

Corvinus University of Budapest
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Conquer and Divide in the Digital Age

**The Role of Facebook in the Occurrence of Echo Chambers in the
Hungarian Public Opinion**

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Abstract

From political campaigns to private conversations, social media has changed various interaction mechanisms in our societies. The following paper investigates the current extent of political segregation of Hungarian Facebook communities with regards to the persistence of echo chambers with an additional interest in users' perception and participation in its antecedent processes. It is deemed to find evidences of an echo chamber effect on Facebook in Hungary and see if such effect further contributes to the social and political polarization of the society. Following the evaluation of currently available relevant theoretical literature and studies, a multi-faceted research is presented, consisting of an experiment using fake Facebook profiles of different political affiliations, followed by an interview with a local expert and then a survey is conducted and analyzed to screen the awareness and perception of individuals on echo chambers. The analysis of the data collected from these three different methodologies is conducted using the framework of curation flows in order to systematically answer the research questions. The results of the study indicate an intentional social media (ab)use by politicians in the form of strategic curation as well as noticeable algorithmic and personal curation forms, contributing to information and opinion bubbles within the sample and the experimental environment, which are, on the other hand, not fully isolated from each other. Further results show a number of negative sentiments of respondents to the current, heavily polarized online and offline spheres in Hungary.

TABLE OF CONTENTS

1 INTRODUCTION	4
2 LITERATURE REVIEW	5
2.1 SOCIAL THEORETICAL BASELINES	6
2.2 DEBATES ON ECHO CHAMBERS	8
2.3 SOCIAL POLARIZATION IN ECHO CHAMBERS.....	9
2.4 CURATION AND MODERATION.....	11
2.5 THE HUNGARIAN CONTEXT	14
3 RESEARCH QUESTIONS AND METHODOLOGY	17
3.1 THE EXPERIMENT.....	17
3.2 THE INTERVIEW	18
3.3 THE SURVEY	19
4 DATA ANALYSIS	21
4.1 THE EXPERIMENT.....	21
4.2DIFFERENCES IN CAMPAIGN STRATEGIES AND THE ROLE OF FACEBOOK	28
4.3 THE SURVEY	31
5 DISCUSSION	37
6 APPENDIX	40

1. Introduction

Social conflict from a classical sociological perspective is an agent of social change (Smelser, 1975). From the demolition of oppressive dictatorships to thriving gender equality movements, this theory has proved its validity throughout the whole of global modernity. However today, the ultimate platform of public conversation is exponentially shifting towards the digital space: compared to one million users of the then-largest social media platform MySpace in 2004, Facebook has had an outreach of 2.26 billion people in 2018 (Ortiz-Ospina, 2019).

While conflict requires two opposing views to interact (Oberschall, 1978), on these forums the possibility of contradicting narratives to meet is limited. Current social media platforms such as Facebook operate with algorithms that offer content threads based on the previously recorded preferences of their users and their friends, shrinking their potential to be exposed to different views, reinforcing users in their preexisting opinions as well as connecting them almost exclusively with like-minded people. As opposed to classical news consumption, users also have more liberty of choosing between sources of information, and they naturally tend to select the ones closer to their own narrative due to confirmation bias. These factors together result in the phenomenon called the echo chamber effect (Cinelli et al., 2021), which generates the isolation of social clusters within the same society, where members of these separate clusters live in differently interpreted realities (Bessi et al., 2016). In such groups, social polarization is a self-exciting, unstoppable vicious cycle. The process of polarization is difficult to measure by its nature, although some studies aim to define opinion polarization as a state rather than a process on a social psychological level for more tangible measurement (Koudenburg et al., 2021).

Polarization can be political too, and the social and political aspects of polarization are interconnected to a large extent and therefore should be considered together. The agency of social media in this process is of paramount relevance today, considering the quickly emerging populist ideologies where effective communication and mass outreach is a key to political success. In addition, the postmodern, globalized uptake of the past decades resulted in fading national identities that is accompanied with a need of redefined belonging for many (Putri, 2017). Such a void can be filled in by different sorts of ideological radicalization - such as from

a strong, nationalist leader - for which social media is a great channel and its polarizing potential is also a catalizator.

Currently available literature discusses social and political polarization on a wide range of platforms, also ones analyzing the effects of the echo chamber in social media. This paper aims to recreate, measure and evaluate the persistence and the effects of these phenomena in Hungary, with a focus on Facebook usage. As of 2021, Hungary has had 6,81 million Facebook users (Medve, 2021) compared to its population of 9,75 million. The current populist government, in power since 2010, is actively using social and traditional media platforms to reinforce their “them and us” narrative across numerous social and political topics, contributing to the establishment of distinct opinion silos within the public.

Therefore discovering the impact of the most relevant social media platform, Facebook in this process as well as the opinion and the extent of awareness of the Hungarian citizens is extremely relevant, accordingly, my research aims to explore these areas, whether an echo chamber is generated on Facebook in Hungary and if so, what users’ perceptions and opinions are. Present paper continues with a review of existing studies and theories connected to the phenomena, which is followed by a contextual description of the Hungarian public and political sphere. Then the research questions and methodology are discussed in detail. Afterwards, an experiment is conducted on Facebook to measure the extent of echo chambers on the platform in its Hungarian language areas, complemented by an expert interview to further clarify these findings. A survey is also conducted, from which the public’s perceptions on echo chambers can be indicated, concluded by a short, non-representative descriptive analysis, from which further areas of study could be identified. Finally, the thesis concludes with a discussion - confirming that all research elements confirmed echo chambers on the observed samples, which are characteristically different based on which political opinion they are built around. Additionally, limitations and further research opportunities are offered.

2. Literature review

Within this chapter, pieces of relevant sociological theories will be discussed and compared in order to streamline the theoretical concept of the paper and clarify the main notions connected to social media, polarization and echo chambers. This is followed by the

review of some previously completed studies in the area to identify best practices, bottlenecks and niches that help set up the research plan and act as a ground zero for further investigation.

2.1. Social theoretical baselines

Marxist notions were briefly mentioned in the beginning, but zooming into today's environment and the topic of this paper, Marx also argued that technological advancements greatly contribute to shaping society and evoking social change, which position is referred to as technological determinism. Late 20th century criticism to this suggestion claims that as technology is created along with human intentions, it only has a passive, assisting role in society (Bimber, 1990). According to Anthony Oberschall in his article "Theories of Social Conflict", "conflict results from purposeful interaction among two or more parties in a competitive setting" (Oberschall, 1978, pp. 291). His approach applies a wider perspective on social conflict than that of Marx, allowing racial, religious and communal conflicts to be included in the discourse, partially disconnecting the notion from its economical dimensions. His take on the political dimensions of conflict is relevant to the topics discussed below.

In a contemporary context, as digital technology is becoming available to an even wider range of society, it is increasingly evident that both mentioned takes on technological determinism are only partially correct. Technology has definitely been shaped by human intentions - right or wrong -, but if it did not affect society in the process, this paper would have nothing to talk about. On the other hand, while the Marxist notion of social conflict is still prevalent, a new conflict emerged in parallel that is horizontal to socio-economic properties and divides society along different criteria. I argue that social media as a technological determinist agent of change has a crucial role in creating social polarization that in itself creates a conflict within society.

It must be looked at, however, how this polarization is created on the level of discourse. The theories of Michel Foucault come useful in understanding the relevance of discourse and its connection to power. According to Foucault, in his writings on knowledge and power, discourse does not only act as a representation, but it also produces knowledge with the use of language. When discourses come together, they create discursive formulations, which become the institutionalized way of thinking and nothing exists anymore outside of that discourse. Therefore discourse becomes a powerful asset to define how the world is categorized and

perceived. Furthermore, the thinker highlights that mass media as such cannot be transparent or be producing an absolute truth, as the way it portrays a topic already reflects a certain thinking (Foucault, 1980).

Social media, and amongst that, Facebook is one of the most efficient mass communication channels and as data analyzed within this research indicates, the Hungarian government must indeed share the thoughts of Foucault, considering how they actively spread and familiarize their preferred discourse amongst the public over these platforms to increase their power and potentially, to close out opposing discourses. Furthermore, an additional application of Foucault's ideas on the present topic could be that echo chambers themselves are enclaves of different discourses and thus, members of different echo chambers are unable to share each other's values and worldviews, because their construction of knowledge is merely different.

The question might be posed, then - does the process of spreading and reinforcing government discourse ever end? According to Antonio Gramsci, it does not, and his explanation lies within the concept of hegemony, that can be connected back to Foucault's notions of discourse. In Gramsci's understanding, based on his volume "The Prison Notebooks" (2008), hegemony is the process of the ruling class disseminating their ideals. This process is vital for the ruling class, as they gain consent to their ruling from the society through it. Gramsci describes this as an ever ongoing battle, although the distinction between consent and coercion is of paramount importance: hegemony only refers to the consensual ruling of the working class.

To explore more takes on the connection of the ruling class and social change, the overview of Joshua Pryor on "How elites shape society" is crucial to note. As we will see below in the section "The Hungarian Context", both cultivation theory and Thorstein Veblen's ideas on top-down social change could be applied (Pryor, 2013) to understand how the Hungarian political elite created the cultural and ideological bipolarity of the society, that is currently actively maintained through mass communication tools - such as social media - in order to reach a certain political goal. In addition, applying the framework of Giddens on structure and agency (Giddens, 1984), it remains a question for this research, how much agency individuals have to shape their own experiences on social media, also shaping their social and political opinion.

Social or group polarization has been studied by Sunstein (2002), who found that individual behavior is influenced by the expectations of the surrounding external environment. After an individual action is completed, it also becomes part of the external, expected realm for other group members, further reinforcing them for supportive actions. By hearing these echoes of homogenous groups, the group radicalizes into a more extreme state. These homogenous opinion silos are called echo chambers.

2.2. Debates on echo chambers

Echo chambers are widely studied due to their alleged effect on polarization, and research conducted on several social media platforms showed that information and opinion segregation is higher on Facebook than on other platforms (Cinelli et al., 2021). Other research, however, challenges the importance of echo chambers and argues that the effect of social media in reinforcing individual beliefs is irrelevant compared to the diversity of information that is accessible there and realistically this should widen political interest (Dubois, 2018).

Researchers are also interested in what happens if the echo chamber is broken. An experiment conducted by MIT showed that recommending more diverse political accounts to users on Twitter results in the reduction of the homogeneity of user beliefs and enhances connection diversity. On the contrary, users ensured of the homogeneity of their connections will have a less diverse network (Gillani et al., 2018). Other research, however, found that exposing politically active users to opposing views for a period of time only reinforces them in their own beliefs, therefore at another instance challenging the whole concept of the radicalizing effect of echo chambers (Bail et al., 2018).

An article on a research conducted by Karlsen et al. in 2017 intends to clear up this controversy. While the authors do not fully reject the notion of echo chambers, they argue that it is only half the picture - opinions are reinforced through contradiction just as well as through confirmation. They call this phenomenon trench warfare dynamics. The paper also bases its theory on Sunstein, who raised his concerns about the Internet as a potential for echo chambers to be created well before social media was widespread, arguing mostly based on the content of Internet blogs. Karlsen et al. criticizes his idea and claim - similarly to Dubois 2018 - that the Internet widens the possibilities to meet contradicting opinions. Where they go further is, however, the importance of selective judgment in addition to selective exposure: meaning that

opposing views only reinforce one's originally established view, in accordance with Bail et al., 2018 findings. This might also challenge the importance of confirmation bias, implying that while people often seek views similar to their own, they do not reject to see opposing views either. A step further from this we find disconfirmation bias, which occurs when we degrade and counter-argue opposing views, and thus reinforcing our original idea.

In order to support this, Karlsen et al. (2017) conducted a survey about the effects of echo chambers and an experiment in which three groups of participants were introduced to opposing views. Their findings relevant to this study highlighted: half of the respondents of the survey became more confident in their own opinion after a debate, 31% claimed that they are often contradicted by someone who is in total disagreement with them. 71% of the above mentioned 31% reported that they become more confident in their opinion after the contradiction happened, and only 6% claimed that a debate changed their mind. The hereby presented effects of confirmation and disconfirmation biases were the highest amongst those with the most extreme opinions and moderate people were slightly more likely to change their minds. The presented study indicates that disconfirmation bias has to be included in researches measuring echo chambers and polarization such as this one, as disconfirmation bias acts as an interaction effect in opinion polarization, creating the trench warfare dynamics introduced by Karlsen.

The presented, contradicting pieces of literature indicate that as of now, also due to the relatively new emergence of the studied area, there is no universally accepted scientific truth on echo chambers and polarization, although the majority of studies referenced within this paper are confirming their persistence.

2.3. Social polarization in echo chambers

Criticism on studies indicating the negative effect of echo chambers on social polarization often argues that their measurements are incomparable (Dubois, 2018). A potential solution to this can be if we measure polarization as a state instead of a process. In a paper from *Frontiers in Psychology*, the social psychological aspects of opinion polarization are used to create a quantifiable "Polarization Index" that could also potentially help measure the extent of social polarization within echo chambers. Said paper creates a distinction between these two approaches where the relevance of echo chambers also becomes distinct: polarization as a state

is static and refers to the already achieved ‘extremity’ of opinions within a group and can be measured rather objectively, while the process of polarization refers to the shift in opinions within the group over time, potentially to a more extreme, later state (Koudenburg et al., 2021). The supposed effect of echo chambers could be studied within the latter context.

Distinction between types of polarization has been drawn along different criteria as well. A study conducted on the content of Facebook, Twitter and WhatsApp channels with regards to the Israeli-Palestinian conflict intended to measure if polarization was increasing on these platforms over time. Here, positional polarization is defined as an individual's current view on a political issue and interpretative polarization is how the issue is put in context and perceived. Said paper, on the one hand, also mentions the above indicated controversy in international literature about the existence of the polarization effect of social media, further emphasizing the relevance of the study area. Their findings in relation with the social media content analyzed about the Israeli-Palestinian conflict cannot determine whether social media had a further polarizing - interpretative - effect in the examined conflict, although it links differences between social media outlets in doing so, marking Facebook as the most polarizing platform amongst the studied (Kligler-Vilenchik et al., 2020). This is partly explained by the fact that the hashtag function on Twitter is able to cut across political opinions when searching for concrete topics as the interpretation is independent from the word users are looking up, while on Facebook, context and preferences are more relevant than keywords.

As we now have an understanding of the notion of echo chambers and the potentially resultant polarization within Facebook, it should also be understood in detail what mechanisms exactly polarize users there. A study conducted by Bakshy & Messing analyzed the interactions of more than 10 million North American Facebook users to discover their exposure to cross-cutting content. The research identified that the polarization process has multiple layers. On the level of exposure, the political interests of users’ friends somewhat contribute to seeing heterogeneous content: 45% of liberals and 40% of conservatives saw cross-cutting content, mainly due to their partially heterogeneous relationship ties (the percentages also indicating that conservatives are more connected to liberals than vice versa). On the other hand, the news feed ranking algorithm of Facebook was found to somewhat reduce this diversity, as it places posts forward that are more related to our ideological preferences. The largest effect on the creation of echo chambers, however, was discovered to be individual choice (Bakshy & Messing, 2015). Even if users were exposed to cross-cutting content, they often did not take it to the next level by “consuming” it (by clicking on it), and therefore these findings supposedly

decrease the responsibility of Facebook on polarization and echo chambers, and partly places that responsibility back to the individual and - most likely - to their confirmation bias, slightly contradicting to Karlsen et. al 2017. We must bear in mind that this research was conducted in 2014-2015 and the Facebook algorithm has been changed numerous times since. It has also only analyzed interactions of users who specify their political affiliations on their profile, which already assumes a stronger political opinion, thus it is not representative to the whole Facebook population in 2022.

2.4. Curation and moderation

Some studies go beyond the above categorization and offer a broader framework for media exposure. “Curated Flows” by Thorson and Wells (2005) provides a revolutionary approach in theorizing “media exposure in the digital age” and thus it is vital to present that in length in relation with this paper. The authors establish their system based on the types of logic along which content is created. Curation is of paramount importance today as the amount of information available to people has increased exponentially, and the traditional role of newsroom information creation has also shifted to individuals. Therefore, Thorson and Wells define five main, often overlapping categories on how information is curated that I will be evaluating based on their relation to polarization and echo chambers.

The first segment is “journalistic curation”, referring to the traditional role of journalists, who highlight what is important in the information flow and curate based on a general public demand. With regards to polarization and echo chambers, this process is mostly dependent on the motives of the curator, the medium: in an ideal case this curator should be independent. In reality, however, - as we will see in the case of Hungary as well - media participants are also politically motivated and therefore curate news and present narratives that heavily contribute to polarization and echo chambers. The next type is “strategic curation”, where there is a commercial motive to maximize profit or a certain result. As opposed to the first type, this logic is based on a one-step flow approach, meaning that individuals can get to the public without a certain intermediate medium curation - such as politicians having a strong social media presence. The authors highlight that if a person is exposed to a high amount of strategic curation, they will be less likely to be exposed to opposing views, simply because

their feed will be occupied by the strategic curator - heavily supporting the appearance of echo chambers (Thorson and Wells, 2015).

Continuing with personal curation, the article highlights our individual responsibility media consumers in curation. This part refers to the logic based on which individuals shape their own experiences on social media by selecting content. This act has a high probability of later self-isolation due to the aforementioned mechanisms of confirmation bias. We must bear in mind, however, that this approach is also not entirely personal - while we have the capacity to choose our preferred content, the content itself is created by someone else, giving a little room to be exposed to a somewhat different perspective. When it comes to echo chambers, it is of importance to consider the personal nature of this view - it is incredibly difficult to measure the effect of personal curation on echo chambers as its extent is different for every individual. Present study intends to fill this gap in the Hungarian context by targeted questions to individuals on their approach. The next curation type is social curation, which refers to our exposure to content that is shared by our strong and weak ties - friends, family and colleagues. While one of the studies mentioned here has already taken this aspect into consideration with regards to the heterogeneity of such relation and therefore their negative effect to echo chambers (Bakshy & Messing, 2015) and Thorson & Wells agree that these can mitigate the effect of silos, they also highlight that individuals mostly choose social networks they already affiliate with, potentially increasing the echo chamber effect. The last category is perhaps the most relevant to the digital age, algorithm curation, which refers to the technical non-human actors curating media content. This notion has already been studied with relation to search engines when its role in social media was less prevalent, confirming that Google search results differ based on the preferences of users, creating filter bubbles (Pariser, 2011). The same applies to Facebook - seeing content that is algorithmically matched to our prior preferences, supposedly increasing the echo chamber effect. Thorson & Wells highlight that algorithms do not only polarize on socio-political axes, but also between the information poor and rich strata of society: not clicking on news results in receiving less news, while often clicking on news would generate the system to offer more, further reinforcing one's original preferences. (Thorson & Wells, 2015). Algorithmic curation is also tested within the experiment conducted in this study in Hungary. In conclusion to the five types of curation flows, it is vital to analyze these as a sometimes overlapping process, creating a hybrid media system.

Within the context of this study, it is also crucial to evaluate the role of one of the most important human elements of curated flows: moderators and administrators. According to

Facebook guidelines, moderators and administrators of Facebook pages can remove posts and comments, highlight/pin posts and remove or block people from the page. In groups, they can also approve/deny membership requests, approve/deny posts and remove or block people from the group (Facebook Help Centre, 2022). While moderation is important to filter out harmful or offensive content that go against community guidelines (Gillespie, 2018) and Facebook themselves have country moderators as well as a central Facebook Oversight Board, such privileges in local groups and pages provide substantial room for censorship and possibilities to tailor content to match a certain preferred view, potentially reinforcing polarization and echo chambers.

A research conducted with political Facebook group moderators in Finland matches the directions of this study in a sense that it uses the framework of Thorson and Wells to analyze the general role and motivations of moderators in content curation. “The owners of information: Content curation practices of middle-level gatekeepers in political Facebook groups” by Sanna Malinen is gap-filling as it analyses semi-structured qualitative interviews with these moderators, detailing their personal experiences and practices. Key findings of the study include that moderators see themselves in a power role and within their work, strategic curation is the most relevant - removing content that does not match the values of the group. They also shed light on the logic behind member selection - applicants are filtered based on their profile, friendship ties and already existing group memberships. Based on the already described approaches, we see the elements of echo chambers in these reports, but moderators justify their actions claiming that they wish to create safe spaces for like-minded people to discuss. However, they also mention that they are often politically motivated and consider themselves activists, wanting to make influence through discreet political promotion, which would evidently make their actions considered strategic curation. On the other hand, they reportedly reject strategic curation of “outsiders”: group member politicians promoting their own agenda are often blocked. Another captivating point is that while moderators originally exist to help remove content that is against Facebook community guidelines - see Facebook guidelines on moderation above - moderators reportedly claimed that their role is not well-defined and they feel detached from Facebook and that original role due to very little direction and cooperation from Facebook (Malinen, 2021). Unfortunately, Malinen’s study does not explicitly focus on echo chambers in this study, mentioning the notion only once (when moderators sometimes “hire” additional moderators of different political ideologies to these Facebook groups for a diversity of opinion), despite many alerting elements in the collected data referring to its

connections to the topic. What I find the most remarkable in this sense is the detachment of moderators from Facebook - if there were clearer guidelines on what should and should not be moderated, and more communication between the platform and the moderators, moderation based on personal preferences, and therefore the echo chambers in these groups could be reduced. While a definite weakness of the presented study is the lack of focus on echo chambers, we might contribute this to locational contextual effects: the situation of democracy in Finland is very stable and political debate is historically not considered as an essential virtue (Nyyssonen, 2008) therefore slightly decreasing the relevance of echo chambers in the local context.

2.5. The Hungarian context

Most case studies presented above took local contextual effects into consideration, and it is of paramount importance to do the same in the case of Hungary and present study. According to Rojas, historical context is vital in public opinion research, as these opinions as variables are highly dependent on the social and historical context of their origin (Rojas, 2019). These guidelines are followed in the research design as well in order to achieve more realistically interpreted results. The connection of polarization and the current political discourse in Hungary is a relevant area of study for all countries undergoing a similar illiberalization process within the Central-Eastern-European region and beyond (Rupnik, 2017). From 2015 onwards, starting with the migration crisis, Hungarian government communication has changed in a way that reinforces the “them and us” narrative with regards to numerous social and political questions (Janky, 2020) and this has supposedly split up Hungarian society into two echo chambers. Social media presence and content is a crucial asset in this process, where the exploitation of its polarizing power is reinforcing the distinct identity of homogenous opinion groups across topics of discussion.

On the other hand, the extent of ideological and political bipolarity of Hungarian society cannot be fully blamed on the current Hungarian government. A case study presented by Federico Vegetti in 2018 explains the historical processes between the Hungarian political atmosphere. His piece wishes to understand “the political nature of ideological polarization” and offers key evidence to understand the process. As in many post-socialist countries, the political elite after the regime changes have already split up to Left and Right - as early as in

1989. However, the separation has had very little to do with the traditional notions of socioeconomic differences of these ideologies: it was more focused on symbolic issues such as the debate of nationalism over cosmopolitan, globalized mindset. Of course, this was reinforced by already pre existing fault lines in the society between folk and urban communities, religious and secular ideologies and workers and the elite - although Vegetti adds that class has very little to do with polarization in Hungary.

According to Vegetti (2018), polarization should not necessarily be bad. In some cases, such as in Switzerland, the split up political scene provides a widened range of possibilities when it comes to policy making. Au contraire, in Hungarian politics, polarization means that there is very little room for manoeuvre on either left or right to change the narrative and implement new ideas, which state is called entrenchment. This is also due to the fact that the electoral system is designed in a way that general elections have a “nothing or everything” philosophy: the winner(s) almost exclusively lead policy making, and the non-winners struggle heavily and are barely able to make an influence.

The current governing party, FIDESZ started off as a liberal youth party after 1989, but after the socialist side won the elections in 1994, they quickly realized the opportunities in the bipolar dynamics and shifted their rhetorics to a more nationalist and conservative state, placing themselves on the then-opposition on the Right. They grew so fast that they already won the next elections in 1998. While they lost the next elections in 2002, due to the unpopularity of the governing parties, political scandals and the economic crisis, FIDESZ gained power again in 2010. Since then, the party gradually removed checks and balances from the legislative system, diminished the freedom of press and amended the constitution in order to guarantee their continuously increasing power (Vegetti, 2018).

It is fascinating to notice - after Vegetti (2008) - that while people’s perception of the gap between Left and Right has constantly widened, very little has actually changed in the manifestos of political parties, which are still relatively close to each other. It is, however, much more the narrative, the “enemy picture” and the very aggressive communication between the parties that lead public opinion to perceive such huge differences, and social media - as we will see later - has a remarkable role in this process, both as a channel and as an agent.

Vegetti established his case study in 2018 and argued that the Left-Right poles have never been crossed by Hungarian parties through coalition, which also supported the polarized setup of the political system. However, just recently, Hungarian right wing party Jobbik has

joined the united opposition, predominantly consisting of left-wing and liberal parties. Additionally, the current prime ministerial candidate of the united opposition, Péter Márki-Zay is a conservative Christian. These events provide Hungary a never-seen-before opportunity to bridge the gap between the often artificially created cultural and ideological differences - which is also likely to be feared by FIDESZ, currently making efforts to maintain said polarized state and enemy picture.

One might find that such a political environment is a perfect soil for echo chambers, but even if they exist, are they actually driven by political partisanship? A social network analysis conducted on Twitter from late 2018 data by Matuszewski and Szabó seeks to answer this question, focusing on Hungary and Poland, a country whose political environment and history is very similar to that of Hungary: highly polarized with very little consensus, with a weakening state of democracy. The researchers analyzed the follower networks of 77 parties, politicians and politically opinionated news outlets, 27 from Hungary and 50 from Poland. The methodology is unique compared to researches presented above as its starting points are the followees, not the regular users following them. They categorized these accounts into three groups, pro-government, anti-government and without political affiliation. The analysis found that there are 5-6 clear clusters in both countries, the majority of which are often homogenous. However, inside the clusters there is no clear preference of political contents as also users of no political interests are part of them. 55% of Hungarian and 48% of Polish Twitter users followed only one-sided content, which is considerable, but also indicates that there is in fact diversity in the remaining population. The study also highlighted a few outlets that are followed by supporters of both sides in Hungary: these were mno.hu, hvg and tv2 (Matuszewski & Szabó, 2019). Since 2018, when the data was collected, two of these three media outlets have already become mouthpieces of the FIDESZ government propaganda, further reducing press freedom and diversity. A weakness of the social network analysis is that while it is using quantitative methodology, the 600000 users altogether are not representative to the whole of the society, especially considering that Twitter is far less common and popular in the CEE region than Facebook. Also, as only the followers of the most popular accounts were involved in the study, it does not capture local nuances and micro scale experiences, although it is still useful to indicate the persistence of echo chambers.

3. Research questions and methodology

3.1. The experiment

The research first aims at modeling the echo chamber effect within the Hungarian Facebook network and **wants to answer whether such effect is generated or maintained by Facebook and/or political actors and if so, is there a difference between echo chambers of different political sides.** This was facilitated by an experiment with the creation of two artificial Facebook profiles. One Facebook profile has the attributes of a pro-government user, which is indicated by following pages that are evidently aligning with pro-government narratives, while the other one follows the same amount of opposition/independent pages, approximately of the same follower base. The categorization of originally followed pages was done with the help of an analysis conducted by the independent Hungarian investigative journalist group “Átlátszó”, who in one of their projects mapped the ownership and narrative changes of Hungarian media outlets (Átlátszó, 2020). For followed pages that were not part of this analysis, categorization was made based on political messages and intentions clearly stated in the description or name of the page.

The two created profiles are identically male, 31 years old and have zero friends, as the preferences of friends also influence recommended content, and there was no sound way to determine the political side, activity or algorithmic influence of randomly chosen “real” users. The two profiles made an equal amount (120-120) of interactions in the form of likes and reactions on political news feed posts of the already followed pages in order to generate more recommendations by the feed algorithm, in January 2022.

Once sufficient data was fed to the algorithm on preferences by the above steps, samples were taken from five areas in March 2022: (1) the first ten Facebook group recommendations for both profiles - this sample was only taken once as group recommendations did not substantially change over time, (2) the recommendations of previously not followed pages/groups in direct notifications over the course of the whole experiment, (3) the advertisements and (4) the recommended posts embedded between the first one hundred posts of already followed pages in the news feed, and (5) the friend recommendations for both profiles. Samples (3) and (4) were taken 12 times, over the course of two weeks, and the analysis focused on the origin of these posts and recommendations, as well as the actual content. The reason behind such a decision was that the research would like to go further than

only measuring the level of exposure to cross-cutting content - and would like to also see what users can expect on the level of political diversity when following the pages where the recommended or advertised content was created.

The categorization of the origin/standpoint of advertisements and recommended posts were done similarly as in the case of the originally followed pages, with the help of the aforementioned analysis conducted by Átlátszó in 2020. Where advertisements/recommendations came from individual profiles (such as politicians or public figures), they were categorized based on partisan membership or clear political message that could be witnessed on their profile/posts. Where posts appeared from pages, groups or users that could not clearly be determined as government favoring or opposing and had no noticeable political activity, they were categorized as inconclusive/cannot be determined. Clearly commercial advertisements from businesses (such as stores, restaurants, clothing stores, travel agencies), advertisements from charities and from religious groups were also categorized separately - neutrally - based on the clear content of the post. In the case of politically opinionated posts/sources, a further category was introduced in order to highlight a potential echo chamber effect: where the advertisement itself had a clear political message (campaign advertisements, direct character assassinations of opposing political parties), they were put within the category “strong political message”.

In order to minimize the inference of interaction effects, the two profiles were always opened from the same computer, in the same browser, at the same locations, at approximately the same times of the day in incognito window, to also minimize cookies and preferences accidentally being brought over by algorithmic residuals from the other profile or activities previously completed on the computer, and for these potential factors to have the same effects on the two profiles. A potential weakness of the plan is that the influence of friend interests in recommendations is excluded, which is a major factor in creating echo chambers over Facebook, although by excluding this factor, purely the effects of algorithmic and strategic curation can be measured.

3.2. The interview

As a supplementary element to the experiment, a face to face deep interview was conducted with a Hungarian political campaign and social media expert working for the opposition in the 2022 parliamentary elections campaign, with the help of whom findings of

the aforementioned research element was to be clarified. Namely, to understand how conscious the use of strategic curation of political parties is, how relevant Facebook is in the ongoing political campaigns, how the algorithms of Facebook work towards or against certain political parties and how campaigning in general changed with the rise of social media as a political platform. The interviewee has been presented with an Invitation Letter and Consent form, where they were assured anonymity, and consent to participation, the use of quotations and voice recording were requested. The interview was conducted in Hungarian and its conclusions were then translated to English. While evaluating the interview, a potential political bias should be taken into consideration, although the expert was not only critical towards the government, but also the opposition in his answers. Before the interview, the interviewee was briefed on the methodology and the main results of the experiment in order to fully understand the context of the questions.

3.3. The survey

The last element of the research was an online survey of 22 questions based on the freely available platform of Google that targeted a small sample of Hungarian Facebook users **in order to explore whether they are aware of the echo chambers and if so, what their opinions or perceptions are** - if they would change it if they could for instance. The research is also interested in whether certain demographic factors (such as age, gender or place of residence) influence these perceptions of individuals. This segment is relevant to compare to the findings of the artificial experiment in order to support or challenge its findings, keeping in consideration that the perceived level of embeddedness in the echo chambers might differ from its actual levels.

Prior to completing the survey, respondents were presented with an introduction that explained general information such as the aims and goals of the research. The survey commences with demographic screening questions such as age, gender, level of education and place of residence. This is followed by requests for information on news and social media consumption and the level of their political interests, that could later be analyzed with quantitative methods. Afterwards, elaborative questions were included to discover the perceptions and opinions on polarization and echo chambers and to see if there are instances where conflicts and debate over clashing opinions can arise. Further questions are added in order to know more about the personal curation strategies of the respondents which can be

contrasted to the algorithmic and strategic curation methods discovered in the experiment after qualitative evaluation.

The respondents of the survey were recruited online in Hungarian via virtual snowball sampling. Such a non-probability sampling method provides a considerable chance for bias: the respondents were found amongst the acquaintances of the researcher, their acquaintances and in university and local Facebook groups. These factors alone imply an overrepresentation of supporters of the Hungarian opposition, higher access to independent information from international press, a more liberal mindset. Some of these biases are controlled by the screening questions, others - such as political opinion - are not controlled but taken into consideration in the analysis, as overly sensitive information such as voting preferences were not collected in the survey in order to increase respondents' comfort and willingness to open up in the elaborative section. Still, the obtained results from the survey alone are far from representative and only serve as a point of orientation for future research.

The 117 responses were obtained over the timespan of 16 days in late February and early March 2022. The timing is relevant as the official start date of the 2022 Hungarian parliamentary elections campaign was set on the 12th of February, therefore politics have increasingly dominated the public discourse during these weeks, also due to the increased exposure to politically motivated posts, billboards, advertisements and movements across the country. The age of the respondents varied from 20 to 86 years: their average being over 41 years, approximately corresponding with the average age of Hungarian society, which is 43 years (KSH, 2021). The age median was 39 years, and the age mode was 25 years with 9 respondents from this category. The latter, relatively low values could be explained by the bias of the sampling method or the comparably lower use of digital technology of the elder population.

Regarding gender distribution, women were more than two times overrepresented with 79 responses (67,5%) compared to 38 responses from men (32,5%). The gender based asymmetry of online survey responses have been noted and studied in earlier researches, and were partially explained by the generally higher empathy of women in the online sphere (Smith, 2008).

76,9% of the sample has had a college or university degree, 22,2% have completed high school as highest education and 1 respondent (0,9%) has had vocational training. 61,2% live in a capital city, 11,2% in a county seat, 15,5% in a city, and 12,1% in a smaller town or village. Here, the dominance of higher educational levels and urban lifestyle will have to be noted when

interpreting the results to avoid the respective biases or false generalizations, which also cannot be made within subsegments of the sample due to its size.

4. Data analysis

4.1. The experiment

Results from the five different areas of sampling have shown a different level of persistence of echo chambers in the experimental environment. In areas (1), (2) and (3) - group recommendations, page recommendations in direct notifications, and advertisements in the news feed - a strong echo chamber reinforcing effect of the algorithm could be witnessed for both users, but the effect in all three areas was larger for the government-favoring user, who met comparably less cross-cutting content in these areas. In area (4), non-sponsored post recommendations in the news feed, a strong counter-effect have shown for the government favoring user - as if the algorithm intended to balance the already existing echo chamber with independent content. In the case of the opposition user, post recommendations have seemed to reinforce the echo chamber of independent media content with very little exposure to the governmental narratives. In area (5), friend recommendations, the results came inconclusive, as the political identity of recommended users could not be determined based on publicly available information on their profiles. Next, we will look at all the areas in detail separately.

4.1.1. Group recommendations

In the section of group recommendations, the first ten algorithmically offered groups for both users were analyzed and clear tendencies were identified. For the pro-government user, five out of ten recommended groups were clearly political, and four out of these were actively supporting the government: “Orbán Viktor Szimpatizánsainak Csoportja” (Group of Supporters of Viktor Orbán), “Fidesz a magyarok négyötöde 2022” (Fidesz is four fifth of Hungarians), “Elemi.hu”, a group connected to the online news portal of the same name, propagandistically criticizing the opposition, and “Köszönet a Fidesz-KDNP kormánynak 2022-ben is” (Thank you to the Fidesz-KDNP government still in 2022). The only recommended group opposing the government was “Márki-Zay Péter támogatói” (supporters of Péter Márki-Zay, the prime minister candidate of the joint opposition for the 2022 parliamentary elections). The remaining five groups were unrelated to politics and themed around DIY activities, gastronomy, sports, jobs and housing.

Similarly, for the government opposing user, four out of 10 recommendations were political and three out of these were aligning with the views of the artificial profile: “Márki-Zay Péter támogatói” was also offered here, followed by “Láthatatlan Magyarország” (Invisible Hungary), openly criticizing the government in its posts, and “Jámbor András támogatói” (supporters of András Jámbor, an opposition political figure). The only cross-cutting recommendation was for the group “Fidesz a magyarok négyötöde 2022”, that also appeared in the other field. The non-political group recommendations for the opposition user were similar to that of its counterpart: DIY, gastronomy, marketplace and clothing.

In summary, it can be concluded that the echo chamber effect was reinforced with these recommendations in this particular scenario: clearly more ideologically aligning political content was offered to both users with very little cross-cutting exposure, although the small sample size resulting from the characteristics of Facebook does not allow us to generalize these results alone.

4.1.2. Recommendations in direct notifications

In the section of recommendations in direct notifications - the ones that appear on the right top corner of our Facebook landing page -, very little admissible data was found. This is mainly due to the reason that most notifications covered content posted by the originally followed pages. On the other hand, new pages/groups that did appear there showed a significant echo chamber emphasizing effect. For the government opposing user, only one page was offered here, but numerous times: “Az ördög ügyvédje” (The devil’s advocate), which page is known for leaking compromising information and allegations on Hungarian government officials. The identity of its creator is unknown and the case was investigated by the police (Rovó, Telex, 2021). For the pro-government user, two groups and one page were offered, all aligning with the political identity of the user: “Trollkocsis” is a “trolling” page constantly posting entertaining content criticizing the opposition, “Orbán Viktor szimpatizánsainak csoportja”, being offered several times, is a group supporting the prime minister that we have already seen in the previous section, and “Magyarok a jó oldalon” (Hungarians on the good/right side) is also openly supporting the government based on its description.

4.1.3. Advertisements

The following area of interest - and the largest sample - was advertisements/sponsored content in the news feed, and as explained in the methodology section, data was pulled twelve times, by collecting and categorizing the sponsored content (and its origin) embedded in the news feed while scrolling through the first one hundred posts of already followed pages for both profiles. In this section, algorithmic curation and strategic curation strategies of political parties are both noticeable, although their effects cannot be clearly differentiated.

The first, remarkable difference between the two profiles were in the total amount of advertisements received: the pro-government user has received 26% more advertisements among the same amount of posts. Both profiles have received the largest ratio in commercial advertisements, the anti-government user received more proportionally. The share of advertisements from charities was similar for both profiles (around 8%), perhaps an increased value as samples were taken when the war in Ukraine unfolded. An interesting highlight is, that while the pro-government profile has received religious advertisements (3,7%), the anti-government profile received no religious content at all.

The amount of advertisements from politically opinionated news sources in their feeds was also merely different: the pro-government user received twice as much (40% of total advertisements) as the anti-government user (around 20%). Higher political and lower commercial advertisement content on the pro-government feed implies that strategic curation techniques on the pro-government side are prevalent in advertisements: pro-government users are flooded with the governmental discourse to an extent that it almost closes out the possibility of receiving opposing views in advertisements. The share of advertisements with a strong political message was also higher for the pro-government user: 17% compared to that of 12% for the anti-government user. The content intensity of these were also not the same - while on the anti-government feed they mostly consisted of traditional campaign posts of political figures, on the pro-government feed, these were complemented by propagandistic “news agencies” (such as Pesti Riporter or Megafon), which exist solely for the reason of besmirching the reputation of opposition figures - resentments of the public against these platforms will also be discussed during the analysis of the survey research element.

The higher share of politically opinionated and strongly political advertisements might explain a more intense polarization of the pro-government user, but it does not necessarily equal the creation of echo chambers. Therefore, the exposure to cross-cutting advertisements

also has to be measured. For the anti-government user, exposure to cross-cutting political advertisements was 29%, for the pro-government user, less than half of this: 13%. In addition, the offensive nature of some of the posts on this feed have further reinforced the original narrative. These results show that the echo chamber generating effect of advertisements is much higher for pro-government users, but it is still noticeable for anti-governmental ones - as an optimal exposure ratio would be 50/50 % - as we might also expect from more traditional campaign elements.

4.1.4. Recommended posts

Similarly to advertisements, recommended posts between the first one hundred original posts were collected, categorized and evaluated for both news feeds in the twelve samples, in this case in order to see the effects of purely algorithmic curation on echo chambers.

The difference in the amount of recommended posts received was even larger than that of the advertisements: the pro-government profile has received more than double, 113% more of these than the anti-government one. The percentage of politically opinionated news or news sources also shows similarities to the previous observation: the government favoring user has received almost 20 percentage points more, which adds up to an overall 50% difference in this category. Travel blogs, entertainment, sports, and similar, politically neutral posts from politically neutral sources were coded as “lifestyle” - these added up to 51% for the anti-government recommended feed and 33% of that of the pro-government one. Similarly as before, posts where the political side of the source could not be found and no political content was present, were categorized as cannot be determined - 5% and 3% respectively. Here, there was no separation of strong political, campaign-like content, as these were not present in the recommended post sample.

The most remarkable difference is, however, that the pro-government user was exposed to an extraordinary amount of independent or cross-cutting content in this field: 80% of all politically opinionated posts or sources, opposed to 13% of recommended posts of cross-cutting sources for the anti-government user. Taking into consideration the already larger number of recommended posts on the pro-government feed, the difference is even more considerable. Within the category, no proven explanation was found for this phenomenon, although later, evaluating the Facebook experiment as a whole might shed light on some of its potential causal mechanisms. As for now, we can conclude that for the pro-government user,

the echo chamber was definitely broken on the level of recommended posts, while for the anti-government one, it did not significantly change.

4.1.5. Friend recommendations

Perhaps due to the nature of the Facebook platform and the experiment itself, friend recommendations could not provide conclusive results. Observing the first ten friend recommendations on both sides, a few local retailers were found that had profiles configured as natural persons, and also individuals where the direction of political interests were not listed as public information. This, however, does not mean that friend recommendations are not based on political partisanship: we might assume that these recommendations were also made to match captured political interests from the experimental profiles and the offered individuals, although present study cannot support or reject this theory due to lack of data.

4.1.6. A holistic approach

While it was beneficial to separate the five areas of sampling to understand separate curation strategies and dynamics present, some details can only be evaluated by looking at the whole picture, and picking up further, rather qualitative details.

This is especially applicable for advertisements and post recommendations, as these are seated in the same news feed. A question that definitely has to be answered: did the cross-cutting content of algorithmically recommended posts indeed break the echo chamber of the pro-government user that was strongly reinforced by advertisements? Looking at the aggregated data it was found that politically opinionated content sources took up 50% of recommendations and advertisements combined, and in the case of the pro-government user, the ratio of government favoring and independent/opposition sources is almost exactly 1:1, meaning that this user had an - in theory - “perfectly” diverse content, not taking the originally liked posts into consideration. One might conclude that the echo chamber was fully dissolved this way, but we must bear in mind that amongst these posts and advertisements, strong, aligning political campaign was still more than six times overrepresented, supporting the reader’s original side. Applying the theories of Bakshy & Messing discussed earlier, this would mean that on the level of exposure, diversity was provided, but on the level of consumption, hypothetically it was still not - as direct political messages were still overrepresented from the same side. Similarly comparing the aggregated data from the anti-government feed, results

indicate that the echo chamber effect prevailed: with users seeing approximately four times more aligning content than contradicting, amongst which around three times more with strong political message from their original side. In conclusion, recommended posts algorithmically curated by Facebook increased political diversity, while advertisements reinforced echo chambers.

A few issues arose during the categorization of advertisements and recommended posts, which will now be discussed for full transparency and more concise understanding of the results. Firstly, charities were categorized neutrally, even if they had connection to a public figure close to politics, provided that they had no political agenda. Anikó Lévai, the wife of prime minister Viktor Orbán is an official ambassador of the Ecumenical Aid Organization, but the advertisement of the charity was considered neutral as the organization had no visible political position. Similarly, “Nemzeti Sport Online” (National Sport Online - sports newspaper) and recipe page “Nosalty” were considered neutral, despite being owned by Mediaworks, a company closely connected to the government (Átlátszó, 2020), as they are not present in the political spheres in any way. On the other hand, the charity advertisement of Alexandra Szentkirályi, current government spokesperson was considered political, as the advertisement was financed by the Hungarian government and the link led to her profile, where political opinions and campaign are present. It is only a further assumption that endorsing charity activity this way is intentionally politically motivated.

It is also of paramount importance to note that the Hungarian opposition is not as united as the governmental media empire, and therefore the echo chamber of an anti-government user is slightly more diverse ideologically: political campaign elements were found from different political parties, such as the far right party “Mi Hazánk” and the new centrist, digitalist party “Megoldás Mozgalom”, who equally campaign against Fidesz and the united opposition, but they still fit into the original category as “anti-government”.

One of the most unexpected results of the experiment was the appearance of religious advertisements that were limited to the pro-government news feed, despite the fact that no religious preferences were added to the profile and no religious content was reacted to. These advertisements were considered politically neutral in the analysis, however, the relationship of the Hungarian governmental discourse and the church are one worth noting. The Fidesz government has been actively supporting the Catholic and Reformist churches in Hungary in the past years (HVG, 2020, Átlátszó, 2020), while they are governing in coalition with KDNP, a Christian-democrat party and their discourse and political ideology is heavily connected to

religion (HVG, 2020). In return, there are indications that religious leaders are strongly encouraged to endorse their followers to vote for Fidesz - as it also turned out during the 2019 municipal elections (444.hu, 2019). Taking all these factors into consideration, it appears less as a surprise that religious content was algorithmically - or strategically - aligned with pro-government indications, indirectly strengthening the opinion bubble.

Another, characteristically comparable factor was the appearance of cross-border Hungarian news outlets (Székely Nemzeti Tanács, Kárpátír, Felvidék.ma, Székelyföld.ma) in the advertisements and recommendations, from the once Hungarian areas of Slovakia, Ukraine and Romania where, to this day, large groups of Hungarian minorities reside. These recommendations and advertisements appeared for the pro-government user ten times, while only once for the anti-government user. The Fidesz government has previously provided voting rights for these Hungarians and it is a known fact that the vast majority of them are voting for Orbán (24.hu, 2018). While from the perspective of the quantitative analysis, these news sources were considered neutral (no political opinions were portrayed and ownership relations could not be clearly determined), it is a noticeable fact that the algorithm has picked up on this topic and placed it in the “appropriate echo chamber”.

While analyzing the content, another out-of-context advertisement appeared, only once on both profiles. This was a paid advertisement by the Hungarian National Bank, portraying a large sum of gold bullions, with the description that the Bank has increased its gold reserves. As it might sound illogical at first why a national bank would pay for Facebook sponsored content, contextual effects might help to explain this nuance. The Russian-Ukrainian war of 2022 has had the most negative economic effect on the Hungarian currency in the CEE region (Central European Times, 2022), and these effects were actively in play during the sampling of the research. In order to overcome the political and economical hardship, Viktor Orbán has called for “strategic tranquility” (Origo, 2022), which was widely narrated through all government supporting media. One might consider that the advertisement of the National Bank is part of this message, and in this sense, has a further, indirect political connotation.

The Russian-Ukrainian conflict has a further effect on the observed echo chamber effect and the experiment itself, namely that the ongoing war is the first public topic in a long time, where the opposition and the government are fundamentally in the same opinion: they condemn the actions of Russia and call for peace. Some details differ - for instance that government propaganda tries to portray that the opposition are in favor of military action - but the situation gives the government hardship to reinforce their usual them-and-us narrative and political

polarization (Telex, 2022). On the other hand, as the war dominates public discourse and news outlets at the time of this research, it most likely masks away some differences in discursive formulations that normally would have been present and support the reinforcement of echo chambers.

Finally, an important limitation of this research has to do with the frequency of certain advertisements with regards to their position in the feed, ranked by the algorithm. Present research did not statistically measure the position of political advertisements in the news feed, but it has caught attention in the process that strongly politically motivated advertisements - and all advertisements in general - are more frequent in the first sections of the feed. While scrolling down, the advertisement to post ratio decreases: further research could explore whether the echo chamber effect is influenced by personal actions this way - namely that users who scroll further receive more balanced content, and those interested in just the first few posts become more reinforced in their echo chambers.

4.2. Differences in campaign strategies and the role of Facebook

The expert interview proved extremely useful in clarifying some of the specificities of the 2022 parliamentary election campaigns, the social media strategies of the current government as well as that of the opposition, and the approach of Facebook to all of this process. The following segment will detail these implications.

According to the expert, Fidesz have various advantages in the latest campaign. Firstly, their financial resources are significantly higher, due to a wide portfolio of funding: they have access to governmental funds, party resources as well as capital from the “NGOs” and foundations they built up in the past to support their political goals. These separate organizations also count as different clients for Facebook, therefore their advertisements together can cover a much larger space. Furthermore, the campaign is centrally organized and synchronized: the same messages are spread across all platforms, which include traditional campaign methods such as billboards and phone calls, but also Facebook, TikTok, and influencers making the whole process more efficient. Members of the government can also use the funds available to spend on their own, individually tailored campaigns.

Besides all other campaign channels, Fidesz is also using Facebook to its full potential. The expert confirmed that strategic curation is a tool intentionally used for two main reasons. First, to flood the news feed of existing supporters with pro-government and anti-opposition

discourse. This has been witnessed during the experiment for the anti-government user, and it results in users not receiving any opposing information and locking them into their echo chambers. Another reason is to interfere with opposition aspirations. During the pre-elections, which were organized by the parties of the united opposition to determine their prime minister candidate, Fidesz and its related organizations have flooded the news feeds of supporters of both sides with political advertisements to make it impossible for the opposition content to appear.

The government strategy built around Facebook goes even further: according to the insight given by the expert, there are online “news portals” created by Fidesz that exist solely for the reason that its articles with fake news and propaganda messages can be shared on Facebook: as users are more likely to accept information as true if they come shared from a news source, rather than an individual post of a user or page. This strategy is one that has only appeared recently, for the present elections campaign, which also introduced political videos of various lengths on the government side, that also work well to confirm the beliefs of already existing supporters.

With regards to the relatively more diverse advertisement content curated for the anti-government user, the expert has explained that assumably the opposition user was perceived by the algorithm as one with a wider political and other interests. The opposition consists of more parties combined, which do not follow a united ideological agenda. Additionally, “independent” media pages followed provide news from a wider portfolio and perspective, as opposed to the synchronized, propagandistic media network of the government. Due to the fact that Facebook optimizes content to keep users engaged, these characteristics could have played a role in the observed differences between profiles and - as highlighted by the expert - decreased the echo chamber effect on the anti-government side. On the other hand, as the government side is focused around a specific narrative and the network around it is significantly more organized and multi-layered, Facebook advertisements will reinforce this echo chamber effect due to the narrow focus of discourse preferred.

During the sample collection of the experiment it was visible that the united opposition started to get involved in active campaigning much later, and the expert explained why: partly, the Hungarian opposition has very limited financial resources, so their active campaign had to be focused to a shorter time frame. Additionally, as the united opposition had held pre-elections to determine their candidate to run against Orbán, they could only start tailoring the campaign to the final candidate once the results came. This alone has already put Fidesz in a better

position. Due to the collaboration of multiple parties on the opposition side, communication and strategy was also not working as efficiently as for Fidesz.

The expert - while working for the opposition - has firmly criticized the campaign strategies of his team. Firstly, he claimed that the opposition focused their campaign strategy in its early stages almost entirely on Facebook - to a level of 90%. This is a mistaken distribution as for instance younger generations cannot be reached here (Fidesz already has influencers working for them on TikTok), as well as it disregards traditional campaign methods mentioned before - calls, letters, or billboards for instance. These strategies were slowly added to the campaign portfolio, but much later than expected.

The usage of videos on Facebook is also not as efficient as that of Fidesz, as the expert says. These are much longer, even full press conferences are organized as Facebook live videos. This is not practical for the press - they cannot ask questions - and they are also less entertaining to watch, consequently their messages reach less people. It is also questionable that while the opposition criticizes the government for the reduction of press freedom and not allowing questions from independent sources, the opposition also appears to follow the same strategy, which, according to the expert, was “learned” by the opposition from the government during the social distancing rules of COVID-19.

The interview has also helped determine the potential responsibilities and involvement of Facebook in the campaign. First, it is important to declare that the original aim of Facebook is entertainment - and therefore political content will only overpower “lighter” content, if the specific user behavior requires that, which is also the reason why only a certain percentage of advertisements presented can be political. Facebook also promotes independent media - also via its Oversight Board - and they are also locally present during the Hungarian elections. The expert also highlighted this fact when asked about the independent recommendations on the pro-government profile - it is indeed possible that the algorithm intended to balance the too one-sided content. Facebook also employs Hungarian journalists who perform fact-checking for them, and according to the expert, they even conducted online webinars to campaign managers that trained them to appropriately use the advertisement functions of the platform.

The expert also highlighted where Facebook could do more. Currently, advertisements can be placed by entities that can confirm a phone number and an official email address. This process is very easy to trick, non-existent organizations can also validate themselves if they purchase a domain. On the one hand, this results in the funding of Facebook not being

transparent, and also gives rise to inequalities in the political campaigns. The expert would recommend Facebook requesting official documentation from entities that wish to advertise, and would also restrict political advertisements during campaigns in a way that only political parties could advertise political messages in that time period. These measures would already create a more balanced platform for democratic campaigns on Facebook.

4.3. The survey

The following pages present a descriptive analysis of the survey, which shows a relative awareness of echo chambers and often strong sentiments about cross-cutting content. Explanatory analysis was also considered. However, significant results were not obtained in the analyzed areas: logistic regression did not show significance in multivariate analysis, and cross-tabulation did not show significant connection between demographic factors (age, gender, place of residence, highest education) as independent variables and echo chamber involvement and perceptions as dependent variables. The level of political interest and Facebook news feed diversity also did not prove significant as a causal factor in any of the above factors. One potential reason for non-significance is the small sample size. Therefore, present analysis focuses on descriptive indications. A future research with considerably higher sample size and representativity could explore potential connections between these variables.

4.3.1. News consumption and political interests

More than two third of the sample claimed that they follow news portals on Facebook. From the responses it was revealed that the main reasons respondents use Facebook were: as a general source of information (regarding events, places, reviews, etc.) (83%) and to keep in touch with acquaintances (70,1%). 41,9% use it as a source of political or general news, and comparably less respondents use it to ask for/receive help (21,4%), for business (12,9%), professional reasons (13,8%) or dating (4,3%). These results emphasize again the relevance of the studied area, as for almost half of the respondents, one of the primary reasons for using Facebook was to receive news, but of course, even those who did not choose this option bump into them in their feed.

The next question focused specifically on their main source of news: here, online press (91,5%) was followed by friends and family (54,7%). An interesting highlight is that 48,7% reported that social media is one of their primary news sources - which is higher than respondents selecting this option in the question about their main intentions using Facebook. This means that for some people, Facebook becomes one of their main news sources without them having an intention to receive news there. Traditional news consumption was underrepresented in the sample - 20,5% watched news on TV and 7,7% read newspapers - this is in correlation with the generally increasing online presence around the world.

People's level of political interest was measured on a 1 to 5 scale - which revealed that the sample is rather interested in politics, with 64,1% of the respondents marking 4 or 5.

4.3.2. Exposure to cross-cutting content

Almost half of the respondents (46,2%) claimed that they do not follow news portals with opposing narratives at all. A further 37,6% said that they only follow a few of them, and only 16,2% said that they follow either fully diverse or even more opposing narratives than aligning. From these responses, the role of personal curation strategies of the sample in creating echo chambers is evident, with almost half of them entirely blocking out cross-cutting content within the power of their choices.

At the same time, they do meet cross-cutting content on Facebook, - with 63,2% reporting that they meet these often or every time they scroll. The remaining 36,8% also see these "seldom" or "sometimes", as no one in the sample claimed that they never meet opposing views on the platform. Most respondents see cross-cutting content primarily in advertisements (67,2%), shared posts of weak ties (56%) and in comments under posts (46,6%). Relatively less people meet cross cutting content when they are shared by strong ties (34,5%), on pages of news portals (33,6%) or within recommended posts (31%). The least cross-cutting exposure turned out to appear in Facebook groups (19,8%). Some of these results slightly contradict with the findings of the experiment, where advertisements appeared to be a rather echo chamber-generating section, although survey respondents' exposure does not necessarily mean that the cross-cutting content they see is dominant over aligning ones.

In the next section, the actions and reactions of respondents for when they are exposed to cross-cutting is presented, to measure which a multiple choice question was posed. The vast majority of respondents (86,9%) mostly ignore the content, although some highlighted that

they read through them. 26,6% in some cases blocks or deletes the source of the content, 12% reported that they might comment and start a debate, and 10,3% might report it to Facebook. Most of these results do not appear to reinforce an echo chamber effect for the respondents, only in the instances of blocking, reporting or deleting the sources of the content. However, it is also indicated that within the sample, the intention for opposing views to clash or start a debate is very limited on Facebook.

The next, elaborative question was specifically interested in the feelings of respondents when they meet content that does not align with their political or social views. Long answers were coded into a new variable where their feelings were categorized as negative, neutral or positive, further, negative feelings appearing in the responses were noted down: almost half of the respondents (46,2%, 54 respondents) proactively named negative feelings: “anger” was described 26 times, but frustration, stupidity, pain, panic, sensitivity, disappointment, sadness and helplessness were also mentioned. 39 respondents described neutral feelings, mostly arguing that they accept that different views exist. Only 4 respondents explained positive feelings when meeting with opposing views, pointing out that diversity is important or that understanding opposing views makes them grow. However, the negative sentiments expressed towards exposure to opposing views are remarkably strong, considering the reportedly high frequency of meeting cross-cutting content. Furthermore, while researching literature for present study, no research was found that specifically concentrated on this aspect, thus this is an area where further, rather psychology-centered analysis could be conducted to see if perhaps, existing in an echo chamber makes individuals more sensitive to opposing views, or the “heated”, heavily polarized characteristics of the Hungarian public opinion mentioned in the chapter “The Hungarian context” alone could be the reason for such negative sentiments.

4.3.3. Breaking the echo chamber

Following the analogy of the literature review, respondents were asked if they are aware of any platform - offline or online - where the echo chamber is broken, namely if they know any situation where opposing views can clash and a “civilized” debate can arise. 70% of the respondents could not name such a platform, which confirms the aforementioned dynamics of opinion silos in Hungary within this sample as well. However, some respondents did mention specific platforms: 13 respondents proactively mentioned Partizán. This Hungarian YouTube channel processes local public and political hot topics, as well as its editors invite political

figures from all across the political spheres to interview them live. An additional 4-4 people mentioned Facebook groups and friends/family, and some other platforms were mentioned individually, such as comments, universities, pubs, work, or even Twitter - but only once per platform. It is indeed possible that respondents did not think the question through and thus the low representation of these areas, but the fact that the vast majority of them could not even mention one (most of them specifically entered “none” in the text field) is highly concerning and shows that within the sample, echo chambers rarely have the possibility to be broken.

Information was also requested on when it was indeed broken, namely, how past conversations or debates with people of different political opinions have changed the own opinions of respondents, in order to reflect on the findings of Karlsen et. al (2017) about a potential disconfirmation bias within the observed sample. 44,2% of the sample reported that they have been involved in a debate where their original opinion did not change in the end. 41,6% have been in a debate which has either reinforced their original views or it became even more extreme and distanced from their debate partner. This result proves the existence of disconfirmation bias within the sample - that is that exposure to opposing views only reinforces or further radicalizes the individual in their original opinion. Additionally, only 28,3% have participated in a debate where their opinion got closer to that of their counter-arguing partner - which relatively low share is in accordance with the low number of indications for platforms where constructive debates could arise. 12,4% said that they have never had a debate or conversation with people of different political opinions.

We have now seen the impressions and effects of past encounters in the sample, but the study was also interested in whether respondents would be eager to meet more cross-cutting content in the form of debate or conversation and break their echo chambers. More than half of the respondents (53,4%) provided a negative answer, these subjects were further asked to elaborate why they refuse this possibility.

Some respondents have said that they answered no as they are simply not interested in politics and others reported that they already have people with opposing views around them, and “that is enough”. The majority of respondents, however, explained radically negative perspectives: the feelings of anger and frustration appeared here as well, alongside with hopelessness and exhaustion - claiming that members of the other political group could never be convinced, thus it is “pointless” or a “waste of time” to have a debate with them. A religious motive has also come to the surface, three respondents have referred to members of the

opposing political supporters as “believers”, emphasizing the perceived, unconditional nature of their beliefs.

Another, stronger rhetoric was also present in the sample, where respondents evidently looked down upon supporters of the opposite political side. Their unwillingness for debate was explained by members of the other side being “uncivilized”, “less intelligent”, “insane”, “short-sighted and stubborn”, “blinded, closed-minded, exclusive and hateful”, or “destructive”. One respondent even went as far as to say that “they live in a parallel universe wearing orange glasses, it is pointless to start a debate” - referring to the official color of the Fidesz party. It is shocking to see the dynamics of echo chambers described by Sunstein (2002) coming to life: to what extent the them-and-us narrative and polarized politics have reinforced differences and negative feelings towards the “other side”, especially taking into consideration that the sample consisted of mainly well-educated, urban respondents. These answers confirm that the respondents providing them are indeed part of their own echo chambers, they feel safe or comfortable in them and would not allow other opinions in. Unfortunately, the present study is unable to measure polarization as a process, although it would be relevant to see whether these sentiments become stronger over time through cohort analysis.

4.3.4. Echo chamber awareness

As one of the closing questions, respondents were asked whether they have heard of the echo chamber effect prior to completing the survey. After their yes/no answer, they were provided with a short definition of the phenomenon and were requested to reflect on how relevant in their opinion it was for them. 63,8% reported that they have never heard of the phenomenon before, although some later confirmed that they have heard of it under a different name, such as “the bubble” or “rabbit hole”, which expressions might not entirely illustrate the effect - as the reinforcing role of “echoes” is not present - but refer to a similar social divide.

The perceptual relevance of the echo chamber effect of participants was coded into three variables: not relevant, somewhat relevant and fully relevant. 40,6% said that they feel that this topic is not relevant for them: that they are not involved in echo chambers. 29,2% said that they are somewhat involved and 24,8% said that they are definitely involved (and some did not answer). One participant even wrote that “during the test I realized it is absolutely (relevant) for me”.

However, merely different approaches to the topic can be witnessed. 17,9% claimed that they are consciously trying to break out of echo chambers by exposing themselves to opposing views, as one of them said, “to see what is on the other side”. Another respondent claimed in this field that “opposing views just reinforce my argumentations on my original opinion”, which reminds us of the Karlsen et. al (2017) notion of trench warfare dynamics, that is where polarization further grows outside of echo chambers.

Some respondents have admitted that they intentionally place themselves into echo chambers for their own comfort. The negative sentiments connected to opinion confrontation witnessed in previously analyzed answers were also witnessed. As one subject said, “I put myself in it as self defense”, or as another claimed, “I only feel good in my own bubble”. One subject has indicated the echo chamber generating effect of personal curation (Thorson & Wells, 2015), saying that “in this information noise, I need some control”, also referring to the non-consumable amount of information presented to citizens of the digital age.

Regarding respondents’ awareness of echo chambers, it can be concluded that the majority of them are somewhat aware of the phenomenon, even if some did not specifically connect it to a scientific theory before. In some sense, respondent efforts to break out of the echo chamber proves its existence at least perceptually, even if the same sample has reported a relatively diverse news feed and exposure to cross-cutting content. Yet, it must be considered again that the overall demographic indicators of the sample do not at all cover the Hungarian population, where most probably lower extents of awareness and reflectivity on the topic could be witnessed.

4.3.5. The role of moderators

One section of the survey focused on partially or fully political Facebook groups, at least one of which 23,3% of the respondents were part of. These users were further asked to elaborate on their views about the role of moderators in these groups, as well as if they generally see that moderators do their jobs right. This question was included to reflect on the discrepancies found by Malinen (2021) where moderators themselves were found to be strategic curators instead of completing their “official” roles mentioned by the Facebook Help Centre (2022), that is limited to making sure that Facebook community guidelines are kept, but still, no clear guidance was provided on additional duties.

Most respondents did confirm the official role of moderators: they need to keep the conversation in the groups “normal” by excluding hate speech, humiliation, extremism, trolling, and encourage members to keep general guidelines and the law. Some respondents mentioned that moderators are also appointed to encourage members to keep the further rules of the specific group, such as not to post advertisements. This is a more ambiguous area as in some cases this equals censorship: one respondent mentioned that they are part of a local district group, where an opposition representative often posts about the work they have been doing for the district, which is then deleted by the moderators as the content is considered political, instead of informative. The power of decision and the moral flexibility of the moderators was highlighted by other respondents as well. While some of them confirmed that in the groups they are part of, moderators complete their job well, some highlighted biases and double standards in their actions: they would allow political opinions to appear from their political side, but moderate ones that are from the opposing view are deleted. A respondent described them as self-contained, being too strict for one political opinion and not strict enough for another. Another respondent mentioned that they were blocked from a Facebook group after posing a question while they did not feel that their question was provocative - which can be a result of lack of reasonable judgment from their end but also censorship that is made possible by unclear rules and regulations also reported by interviewees of Malinen (2021). A potential financial motive behind biased moderation is also well-indicated by a respondent, who mentioned that one of the pro-government Facebook pages’ moderators are paid by its owners as entrepreneurs - which would further indicate the impartiality of such positions, although this information could not be factually confirmed.

5. Discussion

The literature processed prior to the study showed that echo chambers and political polarization are areas of high research interest, with little consensus over its dynamics or even existence on social media. The concept of curation flows (Thorson and Wells, 2015) have proven especially useful in analyzing the results of the current research. Understanding the Hungarian context showed that polarization has been part of Hungarian politics for a long time, that is more focused on symbolic social issues than concrete political ideologies (Vegetti, 2018), creating a basis for potential echo chambers to occur.

The experiment of two fake Facebook profiles showed that algorithmic curation can have a strong echo chamber reinforcing effect in the areas of group recommendations, recommendations in notifications and advertisements. Some of this effect is lessened by recommended posts in the news feed, which seemingly try to break the hegemony of the original political preferences of the user. Differences were also found between the experiences of the pro-government and anti-government user: the pro-government user has received more advertisements in general, as well as more advertisements from politically opinionated sources and advertisements with strong political messages, meaning that they were embedded in an echo chamber to a higher extent. This can partially be explained by the fact that a pro-government user has a more narrow ideological and information preference from the perspective of the algorithm, while the archetype of the anti-government user has wider interests. Strategic curation was only witnessed for the pro-government user, which was also confirmed by the expert as a known campaign tool of Fidesz. Unexpected differences were found in the areas of religion and Hungarians living in the neighboring countries: advertisements and recommended posts from these areas have only appeared for the pro-government user without any prior preferences set, proving the respective interests and connections of the government with these minorities, also indicated in external news sources.

The expert interviewee has argued that the government possesses significantly higher funds and a more centralized network to operate efficient social media presence, while less funds and poorer management on the opposition side result in missing opportunities on Facebook. One could argue that different levels of echo chamber involvement witnessed in the experiment are also the results of these financial and organizational factors. For the same reason, it is pointless to indicate either the government or the united opposition as more ethical in its campaign strategies - as we do not know if the opposition would have used the same, echo chamber reinforcing tools with sufficient financial and professional resources for their own political gains. According to the expert, Facebook is also acknowledging its role and responsibilities in political campaigns to some degree, with an increased local presence and oversight before the elections. However, further, more strict regulations could help create a more balanced environment for political campaigns on the platform, where government strategies engineered to exploit the flaws of Facebook and user behavior could be less prevalent.

The results of the survey confirmed that the majority of the sample consume news and political content on Facebook. Although almost half of the respondents did not intentionally

follow cross-cutting outlets on the platform, indicating an echo chamber generating effect of personal curation strategies in the sample. On the other hand, all of them see cross-cutting content in their feed. Most do not start a debate on Facebook and portray strongly negative feelings when exposed to cross-cutting content. The majority could also not name any online or offline platform in Hungary where different political opinions could clash in a civilized manner, although some mentioned the Partizán YouTube channel as the only platform where this was possible. After past debates, more respondents reinforced their original views than those coming closer to their debated partner, indicating disconfirmation bias as a further factor in polarization besides the confirmation bias operating in echo chambers. Responses also showed that more than half of the sample would rather stay in their echo chambers instead of starting a debate: mostly due to their negative feelings from past encounters and the fact that some strongly look down on supporters of the opposite political party. Most respondents are aware of echo chambers and consider themselves somewhat or fully part of them. Some proactively try to break out, while some place themselves in it for comfort. With regards to moderation, the findings of Malinen (2021) were confirmed within the sample, with respondents indicating often self-driven, politically opinionated strategic curation performed by Facebook group moderators.

Present research fills a gap in already existing literature, studying echo chambers on Facebook in Hungary, taking local specificities into consideration. All research elements indicate the existence of echo chambers, further, a certain conformity of the respondents to this bipolar setting. Perhaps the most significant novelty is the intensity of negative sentiments connected to debates and representatives of the opposite political opinion, which could further be studied from a social psychological perspective. However, the results cannot be generalized to the whole population or the whole platform, due to the low number of respondents in the non-probability sample of the survey and the artificial setup of the experiment. The dominance of the Russian-Ukrainian war in the media has also potentially altered some indicators. Future research on this topic could expand the survey to control for political opinion, differences of which could then be compared to the findings of the experiment. The experiment could also be extended, so that the feed ranking algorithm can be studied, considering the different frequencies in political content at different stages of the feed.

6. Appendix

Invitation to participate in the survey

English

Dear Participant,

I am Bendegúz Havas V., a final year sociology Masters student at the Department of Social Sciences of the Corvinus University of Budapest.

By completing the survey below, you contribute to my thesis “Conquer and Divide in the Digital Age - The Role of Facebook in the Occurrence of Echo Chambers in the Hungarian Public Opinion”, in which I study the reasons and root causes of the heavily polarized Hungarian political and social public opinion, without a specific political standpoint.

Completing the survey is voluntary, the data collected from the responses is confidential and will only be used for the purpose of the above mentioned study. The identity of the respondents will not be identifiable in the data or the finished paper.

Completing the survey takes approximately 6-8 minutes. Please, if your time allows, provide me with detailed responses to the elaborative questions, this will further help my work. Feel free to contact me with questions or comments at v.havas@stud.uni-corvinus.hu.

Thank you for your help!

Best regards,

Bendegúz Havas V.

Hungarian (original)

Kedves Kitöltő!

Havas V. Bendegúz vagyok, a Budapesti Corvinus Egyetem Társadalomtudományi Karának végzős szociológia mesterszakos hallgatója.

Az alábbi kérdőív kitöltésével a "Conquer and Divide in the Digital Age - The Role of Facebook in the Occurrence of Echo Chambers in the Hungarian Public Opinion" című szakdolgozatom elkészülésében segítesz, melyben az erősen polarizált magyar politikai és társadalmi közvélemény kialakulásának okait és hatásait vizsgálom politikai állásfoglalás nélkül.

A kérdőív kitöltése önkéntes, a válaszokból kinyert adatokat bizalmasan kezelem, kizárólag a fent említett munkához használom fel, és a válaszadók személye az elkészült dolgozatban (és az összegyűjtött adatokban) nem lesz beazonosítható.

A kitöltés körülbelül 6-8 percet vesz igénybe. Kérlek, amennyiben időd engedi, a kifejtős kérdésekre minél részletesebb válaszokat adj, ez segíti további munkámat. Kérdéseket, észrevételeket a v.havas@stud.uni-corvinus.hu e-mail-címen tudok fogadni.

Köszönöm a segítséget!

Üdvözlettel,

Havas V. Bendegúz

Survey guide

English

1. Age
2. Gender

- a. Female
 - b. Male
 - c. Other
3. Highest level of education
- a. Elementary school
 - b. Vocational school
 - c. High school diploma
 - d. College/university degree
4. Place of residence
- a. Capital city
 - b. County seat
 - c. City
 - d. Smaller town/village
5. Which of the below do you mainly use Facebook for? (multiple choice)
- a. As a general source of information (events, restaurants, ratings, etc.)
 - b. Keeping in touch with friends/family (on Facebook specifically, not on Messenger)
 - c. Dating
 - d. Professional networking
 - e. Entertainment
 - f. A source of political/public news
 - g. Offering or asking for help
 - h. Business activities
 - i. Other: _____
6. Which of the below are your main sources of news? (multiple choice)
- a. Printed press

- b. Television
 - c. Online press
 - d. Social media (recommendations, followed pages, or shared by friends)
 - e. Family/friends - e.g. during a conversation
7. Are you interested in politics? (1 to 5, where 1= absolutely not, 5=fully, I follow it every day)
8. Do you follow news outlets on Facebook?
- a. Yes
 - b. No
9. Do you follow news outlets that post or use a narrative that opposes your political or social opinions?
- a. Not at all
 - b. Only a few
 - c. I follow an equal amount of supporting and opposing narratives
 - d. I follow more news outlets that use a narrative that opposes my personal opinions
 - e. I only follow news outlets that use a narrative that opposes my personal opinions
10. How often do you see content in your news feed that opposes your social or political opinions?
- a. Never
 - b. Seldom
 - c. A few times
 - d. Often
 - e. Upon every scroll
11. If you see content (on Facebook) that opposes your social or political opinion, where do you see these? (multiple choice)
- a. News portals

- b. Advertisements
 - c. Recommended posts
 - d. Shared by close friends
 - e. Shared by more distant acquaintances
 - f. Facebook groups
 - g. The comment sections of Facebook pages and news outlets
12. Do you do something, if you meet content that opposes your social/political opinions?
(multiple choice)
- a. I do nothing - I ignore it
 - b. I report it to Facebook
 - c. I open a debate or comment
 - d. I block or delete the source of the content (friend, advertisement, etc.)
 - e. Other: _____
13. How do you feel/what do you think when you see such content? (Long answer)
14. Are you a member of any Facebook groups that are (partially or fully) political?
(partisan groups, local district or city groups, etc.)
- a. Yes
 - b. No
15. If yes, what do you think is the role of the moderators in these groups? How well do they do or do not do their job? You can also mention concrete examples. (Long answer)
16. Are you aware of any online or offline platform or situation, where different political opinions can meet, and a civilized debate can be built? If yes, what are these? (Long answer)
17. If you have ever had a debate/conversation with someone of opposing political opinion, how did the debate impact your own opinion? (Multiple choice)
- a. It reinforced me in my original opinion
 - b. My opinion partially changed: it got closer to that of my debate partner

- c. My opinion partially changed: it got further from that of my debate partner and became more extreme
 - d. The direction or intensity of my original opinion did not change
 - e. I have never taken part of such conversation
18. Would you prefer it if you had more chances to meet and discuss with people of different political and social opinions?
- a. Yes
 - b. No
19. If you have answered “No” to the previous question: please elaborate why you feel this way. (Long answer)
20. Have you ever heard of the echo chamber effect?
- a. Yes
 - b. No
21. The echo chamber effect describes that its members mainly meet their own opinion, opposing opinions rarely meet them or they close these out. What do you think - does this phenomenon concern you personally? (Long answer)
22. If you have any further comments on this topic, please note it here. Thank you for your participation! (Long answer)

Hungarian (original)

- 1. Kor
- 2. Nem
 - a. Nő
 - b. Férfi
 - c. Egyéb
- 3. Legmagasabb iskolai végzettség
 - a. Általános iskola
 - b. Szakiskola

- c. Szakközépiskola / Gimnázium
 - d. Főiskola / Egyetem
4. Lakóhely
- a. Főváros
 - b. Megyeszékhely
 - c. (Kis)város
 - d. Község / Falu
5. Főként mire használsz a Facebook-ot? (több választ is megjelölhetsz)
- a. Általános információforrás (események, éttermek, vélemények, stb.)
 - b. Családdal/barátokkal való kapcsolattartás (a Facebook-on, nem Messenger-en)
 - c. Ismerkedés
 - d. Szakmai kapcsolatrendszer kiépítése, "networking"
 - e. Közéleti/politikai hírforrás
 - f. Segítségkérés – segítségnyújtás
 - g. Üzleti tevékenységek
 - h. Egyéb: _____
6. Az alábbiak közül melyek a fő hírforrásaid? (több választ is megjelölhetsz)
- a. Nyomtatott sajtó
 - b. TV
 - c. Online sajtó
 - d. Közösségi média (ajánlások, követett oldalak, ismerősök megosztásai)
 - e. Család/barátok - pl. beszélgetés közben
7. Mennyire érdekel a politika? (1-től 5-ig terjedő skálán, ahol 1 = egyáltalán nem, 5 = minden nap követem)
8. Követsz hírportálokat a Facebook-on?
- a. Igen

- b. Nem
9. Követsz olyan hírportálokat, amelyek a saját társadalmi vagy politikai véleményeddel ellentétes nézőpontú tartalmakat, narratívát posztolnak?
- a. Egyáltalán nem
 - b. Csupán néhányat
 - c. Körülbelül fele-fele arányban követek a véleményemmel megegyező és azzal ellentétes portálokat
 - d. Több, a véleményemmel ellenkező tartalmú portált követek, mint azzal megegyezőt
 - e. Csak a véleményemmel ellentétes tartalmú portálokat követek
10. Milyen gyakran találkozol a politikai, vagy társadalmi véleményeddel ellentétes nézőpontú tartalmakkal a hírfolyamodban? (Beleértve a követett oldalak, ismerősök megosztásait és ajánlott tartalmakat is)
- a. Soha
 - b. Elvétve
 - c. Néha
 - d. Gyakran
 - e. Minden görgetés alkalmával
11. Ha találkozol a Facebook-on a politikai, társadalmi véleményeddel ellentétes nézőpontú tartalmakkal, hol találkozol ezekkel? (több választ is megjelölhetsz)
- a. Hírportálok
 - b. Hirdetések
 - c. Ajánlott tartalmak
 - d. Közeli ismerősök megosztásai
 - e. Távoli ismerősök megosztásai
 - f. Facebook csoportok
 - g. Facebook oldalak, hírportálok komment szekciói

- h. Egyéb: _____
12. Teszel valamit, ha a társadalmi, vagy politikai véleményeddel ellentétes tartalommal találkozol?
- a. Semmit, ignorálok
 - b. Vitát kezdeményezek, hozzászóllok
 - c. Jelentem a Facebook-nak
 - d. Letiltom, vagy törölöm a tartalom forrását (ismerős, hírportál, stb.)
 - e. Egyéb: _____
13. Mit érzel/gondolsz, amikor a társadalmi, vagy politikai nézőpontoddal ellentétes tartalmakkal találkozol? (Hosszú válasz)
14. Tagja vagy (részben vagy egészben) politikai témájú Facebook-csoport(ok)nak (pl. kerületi vagy városi csoportok, vagy pártszimpatizáns csoportok)?
- a. Igen
 - b. Nem
15. Amennyiben az előző kérdésre igennel válaszoltál: szerinted mi a moderátorok szerepe ezekben a csoportokban? Mennyiben látják, vagy nem látják el az általad feltételezett feladataikat? Konkrét élményt, tapasztalatot is említhetsz. (Hosszú válasz)
16. Van tudomásod olyan online, vagy offline platformról, élethelyzetről, ahol különböző politikai vélemények találkozhatnak egymással, és civilizált vita alakulhat ki? Ha igen, melyek ezek? (Hosszú válasz)
17. Ha volt már részed eszmecserében/vitában veled ellentétes politikai véleményű személyekkel, hogy befolyásolta a vita a saját véleményed?
- a. Megerősített az eredeti véleményemben
 - b. Részben megváltozott a véleményem: közelebb került vitapartnereméhez
 - c. Részben megváltozott a véleményem: még távolabb került vitapartneremtől, extrémebbé vált
 - d. Nem változott az eredeti véleményem iránya, vagy intenzitása
 - e. Nem volt részem ilyen eszmecserében

18. Örölnél neki, ha több lehetőség lenne találkozni, eszmét cserélni veled ellentétes politikai, vagy társadalmi gondolkodású emberekkel?
- a. Igen
 - b. Nem
19. Amennyiben az előző kérdésre nemmel válaszoltál, kérlek fejtsd ki, hogy miért érzel így: (Hosszú válasz)
20. Hallottál már korábban a visszhangkamra-effektusról (echo chamber effect)?
- a. Igen
 - b. Nem
21. A visszhangkamra-effektus leírja, hogy az ebben résztvevő szereplők nagyrészt csak a saját véleményükkel találkoznak, az azzal ellentétes vélemények nem jutnak el hozzájuk, vagy kizárják ezeket. Mit gondolsz, ez a jelenség téged személyesen mennyire érint? (Hosszú válasz)
22. Amennyiben bármi egyéb észrevételed van a témával kapcsolatban, kérlek jegyezd fel ide. Köszönöm a kitöltést! (Hosszú válasz)

Expert interview guide

English

1. While setting up the experiment, it occurred to me that in January 2022 there were already campaign ads by Fidesz on Facebook, but only very few opposition advertisements were found. What could be the reason for this?
2. In the experiment, the experimental profiles only followed pages with political content on Facebook, still, a lot of non-political advertisements were also curated. What could be the algorithmic reason for this?
3. In the pro-government Facebook feed, comparably much more advertisements were present. What could be the reason for this?
4. In the pro-government Facebook feed, a higher ratio of political advertisements were present. What would be the reason for this?

5. Could it be intentional by government officials that they post non-political advertisements that later lead to their political profile? Can this be done to “confuse” the algorithm?
6. Is strategic curation a conscious campaign tool of the government in your opinion?
7. To what extent does the opposition rely on Facebook in the present elections campaign?
8. What is its priority compared to traditional campaign methods?
9. How does the echo chamber effect impact the general opinion about the opposition/government?
10. How has the campaign changed since the 2018 elections? Is Facebook more relevant now?
11. During the experiment I found that while the advertisements of the pro-government profile were strongly (aligning) political, the vast majority of Facebook recommended posts were independent. Is it possible that Facebook tried to balance the hegemony of the government narrative?
12. Do you think Facebook should do more to provide a more fair platform during campaigns?
13. Do you have any further comments with regards to this topic?

Hungarian (original)

1. Az adatgyűjtés folyamata közben feltűnt, hogy míg ez év Januárjában már bőven akadtak fideszes “kampány”hirdetések a Facebook-on, ellenzéki hirdetéseket csak elvétve lehetett látni. Mi lehet ennek az oka?
2. A kísérlet során csak politikai oldalakat követtem a Facebook-on, a hirdetések közé mégis sok nem politikai tartalom is bekerült. Ennek mi lehet az oka az algoritmus tekintetében?
3. A fideszes Facebook feed-ben arányaiban sokkal több hirdetés jelent meg, mi lehet ennek a jelenségnek az oka?
4. Miért lehet, hogy arányaiban sokkal több politikai hirdetés van a fideszes álprofil feed-jében?

5. Szentkirályi Alexandra charity-nek kategorizált hirdetést posztolt - de politikai személy és az állam finanszírozta - ez szándékos algoritmus összezavarás lehet?
6. Mit gondolsz, a stratégiai kuráció tudatos eleme a kampány eszköztárának? (stratégiai kuráció: politikusok “megfullasztják” a feed-et egy bizonyos politikai tartalommal, hogy más tartalom ne vagy kevésbé kapjon helyet)
7. Mennyiben hagyatkoznak az ellenzéknél kampány közben a Facebookra?
8. Hol foglal helyet prioritás szintjén? Összehasonlítva tradicionális és más online kampányeszközökkel.
9. Hogyan befolyásolja a kormány/ellenzék megítélését a visszhangkamra-effektus?
10. Mennyiben változtak a viszonyok 2018 óta? Relevánsabb kampányeszköz most a Facebook? Miért?
11. A kísérlet közben feltűnt, hogy bár a jobboldali kísérleti profil hirdetéseit erősen kormánypárt-orientáltak voltak, a Facebook által ajánlott tartalmak nagy része független vagy kormánykritikus hírforrásból érkezett. Lehetséges, hogy a Facebook algoritmus megpróbálta “kiegyenlíteni” a fideszes narratíva hegemoniáját?
12. Szerinted a Meta feladata volna, hogy további lépéseket tegyen a platformján érzékelhető kiegyenlítetlen kampány helyzet ellen?
13. Van bármilyen egyéb észrevételed a témával kapcsolatban?

Information Letter and Consent Form for Invitation to be Interviewed

21/03/2022

Dear _____,

This letter is an invitation to consider participating in a study I am conducting as part of my MA degree in the Institute of Social Sciences at the Corvinus University of Budapest. I would like to provide you with more information about this project and what your involvement would entail if you decide to take part in it.

This study will focus on the circumstances and implications of the echo chamber effect amongst Hungarian Facebook users, with an interest in exposure to information, and forming and maintaining social and political opinions.

Participation in this study is **voluntary**. Completing the interview will take approximately **30 minutes**. You may decline to answer any of the questions if you so wish. Further, you may decide to withdraw from this study at any time without any negative consequences. All information you provide is considered completely **confidential**. Your name will not appear in any report resulting from this study, however, with your permission anonymous quotations may be used.

If you have any questions regarding this study, or would like additional information to assist you in reaching a decision about participation, please contact me at **+36 30 832 11 28** or by e-mail at v.havas@stud.uni-corvinus.hu .

I very much look forward to your answers and thank you in advance for your assistance in this project.

Sincerely,

Bendegúz Havas V.

Consent form - Expert interview

I have read the above information presented in the information letter about a study being conducted by **Bendegúz Havas V.** of the Department of **Social Sciences** at the Corvinus University of Budapest.

I am also aware that excerpts from my answers may be included in the class hand-in and/or publications to come from this research, with the understanding that the quotations will be anonymous and that the content of these quotations will be used in a way that my identity will remain unidentifiable.

I was informed that I may withdraw my consent at any time without penalty by advising the researcher.

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

____ YES ____ NO

I agree to the use of anonymous quotations in any class hand-in or publication that comes from this research.

____ YES ____ NO

I agree with the use of voice recording during the interview.

____ YES ____ NO

Participant's Name (please print) _____

Participant's Signature _____ Date _____

Researcher's Signature _____ Date _____

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