

Traditional and Digital Media Influence on the Polarization in Poland

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ABSTRACT

Over the past decades, polarization has become an increasingly popular topic of researches in democratic countries. According to the previous researches, one of the potential causes of polarization is media consumption. This research focuses on the relationship between polarization and the consumption of traditional and online media in Poland. This paper examines the polarization in Poland in 2012, when online media just started to gain momentum in this country. The study focuses on two main issues: the relation between the amount of media consumption and polarization, and comparison of the polarizing effect of online and traditional media. To study this issue, the thesis uses the method of regression analysis and dataset of the European Social Survey. The analysis shows convincing evidence in favor of the first hypothesis, confirming the positive relationship between media consumption and the level of polarization. The increase in the consumption of media by citizens leads to the increase in the level of polarization. At the same time, the study does not confirm the second hypothesis that online media have a higher polarizing effect than their traditional counterparts. Moreover, the model shows the absence of any polarizing effect from the online media, which contradicts the theories of “community effect” and “echo chambers”. At the same time, the analysis of one age group of the sample confirmed the presence of the polarizing effect of online media. This may indicate different polarization patterns of online media, depending on how they are consumed.

Table of Contents

Copyright.....	i
ABSTRACT	ii
Table of Contents.....	iii
List of Figures.....	iv
Introduction	1
Chapter 1 - The relation between media consumption and polarization.....	5
1.1. Polarization and party affiliation.....	8
1.2. Media consumption and polarization	12
1. 3. Digital and social media as means of polarization	20
Chapter 2 – Polarization and media in Poland.....	28
2.1. Polarization in Poland.....	28
2.2. Polish media and polarization	30
Chapter 3 - Methodology and data.....	34
Chapter 4 – Results	39
4.1. General model	40
4.2. Model for traditional media	43
4.3. Model for online media	45
4.4. Limitations and suggestions about model correction	48
Discussion.....	50
Reference List.....	53

List of Figures

Figure 1. Relationship between polarization and media consumption (general model)	42
Figure 2. Relationship between polarization and traditional media consumption.	44
Figure 3. Relationship between polarization and online media consumption	46

Introduction

The issue of public polarization has been actualized in recent decades in most democracies in the world. While the gap between different political camps in the United States, Poland, Hungary, and many other countries is growing, researchers are analyzing various potential causes of polarization. One of these reasons is the pattern of media consumption.

Many researchers write that more intensive consumption of media leads to a higher level of polarization (Anagnostopoulos et al, 2014; Chang, 2014; Hmielowski et al, 2016; Kim, 2016). Hmielowski, Beam, and Hutchens point out that media is directly related to the level of polarization in society. The authors argue that the pattern of media consumption affects the level of polarization. If a consumer uses several media, his level of polarization will be lower, but if he uses a more diverse selection of sources of information, then he will be more polarized. At the same time, the authors note that conservative consumption of the media has been the dominant scenario since 1996 when the Telecommunications Act was adopted in the United States. This act led to deregulation in the media sphere, which made them more polarized. At the same time, Hmielowski, Beam, and Hutchens emphasize another important feature of polarization through media. More media in the country leads to a more polarized media landscape (2016).

The second important prerequisite for polarization through the consumption of media is the presence of two camps. Most often we are talking about a two-party or two-bloc political system. However, it also concerns the existence of an existing split in society. Dzieciolowski shows the example of Poland, where polarization increased significantly after the Smolensk

plane crash, in which the first persons of the country died. This event became a divide between two political camps, pushing society towards polarization (2016).

The important point is that researchers emphasize the limited nature of the polarizing effect of the media. Yang et al. indicate that media causes polarization only at the political level. This implies a more critical attitude towards parties and politicians from the opposite camp, as well as a more intransigent position on current issues. At the same time, the media has almost no effect on polarization at a fundamental level. Different patterns and intensity of media consumption do not lead to rapid changes in the issues of basic beliefs (2016).

Several researchers note that not only the structure of media consumption is important, but also the intensity of this consumption (Kim, 2015; Lau et al 2016). If viewers have a conservative media consumption pattern (they consume information from one source or sources with similar views), a higher level of consumption leads to a higher level of polarization. At the same time, these authors note that in two-block systems, the conservative way of consuming media is often dominant.

Finally, many researchers note that different types of media have different levels of polarization (Beam et al, 2018; Beaufort, 2018; Dvir-Gvirsman, 2017; Yang et al, 2018). Yang et al claim that if traditional media have only limited influence on polarization, then online media leads to polarization in almost every case (2016). Bessi et al note that this difference between traditional and online media has its own explanation. The authors note the effect of the community when the consumer of media is polarized not only from the media content but also from communication with other consumers. Such communication leads to the creation of a homogeneous environment, where the opposite opinion is completely

lacking (2016). They go further and describe the effect of social networking, called echo chambers. This effect suggests the creation of closed networks around the user, where all media and bloggers will have roughly the same opinions, which will lead to even greater polarization (Gillani et al, 2018).

The study of the influence of media consumption on polarization is quite popular. At the same time, not many authors compare the influence of the consumption of traditional media and online media on polarization. This study poses two main questions. The first is how much the consumption of traditional media affects the level of polarization in society. Whereas the second is interested in whether online media have a more polarizing effect than their traditional counterparts. In the first case, the hypothesis of the study is that the intensity of media consumption has a positive correlation with the level of polarization in society. The second hypothesis of the study suggests that online media has a more polarizing power in comparison to traditional media. This hypothesis grounds on the idea that in online media polarization appears not only because of the content but also because of the interaction with other users and creation of homogeneous network of information sources.

To look at the relationship between polarization and media consumption we should define both these terms. In this study polarization is defined as the depth of separation between groups in society at the political level. On this level polarization means sympathy for certain political parties and politicians or current issues. To operationalize this approach, research uses party affiliation, where the more the voter favors his party over others, the higher the level of polarization of the society should be. Another important definition is media consumption, which means the share of citizens in a society who consume information through mainstream or online media sources.

For analysis, the study uses the case of Poland, which satisfies all the criteria of a country where, according to media literature, should have a high polarizing effect. Poland is a polarized country with a relatively long history of polarization. Moreover, this country has two opposing camps with two main contestant parties, and there are media that have sympathy to these parties. The analysis is performed using regressions using control variables for several models. Part of this models directed to the correlation of polarization and traditional media consumption, when others focused on the relation between polarization and digital media consumption. Both models have their duplicates with control variables that covers other influences on the polarization. The study uses data from European Social Survey panel, which collected between September and December of 2012. The sample is representative and covers all Poland.

This study approves the first hypothesis that there is a positive relation between amount of consumed information from traditional media. However, the research failed to prove that online media have higher polarizing effect than their traditional counterparts. Moreover, the results of this study show that in Polish case of 2012 online media has no polarizing role at all.

The structure of this study is as follows: first, I consider previous studies of the relationship between patterns of media consumption and polarization, justifying party affiliation approach to the definition of polarization. Then, I consider the case of Poland, looking at the research on polarization in this country and the influence of media on this polarization. Next, the method and model of the study are presented. After that, the work contains the results of practical analysis. Finally, the work ends with a discussion of the results.

Chapter 1 - The relation between media consumption and polarization

The notion of polarization is significant for political science from different perspectives. It is an essential characteristic of the party systems, an indicator of social consolidation and measurement of the depth of the social cleavages. However, during the last decades, polarization has become more significant for the explanation of socio-demographic divisions and their sharpness, especially in the US. In western countries, this division appears mostly in the rearrangement of old cleavages, outlined by Lipset and Rokkan (1967). The division between urban and rural area, liberal and conservative views, secular and religious values merged into the one strong division in most of the countries (although in some countries it is still a division between denominations, religions or different classes).

These divisions are related with the media domain. The increasing role of partisan-biased journalism, "echo chambers" in social media and different means of media consumption shows an extremely high level of polarization between media consumers of different camps (Del et al, 2015; Gillani et al, 2017). Despite the popular hypothesis that political preferences play a great role in media polarization, a lot of researchers (Anagnostopoulos et al, 2014; Chang, 2014; Hmielowski et al, 2016; Kim, 2016) show the importance of the reverse relation.

There are many studies on the relationship between polarization and media consumption habits. Most of these studies focus on the mechanism of polarization through media, as well as determining how strong the polarization effect is. Moreover, some studies (Beaufort, 2018; Dvir-Gvirsman, 2017; Jung et al., 2016) show that online media may have a more significant polarizing effect than mainstream media.

However, the question of comparing the polarizing effect of mainstream and online media remains insufficiently researched. In recent years, all European countries have shown an increase in the share of online media in the structure of information consumption (Reuters media report, 2019). This study explores the difference in polarization effect between mainstream and online media. Literature puts forward several theories about why online media and social networks have a higher ability to polarize society. Firstly, this is the “community effect” (Kim et al, 2018). This theory suggests that the polarization in the online media is not only due to the consumption of information from the media itself but also through communication in comments with like-minded people. Another major theory is the echo chambers theory, according to which online media and social networks establish clear links with like-minded people, but completely ignore the views of opponents.

Based on these theories, this study verifies the statement that an increase in the proportion of information obtained from online media leads to a higher level of polarization. In addition, the study also tests the general polarization effect of the media on society. The main hypothesis of this study is that the media increase polarization. Moreover, the effect of increasing polarization is more significant in the online media.

This paper uses two key definitions: polarization and media consumption. Polarization is defined as the depth of separation between groups in society. This study examines polarization at the political level (Stroud et al, 2019). This means that increasing polarization in this study does not mean a change in fundamental values (or strengthening one’s own views on these values) in society. Instead, polarization checked at the level of decision-making and sympathy for certain political parties. To operationalize this approach, research

uses party affiliation. In fact, with this approach, the polarization in society is calculated by the aggregated value of the proximity of each voter to his party. This approach to measure polarization suggests that the more the voter favors his party over others (and the lower the number of doubters), the higher the level of polarization of the society will be.

The second important definition is media consumption. By this term, research means the share of citizens in a society who consume information through certain sources. In the following sections, the study identifies two variables: consumption of mainstream media and consumption of online media. Operationalization of these definitions is carried out through opinion polls, where citizens indicate the frequency of use of these or other sources of information.

The research defines both variables at the level of society. However, they have their own measurements at the level of the individual respondent. The sum of the level of confidence in party affiliation implies a polarization, and the aggregate of preferences in sources of information constitute the structure of media consumption.

This chapter concentrates on a review of the literature and existing research on the interdependence of polarization and media. First, the study shows an analysis of the definition of polarization and its operationalization through party affiliation. Then, chapter outlines the main approaches to the description of media consumption pattern and the level of polarization, including a possible mechanism of this relation. Finally, the paper discusses the role of digital and social media in the increase of polarization during the last decades. This increase strongly associated with the emergence of the "echo chambers" around social media users and exclusive nature of the online media consumption.

1.1. Polarization and party affiliation

For the analysis of media consumption impact on the level of polarization, it is necessary to define the notion of polarization. This section will analyze different approaches to the definition of polarization and justify the choice of operationalization through party affiliation. Also this section of the study will describe the different levels of polarization and justify the choice of the political level for this study. Finally, this section will provide an argument in favor of choosing party affiliation as a way to operationalize the definition of polarization.

There are two dominant definitions for this term. The first one refers to the polarization as a feature of a party system, which describes a distance between two polar extremes of the left-right scale. This definition is close to the idea of Sartori, where polarization is a characteristic that shows the width of the political spectrum (2005). Sartori claims that polarization is a matter of the ideological dispersion within the spectrum within the political system, which makes it challenging to draw a line between the camps. For instance, if there are five parties and voters dispersed evenly along the spectrum there are a lot of possible coalitions (between the right and center, between the left and center, between those parties, which are closest to the center). This definition considers polarization in terms of the diversity of party ideologies. If the parties are close to the center of the ideological spectrum, then the polarization is absent or insignificant. Such an interpretation ignores the tension between different parties or camps and focuses only on the diversity of political elections within the party system.

The second approach looks at the polarization from the perspective of the division lines and ignores the ideological dispersion. This definition emphasizes the depth between the political

camps within society (McCoy, Rahman and Somer 2018, Mayer 2017). If there are five parties with a deep division between the camps of two and three parties, the number of options of the potential coalitions is limited. Certainly, there are a lot of other options for the definition of the polarization although they connected with above mentioned approaches or have limited scope. Such an approach to polarization sets as its goal to evaluate not the range of party ideologies, but only the gap between public groups. This gap can be measured in the preferences of his party, the negative attitude towards other parties, as well as in electoral volatility between elections. Moreover, there are different combinations of these definitions (McCoy, 2019).

However, the definition of polarization is strongly connected with the purpose of the research. The Sartorian approach is more useful for the analysis of the polarization from the perspective of party. The difference between party systems often depends on the range of ideological dispersion. This paper uses the second approach and defines the polarization in terms of the clear divisive line between camps. The reason behind this choice is in the purpose of the study. It neglects the width of the political spectrum in any way and focuses on the split between main political camps and the depth of this division. This paper studies how media can widen or reduce the gap between the two opposing camps. In this sense, polarization is not determined by ideological diversity within the party system, but by deep divisions between political parties (or blocks of parties). Therefore, the ideological approach is unacceptable for the purposes of this study.

Rose and Mishler operationalize this type of polarization through the negative party identification. They claim that there are both positive and negative party identifications for voters. Both of these identifications are significant predictors for the voting behavior

although the first one has more reflections within the literature. Moreover, authors show that for the CEE countries negative party identification is a more significant feature than positive partisan preferences. For instance, data survey from 1995 shows that in Central European countries negative partisanship explained voting behavior of around 70% of voters, while for positive numbers were around 30% (1998). This idea is a natural result of the low trust in parties as institutions, so distrust is a higher predictor than support. Gendzwill researchers the problem of the difference between trust and distrust to parties within Polish society and finds out that this problem is still relevant. According to Gendzwill, distrust to the parties decreases only through generations effect although is nearly constant in terms of time effect. As a result, only post-1989 generation tend to trust to parties more although even among them this trust is much lower than in Western Europe (2013). Finally, negative partisanship shows the depth between the camps within society (Abramowitz et al, 2017). While positive partisanship does not presume fear or anger towards the rival part, negative party identification focused mostly on the prevention of some groups from power.

At the same time, polarization can be defined not only through negative party identity, but also through direct party affiliation. Moreover, with an increase in the level of trust in a political system, a positive party affiliation may have an even more significant role than a negative one. Party affiliation per se does not indicate polarization in society, as it may depend on various factors. However, if a party affiliation is served in contrast to the attitude to other parties, then it speaks of a division within society, and therefore a certain level of polarization. The definition of polarization through party affiliation is typical of studies of the US political system (Vraga, 2015). In such studies, polarization is determined through a scale of priorities: a staunch supporter, ready to support, not ready to support, never vote.

However, some scholars underline that due to the nature of partisanship (both positive and negative) it is much more significant in two-party systems or two-block party systems. Abramowitz and Webster study the increasing polarization in the United States though negative polarization. They emphasized that the two-party system is one of the reasons for partisanship development in this country (2018). This argument can be broadened in terms of pragmatic reasoning of parties/party leaders. Mayer in her research for 17 European countries finds out that negative partisanship increases elections turnout. Nevertheless, the lower number of parties in the party system, the higher this turnout increase effect (2017). As a result, parties in two-party systems are more motivated to fuel negative campaigning and negative partisanship identification.

At the same time, it is necessary to determine the level at which the study considers polarization. There are two such levels. The first defines polarization at the level of basic beliefs, such as religion, fundamental economic and social values. However, the literature notes that this level of polarization is quite stable and cannot change quickly under the influence of media and other external factors. The second level of polarization is measured at the political level. Such polarization includes different attitudes towards short-term issues (laws, acts, decisions in foreign policy), as well as attitudes towards politicians and political parties. Previous studies have noted that it is at this political level that media can increase polarization significantly in a relatively short period of time. This study focuses precisely on the political approach to polarization, drawing on previous research, as well as taking into account the long-term nature of change at the level of basic values.

This study uses the definition of polarization through positive party affiliation. This approach implies that the more citizens are convinced of the advantage of one party over its opponents,

the higher the level of polarization in this society. This approach to polarization is used in cases where there are two pronounced opposing camps. In addition, such an approach to research makes it possible to obtain an aggregated level of polarization, while the operationalization through negative partisanship can show different levels of polarization for different camps. Finally, this approach to polarization makes it possible to estimate the distance between batches, and not the diversity of ideologies, as Sartori's approach does. Since this study focuses on the case of Poland, where there are two clearly defined camps, and the purpose of determining polarization is precisely the depth of the gap between the two camps, the paper uses operationalization through party affiliation.

1.2. Media consumption and polarization

One of the main issues of this study is the relationship between the structure of media consumption and polarization. This section examines the arguments about whether the media influence the increase in polarization, as well as what mechanism of this influence. First, the section focuses on the question of what are the approaches to describing the relationship between media consumption and polarization. Next, this part of the paper considers various possible mechanisms of such influence. Finally, the section identifies conditions that can increase or decrease the potential influence of media on the level of polarization.

The question of the connection between polarization and media consumption patterns developed during the last two decades. Predominantly this topic becomes so significant because of the steady polarization in the United States, where two big camps (representing parties) slowly increase gap among themselves on demographical, regional and media consumption basis.

The last one is especially important because of a drop in the other forms of socialization. When the role of trade unions, associations and personal connections decreased, media becomes one of the main domains of recreation of political views. Hmielowski, Beam, and Hutchens introduce the direct effect of media consumption on the polarization. They use the American National Election Studies cumulative data file to test the idea of media polarizing effect from 1984 to 2008. Authors mentioned that the TV has the main polarizing power within the media. People, who get their information from the television tend to more polarized than average (2016). This may be driven by the nature of so-called "vernacular watching", in the sense of less critical perception of the information. However, this paper takes into account another important reason for such an effect of the TV. While people, who get their information from a TV are primarily devoted audience of one (group) channel, people, who get their information from several sources or print/online media, use a more diverse set of sources.

Hmielowski, Beam, and Hutchens also emphasize that the trend for the connection between polarization and media consumption appeared only after 1996. To find out, if there is any connection between increasing polarization in this period of time and media consumption authors compared different groups (low, average and high TV news consumption). The results show significant higher level of polarization in a group of high TV news consumption, while low TV news consumption group tend to be the least polarized. Before 1996 media had an only temporary polarizing effect, while after 1996 develops also over-time polarizing effect. Authors give three explanations for this change. First, it is the rapid increase in the number of media at this time. The higher number of channels leads to more options for the audience, so these channels became more tuned to the opinion of the audience. Second, in

1996 the government issued the Telecommunications Act, which weakens the regulation on the TV broadcasting market and more private groups managed to get their own TV channels. Third, mergers with non-media companies. These mergers lead to shortages in news departments and lead to more emotional and profit-oriented content creation. Authors also underline that in the post-1996 period there was not only an increase in the level of polarization but also in time, during which polarization appears (2016).

However, polarization is not only about TV preferences, but, more broadly, about media consumption and communication in general. Kim shows a more exact mechanism of the media influence on the polarization. In one of his article, he studies the effect of interpersonal communication on the polarization. While he gets to the point that interpersonal communication decreases polarization, he finds out a huge role of the media in this process. According to Kim, media consumption patterns affect both polarization itself and the ability for interpersonal communication. The first one is straightforward: there is a strong connection between media consumption pattern and polarization. Societies, where people tend to use only one source of information, also tend to be more polarized. Moreover, the increase in the separate audiences of different media associated with higher polarization society-wide. Indirect influence is even more interesting because it shows, how media can have an enormous cumulative effect on the increase or mitigation of polarization. People, who tend to remain polarized and consumes information from several sources have high chances to interact into the interpersonal arguments with the opponents. And these arguments, in turn, decrease polarization (2015). However, in this article, Kim does not give any strong evidence of the direction of media consumption and polarization relations. It can be a problem of reverse causality, where higher polarization pushes people to the more conservative use of media.

For his research, Kim uses cases of South Korea and the United States and both cases approve the idea that media consumption patterns can affect the level of polarization. These findings are surprising because, in contrast to the two-party system in the US, South Korea has a multiparty system. Such finding presumes that polarizing effect not only can be applied to other countries but also shows that the two-party system is not a necessary condition, which assumes that media and polarization connection is not a pure Anglo-American phenomenon. Kim tries to explain this similarity through the dominance of the two parties within the multiparty system and the presence of two main camps for the voters (2015). Even without the strict distinction of two parties, there can be proxies for more broad two camps. However, this condition implies that the connection between media consumption and the level of polarization can appear in different party systems.

In another article, Kim moves further and tries to find out a direction of media-polarization relation and mechanism of this relation. To prove that media consumption patterns lead to polarization (and not vice versa) he looked at the panel of questions for the same people from primaries till campaign of 2008 US presidential elections. During the whole campaign there were a question about attitude to different politicians (to measure polarization), political participation, issue knowledge, beliefs, and media consumption habits. And after that, he tries to make chains of connections, where media consumption to polarization is not straightforward but mediated by other categories. He points out that there are several connections. First one is a direct connection between conservative media usage (in meaning one-source information consumption) and polarization through reaffirming of values and reading like-minded opinions. Kim's approach still not excludes the possibility of overtime

reversal causality (when polarization appears from other than control variables) although it cuts off such possibility at the start of a survey.

Another connection is indirect and shows how conservative media usage can influence on the knowledge of particular issues. And this issue of knowledge leads to higher polarization. Finally, all these aspects (conservative media consumption, polarization, and issue knowledge) leads to a higher political engagement, which reaffirms connection with like-minded people (2017).

At the same time, Kim tried to focus also on the indirect results of media consumption, such as higher participation. He finds out that while value-based theory shows such side-effect, the knowledge-based theory has no significant consequences for higher participation. Moreover, the influence on the level of beliefs creates more consistent and long-term influence on the attitudinal polarization of the consumers (2017). This finding can assume the high significance of beliefs orientation within the media. This means that just pluralism over different issues has not so high impact on the citizens. Opinions from different sides of deep cleavages tend to reinforce this cleavage in a more extreme way. So, one of the crucial conditions for a polarization via media consumption is an existence of partisan-biased media (or, at least, media with a strong position over existing in society cleavages).

Another interesting case of correlation between polarization and media consumption in Poland. Polish media play a fundamental role in this process. This is a case because of the polarization of the media domain itself, claims Dzieciolowski in the report for Reuters "Is there any chance for non-partisan media in Poland". He emphasizes that there are a lot of preconditions for such polarization (even in a period before 1989), but the main change

appeared after Smolensk air crash. This event led to the deep divide between pro-governmental (right wing) and opposition media at that time (2016).

A more recent situation on the threats to the polish media field has been carried out by both the Center for media pluralism report and Open society report. First one shows that there are a lot of factors that push media to cooperation with parties. Among them same values, revolving-door personal connections (some journalists became politicians and vice versa) and, most prominently, dependence on the state allocation of the financial resources. Second mentions that now this deep division exists within all types of media from TV to online blogs and Youtube channels (2012).

While media consumption can have a significant effect on the level of polarization, there is a set of additional issues that can increase or mitigate this effect. Previously this research emphasized some of these additional features. One of them can be an internal context of the cleavages within the country (Wojcieszak et al, 2018). For instance, in countries with a strictly defined camps polarizing effect of media can be higher than in countries with vague and not so sharp divisions between different groups. Jung et al. describe this effect by the terms of attitudinal and perceived polarization, where the first one exists according to beliefs and second is a construct of media and politicians. These levels of polarization differ in terms of questions: perceived polarization more connected with support and distrust in exact politicians or position on exact issues, while attitudinal polarization refers to the deep beliefs like left-right scale. The authors claim that attitudinal polarization changes very slowly (during the lifetime of the person or generations change), while perceived polarization changes rapidly after media use. However, Jung et al. claim that people with high attitudinal polarization have a higher possibility to increase their perceived polarization. The form or the

depth of cleavages also plays a significant part in the polarizing effect of media. Kim shows how interpersonal communication can mitigate the polarizing effect of media consumption (2015). This also shows the importance of geographical, social and income differences between polarized groups (while all these predictors can increase or decrease possibilities for the interpersonal arguments).

Chang outlines the criterium of the message influence, which works in the opposite direction. In her study, she shows that the impact of media highly dependent on the impact of the message. If the person is ambivalent towards the media, but he finds a lot of similarities with his own beliefs (but about previously unknown facts and people) in the exact story, this source will be perceived as a credible one. To prove this claim Chang uses the method of experiment with a random sample of participants, who have to formulate their attitude regarding the particular media without any previous knowledge about this media. She finds a significant connection between people's attitude to the media after the experiment with the conformity of their values and values expressed in media (2014).

This reverse message effect leads to two important conclusions. First, that media can have a polarizing effect even without partisan bias in whole media, but just with the topic selection process. The number of stories, which recreates the patterns that are close to some biases and stereotypes can have a polarizing effect in itself. Second, relations between consumer and media forms a self-recreating relationship. A person with certain values will tend to find sources that reaffirm her values even without a transparent position of the exact media. This can create a vicious circle of media consumption and attitudinal polarization, which is close to the argument of Kim. However, this finding can be problematic in terms of the limitations of the experiment. Chang accounts consumers only for one straightforward set of values,

existing for the exact situation. This issue can be more complicated in the context of several confronting sets of values and the repetitive use of media. Moreover, some media exists in network connections (citing one another, through personal connections, etc), so it is hard to account for all possible controls in these cases.

Lau et al. show that another essential factor that increases the level of polarization through media is a diversity of available media source. In their research authors find out that there are different patterns in the setting, where the choice of media is restricted to mainstream sources and where there are a lot of different options. The second pattern pushes both consumer and media themselves to the higher polarization and to a sharper representation of their own beliefs. Authors claim that another crucial factor of the media as a mean of polarization is negative campaigning (2017). While the audience is highly susceptible to negative campaigning, value-oriented media give a possibility to target specific audiences for such advertisements. And these campaigns also gradually increase negative partisanship and, as a result, polarization between audiences of media with different values. This study also emphasizes the spill-over effects that can emerge as a result of diverse media options and negative campaigning. One of these effects is a personal search for information after consumption of the negative advertisement (Lau et al, 2017). When some information is revealed people start to investigate through the internet and other means more facts about this exact subject. However, this investigation is deeply selective and ignores all other potential pieces of information on this or other candidates (issues).

In general, there are a lot of possible ways how media can polarize the society both on the attitudinal and even value-based levels. The reviewed literature shows that at the political level, media can have a rather significant polarizing effect. In addition, this effect can

exacerbate existing divisions within society. Mechanism of such influence can be both direct (via position and beliefs that media represents) and indirect (issue selection, framing, advertisements). Finally, different media environments (if there are just mainstream media, or media split into small groups) can affect the polarizing power of media.

1. 3. Digital and social media as means of polarization

The second significant issue of this study is the difference between polarization using traditional media and online media. This section examines the different arguments for the fact that online media have a more pronounced polarizing effect than their traditional counterparts. First, this section examines different approaches to why online media can influence polarization more than traditional media. Further, the section considers social networks and their influence on the polarization of society. Finally, the section draws attention to various existing theories that explain the particular influence on polarization from the online media.

In contrast to the previous authors, Jung et al. show that there is a deep contrast between the impact of traditional media on polarization. In the so-called "liberal" system (the US, Canada, the UK) media affects polarization, while in other countries they can have limited (Norway) or even no impact (Greece, Italy) on polarization. However, the authors emphasize that things are really different in online media, where the relation with polarization appears almost in every country. This study underlines that digital media increases perceived polarization, but not the attitudinal. While online media succeed to show their audience a great difference between opposing candidates, they do not increase the contrast in values of the audience (2016). This finding has several significant implications. First, digital media increases the rift

between social and media reality. In this setting persuasion and interpersonal arguments can have less influence on the change of the political preferences (Rojas and Velasquez, 2017). At the same time, it is harder to mobilize this audience for some political activity, which can be a positive feature in case of attitudinal polarization. Second, digital media are more powerful in terms of polarizing effect. And the increasing share of these media in the media consumption habits of the people can be a major reason for increasing polarization.

Moreover, Jung et al. discover that digital media work as an amplifier for the existing polarization, even without deepening of the values gap between the groups. Digital media increase perceived polarization more for those people, who have a higher level of the attitudinal polarization. Authors suppose that the possible mechanism of this effect is exposure to extreme exemplars by those people, who have more polarized values at the start (2016). This finding presumes that digital media have their extreme polarizing effect only on the limited group of people. At the same time, it also shows that there is no need for crucial changes in people's values to increase the level of their polarization. In turn, this presumes the possibility of the polarization within a small period of time.

However, digital media can reinforce polarization also through contacts with other people. Dvir-Gvirsman studies the effect of the audience homophily, which means the existence of like-minded audiences of different media. This audience homophily emerges not only on the grounds of similar values (attitudinal polarization) or indirect polarizing effects (issue choice, selective knowledge on questions and persons, but also on the feeling of the unique community. The author emphasizes that the process of a reinforcing spiral when a person uses information from media to reinforce his own identity, beliefs or trait (2017). This process runs as a non-stop cycle, creating a higher and higher level of perceived polarization.

Dvir-Gvirsman underlines a significant role of online media in the recreation of this audience homophily. In contrast to traditional media, consumers of online media have a possibility for fast feedback and direct engagement with other consumers (2017). The communication with the editors, journalists, and other users creates coherent communities with their values and informal rules. After a while, users find themselves in a relatively homogeneous environment with only rare occasions of communication with representatives of other views. This community creates audience homophily in a more extreme way than traditional media (Anagnostopoulos et al, 2014: Wang et al, 2017)).

Moreover, this effect is even more influential in the cases of the creation of user-generated content, comments and reactions. Dvir-Gvirsman underlines the importance of the user-generated content for audience homophily and reinforcing spiral (2017). When consumers have a possibility to be also producers of articles or opinion sections, they push media even further to the extreme. The author also points out that people with a stronger ideological identity are more vulnerable for this vicious circle of reinforcing spiral. This finding stands in line with an idea of a higher vulnerability of these people to the perceived polarization through online media.

However, the idea of self-reinforcement of polarization works only on short-term questions, such as political preferences. At the same time, this effect has limited influence on fundamental values. Beaufort in her overview of the literature on this topic emphasizes that the idea of reinforcing spiral is questionable and in a long-term researches media consumption shows no significant correlations with polarization. She also refers to several empirical studies, which show results that are contrary to the theory of polarization through

media consumption (2018). This difference may appear due to the different interpretations of the polarization. While polarization conceptualized on the attitudinal level, the threshold is much higher than in a case of perceived polarization.

When researchers measure perceived polarization in the current setting (during the last 10-15 years) almost always the result shows higher polarization from the digital media. In the case of mainstream media, it is always a question of a time period and cultural or political context. However, digital media are not the most powerful in terms of the increase in the perceived polarization. Social media has an even higher impact on polarization. Bessi et al. claim that algorithms create echo chambers, which pushes people to higher polarization. These echo chambers are the networks, which shares a similar opinion on a disputable question within the whole social network. Because of the algorithms and social behavior of users echo chambers tend not only to be polarized but also to polarize users in their network themselves (2016). This finding is extremely impressive if we take into account that there are a lot of issues, which can have polar conflicting positions. And the distribution for all of these issues according to the attitudinal polarization can be different. However, if networks can have a polarizing effect themselves, finally distributions can merge one with another. This can create issue packages, where rainbow coalitions on each side are polarized due to the core issues but also earn perceived polarization on secondary issues (even if they are contradictory to their basic values). This assumption supports general studies on the polarization within the US and European societies, where cleavages tend to merge one with another.

Moreover, Bessi et al underline that these echo chambers tend to increase polarization over time because of the habits of users (2016). This shows the defining power of the community, which can reinforce polarization. Users can select favorable for their beliefs content, and this

content is often commented, liked and shared by users with similar beliefs. Alike to the argument of Dvir-Gvirsman about reinforcing spiral and audience homophily in digital media, social media can build their communities through the direct contacts and feedback to media-content producers. Moreover, they can produce their own content and support other consumers that produce their content. This makes community argument even stronger than in digital media. Furthermore, in contrast to digital (and even more to mainstream) media, social media uses existing personal connections as a foundation for building a virtual community. This factor can lead to even more homogeneous groups, not only in terms of values but also in the question of geographical proximity. social status, income and other strong predictors for basic values.

At the same time, there are two dominating patterns of behavior within the observed social media (Facebook and YouTube). First, shows a trend towards polarization and over some time pushes to the extreme (Beam et al, 2017; Hmiloński et al, 2018). Second, shows a tendency to permanent switch between conflicting ideas without polarization. Bessi et al. underline that these patterns seem to be universal despite the topic and also have no significant difference for Facebook and YouTube (2017). This finding is very close to Yang's idea of the polarization mechanism of digital media. People with low attitudinal behavior have lower chances to earn perceived polarization through social media. However, those, who have a high level of attitudinal polarization, would not only increase their perceived polarization level (like in case of digital media) but also converge on the different polarizing topics.

Moreover, the influence of this imagined communities is far from obvious for users themselves. Gillani et al. show how people's perception of echo chambers differs from reality.

In their research, they compared the supposed placement of the users on the cognitive map of the relations between Twitter users with their real preferences. The result shows that people do not really aware of echo chambers even if they know about this theory (2018). Another finding is even more crucial for the comparison of the polarizing effect of social media from people with different preferences. The results of the study show that people, who follow several bloggers from different nodes on the cognitive map after some time get more diverse views. In contrast, people, who were more focused on one person or not earned higher perceived polarization.

Finally, Beaufort also gives several examples when the results of the research on social media show even depolarization or no changes in polarization (2018). Similar to the argument on digital media here the problem can be in different operationalization of polarization. While attitudinal polarization can be the same, perceived polarization shows the increase (Kim et al, 2019). Moreover, studies show that this increase assumed only within people with high attitudinal polarization.

It should be noted the theoretical part of the argument that online media are more polarizing than their traditional counterparts.

The aforementioned literature provides two main theoretical approaches that suggest polarization from online media. Firstly, this is the “community effect”. According to this theory, polarization during the consumption of media is not only from the content itself but also from other consumers. Both traditional and online media can have a homogeneous audience in the sense of political conviction. However, it is online media that allow this audience to communicate with each other and see each other’s comments. According to the

theory, this leads to a cumulative effect, when political preferences of self-reproduction increasingly convince supporters and repel opponents.

The second significant theory is "echo chambers". This approach is more relevant to social media, but some authors also apply it to online media. According to this theory, mass media consumers not only reproduce and strengthen the value messages of certain mass media or authors but also create networks of like-minded people. In social media, the construction of such networks occurs by themselves, according to the algorithms. Users are increasingly reading those whose opinions they share, moving away from opposing points of view. At the same time, this theory is applied to online media. In this case, the construction of networks arises as a result of cross-references, to journalists working for several publications and search engines.

This paper refers to the different approaches of relations between media consumption patterns and polarization in society. However, for the purposes of the research, it is necessary to pick out the most significant and relevant aspects. First, it is essential to point out the main concepts used in further analysis. The polarization in this study is conceptualized through the political polarization level. It is unnecessary and difficult to find out the impact of media on the level of fundamental polarization because values can change over a long period of time. In contrast, perceived polarization, which shows positions to the exact politicians and issues, is much more close to the short-term effects of media consumption. Moreover, for the measurement of the perceived polarization, this research uses the framework of party affiliation. Such an approach to polarization makes it possible to consider it at the level of the whole country, and not of distant political parties (as in the case of ideological polarization) or camps (as in the case of negative partisanship). The study considers polarization from the

point of view of party affiliation also because of the choice of the case under study. The Polish party system in the period under study involves not only two camps, but also two dominant parties, dividing 60% - 70% of all political supporters. Media consumption is a more narrow definition and almost in most cases operationalized through a diversity of information sources. This paper also uses such an approach to media consumption conceptualization.

Second, this paper takes into account some of the main mechanisms of media consumption and perceived polarization relations. The most significant of them is the very idea of the influence of conservative habits in media consumption (consuming information from one source) as a pre-requisite for a higher polarization. Second, it is essential for this research that digital media has higher polarizing effect than mainstream media. Moreover, social media are even more polarizing than digital media. As a result, the general division in main sources of information society-wide can play a crucial role in the possibility of media polarizing effects. Finally, this research takes into account some possible external influences, which can diverge the results. First, it is a diversity of the media landscape, which can increase polarization through the amount of more radical options. Second, it is the pre-existence of strong cleavages, which can split the media landscape into different isolated camps and push to the polarization. At the same time, this paper does not consider the role of the party system as a crucial background point for the existence of media consumption and polarization relation. The reason behind this idea is the possibility of the simultaneous divisions in several dimensions and the empirical results of the researches that claim strong digital media influence on perceived polarization in all possible party systems.

Chapter 2 – Polarization and media in Poland

Political polarization in Poland has repeatedly been the object of research. Such attention in the study of polarization within this country is caused by a number of reasons. First, Poland has consistently been a polarized country for the past twenty years. Secondly, the level of public polarization in this country is increasing. In addition, the polarization in Poland passes between two stable, but political camps. This feature distinguishes polarization in this country from polarization in countries where the division takes place according to persistent non-political categories (religious denominations in the Netherlands, ethnic identity in Belgium, geographical identity in Italy).

This study uses the case of Poland, not only for the reasons listed above but also because of the media landscape inside the country. Most of the Polish media have political sympathies towards one of the political camps. Accordingly, the study suggests the presence of a polarizing effect from the media in this country.

This chapter examines the polarization within Poland, as well as the media component of this polarization. The first part considers the context of polarization and the current position of this polarization, while the second part focuses on the media component of polarization in Poland. Finally, section summarizes polarization and media consumption in Poland in terms of the consistency of the arguments of the previously reviewed studies.

2.1. Polarization in Poland

Polarization in Poland has a historical background. Political and economic imbalances have accumulated over a long period of time. Tomsic argues that polarization in modern Poland

has its roots back in the post-socialist transformation. Then, according to the author, democratization and market reforms created those who won and those who lost from reforms in the short term. These two heterogeneous groups laid the foundation for the polarization of the last decades. Tomsic notes that despite the demographic, social and territorial divisions, both groups are heterogeneous because they include a variable electorate. However, the author emphasizes that polarization is on an uptrend in Poland. The main reason for this, he notes the perception of the opposite camp, as existential enemies. Both political camps perceive an enemy victory as a threat to democracy or statehood. That is why party affiliation and electoral activity is particularly pronounced here (2017).

This level of polarization has led to increased mobilization of one group of the society against its opponents. Considering enemies as a natural threat, polarization remains the only instrument for protecting not only one's convictions but also the existence of the country as a whole. In addition, this level of distrust of the enemy camp is justified by quite rational arguments. The legislative activity of opponents can compromise the institutions or important principles of another camp. This creates constant pressure on the political elites in each camp, forcing them to constantly renew their polarizing rhetoric. Moreover, the pressure on the party occurs not only from the opposite camp but also within its own camp. Such pressure is exercised by both voters and political partners. Baylis notes how parties with similar views force one another to be radicalized in order to preserve their niche and not lose the political struggle inside the camp (2012).

An important point of polarization in Poland is the short history of its institutions. Most of the institutions in the country exist for a short time and do not have strong protection against political interference. This factor not only enhances the polarization in the country (because

each camp sees a danger to institutions if the opponent wins) but also worsens the potential effects of polarization. Savage emphasizes that polarization in Western Europe and Eastern Europe has different potential outcomes. If in the west, polarization means a shorter duration of government, in the east it correlates with abuse of power and a long stay in government (2013).

Some authors (Dawson and Hanley, 2016) note that in Poland, like in other Central European countries, polarization does not exist only between opposing camps. In addition to this "horizontal" polarization, there is also a "vertical" polarization between the elites and the general public. This polarization dimension is difficult to measure because it has no practical expression except in anti-elite sentiment. However, researchers (Dawson and Hanley, 2016) note that such polarization creates serious political imbalances and can lead to a sharp change in the camp.

2.2. Polish media and polarization

The polarization in Poland is an interesting phenomenon. Due to a division on two almost equal in terms of size camps, regional and demographical (big cities against small cities and villages) divisions and deep connection between parties and civil society (partisan-biased media and links with associations, interest groups, and NGOs) polish political landscape is close to the US. However, Polish system is slightly more vulnerable for the exploits, while it has fewer checks against the majoritarian rule and a shorter history of institutions. Tworzecki repeats the above effect, that Poland is much more vulnerable to the negative effects of polarization. Each camp is an existential threat to the opposite camp, and therefore is perceived as an enemy of statehood and democracy. Tworzecki stresses that negative

campaigns are the main danger in this process. They are the ones who beat the enemy camp, defending their part of society and the politician from criticism (2019).

Polish media play a fundamental role in this process. Both campaigning and media coverage are mostly divided between media, which have some preferences towards some specific parties. This is a case because of strong polarization within the most influential Polish media. Dziecilowski in the report for Reuters "Is there any chance for non-partisan media in Poland" emphasizes that Polish media domain is divided itself. He points out the presence of preconditions for such polarization both before and immediately after the collapse of the Warsaw pack and socialistic block. However, this division became even more strong and noticeable after Smolensk air crash, when the society divides into very emotionally defined camps. This event led to the deep divide between right wing pro-governmental and neoliberal with socialist opposition media at that time (2016).

However, this polarization effect in media remains also in 2010-2016. Moreover, media become even more polarized and sometimes they even have strict partisanship. Center for media pluralism report and Open society report on the threats to the polish media field show that during the last years polarization in Polish media became a clear trend. First one shows that media themselves are pushed towards cooperation with parties. This push is caused by a lot of factors like same values, revolving-door personal connections (some journalists became politicians and vice versa) and, most prominently, dependence on the state allocation of the financial resources. Second mentions that now this deep division exists within all types of media from TV to online blogs and Youtube channels. Moreover, in social media this division increases even more rapidly than in general (2012).

However, the most spectacular are the general results of the Wenzel's description of the Polish media divide. It is obvious that there is a complete overlap between these camps in both fields, but it is a question if media polarization reinforces societal division. Wenzel gives a close look at the correlations between party affiliation in Poland. Among the top 32 media sources, only 9 (including Facebook) have relatively the same attention from different camps. And 18 of sources are twice or more skewed towards the supporters of one camp than another (in some cases difference can be in 5 or 6 times). This result looks impressive in terms of the similar geographical availability of all of these sources (2018). The result of the survey for the most important source of information is even more impressive. While "TVN" is an important source for the 68,6% supporters of "Civic Platform" and "Nowoczesna" and only 28% of "Law and justice" supporters, figures for "TVP" are 16,6% and 54,6% respectively.

Another important aspect of the Wenzel's study is the level of internal correlations of parallel consumption of different media. There is a strong correlation within both conservative and liberal media group. Wenzel presents the results of his research, where consumption of one conservative media is a good predictor for the consumption of another conservative media(2018). Moreover, his research shows that media can be a better predictor for party affiliation than sex, urban/rural origin and eastern/western location within the country.

An overview of polarization in Poland shows that it corresponds to the main parameters of this study. In Poland, there is a fairly pronounced level of polarization, this trend has only increased in recent years. In addition, there are two clearly established camps in the country, each of which has a large dominant party. The total rating of the two largest opposing parties in the study period is about 68%. This is far from the indicators of a two-party system.

However, this already makes it possible to use party affiliation as an indicator of political polarization in society.

Finally, in Poland, there is a strong media division into two camps. Moreover, often the media have a pronounced party preference. This trend is particularly noticeable in the plane of the online media of the country.

Chapter 3 - Methodology and data

This study aims to answer two questions. The first is whether media consumption has an effect on polarization. Some studies say that in the case of conservative media consumption (when a consumer uses information from one source or from one group of sources), more consumption may lead to a higher level of polarization. Traditional media does not in all cases enhance polarization. However, in the case of Poland, where there are two camps and there is a division at the fundamental level, according to the theory, the effect of the media should be present. Second and more important, it tests the idea from the literature that social and digital media are more polarizing than mainstream media. The main body of literature emphasizes that digital media increase perceived polarization rapidly. In this study, the question of the difference between the effects of online and mainstream media is the most important. Comparing these two groups of media can confirm or disprove the theory of "community effect" and "echo chambers". These theories claim that, unlike the mainstream media, where polarization is intensified in the process of content consumption, a more complex mechanism operates in the online media. This mechanism involves the interaction of people with peers, and not with content producers. This interaction (through comments or other means of communication) creates a polarizing effect that is not available in traditional media.

To study the question of the relationship between media consumption and polarization, this paper uses a regression method. To investigate the difference between the impact on the perceived polarization in mainstream media and digital and social media this study also uses the method of regression analysis. For this study will build six regression models. In all six regression models, the dependent variable will be polarization. This variable can take values

from 1 to 5 and is determined by the level of respondent's party affiliation. In the first model, dependent variables are traditional media consumption and online media consumption. In the second model, control variables are added to these independent variables (party membership, age, territorial and demographic indicator). The second and fourth models duplicate the third and fifth, but with the control variables. The third and fifth models define the interdependence between polarization and traditional and online media separately.

The study uses the European Social Survey panel information. All variables are taken from a single survey with a randomized questionnaire and a representative sample. Information collected between September and December 2012. The sample size is 1619 people. The level of failures on the questionnaire is 3%. The survey method is a telephone interview.

This study uses the time period for the last four months of 2012. This period was chosen for two main reasons. First, during this time period, the two largest parties in Poland had a support level above 70%. The sample for creating models inside this study shows even higher rates: about 74%. Such a high percentage makes it possible to minimize the situation when weak party affiliation means the flow of the electorate within the same camp. Moreover, during this period, the other rating parties had a clear separation from the two previous ones (in contrast to the period 2014-2016, when the parties Nowoczesna and Platforma Obywatelska shared a practically identical electorate).

The second reason for choosing the time interval is the beginning of the rapid growth of online media popularity. During this period, social networks have not yet become ubiquitous, and the online media is rapidly gaining an audience but has not yet dominated the market. In 2016, online media became the second most popular category in Poland, and the gap from television was rapidly declining. This study wants to concentrate on a point when online

media has not yet been so popular. Such a decision should make the contrast between traditional and online media sharper.

There are three main variables in the study. Polarization is the only dependent variable, while traditional media consumption and digital media consumption are two separate independent media, which test two hypotheses of the research.

1. *Polarization.* The dependent variable of the research is polarization, which reflected the level of a standoff in the society. This research uses the definition of the political polarization, which focuses on the attitudes towards issues and politicians, ignoring fundamental values. The operationalization of perceived polarization in this study uses the concept of party affiliation, concentrating on the closeness to any party in contrast to others instead of the usage of left-right (or other types) of positive partisanship divisions. The higher level of party affiliation shows higher split between the camps. Operationalization through party affiliation also allows us to estimate the level of polarization not in a separate group, but at the level of the whole society. To determine this variable, the study uses data from the European Social Survey. There are two variables in this survey that, in combination, are our party affiliation index. The first variable determines whether the respondent feels closer to any party than others. The second question determines how close to this party the respondent feels himself. The variable can take values from 1 to 5, where 5 is the highest level of party affiliation and, accordingly, polarization. In the study, this variable is indicated by the word *pol*.
2. *Digital media consumption.* This is the first independent variable of the regression. This variable should show the relationship between the share of digital media in the

consumption habits of society and perceived polarization. This variable uses European Social Survey data. The variable determines the frequency of using Internet sources of information. For a variable, a scale from 1 to 4 is used, where 1 means not using the Internet as a source of information, and 4 means regularly using the Internet. In the study, this variable is indicated by the word *net*.

3. *Traditional media consumption*. This is the second independent variable, which this study uses in regression models. This variable uses European Social Survey data. The variable determines how actively the respondent uses television to receive news. The variable is calculated on a scale from 1 to 4. A value of 1 means not using television to receive news, and 4 means intensive use of television to receive news (more than 3 hours a day). The study uses television as the main indicator of consumption of traditional media. According to previous studies, at the time of the survey, television was the most popular source of political information, with a share of more than 90% of citizens. In the study, this variable is indicated by the word *tv*.

At the same time, this research also uses four different control variables, which can also explain dependent variable and have some overlap with two independent variables. Among these variables are party membership, age of respondent, size of the city of origin of the respondent, and the level of trust to parties.

4. *Party membership*. This variable is used from the direct question about the respondent's party membership. The variable can acquire the values 0 (in the case of missing party membership) or 1 (if the respondent is a party member). This control variable is used to exclude distortion from those people who are members of the party

(since they will definitely feel closer to their party). In the study, this variable is indicated by the word *mprty*.

5. *Age*. This variable is taken from the data of the European Social Survey, which calculated the variable by a mathematical operation from its year of birth. A variable can have any value from 18. This control variable is used to correct a possible correlation between young people and those who use the Internet as a source of information. In the study, this variable is indicated by the word *agea*.
6. *Socio-demographic variable*. This variable is taken from the European Social Survey and determines from which locality the respondent. A variable is defined by a number from 1 to 4, where 1 means a resident of a farm outside a settlement, and 4 means a resident of a large city. This control variable adjusts data for one of the most important demographic indicators. In the study, this variable is indicated by the word *dem*.
7. *Trust in parties*. This variable uses the European Social Survey question about the level of trust in parties. Respondents could rate their level of trust in parties on a scale from 0 to 9, where 9 means very high confidence in parties as institutions. The study uses this control variable because a low level of trust in parties, as institutions, can lead to low party affiliation. In the study, this variable is indicated by the word *trstprt*.

Finally, these variables uses information from our European Social Survey data set from Poland and put it in six separate regressions to find out the relationship within our models. Some of the cases within sample have missing values for some variables, so this research drops these cases. This affects less than 10% of the sample, so the results still should be representative for the sample.

Chapter 4 – Results

This section reviews the results of the previously described regressions and evaluates the two main hypotheses of this study. Three of the six models evaluate the interaction of the main independent variables (traditional and online media consumption) and party affiliation. The remaining three models represent broader constructs with control variables.

The models ignore the answers of 127 respondents since each of these respondents did not answer at least one question. At the same time, the sample remains fairly large and representative and is 1,492 respondents. All models only limitedly interpret the relationships within this sample since the R-squared value is rather low in all models. Nevertheless, some models interpret the data better than others, which shows the direction of possible changes for further research.

The main results of this section are the answers to two main research questions. First, the models confirm the first hypothesis. Media consumption does have a positive correlation with the power of party affiliation. All models show the strong influence of traditional media on the power of party affiliation, which fully confirms the research hypothesis.

However, the study failed to prove a second hypothesis about the strong influence of online media on party affiliation. The impact of online media is less than the influence of traditional media. Moreover, most models show that within this sample, online media consumption is not at all tied to the power of party affiliation. This relationship works only in selected sample sites (younger age groups).

This section describes in detail the three pairs of models and the results of regressions in these models. Next, the section describes the possible limitations of this study. Finally, the section offers options for changing the model and selecting variables for further research on this problem.

4.1. General model

The first part of the analysis focuses on the full model. This model includes the influence of traditional media and the influence of online media on party affiliation. This model aims to determine whether there is a link between the intensity of media consumption and polarization. The hypothesis of this study is a positive correlation between the high level of party affiliation and the high level of media consumption. Previous studies have noted that the relationship between polarization and media consumption is high only under a certain number of conditions (the presence of clear opposing camps, a large number of alternatives among the media, a high connection between parties and the media). All these conditions are present in the case of Poland.

The first model shows that the sample from the survey confirms this hypothesis, albeit with certain reservations. The intensive consumption of information from traditional media shows a positive correlation with the level of party affiliation. Moreover, this correlation is significant (when the p-value is 1%) and is rather high. The growth in consumption of traditional media by one unit (on a four-point scale) leads to an increase in party affiliation by 0.32 (on a five-point scale). This means a rather high role played by the consumption of traditional media in influencing party affiliations. However, in this model, online media did not show a significant correlation with party affiliation. Moreover, even with a lower level of

the p-value, there is no such correlation. This suggests a very low correlation of variables within the presented model.

Another significant problem within this model is also the low value of the R squared, which means the model's low ability to determine party affiliation. The model describes only a small part of the relationship of the entire sample. The reason for this low ability of this model is precisely the use of the online media variable, which will be discussed in the demonstration of the following models. The considered model completely negates the second hypothesis of this study. The use of online media does not have a higher polarizing effect, as was expected according to previous studies. On the contrary, online media do not have a polarizing effect at all within the framework of this model. In addition, the following models show that a separate analysis of the influence of traditional media on party affiliation is more relevant.

The second model, which is presented on the *Figure 1*, of this study takes into account not only the two main independent variables but all the control variables. The model uses four control variables, each of which also explains the level of party affiliation. First of all, we are talking about direct predictors of the level of party affiliation. Chief among them is the respondent's party spirit. The second such predictor may be the respondent's level of confidence in parties in general. Two other variables are guided by broader demographic indicators. One variable controls the location of the respondent. It is assumed that living in large cities should push the respondent to more pronounced party affiliation. The second social variable controls the age of the respondent. It is assumed that a high age should mean a higher level of polarization due to more persistent and conservative views of the respondent.

Figure 1. Relationship between polarization and media consumption (general model)

Model2	
	<i>Dependent variable:</i>
	pol
tv	0.212*** (0.040)
net	0.095*** (0.025)
agea	0.014*** (0.002)
dem	0.066*** (0.025)
mprty	-1.612*** (0.271)
trstprt	0.079*** (0.015)
Constant	3.260*** (0.567)
Observations	1,492
R ²	0.119
Adjusted R ²	0.116
Residual Std. Error	1.107 (df = 1485)
F Statistic	33.499*** (df = 6; 1485)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

This model also has a rather low R-squared indicator, although this indicator is still significantly higher than the similar indicator in the previous model. This means that this model describes a greater number of responses from respondents and is a more universal predictor of the level of party affiliation.

At the same time, all variables are defined as significant. Among the main independent variables, the consumption of traditional media still remains the main predictor of high party affiliation. This indicator is higher than the positive coefficients of all the others (including control ones) variables. The indicator of online consumption of information in this model is also significant, but it has a very low positive impact on the level of party affiliation.

All control variables are also defined as significant in this model. The locality of residence does not significantly affect the level of party affiliation, whereas age is a more tangible predictor. An increase in the age and size of a residence is expected to mean an increase in party affiliation. The most significant positive impact among the control variables as expected is the level of confidence in the parties. However, it is still lower than the intensity of consumption of traditional media. Unexpected for this model is the effect of partisanship of the respondent. Counterintuitively, partisanship leads to less party affiliation. This may be explained by the fact that members of parties are also representatives of local authorities and are forced to make compromises with other parties during political activities.

Overall, this model shows two major trends. First, the hypothesis about the effect of media consumption on polarization is correct. The second trend refutes the hypothesis of a higher level of party affiliation with a high level of online media consumption. In order to look at both these hypotheses in more detail, the study examines the models of traditional and online media consumption separately.

4.2. Model for traditional media

The second step of the study is the separation of two different models of media consumption and the determination of their correlations with party affiliation. The first such model is the bivariate regression between party affiliation and the consumption of traditional media. According to previous studies, an increase in the intensity of consumption of traditional media in the context of Poland should lead to a higher level of party affiliation. The third model of this study confirms this hypothesis. The model again demonstrates a rather low level of the R-squared indicator, which indicates limited applicability of this model. At the

same time, the variable consumption of traditional media is significant (when the p-value is 1%), which indicates the correlation between these two indicators among the sample. As in the first model, the increase in traditional media consumption by 1 increases the level of party affiliation by 0.3. This suggests a fairly high positive correlation.

Figure 2. Relationship between polarization and traditional media consumption.

Model4	
	<i>Dependent variable:</i>
	pol
tv	0.205*** (0.040)
agea	0.010*** (0.002)
dem	0.094*** (0.024)
mprty	-1.671*** (0.272)
trstprt	0.082*** (0.015)
Constant	3.739*** (0.555)
Observations	1,492
R ²	0.111
Adjusted R ²	0.108
Residual Std. Error	1.112 (df = 1486)
F Statistic	36.976*** (df = 5; 1486)
Note:	* p<0.1; ** p<0.05; *** p<0.01

To refine this relationship, the study also uses the fourth model. In this model, in addition to the intensity of traditional media consumption, all control variables are present (*Figure 2*). As in the previous pair of models, here the model with control variables has a higher R-squared indicator. This suggests that the model describes more cases from the sample. At the same time, the R-squared rate is still not very high, which indicates the need to improve the model for a more universal result.

Similarly to the second model, in this model all variables are significant. Almost all variables have a positive correlation with party affiliation, except for party membership (similar to the second model). The only significant difference from the second model was an increase in the influence of the indicator of the settlement and a decrease in the value of the indicator of age. This can be explained by the high correlation between the rate of online media consumption with urbanization and the young age of the respondents.

In general, this model proves the first hypothesis, noting the role of intensive consumption of traditional media in increasing the respondent's party affiliation.

4.3. Model for online media

The second research question is the relationship between party affiliation and online media consumption. Previous studies have shown that usually online media has a greater polarizing effect than traditional media. This explains two things. The first effect of the community is when the consumer of information is polarized not only due to the content in the publication but also through interaction with other readers. Feedback in comments or personal messages creates a clear community, and the homogeneity of this community enhances consumer polarization. The second argument is echo chambers, which further extend the previous theory. Such echo chambers create closed networks of like-minded people who completely isolate them from the opposite opinion.

Figure 3. Relationship between polarization and online media consumption

Model6	
	<i>Dependent variable:</i>
	pol
net	0.089*** (0.025)
agea	0.017*** (0.002)
dem	0.079*** (0.025)
mprty	-1.620*** (0.273)
trstprt	0.084*** (0.015)
Constant	3.506*** (0.570)
Observations	1,492
R ²	0.103
Adjusted R ²	0.100
Residual Std. Error	1.117 (df = 1486)
F Statistic	34.042*** (df = 5; 1486)
Note:	*p<0.1; **p<0.05; ***p<0.01

Based on these arguments, the research hypothesis suggested a higher party affiliation among those respondents who consume more online media. However, the first two models disproved this theory. The fifth and sixth models consider the relationship of party affiliation and the consumption of online media only (ignoring the consumption of traditional media). The fifth model is a correlation between these two variables. This model shows that in the absence of other variables, the relationship between party affiliation and online consumption does not exist at all. The value of R-squared is absolutely minimal, and the variable of online media consumption is not significant in the model. These things show the absence of any connection and the falsity of such a model.

The sixth model assumes the inclusion of the same variables with the addition of control variables (*Figure 3*). The value of R-squared in this model is higher (although lower than in the second and fourth models), which means its partial applicability to the sample description. In addition, it also assumes the importance of absolutely all variables, including the consumption of online media. However, the weight of online consumption in this model is very low. Living in a big city is about the same predictor for determining party affiliation as online media consumption. Age and confidence in parties are twice the best predictors for determining party affiliation. All this speaks against the variable consumption of online media in this model. Therefore, the second hypothesis remains refuted.

At the same time, there were additional correlations between the online media consumption variable and some other control variables. Together with additional regressions and visual analysis of information, it can be said that the problem with this variable is the limited correlation in individual groups. In certain age groups (age below) and among residents of large cities, it shows better results than in the entire data set.

This is especially noticeable if we conduct a regression analysis for a separate part of the sample in a group of up to 30 years. Here, in almost every model, the relationship between online media consumption and the level of party affiliation is significant and has a fairly high figure. Such results can speak of two things. The first is that the respondent incorrectly interpreted the question about the consumption of online information. The second hypothesis is more important and can lead to useful changes in the model. She suggests that the community effect does not affect all consumers, but only those who interact with other people through online media. This means that, depending on the way in which online media is used, it may not have its polarizing effect.

4.4. Limitations and suggestions about model correction

This section notes the limitations in the study and responds to possible criticism on these limitations. The first insignificant problem of this study is the minor manipulation in the interaction with the sample. Since not all respondents answered all questions, some of the data from respondents had missing values. The analysis ignores the responses of respondents where there is no value for at least one variable. There were 127 such cases in the sample, which is about 8% of the total sample. Most of the missing values come from the question of party affiliation. Since the distribution of missing answers is random and does not exceed 10%, this should not significantly affect the results of the regressions.

The second and most important problem of these models is the relatively low R-squared in all models. This problem indicates a low universality of the models and their inability to describe all cases in the sample. However, the study provides a comparison of different models and shows which of them best describe the dependent variable.

Another problem of research (associated with the low capacity of models) may not be the ideal operationalization of polarization and media consumption. Although the study previously showed that party affiliation is the most favorable option for the operationalization of polarization, it still has certain omissions and problems.

This study was intended to determine the relationship of party affiliation with the consumption of traditional and online media. One hypothesis was confirmed, and the second

was not confirmed. However, in all models, improvements can be made to more accurately describe the sample. This section will look at improvements in collecting information for variables, as well as building a model.

The first possible change relates to the variable intensity of online media consumption. This variable is taken from a survey where the respondent responded to the frequency of consumption of information from online sources. However, models with this variable showed different results for different age groups. This may mean a different interpretation of the question or a different level of interaction of the respondents. A more accurate question may be how important the online source is for the consumption of information for the respondent.

The second change in the model may concern its structure itself. Some variables only slightly describe the dependent variable. The respondent's place of residence has little effect on his level of party affiliation. While party membership did show unexpected counterintuitive results. Instead of these static variables, you can try their dynamic counterparts. For example, participation in political activity or experience of living in another country / other locality.

Discussion

Over the past decades, the issue of polarization has become more relevant for most democracies. This study examines one of the possible causes of polarization - the consumption of information from the media. Previous studies have emphasized that there is a positive correlation between polarization and media consumption habits. Moreover, some researchers offered their own interpretation of the mechanisms by which media consumption habits influence the level of polarization in society. This analysis looked at whether media consumption affects the increase in political polarization in society. For this, polarization was defined through positive party affiliation, when a higher level of support for a particular party, as opposed to the rest, means a higher polarization. This study uses the example of Poland. This country is polarized, has two camps, and its media have open sympathy for specific parties. The study focused on two issues: the impact of media consumption on polarization in general, and the difference between the influence of traditional and online media on polarization in society.

The first question examines whether there is a relationship between media consumption and polarization in society. Most of the previous studies have noted that intensive media consumption often leads to a higher level of polarization. However, the researchers emphasize that we are talking about political polarization. Media can exacerbate disagreements between different camps in society only on current issues, while fundamental values change slowly and under the influence of many factors. Moreover, even political polarization does not arise in all cases, but only under certain conditions. One of the key conditions is the existence of a two-party (or two-bloc system) when there are two opposing camps within society. In addition, the number of media should be large enough so that some

channels or publications have an incentive to show something for a specific audience. This analysis uses the example of Poland, where all these factors are present. Therefore, the first hypothesis of the study was that in this case, the media influence the level of polarization. A study in the form of a regression model confirmed this theory. More intensive consumption of traditional media in Poland leads to a higher level of party affiliation.

The second question of this study is connected with a more detailed look at the different effects of different media on the level of polarization. Previous studies have indicated that online media may have a higher polarizing effect than their traditional counterparts. This study is based on two main theories that point out a stronger influence on the level of polarization from the online media. The first theory assumes a community effect when the polarization of online media consumers is not carried out through the consumption of content, but through communication with other visitors of this media. Unlike traditional media, online media have the ability to comment and sometimes exchange messages between users. This leads to repeated repetition of the points of view of people with similar views, which leads to a higher level of polarization.

The second theory concerns echo chambers within social networks, and sometimes online media. This effect occurs because the user (with the help of algorithms or cross-references) turns out to be on the network of media and bloggers with similar views. At the same time, media with opposite views are cut off, which leads to a higher level of polarization. However, regression analysis within the sample of this study showed the opposite result. Online media not only did not have a higher polarizing effect but, on the contrary, had an almost zero effect on polarization. Thus, the study could not prove the second hypothesis. This could be a result of the different types of interaction with the digital media. Some people may read and write

comments and be affected by the influence of the community effect of the polarization, while others just ignore this section. A more detailed study showed that in the younger age sample this study works. This may mean a different level of interaction (when younger people are more likely to enter discussions in the comments) or a misinterpretation of the question. Moreover, some resources may even have no options for such interactions, restricting comments or have no other possible means for the feedback of users.

This study also suggested certain model corrections to further explore this problem. In addition, the results for different groups and different levels of interaction in the online media suggests further research on this topic. An example of this would be to test the hypothesis that people interacting with comments have a higher level of polarization. Moreover, in the future it would also be interesting to conduct a study of changes in polarization levels over time, comparing this with the increase in the share of online and social media in the structure of information consumption.

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