one takes place on public Facebook Pages devoted to specific topics (public). The latter is the focus of this paper, as according to the normative theory of the public sphere that

Habermas (1989) has presented, respectively, private conversations of citizens affect the public sphere but do not constitute it.

Facebook Pages are public platforms the company has designed as spaces for communication for businesses, brands and organizations (Facebook, 2015). Since 2007, these pages have also been available for political parties and politicians (Grzywińska, 2013). The main goal of these pages is to create communities of people interested in a particular topic (Facebook, 2015). Facebook users ‘join’ the communities around a Facebook Page by clicking ‘like’ and becoming part of its network. They can interact with the content posted on Pages by commenting, liking or sharing it. In theory, people who have liked a Page and their friends can get updates on content that is being shared in order to stay engaged, but after Facebook changed its EdgeRank algorithm in 2012, the organic reach per fan has decreased.

The goal of this research is to understand how public political discussions within SNSs, particularly on Facebook, interact with the concept of the public sphere within three analysed dimensions: structural, representational and interactional. That leads to three primary research questions:

- (1) *Structural*: How do citizens engage in public political discussions on Facebook? What is the percentage of users who are active in public political discussions on Facebook? How diversified is overall user engagement? What is the distribution of users’ activity on different political Facebook Pages?
- (2) *Representational*: Who engages in public political discussions on SNSs? Which parties have the most active users on Facebook Pages, and how does this relate to the share of voice in mainstream media? What is the relationship between the representation of different political parties in political discourse in mainstream media and on SNSs? Do SNSs play the role of an alternative public sphere?
- (3) *Interactional*: To what extent do people of opposite views interact with each other within public political discussions on SNSs? Can we observe the phenomenon of like-minded political communities on SNSs?

Methods and sampling

In order to evaluate the objectives of this study, we collected two data sets. The first one consists of the data on all the active users of Facebook Pages devoted to Polish political parties and politicians. We chose the Facebook Pages based on official political party registry as well as the list of key politicians who hold major state or party positions and are active on Facebook in one of two selected 4-month time frames (February–June 2013 and February–June 2015). Using Facebook API through the Sotrender tool we collected the data on all posts, likes, comments and posts’ shares on political Facebook Pages together with timestamps and users’ IDs, which allowed us to identify users active on different pages. The data were updated every hour during both time frames.

During the first selected time frame, we detected 153,756 active users on political fan pages as a result of the analysis we conducted (i.e., 1.4% of Facebook users in Poland). In the second time frame, we detected almost 1.5 million users (i.e., 11.3% of Facebook

users in 2015). ‘Activity’ among users is understood as at least one like, share or comment on the content of a particular Facebook Page.

It is necessary to point out that this analysis reflects only discussions held publicly on pages connected to parties and politicians. Therefore, it does not refer to discussions that users held on their profiles or within their private networks. These discussions, however, are not part of the public sphere (although they might have a major impact on it) which is the focus of this study.

The second dataset contains data on mentions of the same political parties and politicians in institutionalized media (press, radio, TV and mainstream Internet news sites) during two selected time frames. Newspoint and Press Service, two major independent media monitoring companies in Poland, provided these data. The companies investigated millions of media pieces, but in the final analysis, we used only data on press mentions, which were comparable for both periods. In 2013, the parties and politicians were mentioned 12,805 times in mainstream daily newspapers and weeklies and 73,347 times in 2015 during the presidential campaign.

We chose two different time frames in order to verify whether the relationships we observed in the study remain stable over time. The first period of four months between 15 February 2013 and 15 June 2013 was characterized by a lack of major political events (such as elections). The time frame for the second sample was also between 15 February and 15 June two years later (2015). It covered a time period that took place before, during and after the presidential elections on 10 May and 24 May. Since studies show that Polish political parties are mostly active on Facebook and engaging with voters before elections (Grzywińska, 2013), the data collected in 2013 and in 2015 during the presidential campaign could help verify the stability of the findings both in time and during different political events that influence how users engage in public political discussions.

In order to understand the context of the collected data, it is necessary to provide a brief description of the political situation in Poland between 2013 and 2015. As a result of the 2011 parliamentary elections, a centre party, Civic Platform, received the biggest number of seats (207 out of 460) and became a ruling party in Poland. It created a coalition with PSL (Polish People’s Party), and its leader, Donald Tusk, became prime minister. The party’s main opposition is the conservative, right-wing Law and Justice Party, which got the second-highest result in the 2011 elections (130 seats). Other parties that received votes in the parliament were SLD (a left-wing party) with 34 seats, SP (a right-wing party that separated itself from Law and Justice in 2014) with 15, Ruch Palikota (a left-wing party) with 11 and non-attached (26 seats). Outside of the parliament but still politically relevant are Nowa Prawica (a right-wing party with libertarian views on the economy)¹, Polska jest Najważniejsza (a centre-right wing party), Samoobrona (a national peasant party) and some extreme right-wing parties of nationalistic and Catholic descent, such as Ruch Narodowy, Ruch Katolicko-Narodowy and Liga Polskich Rodzin. All parties active in the parliament have Facebook Pages, as do their leaders and primary politicians (Grzywińska, 2013).

In order to evaluate the objectives in this study, we conducted a quantitative analysis of the collected data. We used a mixed-method approach that is recommended for Internet studies. The methods of choice were social network analysis, hierarchical cluster analysis and linear regression.

Results

Users' engagement in public political discussions on Facebook

Research question 1 asked about citizens' engagement in public political discussions on Facebook. In order to answer this question, we first computed what percentage of Facebook users in Poland are active on political Facebook Pages. In 2013, only a small fraction of users were active on such pages (153,756 out of 10.8 million, which equals 1.4%). On the other hand, in 2015, this percentage was much higher (1,493,660 out of 13.3 million, which equals 11.2%).

Secondly, we asked how diversified overall users' engagement was in public political discussions on Facebook. To answer this question, we analysed the activities of users on Polish political Facebook Pages as defined above. Based on the data retrieved from the Facebook API, the number of different activities users perform is inversely proportional to the level of effort each activity requires from the user. Thus, the majority of users' activities on those pages are 'likes', and the number of posts users publish is relatively small (Table 1).

User engagement is also diversified in terms of the number of activities individual users undertake in a given time frame. The majority of active users were active only once or only a few times, whereas the most active ones were the least numerous. In fact, the distribution of users' activity follows a power law (Figure 1). The relationship was similar in both analysed time frames, even though the number of active users in 2015 was significantly larger.

Finally, we analysed the distribution of users' activity on different political Facebook Pages. Figure 2 shows that this distribution also fits a power law. The majority of users engage in public political discussions on only a small number of Facebook Pages, and only a fraction are active on many Pages. In 2013, the number of people active on exactly one page equalled 74.5%, and on more than two, 10%. Two years later, 68.7% were active on one political Facebook Page and 15% on more than two.

Facebook political fan pages as an alternative public sphere

Research question 2 asked whether SNSs serve as an alternative public sphere understood as a counter discourse to the main discourse held by traditional institutionalized media. In order to answer this question, we used two sets of data: one consisting of the active users on the Facebook Pages of the political parties, and the second including the mentions of the political parties in traditional media (press, radio, TV). For each political party and the main politicians we defined three variables: the number of active fans on Facebook, the number of mentions in traditional media and whether a party is in Parliament or not.

Table 1. Characteristic of users engaged on Polish political Facebook Pages in 2013 and 2015.

	2013		2015	
Number of users	153,756	1.42%	1,493,660	11.2%
Number of political Facebook Pages	113		169	
Likes	764,726	82.7%	9,857,548	88.4%
Comments	152,407	16.5%	1,216,839	10.9%
Users' Posts	8115	0.9%	70,605	0.6%
Total number of uses' actions	925,248		11,144,992	

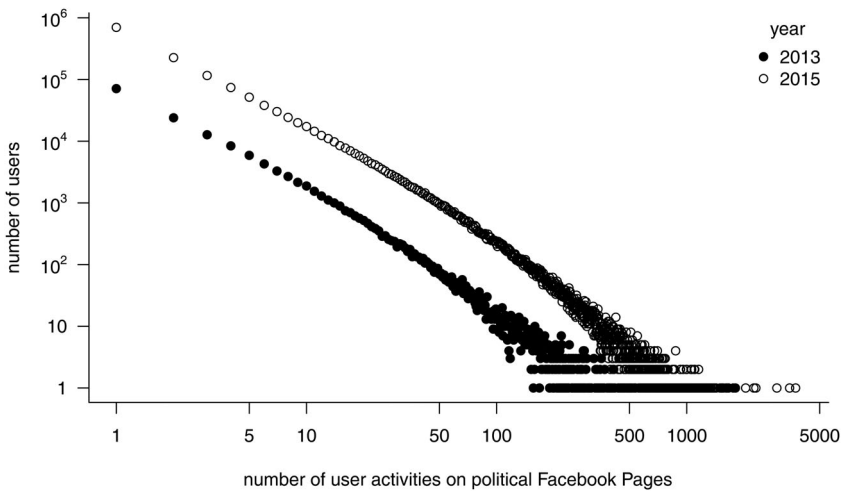


Figure 1. Distribution of user activity on political Facebook Pages.

Next, we conducted the regression analysis in order to verify the relationships between those variables (Table 2).

The 2013 analysis shows a positive correlation between the number of mentions in traditional media and the number of active fans on the Facebook Pages of political parties. The parties that are the most visible in mainstream media have more active users on their Facebook Pages. Parliamentary parties are more visible in traditional media and therefore have large groups of active fans. However, they experience an additional effect that decreases their numbers of active fans. Although this effect is not significant, it is related to the fact that some extreme right parties that are not in parliament have comparable number of active users.

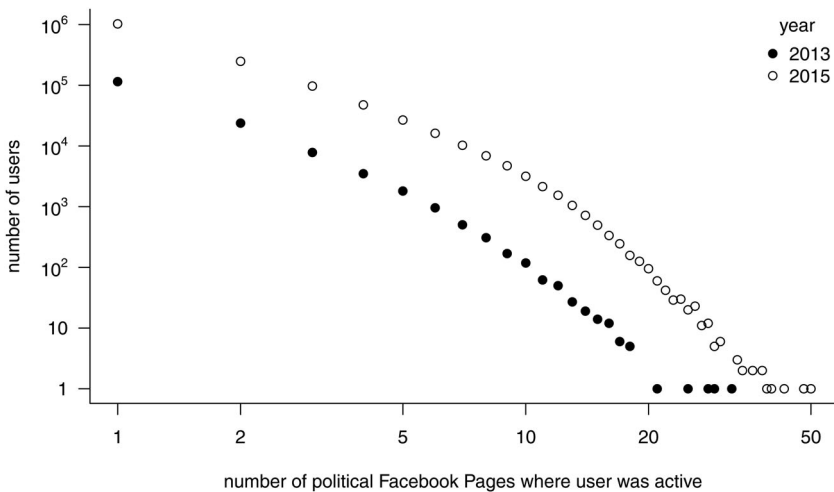


Figure 2. Distribution of the number of Facebook Pages where users were active.

Table 2. Regression models for the number of active users on political Facebook Pages in 2013 and 2015.

	Model 1 Number of active users 2013	Model 2 Number of active users 2015
Number of mentions in the press	6.8* (2.7)	107.4*** (14.1)
Parliamentary party/politician	-7001.3 (5451.1)	-28,118.5 (19,206.5)
Number of mentions in the press* for parliamentary parties (Intercept)	- 2478.0 (1415.2)	-82.8*** (14.7) 14,287.8 (10,436)
R^2	0.29	0.69

* $p < .05$.** $p < .01$.*** $p < .001$.

We can also observe a significant statistical relationship between a party's or politician's visibility in traditional media and the activity of users on their Facebook Pages in 2015 (Table 2). However, this effect is much lower for parliamentary parties and politicians due to negative interactions. This means that the number of active fans increases with the number of mentions in the press much faster for those who are not in Parliament. This effect was not observed in 2013, which may result from the fact that at a time when there were no elections, activity in social media was very diverse among politicians that were not in Parliament. We can recognize that extreme right-wing parties' fans were very active on Facebook even though the visibility of these parties in traditional media was almost two times smaller than for the parties that are in the parliament.

Both analyses show a correlation between visibility in traditional media and the number of active fans in social media. Parties that are visible in traditional media are also attracting active fans around their communities in social media, both among these parties and politicians that are in Parliament and those outside of it. It means that the new media ecosystem is highly converged, and we cannot establish the conclusion that SNSs constitute an alternative to mainstream discourse. However, the non-parliamentary groups have more active fans than would result only from their popularity in traditional media. In 2013, this was true only for extreme right-wing parties, but in 2015 during presidential elections, the effect was present for all nonparliamentary parties.

Fragmentation of political discussion on Facebook

Research question 3 asked whether the phenomenon of fragmentation or 'echo chambers' is observable among Facebook users engaged in public political discussions. To address this question, we applied network analysis and hierarchical clustering to analyse users' coactivity on different Facebook Pages. A portion of these profiles had little activity and a small number of fans; thus, coactivity was minimal and more random. Therefore, in the final analysis, we included only politicians and political parties who had at least 100 people active on their Facebook Pages. After this limitation, we conducted a cluster analysis on 70 profiles for 2013 and 133 for 2015.

The results of hierarchical clustering for 2013 depict clear division into three groups that are compliant with ideological camps existing in the Polish political scene: right-wing parties, left-wing parties and the liberal centre (see the network in Figure 3). Such divisions confirm that users who are active on more than one Page focus their activity within one party or political group. Situations in which one user is active on profiles of different parties are uncommon. There are two exceptions to the division in accordance with party affiliation. First, the Polish People's Party (PSL) is clustered with the Civic Platform, as both parties form the government. Second, two members of Parliament from the Civic Platform (Gowin & Godson) were more connected to the right-wing parties than to their own party. In fact, they left the Civic Platform two months after the end of 2013 data collection and later formed a new party with other right-wing politicians.

The above analysis indicated that among users that are active on particular pages, a strong ideological fragmentation is evident, which supports Sunstein's (2009) hypothesis on 'echo chambers' in SNSs (Figure 4).

The results for 2015 showed significant ideological divisions in users' coactivity on political Facebook Pages (Figure 4). However, there are some important differences. Most importantly, there are some nodes that are highly central and have a significant number of cross-cutting connections. These are the main candidates in presidential elections: the incumbent President Komorowski (supported by the Civic Platform), his main rival Andrzej Duda (the candidate of the right-wing Law and Justice Party) and Paweł Kukiz (supported by the right-wing extremists). These results showed that the electoral campaign, to some extent, increased the activity across party lines.

It should be noted that in 2015, the Polish People's Party formed a separate cluster. This change from 2013 may be a result of the growth of popularity of Facebook in Poland. The

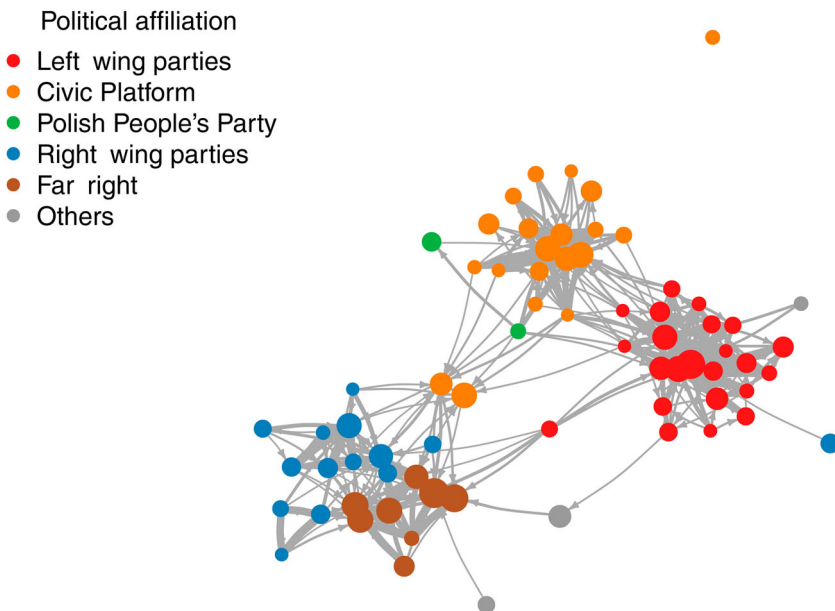


Figure 3. The network of political Facebook Pages connected by co-active users in 2013. Only the edges with at least 10% co-active are shown.

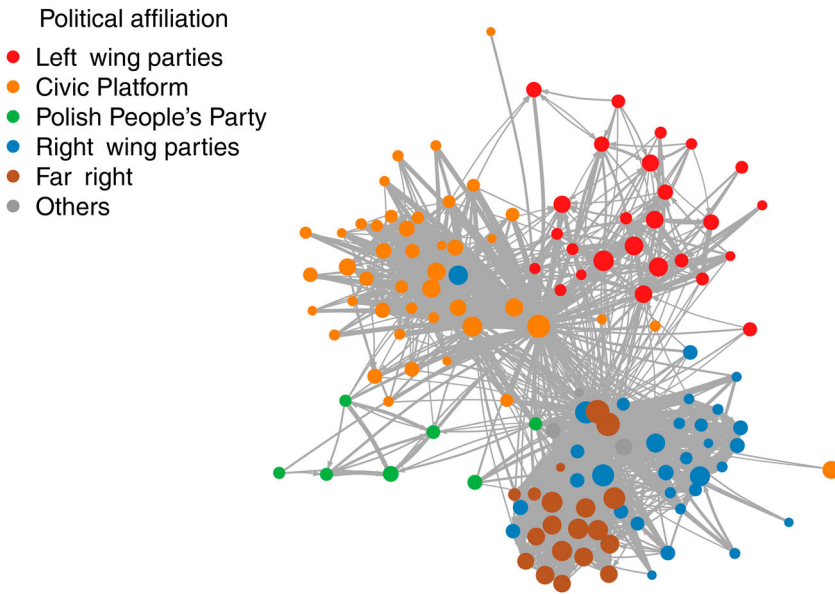


Figure 4. The network of political Facebook Pages connected by co-active users in 2015. Only the edges with at least 10% co-active are shown.

PSL electorate usually comprises people living in the countryside, most often working in agriculture. Members of this group are less often among early adopters of new technologies and likely began to use Facebook later than other groups.

In the 2015 data, there are also two individuals more connected to other parties than to members of their own political groups. The first one is Kluzik-Rostkowska from the Civic Platform, whose fans were active on profiles of right-wing politicians. This is probably due to the fact that she was formerly an important member of right-wing parties. The second one is former Deputy Prime Minister Giertych, who used to be a leader of one of the smaller right-wing parties, but in 2015 was supporting the Civic Platform.

Discussion and conclusion

Structural dimension of the online public sphere

Only a small fraction of Facebook users are active in public political discussions that take place on political Facebook Pages. The activity of users is much higher during electoral campaigns, when over 11.2% of users of the most popular SNSs in Poland interacted with the content published on political Facebook Pages. Thus, the level of engagement depends on the current political events that take place within public sphere offline. Moreover, the level of activity of politicians and political parties on SNSs during electoral campaigns is much higher than between elections. Another factor that might explain these differences in the levels of activities in the analysed timeframes is the usage of marketing resources by political actors, such as parties or particular politicians. Facebook offers a variety of paid promotional tools that aim to increase user engagement.

The fact that the distribution of the political engagement of users on Facebook is similar both during electoral campaigns and between elections proves that this relationship is not dependent on the increased activity of political actors or their marketing efforts. The results are also not dependent on Facebook's construction as a communicative space. In our opinion, it might rather be connected to a diversified level of interest and motivation of users to take part in political discussions. This relatively low level of engagement of Facebook users in political discussion might be related to the fact that users prefer to discuss politics within their private networks of friends (Cowan & Baldassarri, in press). Also, Facebook is used mainly for entertainment rather than discussions about public affairs, which scholars have proven to be the rule for the whole Internet (Hindman, 2008). It means that the structural dynamic of inclusivity/exclusivity of the public sphere within SNSs is less connected to the online specificity of Web 2.0 tools, as technological determinists might argue, but more connected to the political attitudes of users and how political stakeholders are activating them.

Representational dimension of online public sphere

As for the hypothesis of the alternative public sphere that was brought up in early research on the public sphere and Usenet, the collected data show that the right-wing parties are especially active on social media even though there is no statistical proof that this occurs as a result of their lower presence in mainstream media. However, especially for radical parties, the high level of activity of their fans on Facebook might be connected to the need to create an alternative public sphere for users with radical views who do not find representation in the parliament and are largely absent from the mainstream discourse. They also might use SNSs as an outlet to vent their political frustration and as a platform for expressing their emotions, as was shown in similar research conducted on conservative and liberal users in the U.S.A. (Hill & Hughes, 1998). In order to verify this hypothesis, further research is required.

Another factor worth taking into consideration is the diversity of activity of users on SNSs based on demographic variables. For instance, parties supported by young people have more active audiences on SNSs, whereas others are less active because their supporters, older people from small cities, are less likely to use social media.

Interactional dimension of the online public sphere

With regard to the interactional dimension, the presented research showed that the online public within SNSs are fragmented and homogenous, supporting the hypothesis on 'echo chambers' (Sunstein, 2009) presented. It is, however, important to note that this can stem from many factors that are not necessarily connected to the features and patterns of usage of SNSs. First of all, users who are active on political fan pages are usually already engaged politically offline. Moreover, the divisions between the more politically engaged users may be greater than among those less involved (Farrell, 2012). In fact, the divisions are smaller in 2015, when there are significantly more users involved. However, most of these cross-cutting links seem to be connected to the electoral campaign. Secondly, it is difficult to establish to what extent public discussions on Facebook reflect what is happening on the profiles of users, who are exposed to different opinions through their social networks.

Research shows, however, that the phenomenon of the spiral of silence increases the issue of echo chambers in private networks of friends (Hampton et al., 2014).

What is more interesting is that even though we clearly observe homogenous clusters, we can also differentiate exceptions from this rule that reflect the offline relationships between parties and particular politicians. For instance, Roman Giertych, a right-wing party politician, has been, according to our data, closer to the political centre as part of the Civic Platform cluster. And indeed, during the next elections in autumn of 2015, the Civic Platform is going to support him. A similar relationship is observable for a few other politicians, and patterns of coactivity of Facebook users can sometimes better predict the position of a politician than his party affiliation. This requires further investigation, as it might point to wider probabilistic research based on social media data where relationships between active users, political parties and politicians on SNSs point to changes in political structures in the future.

Note

1. Its leader, Janusz Korwin-Mikke left the party in 2015 and started a new one, KORWiN, together with some politicians from other smaller right-wing parties.

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