From Personalized News Curation to Shared Issue Concerns in Fragmentation Era:

A Dynamic Network Approach by Levels of Issue Involvement

Sujin Choi

Full Professor (tenured) (PhD)
Department of Media
Kyung Hee University
26, Kyungheedae-ro, Dongdaemun-gu, Seoul, 02447, South Korea
Phone. 82-2-961-9227 / Fax. 82-2-961-0622
sujinchoi2012@gmail.com , sujinchoi@khu.ac.kr, Sujin Choi's homepage

Acknowledgments

We are grateful to Dr. Tom Snijders (University of Groningen) for providing close advice on the modeling and implementation of RSiena. This study was supported by the National Research Foundation of Korea (NRF) grant funded by the Korea government (Ministry of Science and ICT) (NRF-2022R1F1A1064470). In addition, the Institutional Review Board (IRB) at Khung Hee University approved this study as exempt from review (KHSIRB-22-472(RA)).

Please cite as follows:

Choi, S. (In press). From personalized news curation to shared issue concerns in fragmentation era: A dynamic network approach by levels of issue involvement. ***Information, Communication, & Society,*** https://doi.org/10.1080/1369118X.2025.2539295

Abstract

As the phrase 'no issue, no public' signifies, attention to shared issues brings strangers together. The erosion of shared issue awareness threatens social consensus-building and democratic decision-making. In an era increasingly characterized by personalized news curation, understanding what fosters issue overlap between individuals becomes crucial.

Using stochastic actor-oriented modeling with digital log data and survey data, we identified underlying mechanisms that lead to the formation of a shared-issue network and its interplay with personalized news curation during a presidential election—a period that increases political issue salience and likely catalyzes the formation of shared awareness. We examined how this likelihood unfolds differently by the level of involvement in politics.

Our findings reveal that the likelihood of forming shared-issue relations increases over time through reduced susceptibility to ideological homophily, greater accumulation of political knowledge, and active manual filtering promoting genre-diverse news exposure. Notably, highly involved individuals diversified, rather than narrowed, their exposure as the election approached. The co-evolution dynamics between personalized news curation and shared issue relations further highlight the importance of diverse genre exposure for increasing issue overlap. Our findings show that general interests tend to develop into specialized interests across a wider array of issues, whereas specialized interests are less likely to broaden back into more general interests.

This research extends scholarly discourse beyond individual-level news consumption to network-level issue-sharing dynamics. It provides implications for digital news platform designs and news literacy education, while enhancing our understanding of the evolving public discourse landscape shaped by both low-and-high involvement citizens.

Keywords: news curation, manual filtering, political homophily, issue involvement, inferential network analysis, SAOM

From Personalized News Curation to Shared Issue Concerns in Fragmentation Era: A Dynamic Network Approach by Levels of Issue Involvement

In an era of personalized media use, an important question is under what conditions individuals still maintain shared issue agendas. Today, we live in an increasingly fragmented issue landscape, where attention—not information—is a scarce resource (Johnson, 2012; Lanham, 2006). Digital technologies facilitate selective exposure by enabling individuals to easily opt in or out of issues aligned with their personal interests (Kim, 2007). Unlike the past when limited media outlets promoted substantial overlap in news consumption among citizens, the current attention economy fosters 'digital cocoons' or 'issue silos' where individuals focus narrowly on their preferred topics, remaining largely unaware of other issues (Lakoff, 2008). Consequently, the social foundation predicated on common awareness of similar issues has eroded, complicating social consensus-building and effective policy implementation. This phenomenon is exacerbated in countries marked by stark ideological divisions—such as the United States and South Korea (the latter serving as the site for data collection in this study)—where the partisan news media environment is especially pronounced (Rhee et al., 2011). Given these challenges, exploring the factors that influence individuals to *share* attention to similar issues merits scholarly attention.

The present study aims to reveal the underlying mechanism that leads to the emergence of shared-issue relations[1] between individuals. When two individuals consume a set of similar issues, they share an awareness of those issues, become informatively connected, and thereby

[1] In this study, we use the term 'relation' within the framework of network analysis, distinct from the usual meaning of interpersonal contact or interaction.

form a shared-issue relation. We investigate this mechanism by factoring in the level of involvement in politics, a widely used concept in political communication and news consumption research. In particular, issue involvement serves as "a necessary condition for the formation and maintenance of an issue public" which consists of individuals who pay closer attention to specific issues in their daily lives than general citizens (Atkinson & DeWitt, 2019, p. 87; Krosnick, 1990). Considering that issue involvement is a defining characteristic of those who share a set of similar issues, we presume that the mechanism of shared-issue relations may unfold differently depending on the level of involvement. Therefore, by comparing individuals with low and high involvement, we examine the dynamics of how shared-issue relations form in today's personalized media environment.

Our inquiry is conducted during the presidential election period, which serves as a critical juncture where the collective will of the general citizens directly impacts the political landscape. This period offers heightened opportunities for the public to actively exert influence on decision-making processes. During elections, individuals highly involved in politics become particularly engaged (Converse, 1964; Kingdon, 1984), while even those previously inattentive to politics tend to consume more news, as observed in previous studies (Boczkowski & Mitchelstein, 2010; 2015). Since presidential elections elevate the salience of political issues and offer a meta-narrative to the public, they likely catalyze the formation of shared interests in a set of similar issues among individuals. However, this phenomenon may manifest differently between individuals with low and high involvement—a distinction we aim to examine. Additionally, our investigation is based on *actual* news consumption records of individuals, using log data of digital news consumption and survey data (both collected from the same population) to model both behaviors and attributes.

Overall, we examine the creation, maintenance, and dissolution of shared-issue relations and their interplay with personalized news curation during the presidential election period, comparing these dynamics between individuals with low and high involvement. Utilizing both digital log data and survey data, this investigation employs dynamic network analysis, which has been rarely applied in the relevant literature. Our findings may contribute to extending scholarly discussions beyond individual-level news consumption to network-level issue sharing and to identifying factors that influence the dynamics of shared-issue relations. The results may also highlight the significance of involvement in politics and enhance our understanding of the evolving public discourse landscape shaped by both low-and-high involvement citizens.

Literature Review

In an increasingly fragmented issue landscape, understanding what drives individuals to pay attention to similar issues has become a significant question. Traditionally, issue salience has transferred from media to the public, flowing unidirectionally (McCombs & Shaw, 1972); however, this flow has become multi-directional in the contemporary networked public sphere. This shift, in particular, has been accelerated by personalized news environments. Groups of individuals, paying close attention to certain issues that reflect their personalized news consumption patterns, often form “ad hoc publics” or “hashtag publics” (Bruns, 2023; Bruns et al., 2016).

As envisaged by these terms, individuals who engage with similar sets of issues, maintain shared awareness, and base their democratic decisions (e.g., voting) on this awareness may constitute loosely defined 'communities of practice' (Eckert & McConnell-Ginet, 1992; Wenger, 2011) or, more preferably, 'networks of practice' (Brown & Duguid, 2001). According to Brown

and Duguid, although individuals within these networks do not know or never encounter one another, their shared issue awareness serves as a "common substrate" (p. 205) and influences their actions. Inspired by this literature, we examine how shared awareness of issues is formed and in what ways personalized news curation and shared-issue relations co-evolve. Even though direct social interactions do not occur, shared attention to specific issues forms shared issue priorities and establishes common grounds for judgment, influencing practical outcomes, particularly in contexts like presidential elections where these judgments manifest through votes.

Our investigation is situated within the context of presidential elections, which elevate the salience of political issues and catalyze the formation of shared awareness among individuals. Unlike other political events such as civil unrest and impeachments, which are often disproportionately influenced by political elites or typically engage only certain segments of society, presidential elections provide universal participation opportunities for all eligible citizens. Additionally, while political events like civil unrest frequently accompany trauma or extreme polarization—introducing factors irrelevant to our study, presidential elections are regularly occurring democratic processes. The recurring nature of presidential elections also enables comparative research across different time periods and nations, allowing subsequent research to build upon our findings. Considering these aspects, presidential elections provide an appropriate context for our study, compared to other political events.

The framework of this study is based on a multi-level perspective. At the *monadic* level, we consider the personalized news curation network shaped by individual news consumption. At the *dyadic* level, we explore the relations formed through shared-issue interests between

individuals, conceptualized as a shared-issue network. Finally, at the *graph* level, we examine the co-evolution between personalized news curation and shared-issue relations (see Figure 1).

<Figure 1 about here>

Personalized news curation

Our cognitive resources for processing information, rather than the information resources per se, have become scarce (Lanham, 2006). In the attention economy, individuals allocate their attentions to issues that align with their interests (Johnson, 2012). Empowered by digital technologies, they can easily select and filter issues of interest. In the past, when only a few news outlets existed, most citizens shared a set of similar issues. This overlap of issues is less likely to occur today. With a flood of information from numerous outlets, it often disappears unnoticed if it fails to capture attention, and which information garners attention is determined by each individual. Under this circumstance, news curation made by individuals exerts a greater impact than that by news outlets—leading Thorson and Wells (2016) to theorize 'personal curation' as one of the curated flows governing the digital information environment. To emphasize the *self*-filtering to serve one's taste, the term 'personalized curation' is used in our study.

Personalized curation is practiced in the form of 'manual filtering' by individuals themselves. This concept contrasts with the 'automated filtering' performed by news algorithms. It is well-known that automated filtering tends to strengthen our existing preferences by recommending news based on our past trajectory (a phenomenon labeled the "filter bubble" (Pariser, 2011)). While the consequence of automated filtering is relatively well-documented, that of manual filtering is not yet clear (Only a few studies have explored its *antecedents* (e.g., Lee et al, 2019)).

Manual filtering can result in two consequences: i) reinforcing existing genre preferences or ii) increasing exposure to diverse news genres. Researchers have found that, for instance, sports enthusiasts actively seek out news within the sports genre, while deliberately filtering out news from other genres (Iyengar et al., 2008; Kim, 2009). Given these findings, those who are highly involved in politics may prefer reading political news primarily, while those with low involvement in politics may avoid it. However, other possibilities cannot be ruled out. As observed by Peterson and colleagues (Peterson, 1992; Peterson & Kern, 1996), a certain portion of the demographic, mostly those of high socio-economic status, are cultural *omnivores* who enjoy diverse tastes. In the context of news consumption, this omnivorous propensity may likewise appear among those with the requisite capacity, namely individuals highly involved in politics. They may seek out news not only from political genres but also from adjacent genres (e.g., economy, society, and international affairs), recognizing the intricate interconnections of these domains with political issues. Indeed, recent research (Vogler et al., 2023) found that individuals who showed more interest in politics tended to consume news from a wider variety of sources. Considering this positive association between political interest and news source diversity, individuals with high involvement in politics may practice manual filtering to consume news from diverse genres. Particularly, this tendency is likely to occur in the run-up to a presidential election, a heightened period when they can exert influence on the decision-making process.

In contrast, low-involvement individuals' news consumption may not diversify during the election; instead, as voting day nears, they may narrow their attention to fewer genres, primarily focusing on politics. Given that the election elevates civic duty over personal enjoyment, those previously disengaged may feel guilty and become compelled to catch up on political news

(Boczkowski & Mitchelstein, 2015). Consequently, low-involvement individuals are likely to focus on political coverage. Their comparatively limited grasp of the complexity of political issues may prevent them from engaging with news from diverse genres intertwined with politics. Thus, we expect that the effect of manual filtering on the diversity of news genre exposure may unfold differently between low-and-high involvement groups—manual filtering by low-involvement individuals is likely to lower exposure diversity, whereas that by high-involvement individuals is likely to increase exposure diversity.

The aforementioned relationship between manual filtering and news genre exposure diversity can be confounded by the digital media repertoire for news consumption. The concept of 'repertoire' (Heeter, 1985), such as media repertoire or channel repertoire, indicates a set of media or channels that an individual regularly uses in daily lives. Researchers have found that different media repertoires are associated with exposure to different content. For instance, individuals whose news media repertoires include both television and the Internet regarded the World Financial Crisis as the most important issue, which was distinctive from those with other repertoire compositions (Yuan, 2011). Additionally, those who consumed news the most had a repertoire composed of television and the Internet, whereas those who consumed news the least had a repertoire composed of audio, cable television, and the Internet (Yun & Moon, 2010). Given these findings, individuals who regularly obtain news from a variety of media (such as search engines, news websites, subscribed newsletters, podcasts, and online communities) are likely to be exposed to diverse news genres compared to those who only use social media. Thus, after controlling for the size of digital news media repertoire, we examine how the effect of manual filtering on the diversity to news genre exposure unfolds differently between low-and-high involvement individuals. *H1-1. In the case of individuals with low involvement in politics,*

those who practice a higher extent of manual filtering are likely to be exposed to a smaller number of news genres, as a presidential election approaches. H1-2. In the case of individuals with high involvement in politics, those who practice a higher extent of manual filtering are likely to be exposed to a greater number of news genres, as a presidential election approaches.

Shared-issue relations

As Marres (2005) emphasized by entitling the book "No Issue, No Public," attention to *shared* issues can bring strangers *together.* At a granular level, this process consists of two steps: i) personalized curation to specific news genres and ii) concurrence of attention to specific issues with other individuals. The latter step concerns the formation of shared-issue relations. When two individuals share a specific set of issues *more frequently* than other pairs of individuals, a tie is formed between the two, which we define as a 'shared-issue relation' (its detailed operationalization is provided in the Method section). The fact that two individuals are attentive to a set of similar issues, particularly in the attention economy, implies that they are informatively connected and view the world from the perspective of similar issue interests. Given the weakening of the social foundation established on the basis of a shared awareness of similar issues, the exploration of factors that contribute to the creation and maintenance of shared-issue relations over their termination and absence becomes more significant.

In the context of this study, the factors potentially influencing the sharing of common interests in issues among individuals are the political predispositions that each individual possesses. Among political predispositions, political ideology deserves particular attention, as it reflects one's moral and philosophical grounds and system of value judgments (Graham et al., 2009). This would be even more critical with clear ideological divides such as the United States

and South Korea. Some studies have found that individuals can incidentally be exposed to information dissonant with their political ideology (e.g., politically liberal individuals encountering pro-conservative news) (e.g., Lu & Lee, 2019). However, the majority of research suggests that, for cognitive consistency and psychological comfort (Festinger, 1957), individuals tend to selectively expose themselves to politically like-minded media or content (e.g., politically conservative individuals consuming pro-conservative news) (e.g., Cinelli et al., 2020; Westerwick et al., 2017; Stroud, 2008). Although recent studies have observed a weaker-than-expected effect in certain contexts (e.g., Nelson & Webster, 2017; Song et al., 2020), previous findings generally indicate that individuals prefer consuming information that supports their own political ideology. Taken together, having the same political ideology would be critical in being attracted to a similar set of political issues. As suggested by Iyengar et al. (2008), individuals with the same political ideologies may consume a similar set of issues more frequently than those with differing political ideologies—thereby making them more likely to form shared-issue relations. Considering that political homophily is a general tendency observed in previous research, we expect that it would manifest in both low-and-high involvement cases. In particular, with the run-up to a presidential election, this tendency would become pronounced, irrespective of the involvement level.

In addition to political ideology, the amount of prior knowledge[2] regarding politics an individual has may influence the likelihood of forming shared-issue relations. Regarding issues

[2] Prior knowledge in our study refers not to issue-specific knowledge but to general political knowledge encompassing both foundational civic understanding (such as institutional structures and constitutional processes) and current political awareness (such as recognition of key political figures and party configurations).

to which they are attentive, individuals tend to accumulate a large amount of knowledge (Atkinson & DeWitt, 2019; Krosnick, 1990). Research has shown that prior knowledge is closely associated with the capability to process new information systematically (Chaiken, 1980; Petty & Cacioppo, 1986), and it substantially promotes news recall (Price & Zaller, 1993). In this regard, prior knowledge helps individuals process news efficiently by connecting it with their pre-existing knowledge schema related to the issues of interest. This suggests that individuals with a greater amount of political knowledge would be more likely to pay close attention to news about relevant issues, thereby increasing the likelihood of forming shared-issue relations. This tendency may be more prevalent for low-involvement individuals, compared to high-involvement individuals. High-involvement individuals typically possess substantial prior knowledge due to their consistent engagement with politics in daily lives; thus, the *relative* difference in knowledge levels within this group may not critically influence the formation of shared-issue relations. In contrast, within the low-involvement group, the *relative* level of political knowledge would become increasingly significant as the election approaches. When these individuals deviate from their usual news consumption patterns and redirect their attention toward political news in response to the election, even modest differences in political knowledge can meaningfully impact their likelihood of forming shared-issue relations. Although the absolute level of political knowledge among low-involvement individuals is expected to be low, the *relative* variations in political knowledge within this group warrant scholarly attention, as these differences appear to have impacts on cognitive processing during periods of heightened political salience.

Taken together, we expect that the effect size of political ideology on the formation of shared-issue relations does not significantly differ between low-and-high involvement

individuals. However, the effect size of political knowledge would be greater for low-involvement individuals than for high-involvement individuals. These potential relationships can be confounded by other factors such as ideological strength and lifestyle values.

Previous research has found that individuals with extreme political stances perceive news articles that convey a politically neutral tone as biased towards the opposite side (Vallone et al., 1985). While a set of issues covered in the media may not be perceived as problematic enough to warrant attention from the perspective of moderates, far-rights and far-lefts may see them as problematic and worthy of attention. Therefore, presumably, a pair of individuals with extreme political stances would be more likely to form shared-issue relations than a pair of individuals with different ideological strengths. This tendency needs to be controlled for, especially because it can confound the homophily effect of political ideology—the formation of shared-issue relations between two individuals with the same political ideology could arise from both having high ideological strength, rather than being in the same political camp.

Alongside political attributes, lifestyle values need to be controlled. Previous studies have found that the consumption of news and, more broadly, media content is closely associated with lifestyle values, which encompass family-oriented, socialization-oriented, quality-of-life-oriented, and status-seeking-driven lifestyles (Palomba, 2020; Shim et al., 2004). Given these findings, individuals who have similar lifestyle values are likely to have similar issue interests, which may increase the formation of shared-issue relations between them.

After controlling for ideological strength, lifestyle values, and demographic attributes (e.g., gender, age), we test the following hypotheses regarding the effects of political ideology and political knowledge: *H2. Individuals with the same political ideologies are more likely to*

form shared-issue relations, as a presidential election approaches. H3-1. Individuals with a greater amount of political knowledge are more likely to form shared-issue relations, as a presidential election approaches. H3-2. The effect size of political knowledge on the formation of shared-issue relations will be greater for individuals with low involvement in politics than for individuals with high involvement in politics.

Co-evolution between personalized news curation and shared-issue relations

Shared issue concerns between individuals are inseparable from the news curation of each individual. Personalized news curation can *influence* or *be influenced by* shared-issue relations. Curation to the same *genre* may develop common orientations between individuals, leading to interests in a similar set of *issues* and thus forming shared-issue relations (i.e., personalized curation to the same genres → formation of shared-issue relations). The opposite scenario is also possible. Shared interests in a set of *issues* may lead individuals to become attentive to the same domain related to those issues and thus curate to the same *genre* (i.e., formation of shared-issue relations → personalized curation to the same genres). As such, the personalized news curation of each individual and the shared-issue relations between individuals are mutually constitutive, both reflecting individuals' interests in the issue-related domain. However, the underlying dynamics that lead to these interests differ. The former case (i.e., curation to the same genres → shared-issue relations) implies a general interest developing into a specialized interest, whereas the latter case (i.e., shared-issue relations → curation to the same genres) implies a specialized interest developing into a general interest. The question of which case is more probable remains open (Bolsen & Leeper, 2013).

While acknowledging that a public cannot coalesce without shared issues ("no issue, no public" (Marres, 2005)), we also find it crucial to recognize that not all publics form shared-issue agendas in the same way. High-involvement individuals who devote greater attention to particular issues are often characterized in the literature as information specialists (Dufresne & Ouellet, 2021). Indeed, researchers have shown that these individuals possess specialized knowledge regarding their issues of concern (Krosnick, 1990). Given previous findings that they are issue-selective (Iyengar et al., 2008), high-involvement individuals are likely to set their own agendas and selectively expose themselves to issues of interest, which subsequently prompts them to navigate news genres intertwined with those interests. Thus, we expect that when two highly involved individuals share similar issue interests, they will likely curate the same news genres (i.e., shared-issue relations → curation to the same genres).

In contrast, for low-involvement individuals, the tendency is likely to be the opposite. Since they turn to political issues in the run-up to the election—building on otherwise politically detached news-consumption habits—they are less likely to have specialized interests *beforehand* that subsequently develop into general interests. These individuals typically do not seek out issues on their own, instead relying on agendas highly publicized by media in certain genres, which leads them to gradually or incidentally be exposed to a common set of issues (Fletcher & Nielsen, 2018). While high-involvement individuals may be driven more by bottom-up motivations, selectively exposing themselves to issues of their own interest and thus forming shared-issue relations from the inside out; low-involvement individuals may be more dependent on media agendas and get inadvertently exposed to similar issues. Consequently, this latter group would be more susceptible to the media's agenda-setting effect (McCombs & Shaw, 1972). In

this regard, low-involvement individuals may form shared-issue relations as a result of being exposed to the same news genres (i.e., curation to the same genres → shared-issue relations).

Taken together, we hypothesize as follows: *H4-1. In the case of individuals with low involvement in politics, personalized curation to the same news genres is likely to influence the formation of shared-issue relations, as a presidential election approaches. H4-2. In the case of individuals with high involvement in politics, the formation of shared-issue relations is likely to influence personalized curation to the same news genres, as a presidential election approaches.*

Overall, as illustrated in Figure 1, our study examines three interconnected levels: at the monadic level, the extent to which individuals' manual filtering practices shape personalized curation to increase the diversity of news genre exposure; at the dyadic level, how political predispositions facilitate the formation of shared-issue relations between individuals; and at the graph level, the ways in which personalized curation and shared-issue relations co-evolve over time. These inquiries are explored through a dynamic network modeling approach that captures the interplay between individual behaviors and collective patterns of issue overlaps.

Methods

Data collection

The data collection was implemented in South Korea. South Korea exhibits a conservative-liberal divide traditionally reinforced by regional divide and more recently by generational divide. The Korean media landscape mirrors this political bifurcation, a phenomenon described as 'political parallelism' (Rhee et al., 2011). Beyond the fragmented issue landscape, political polarization and partisan media introduce an additional layer of

fragmentation. Furthermore, South Korea's advanced digital infrastructure and overwhelming reliance on digital media—used by 77.2% of the nation to obtain news (Korea Press Foundation, 2022)—facilitate personalized news curation. In these regards, South Korea provides an appropriate context to examine under what conditions individuals may still develop overlapping issue agendas.

We collected two types of data from the *same* participants: log data of digital news use and survey data.[3] In South Korea, the device most frequently used to access news online was mobile phones (79.2%) and 75.1% of those who obtained news online relied on news aggregators (i.e., Naver.com, Daum.net) (Korea Press Foundation, 2022). Given this context, we collected log data of digital news consumption from participants' mobile phones through applications for accessing Naver.com and Daum.net (these two news aggregators accounted for 85.5% of news usage in South Korea (Korea Press Foundation, 2022)), made by MarketLink, a Korean public opinion and market research company. We conducted stratified sampling from the MarketLink panel, ensuring representation of the population's demographic proportions by gender and age.

The log data was collected across three distinct periods in 2022 surrounding the South Korean presidential election of March 9. February 6-12 (Wave 1) represents the pre-election period when political salience is elevated but not yet at its peak. March 6-12 (Wave 2) captures the election period including the election day itself when political engagement reaches its maximum. April 6-12 (Wave 3) represents the post-election period when political attention

[3] Data available on request from the authors

typically declines. Our investigation of network dynamics focuses on the changes from Wave 1 (pre-election period) to Wave 2 (election period) (for *comparative* purposes, we also examined the network changes from Wave 2 to Wave 3 and presented them in the Appendices). The log data of digital news consumption includes information on the news articles that each participant consumed, such as news headlines, news brands, news genres, news URLs, and news publication dates. To cluster news articles that participants consumed at an *issue* level, we implemented sentence-BERT(Bidirectional Encoder Representations from Transformers) with Python (Reimers & Gurevych, 2019) (For detailed information, see Appendix 1). This process yielded 937 issues from 12,118 news articles that the participants consumed in Wave 1 and 1,036 issues from 15,733 articles in Wave 2 (for reference, 610 issues from 7,079 articles in Wave 3).

In addition, we conducted an online survey with the *same* participants between November 3 and 25, 2022. In total, 729 participants completed the survey and consumed news articles across all waves. The response rate of the survey was 52%. Among them, we selected participants whose level of involvement in politics was either below or above one standard deviation from the average (M=4.756, SD=1.036). Participants whose involvement scores were below one standard deviation from the mean (scores lower than 3.720, N = 94) were categorized into the low-involvement group, whereas those with scores above one standard deviation from the mean (scores higher than 5.792, N = 143) formed the high-involvement group. The low-involvement group consisted of 45 males and 49 females, with an average age of 46.5 years (SD = 10.925). The high-involvement group included 82 males and 61 females, with an average age of 46.64 years (SD = 11.931).

The involvement level was assessed using a 7-point scale by asking participants the extent to which they perceived political issues as, for instance, interesting, deserving attention, important, and influential in their daily lives (Kim, 2015; Lee & Kim, 2016; Waddell, 2018) (Cronbach's $\alpha = .854$). A political context was chosen because election periods create a unique environment where civic duty significantly influences news consumption patterns (Boczkowski & Mitchelstein, 2015). This setting allows us to examine how shared-issue networks form differently based on the level of involvement in political issues. Additionally, presidential elections offer universal participation opportunities where all eligible citizens can potentially engage, unlike other contexts that may involve specific demographic segments. Elections as regular political events also provide temporal boundaries, enabling before-during-after comparisons with the election serving as a natural watershed. Furthermore, issue involvement is most extensively studied in political contexts. Since it determines the extent to which individuals share similar concerns (Krosnick, 1990), we expect the emergence of distinct network patterns between participants highly involved and less involved in political issues during this politically salient period.

Measurement

Using both the log data and survey data, we constructed two types of networks—a personalized curation network and a shared-issue network—for the low-involvement and high-involvement groups, respectively. The former is represented as a two-mode matrix, [participants x news genres], and the latter is represented as a one-mode matrix, [participants x participants]. These matrices were formed for each wave, with the number of participants remaining constant across all waves.

Personalized curation network (two-mode network).

The network of personalized curation comprises both participants and news genres which are classified into 13 categories: politics, opinions, economy, finance, real estate, international affairs, society, entertainment, sports, automobile, life, information technologies, and others. We adopted the genre classification provided by online news aggregators from which our log data were collected. This classification aligns with those used in previous studies on Korean users' news consumption via online news aggregators (e.g., Kwak et al., 2021; Park, 2012; Song & Yang, 2017), while also providing more granular sub-categories. For instance, whereas the aforementioned studies treated politics as a single genre, our study distinguishes between politics and opinions as separate categories. Based on these refined genre categories, if participant A consumed news articles, for instance, in the political and sports genres, then a relation is formed between A and each genre, as follows: A → politics, A → sports. In this way, we formed a two-mode, directed, and binary network for each involvement group.

Node behavior. Regarding *manual filtering*, we asked participants to rate on a seven-point scale how frequently they engage in the following behaviors, such as changing default settings of digital media to increase exposure to preferred news brands, filtering out specific news brands to avoid, searching for news articles published by specific news brands, and consuming news through 'my news' services personalized by oneself. We then averaged the scores (M=2.764, SD=1.138, Cronbach's α=0.805 for the low-involvement group; M=3.585, SD=1.611, Cronbach's α=0.852 for the high-involvement group).

As a *control variable*, we included *digital media repertoire* for news consumption. The size of the digital news media repertoire was measured by counting the number of digital media

categories that participants regularly used on a weekly basis from the following eight categories: Naver.com or Daum.net, news aggregators besides the two, news websites (e.g., nytimes.com), social media, online video platforms (e.g., YouTube), news podcast, email news letter from news organizations, and others (M=2.936, SD=1.625 for the low-involvement group; M=4.154, SD=1.813 for the high-involvement group).

Shared-issue network (one-mode network).

Building on our definition of "shared-issue relation" outlined in the Literature Review, we operationalize the shared-issue network as relations between individuals who consume a specific set of issues *more frequently* than others and have *closer* associations in the individual-level distribution of the shared-issue frequencies than other pairs of individuals. Specifically, we calculated shared-issue frequencies between participant dyads and generated similarity matrices using Anderberg's (1973) correlation method. Dyads with similarity scores 0.5 or higher were identified as having shared-issue relations. This operationalization is especially meaningful, because it allows us to extract a shared-issue matrix from a given set of *whole* individuals. The shared-issue matrix indicates whether two individuals share (or lack) interests in a set of similar issues, in comparison to *all other pairs* of individuals. We thus formed a one-mode, undirected, and binary network for each involvement group. (See Appendix 2 for detailed explanations).

Node attribute. Regarding *political ideology*, participants self-reported their political stances on a 9-point scale. We re-categorized them into liberals (scores 1~4), moderates (score 5), and conservatives (scores 6~9). The low-involvement group comprised 16 liberals, 53 moderates, and 25 conservatives, and the high-involvement group comprised 53 liberals, 46 moderates, and 44 conservatives.

To measure *political knowledge*, we asked participants to provide short answers to five questions. These queries assessed both foundational civic knowledge typically covered in standard educational curricula (such as which institution determines the constitutionality of laws and the presidential term length) and current political awareness that requires ongoing engagement with political affairs (such as the name of the current prime minister, which party holds the most seats in the legislature, and the name of the leader of the primary opposition party) (Price & Zaller, 1993) (0 = wrong or don't know, 1 = correct). The scores from all five queries were added together (M=3.160, SD=1.370 for the low-involvement group; M=4.259, SD=0.962 for the high-involvement group).

As *control variables*, we included ideological strength and lifestyle values. We calculated *ideological strength* by subtracting the value of five from the political ideology scores (Dvir-Gvirsman, 2015). In this way, moderates have an ideological strength score of zero, whereas extreme liberals or extreme conservatives, with political ideology scores of one and nine, respectively, have an ideological strength score of four (M=0.830, SD=1.104 for the low-involvement group; M=1.329, SD=1.191 for the high-involvement group).

Regarding *lifestyle values*, we asked participants to indicate the extent to which they agreed with 36 statements concerning nine dimensions of lifestyle values on a seven-point scale: fashion/trend-oriented, socialization-oriented, health-oriented, family-oriented, quality-of-life-oriented, individualization-oriented, life-expansion-oriented, status-seeking-driven-oriented, and western-oriented (Leung, 1998; Shim et al., 2004). We included the Pearson correlation coefficients of lifestyle value scores across the dimensions between participants in our model to

control for the effect of lifestyle value similarities on the shared-issue network. We also controlled for *gender* and *age* similarities.

Modeling (SAOM)

SAOM (Stochastic Actor-Oriented Model; Snijders, 1996) is an inferential network model that explains the evolution of networks over time. It allows researchers to define network and behavior data, specify relevant effects to be tested, and estimate how strongly each of these effects influences observed network changes over time. By examining the estimated parameters for each effect, we can gain insights into the underlying processes driving network evolution. SAOM is particularly useful for exploring dynamics where networks and individual attributes/behaviors mutually influence each other (Snijders et al., 2013). We constructed two SAOMs, one for each involvement group (see Appendix 3 for detailed information about SAOM and the parameters included in our models).

Our SAOMs are composed of behavioral parameters regarding the personalized curation network, attribute parameters regarding the shared-issue network, structural parameters regarding the inter-dependence between these two networks, and endogenous network parameters (e.g., popularity, transitivity, assortativity). Our SAOMs for high-involvement group and low-involvement group basically have identical parameters. However, inherently, the endogenous network dynamics embedded in each case differ, resulting in slightly different endogenous network effects for each model. After controlling for purely structural effects

specific to each group, we can compare the effects of interest *across* the two cases. For statistical comparisons by involvement level, we additionally implemented *Z*-test (Ripley et al., 2023).[4]

The estimation and simulation of SAOMs were implemented using RSiena (R version of the Simulation Investigation for Empirical Network Analysis) (Ripley et al., 2023). The RSiena results indicate the extent to which node attributes/behaviors and network parameters contribute to the likelihood of tie creation/maintenance over tie dissolution/no-tie maintenance (the parameter estimates are interpreted like logistic regression coefficients).[5]

Results

Network descriptive

Regarding the personalized curation network, nearly half of all possible ties were formed, irrespective of involvement level and wave. This means that participants on average consumed about half of the 13 available genres. Considering that the news genres one frequently consumes tend to be routinized, shifts in curation behaviors did not occur significantly. In contrast to the curation network, the connectivity of the shared-issue network varied by involvement level and by period (see Appendix 4 for detailed information).

---

[4] For model comparison, the *Z*-test scores were calculated by subtracting the parameter estimate of one model from that of the other model and then dividing this subtraction by the square root of the sum of the squared standard deviations of the two estimates (Ripley et al., 2023).

[5] Our models satisfied all the SAOM requirements of Jaccard similarity index, convergence t-ratio, and overall maximum convergence ratio. The models also exhibited an acceptable goodness of fit for degree distributions, geodesic distributions, and mixed triadic census. This indicates that our models capture the structures embedded in our observed data, even those that were not explicitly modeled.

As shown in Figure 2, participants in the high-involvement group are connected much more densely with fewer individuals remaining isolated, compared to the low-involvement group. As the election approaches, even in the low-involvement group, more participants have become engaged in shared-issue relations, and individuals initially placed at the periphery become tied to the main component of the network. In the high-involvement group, the sub-cluster (composed of six participants) sharing a distinct set of issues has disappeared and the main component has become more agglomerative as the election draws near.

< Figure 2 about here>

Specifically, four possible changes can occur in the shared-issue network, as the election approaches (i.e., from Wave 1 to Wave 2). First, shared-issue relations can be created between participants who had not previously formed such relations (tie creation). Second, shared-issue relations can remain present between participants who had previously formed such relations (tie maintenance). Third, shared-issue relations can cease between participants who had previously formed such relations (tie dissolution). Lastly, shared-issue relations can remain absent between participants who had not previously formed such relations (tie absence or no-tie maintenance).

For low-involvement participants, a number of 1,142 ties were created, 394 ties were maintained, 184 ties were dissolved, and 2,558 ties were absent. For high-involvement participants, a number of 2,029 ties were created, 5,045 ties were maintained, 845 ties were dissolved, and 2,234 ties were absent (see Appendix 5). Low-involvement participants created and maintained proportionately much fewer ties over time, compared to high-involvement participants. As expected, the latter had greater issue overlaps than the former. As shown in our *supplementary* analyses (see Appendix 5), proportionately more ties were created and maintained

before the election, whereas more ties were terminated after the election. These overall dynamics are in line with what we would expect from previous research, with the major political event serving as a trigger (Boczkowski & Mitchelstein, 2010, 2015; Converse, 1964).

Mechanisms of personalized curation network, shared-issue network, and their co-evolution

As shown in Table 1, the extent of manual filtering did not have a statistically significant effect on the dynamics of the personalized curation network for low-involvement participants (β=-0.118, SE=0.077), thus rejecting *H1-1.* However, it was significant for high-involvement participants (β=0.087, SE=0.042)—those who manually filtered content to a greater extent tended to consume a greater number of news genres, as the election approached, thus failing to reject *H1-2*. Given that the manual filtering effect differed significantly by involvement level (z=2.345), a clear distinction is observed in how manual filtering is practiced between participants who are highly involved in politics and those who are not. Unlike low-involvement participants, high-involvement participants (who have a comparatively better understanding of political complexity) demonstrated omnivorous news consumption propensities, diversifying their exposure to other genres intertwined with politics in the run-up to the election.

Regarding the shared-issue network, the homophily effect of political ideologies was marginally significant[6] for low-involvement participants (β=0.150, SE=0.087), but not significant for high-involvement participants (β=0.055, SE=0.107), thus providing partial support for *H2*. Its effect size did not significantly differ by the involvement level. Given the politically polarized context in South Korea where our data was collected, we expected a

[6] The conventional alpha level of 0.05 used to determine statistical significance is not strictly applicable in the context of SAOM.

stronger influence of ideological homophily on the formation of shared-issue relations, regardless of involvement level. However, only among low-involvement participants was a weak indication of the homophily effect of political ideologies observed.

The political knowledge effect was statistically significant for low-involvement participants (β=0.048, SE=0.023), but not significant for high-involvement participants (β=-0.020, SE=0.032), thus providing partial support for *H3-1*. For low-involvement participants, those with a greater amount of political knowledge were more likely to form shared-issue relations, as the election approached. The effect size of political knowledge was marginally greater for low-involvement participants, compared to high-involvement participants (z=-1.746), thus failing to reject *H3-2*. This differential impact of political knowledge can be explained by the fact that high-involvement participants had already possessed a similarly high level of political knowledge, as indicated by the high average (M = 4.259) and low standard deviation (SD = 0.962) of political knowledge scores. This limited the potential for political knowledge to drive further changes in the shared-issue network for this group. In contrast, low-involvement participants showed lower average knowledge (M = 3.160) and greater variability (SD = 1.370), which likely contributed to the more pronounced role of political knowledge in shaping their shared-issue relations.

Regarding the network inter-dependency, the shared-issue network dynamics did not significantly influence the personalized curation network dynamics, irrespective of involvement level (β=0.017, SE=0.014 for the low-involvement group, β=0.004, SE=0.006 for the high-involvement group). However, the personalized curation network dynamics did influence the shared-issue network dynamics, irrespective of involvement level (β=0.102, SE=0.023 for the

low-involvement group, β=0.134, SE=0.025 for the high-involvement group), thus failing to reject *H4-1*, while rejecting *H4-2.* These consistent patterns across involvement levels are corroborated by the statistically non-significant results from comparisons between low-and-high involvement participants (z=0.949 for curation network → shared-issue network, z=-0.804 for shared-issue network → curation network). These findings suggest that specialized interests develop from general interests, rather than the reverse.

Among the control variables, ideological strength (β=-0.465, SE=0.130) and gender (β=0.186, SE=0.066) were statistically significant only for low-involvement participants. The negative effect of ideological strength, coupled with the positive effect of political ideology, indicates that shared-issue concerns arise from being in the same political camp rather than from having a similar level of political conviction—contrary to what would be expected from the influence of ideological strength on news perception (Vallone et al., 1985). Gender also played a role in guiding low-involvement participants to share issues. In contrast, the issue overlaps among high-involvement participants were not influenced by these predispositions but rather by their manual filtering behaviors.

<Table 1 about here>

Discussion and Conclusion

In today's fragmented issue landscape, sharing a set of similar issues becomes increasingly vital yet simultaneously more difficult due to the prevalence of attention economy. The social foundation built upon a shared awareness of similar issues has weakened, hampering social consensus formation and effective public policy implementation. This challenge is further intensified by pronounced ideological divisions in the South Korean political sphere, which add

another layer of fragmentation. Within this context, our study identifies factors influencing the creation, maintenance, and dissolution of shared-issue relations that interplay with personalized news curation effects. Shared awareness of issues serves as a common substrate for judgment and action even without direct social interactions, according to the 'networks of practice' literature (Brown & Duguid, 2001). We employ a dynamic network approach, a methodology rarely employed in previous research, to investigate how these networks evolve in conjunction with personalized news curation.

This investigation is made through a comparison between participants with low and high involvement in politics. Issue involvement is a defining characteristic that distinguishes those who pay close attention to a set of similar issues from those who do not (Atkinson & DeWitt, 2019, p. 87; Krosnick, 1990). High-involvement participants typically exhibit greater issue overlap (as observed in previous findings and also revealed in our study; see Appendices 4 & 5) than low-involvement participants. The comparison between the two groups helps us identify factors contributing to issue overlap. In particular, the presidential election period provides an ideal context for this comparison. The election increases the salience of political issues and offers a meta-narrative to the public, thereby likely catalyzing the formation of joint interests with others. We examined how this likelihood unfolds differently by involvement level, as the election approaches.

Regarding personalized curation network, we found that participants who seriously care about politics indeed *increased* their exposure to diverse genres over time, as the election approached—a statistically significant divergence from low-involvement participants. This tendency of high-involvement participants contrasts with prior research showing that individuals

tend to actively seek out news aligned with their interests and filter out news from other genres (Iyengar et al., 2008; Kim, 2009). Our finding implies the importance of factoring in issue involvement when explaining variations in news exposure diversity, resonating with some previous findings (e.g., Vogler et al., 2023). It also points to manual curation as a potential pathway to broader news consumption. Given that exposure to news is influenced by news algorithms, conscious filtering can counteract algorithmic bias inherently existing in digital news feeds. As suggested, the extent to which this effort is made appears to be closely associated with an individual's level of involvement in politics.

Specifically, what could be inferred from the aforementioned finding is that high-involvement participants might have consciously diversified their genre exposure to gain a *better understanding* of political issues across multiple domains in the lead-up to the election, a time when their opinions carried heightened weight. Since they regard political matters as highly important and directly relevant to their daily lives, their news exposure could have been motivated by a desire to obtain accurate and unbiased information, resulting in thorough information search across diverse news genres (Hart et al., 2009). Alternatively, this tendency could stem from defense motivation—seeking to defend pre-existing beliefs by preparing for counter-arguments against opposing viewpoints (Hart et al., 2009). However, this explanation is less plausible as our data shows no significant effect of political ideology or ideological strength (indicators of partisan loyalties closely associated with defense motivation) on issue overlap between high-involvement participants. Instead, the salience of the election could have amplified their motivation to reduce uncertainty by exploring more diverse information sources (Wilson, 1999)—they may be aware of how political issues interconnect with other genres such as economic, social, and international affairs and thus be motivated to consume news across diverse

genres to develop a nuanced understanding. Contrary to prevailing concerns, those who care deeply about politics did not become tunnel-visioned or bigoted. Given the extant tendency of algorithms to reinforce biases, the manual filtering practiced by high-involvement participants to increase exposure diversity is particularly promising.

Regarding the shared-issue network, we expected that the homophily effect of political ideologies would be a strong driver in forming shared-issue relations considering the politically divisive climate of South Korea. Contrary to our expectation, only a marginally significant effect was found among low-involvement participants, as the election approached. Nonetheless, it is still noteworthy because the effect persisted even after controlling for demographics, lifestyle values, ideological strength, political knowledge, personalized curation behaviors, and endogenous network dynamics. For low-involvement participants, political ideology served as an underlying guide for news consumption, whereas it did not exert a significant impact for those highly involved in political issues in their daily lives (Dufresne & Ouellet, 2021).

In addition, the amount of prior knowledge on politics significantly affected shared-issue network dynamics for low-involvement participants, but not for high-involvement participants. Political knowledge served as a significant catalyst for those, who had been inattentive to politics in their daily lives, to create or maintain shared-issue relations upon the run-up of the election. This result is consistent with previous findings suggesting that the more knowledge one has, the more likely one is to become interested in related issues (Chaiken, 1980; Petty & Cacioppo, 1986; Price & Zaller, 1993). In contrast, political knowledge had a minimal impact on high-involvement participants who already possessed substantial prior knowledge regardless of

electoral context. Our result confirms the critical role of political knowledge in increasing issue overlap, as with its positive effect on other political outcomes (Lassen, 2005; Prior, 2005).

Taken together, our findings reveal a fundamental distinction in how shared issue awareness is formed: while the issue overlaps observed among low-involvement participants were shaped by 'who they are'—their demographic and ideological identities—the issues around high-involvement participants were constructed by 'what they do'—their deliberate practice of curating diverse news genres. This distinction can have important political implications, since shared issue awareness serves as common ground for political decision-making that may manifest through voting, drawing on the 'networks of practice' framework (Brown & Duguid, 2001). For instance, the identity-based awareness of the low-involvement group may be more likely to result in political support for candidates who align with their demographics or ideological predispositions.

Furthermore, we examined the co-evolution between the personalized curation network and the shared-issue network, an aspect that has rarely been investigated in previous research. Our findings suggest that personalized curation network dynamics tended to promote shared-issue network dynamics over time, rather than the latter promoting the former. It appears that curation of the same *genre* fostered common orientations among participants, which subsequently led to interests in a similar set of *issues*, thereby forming shared-issue relations—a finding aligning with the notion of 'networks of practice' in that shared awareness does not exist as a static, pre-given foundation but does emerge dynamically through the practice of personalized news curation. This tendency was observed in both low-and-high involvement participants. This may have arisen due to the relatively strong agenda-setting effect of the media

(McCombs & Shaw, 1972), particularly during the election period, resulting in the transfer of issue salience from the media to the public regardless of their involvement level. Alternatively, our finding could challenge the assumption that high-involvement participants are information specialists, being issue-selective and having specialized knowledge regarding issues of their own concerns while being relatively less attentive to other issues (Dufresne & Ouellet, 2021, Iyengar et al., 2008, Krosnick, 1990). Drawing on this assumption, we expected that high-involvement participants, driven by bottom-up motivations, would selectively expose themselves to issues of their own interest and subsequently broaden their exposure to other issues. However, our finding indicates that they were attentive to *specific* issues on the basis of their *general* awareness of other relevant issues—suggesting that their specialized interests likely developed from a broader general interest, rather than the other way around.

As signified in the phrase, 'no issue, no public' (Marres, 2005), attention to *shared* issues brings strangers *together*. In the era of fragmentation, the value of being together—in the context of our study, sharing concerns and developing common awareness of issues—becomes paramount. Shared attention to specific issues forms shared issue priorities and establishes common grounds for judgment, consequently influencing practical outcomes based on such judgment, as suggested by the literature on networks of practice (Brown & Duguid, 2001). The overlap of issues is the foundation of social consensus building. Given this importance, what promotes the overlap of issues between individuals in personalized news environments? Based on our findings through the comparison between low-and-high involvement participants, we suggest three factors that contribute to increasing the overlap of issues: 1) reduced susceptibility to ideological homophily, 2) greater accumulation of political knowledge, and 3) greater engagement in manual filtering promoting the diversification of news genre exposure.

Particularly, diversifying genre exposure appears crucial for increasing issue overlap; since general interests tend to develop into specialized interests across a wider array of issues, whereas specialized interests are less likely to broaden back into more general interests.

Some practical implications can be drawn from the aforementioned insights. Digital news platforms may consider displaying political issues by clearly visualizing their connections with diverse genres (e.g., in the form of an issue-genre graph) or providing "genre-jump" nudges prompting users to "jump" into different genres related to the issue. These approaches may help users to see the full landscape of issues, facilitate a better understanding of their complexity, and deepen issue knowledge. Additionally, news algorithms may redirect their optimization strategies away from promoting congenial news consumptions. Our study shows that, among individuals who genuinely care about politics, ideological alignment does not drive issue overlap. This finding presumably indicates a demand for quality news surfacing across the ideological spectrum, which calls for quality-first recommendation systems. Furthermore, digital news literacy education is necessary to encourage individuals navigating personalized news environments to implement manual filtering strategies toward diversifying their news exposure. Such practices may not only help counteract issue fragmentation in personalized news environments but also foster better-informed citizens.

The present study is not without limitations. Our participants were recruited from the panel of a public opinion and market research company. Although stratified sampling was implemented from the panel to represent the population's demographic proportions by gender and age, the panel may inherently contain self-selection bias. Nonetheless, our decision to use this panel was made, given the infeasibility of tracing log data of those recruited from a random

sampling of the nation. In addition, our log data of digital news consumption was collected from individuals who consumed news on mobile phones via Naver.com and Daum.net, which limits the interpretations of our findings to this specific stratum. However, as shown by national statistics (Korea Press Foundation, 2022), most people in South Korea obtain news using mobile phones from Naver.com and Daum.net, the two most popular digital news platforms in the nation. Thus, the data collected from this stratum closely resembles the typical news consumption patterns of the nation. Furthermore, we acknowledge the limitation of operationalizing personalized news curation (defined as 'manual filtering' practiced by individuals) by isolating it from algorithmic curation. Although we measured manual filtering to ensure that our empirical analyses of personalized curation focused specifically on deliberate news choices made by individuals themselves, we recognize that this practice in and of itself is likely influenced by the seamless interplay between manual and algorithmic filtering.

Unlike previous research, we modeled through the SAOM approach the practice of personalized news curation at the *monadic* level, the formation of shared-issue relations at the *dyadic* level, and the co-evolution between these two at the *graph* level, using digital log data and survey data. Considering this methodological effort, our findings merit scholarly attention, although additional evidence is still necessary. We recommend subsequent research be conducted in contexts that contrast with our study, such as environments less susceptible to political polarization and partisan media. For instance, testing whether the marginal ideological homophily effect we observed among low-involvement participants remains consistent in these alternative settings would further substantiate its robustness. In a non-partisan media environment, manual filtering to diversify news exposure may turn out to be less vital for enlarging issue overlaps, and instead the size of digital media repertoire might become more

pronounced. We also suggest further studies explore how exogenous events (a presidential election in our study) are associated with changes in network dynamics and to what extent issue overlaps vary depending on the interplay of political predispositions such as political ideology, ideological strength, and political knowledge. Future research could compare the effects of personalized curation versus algorithmic curation on news exposure diversity and their inter-dependencies with shared-issue network dynamics. These inquiries, along with our present findings, may contribute to our understanding of the evolving public discourse landscape.

References

Anderberg, M. R. (1973). *Cluster Analysis for Applications: Probability and Mathematical Statistics.* New York, NY: Academic Press.

Atkinson, M. D., & DeWitt, D. (2019). Does celebrity issue advocacy mobilize issue publics? *Political Studies*, *67*(1), 83-99.

Boczkowski, P. J., & Mitchelstein, E. (2010) Is there a gap between the news choices of journalists and consumers? A relational and dynamic approach. *The International Journal of Press/Politics,* 15(4), 420–440.

Boczkowski, P. J., & Mitchelstein, E. (2015). *The News Gap: When the Information Preferences of the Media and the Public Diverge*. Cambridge, MA: MIT Press.

Bolsen, T., & Leeper, T. J. (2013). Self-interest and attention to news among issue publics. *Political Communication*, *30*(3), 329-348.

Brown, J. S., & Duguid, P. (2001). Knowledge and organization: A social-practice perspective. *Organization Science*, *12*(2), 198-213.

Bruns, A. (2023). From "the" public sphere to a network of publics: towards an empirically founded model of contemporary public communication spaces. *Communication Theory*.

Bruns, A., Moon, B., Paul, A., & Münch, F. (2016). Towards a typology of hashtag publics: A large-scale comparative study of user engagement across trending topics. *Communication Research and Practice*, *2*(1), 20-46.

Butts, C. (2024). *sna: Tools for Social Network Analysis*. Retrieved from on April 16, 2025: https://cran.r-project.org/web/packages/sna/index.html

Chaiken, S. (1980). Heuristic versus systematic information processing and the use of source

versus message cues in persuasion. Journal of Personality & Social Psychology, 39(5), 752–766.

Cinelli, M., Brugnoli, E., Schmidt, A. L., Zollo, F., Quattrociocchi, W., & Scala, A. (2020). Selective exposure shapes the Facebook news diet. *PloS One*, *15*(3), e0229129.

Converse, P. E. (1964). The nature of belief systems in mass publics. In D. Apter (ed.), *Ideology and Discontent*, New York, NY: Free Press.

Dvir-Gvirsman, S. (2015). Testing our quasi-statistical sense: News use, political knowledge, and false projection. *Political Psychology*, *36*(6), 729-747.

Eckert, P., & McConnell-Ginet, S. (1992). Think practically and look locally: Language and gender as community-based practice. *Annual Review of Anthropology, 21*, 461–490.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7*(2), 117–140.

Fletcher, R., & Nielsen, R. K. (2018). Are people incidentally exposed to news on social media? A comparative analysis. *New Media & Society, 20*(7), 2450-2468.

Fruchterman, T.M.J., & Reingold, E.M. (1991). Graph Drawing by Force-directed Placement. *Software - Practice and Experience,* 21(11), 1129-1164.

Graham, J., Haidt, J., & Nosek, B. A. (2009). Liberals and conservatives rely on different sets of moral foundations. *Journal of Personality and Social Psychology, 96*(5), 1029.

Hart, W., Albarracín, D., Eagly, A. H., Brechan, I., Lindberg, M. J., & Merrill, L. (2009). Feeling validated versus being correct: A meta-analysis of selective exposure to information. *Psychological Bulletin*, *135*(4), 555-588.

Heeter, C. (1985). Program selection with abundance of choice: A process model. *Human Communication Research, 12*(1), 126-152.

Iyengar, S., Hahn, K. S., Krosnick, J. A., & Walker, J. (2008). Selective exposure to campaign communication: The role of anticipated agreement and issue public membership. *The Journal of Politics*, *70*(1), 186-200.

Johnson, C. A. (2012). *The Information Diet: A Case for Conscious Consumption*. CA: O'Reilly Media.

Kim, Y. M. (2007). How intrinsic and extrinsic motivations interact in selectivity: Investigating the moderating effects of situational information processing goals in issue publics' Web behavior. *Communication Research*, *34*(2), 185-211.

Kim, Y. M. (2009). Issue publics in the new information environment: Selectivity, domain specificity, and extremity. *Communication Research*, *36*(2), 254-284.

Kingdon, J. W. (1984) *Agendas, Alternatives, and Public Policies*. Boston, MA: Little, Brown and Company.

Korea Press Foundation (2022). *Media Users in Korea 2022*. Seoul, Korea: Korea Press Foundation

Krosnick, J. A. (1990). Government policy and citizen passion: A study of issue publics in contemporary America. *Political Behavior*, *12*, 59-92.

Kwak, K. T., Lee, S. Y., & Lee, S. W. (2021). News and user characteristics used by personalized algorithms: The case of Korea's news aggregators, Naver News and Kakao News. *Technological Forecasting and Social Change*, *171*, 120940.

Lakoff, G. (2008). *The Political Mind*. New York: Penguin Group.

Lassen, D. D. (2005). The effect of information on voter turnout: Evidence from a natural experiment. *American Journal of political science*, *49*(1), 103-118.

Lee, E. J., & Kim, Y. W. (2016). Effects of infographics on news elaboration, acquisition, and evaluation: Prior knowledge and issue involvement as moderators. *New Media & Society*, *18*(8), 1579-1598.

Lee, F., Chan, M., Chen, H., Nielsen, R., & Fletcher, R. (2019). Consumptive news feed curation on social media as proactive personalization: A study of six East Asian markets. *Journalism Studies, 20*(15), 2277–2292.

Leung, L. (1998). Lifestyles and the use of new media technology in urban China. *Telecommunications Policy*, *22*(9), 781-790.

Lu, Y., & Lee, J. K. (2019). Stumbling upon the other side: Incidental learning of counter-attitudinal political information on Facebook. *New Media & Society, 21*(1), 248-265

McCombs, M. E., & Shaw, D. L. (1972). The agenda-setting function of mass media. *Public Opinion Quarterly*, *36*(2), 176-187.

Nelson, J. L., & Webster, J. G. (2017). The myth of partisan selective exposure: A portrait of the online political news audience. *Social Media + Society*, *3*(3), 1-13.

Palomba, A. (2020). Consumer personality and lifestyles at the box office and beyond: How demographics, lifestyles and personalities predict movie consumption. *Journal of Retailing and Consumer Services, 55*, 1-11.

Pariser, E. (2011). *The Filter Bubble: What the Internet is Hiding from You*. UK: Penguin.

Park, K-S. (2012). An analysis of the influence of the editorial elements of portal news section on the news user's choice of articles. *Korean Journal of the Korea Academia-Industrial Cooperation Society, 13*(5), 2087-2095

Peterson, R. A. (1992). Understanding audience segmentation: From elite and mass to omnivore and univore. *Poetics, 21*, 243-58.

Peterson, R. A., & Kern, R. M. (1996). Changing highbrow taste: from snob to omnivore. *American Sociological Review, 61*, 900-907.

Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In: Berkowitz L. (Ed.), Advances in Experimental Social Psychology, Volume 19. New York: Springer (pp. 124–205).

Price, V., & Zaller, J. (1993). Who gets the news? Alternative measures of news reception and their implications for research. *Public Opinion Quarterly*, *57*(2), 133-164.

Prior, M. (2005). News vs. entertainment: How increasing media choice widens gaps in political knowledge and turnout. *American Journal of Political Science*, *49*(3), 577-592.

Reimers, N., & Gurevych, I. (2019). Sentence-bert: Sentence embeddings using siamese bert-networks. *arXiv preprint arXiv:1908.10084*

Rhee, J. W., Cho, H. J., Song, H. J., & Jung, J. H. (2011). South Korean media system: Toward a democratization model. *Korean Social Sciences Review*, *1*(1), 303-337.

Ripley, R. M., Snijders, T. A., Boda, Z., Vörös, A., & Preciado, P. (2023). *Manual for RSiena*. University of Oxford, Department of Statistics, Nuffield College.

Shim, M., Kim, E., & Rhee, J. W. (2004). Life-style and television viewing pattern: A one source data analysis. *Korean Journal of Journalism and Communication Studies, 48*(2), 189-217

Snijders, T. A. (1996). Stochastic actor-oriented models for network change. *Journal of Mathematical Sociology*, *21*(1-2), 149-172.

Snijders, T. A., Lomi, A., & Torló, V. J. (2013). A model for the multiplex dynamics of two-mode and one-mode networks, with an application to employment preference, friendship, and advice. *Social Networks*, *35*(2), 265-276.

Song, H., Cho, J., & Benefield, G. A. (2020). The dynamics of message selection in online political discussion forums: Self-segregation or diverse exposure? *Communication Research*, *47*(1), 125-152.

Song, H., & Yang, J. (2017). Online news portal service and changes in news distribution. *Korean Journal of Journalism and Communication,* 61(4), 74~109

Stroud, N. J. (2008). Media use and political predispositions: Revisiting the concept of selective exposure. *Political Behavior, 30*(3), 341-366.

Thorson, K., & Wells, C. (2016). Curated flows: A framework for mapping media exposure in the digital age. *Communication Theory*, *26*(3), 309-328.

Vallone, R. P., Ross, L., & Lepper, M. R. (1985). The hostile media phenomenon: biased perception and perceptions of media bias in coverage of the Beirut massacre. *Journal of Personality and Social Psychology*, *49*(3), 577-585.

Vogler, D., Weston, M., Ryffel, Q., Rauchfleisch, A., Jürgens, P., Eisenegger, M., Schwaiger, L., & Christen, U. (2023). Mobile news consumption and its relation to young adults' knowledge about and participation in referendums. *Media and Communication*, *11*(1), 6-18.

Waddell, T. F. (2018). What does the crowd think? How online comments and popularity metrics affect news credibility and issue importance. *New Media & Society,* 20(8), 3068–3083.

Wenger, E. (2011). *Communities of Practice: A Brief Introduction*. Retrieved May 22, 2025, from https://scholarsbank.uoregon.edu/items/6baf09ba-c319-4949-acef-cb220dc2953a

Westerwick, A., Johnson, B. K., & Knobloch-Westerwick, S. (2017). Confirmation biases in selective exposure to political online information: Source bias vs. content bias. *Communication Monographs*, *84*(3), 343-364.

Wilson, T. D. (1999). Models in information behaviour research. *Journal of Documentation*, *55*(3), 249-270.

Yuan, E. (2011). News consumption across multiple media platforms: A repertoire approach. *Information, Communication & Society*, *14*(7), 998-1016.

Yun, H., & Moon, S. C. (2010). Media repertoire and genre preference in network TV viewing. *Korean Journal of Broadcasting and Telecommunication Studies, 24*(5), 325-369

Figures and Tables

Figure 1 Research framework

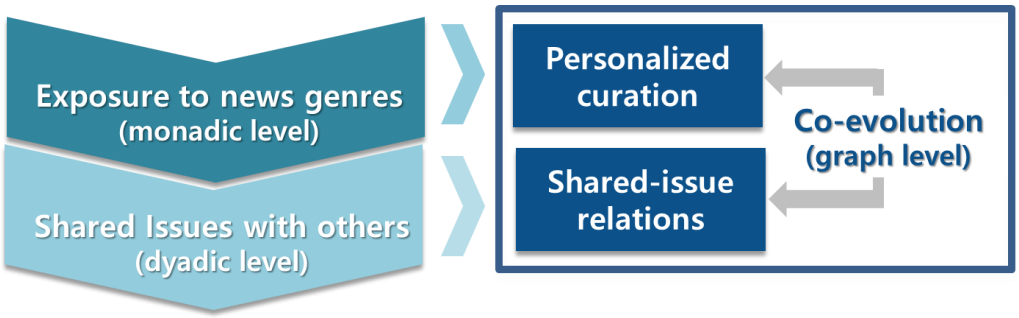
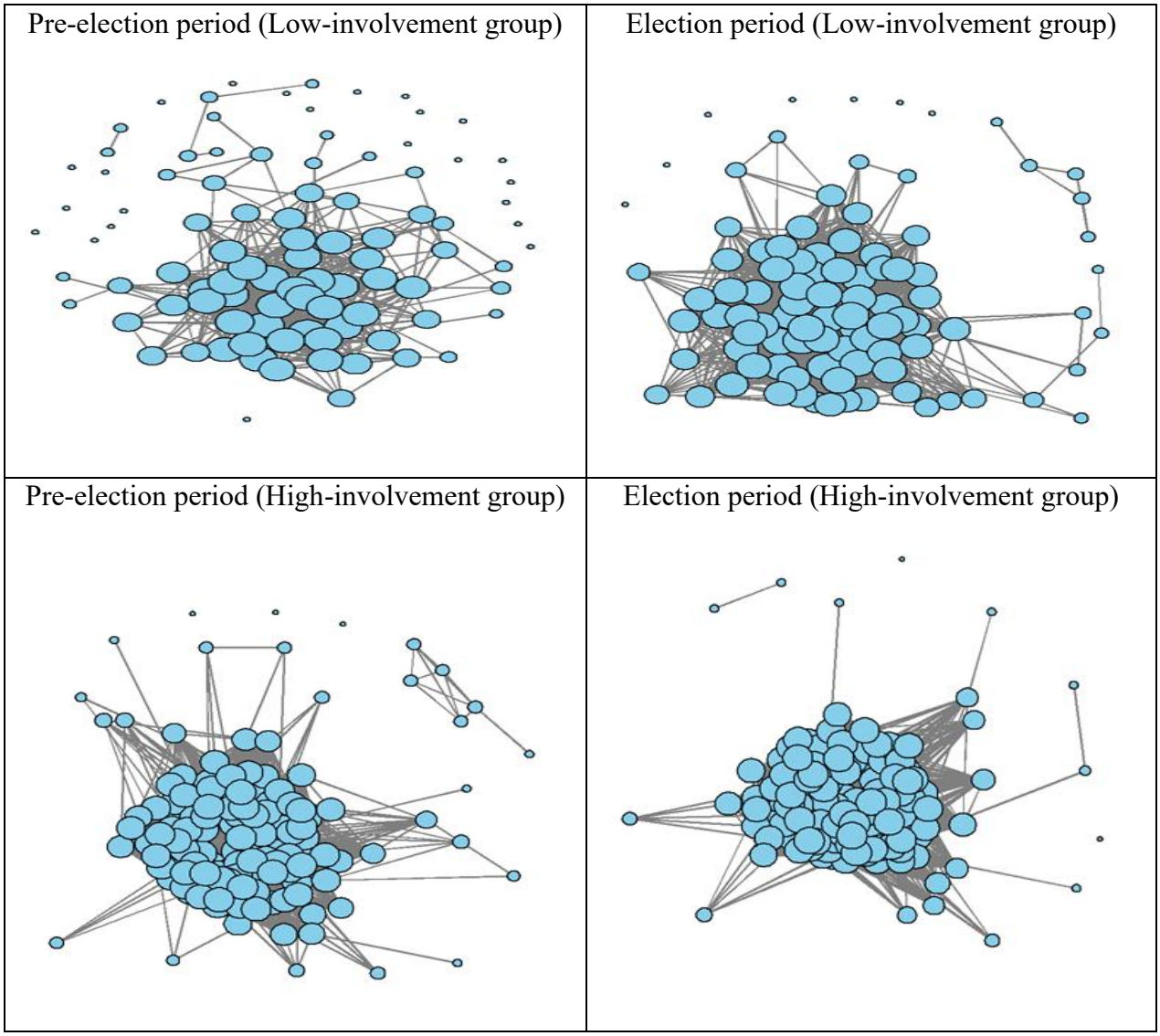


Figure 2 Shared-issue network changes in low-involvement and high-involvement groups from pre-election (Wave 1) to election periods (Wave 2)



Note: Nodes represent participants, and links represent shared-issue relations between participants. Node size represents degree centrality, which indicates the number of relations each participant has. For graph layout, we used the widely applied Fruchterman-Reingold algorithm from R SNA package (Butts, 2024). This algorithm visualizes networks by positioning connected nodes close together, while placing unconnected nodes farther apart (Fruchterman & Reingold, 1991). The same layout algorithm with identical layout parameters was applied to all network visualizations.

Table 1 SAOM results regarding the personalized curation network, shared-issue network, and their co-evolution

		Low involvement			High involvement			Comparison	
		Estimate	SE		Estimate	SE		z (high-low)	
Persona-lized curation network	Rate parameter	4.476	1.088	***	3.614	0.565	***	- 0.703	
	Density (outdegree)	- 3.708	1.079	***	-4.078	1.605	*	- 0.191	
	Transitivity (cycle4)	0.001	0.003		0.002	0.002		0.312	
	Popularity (inPopSqrt)	0.041	0.015	**	0.281	0.115	*	2.071	*
	Activity (outActSqrt)	0.107	0.070		0.266	0.323		0.482	
	Manual filtering (egoX)	- 0.118	0.077		0.087	0.042	*	2.345	*
	Digital media repertoire (egoX)	0.001	0.050		-0.033	0.046		- 0.508	
Shared issue network	Rate parameter	58.267	14.755	***	191.543	18.230	***	5.683	***
	Density (degree)	- 5.262	1.927	**	-5.709	0.537	***	- 0.223	
	Popularity (degPlus(Sqrt))	0.430	0.357		0.241	0.020	***	- 0.529	
	Assortativity (outInAss)	- 0.024	0.069					0.349	
	Gender (sameX)	0.186	0.066	**	0.022	0.053		- 1.931	†
	Age (simX)	0.006	0.177		0.141	0.156		0.573	
	Lifestyle (X)	0.149	0.096		0.035	0.140		- 0.670	
	Political ideology (sameX)	0.150	0.087	†	0.055	0.107		- 0.690	
	Ideological strength (simX)	- 0.465	0.130	***	-0.091	0.327		1.063	
	Political knowledge (egoPlusAltX)	0.048	0.023	*	-0.020	0.032		- 1.746	†
Co-evolu-tion	Personal curation nw -> Shared-issue nw (from)	0.102	0.023	***	0.134	0.025	***	0.949	
	Shared-issue nw -> Personal curation nw (to)	0.017	0.014		0.004	0.006		- 0.804	

† $p<0.1$ * $p<0.05$ ** $p<0.01$ *** $p<0.001$

Appendices

Appendix 1 Sentence-BERT

BERT(Bidirectional Encoder Representations from Transformers) is a pre-trained transformer for tasks related to natural language processing; and sentence-BERT, as an extension of BERT, derives "semantically meaningful sentence embeddings," which enables the comparison of semantic similarity between sentences and clustering of sentences based on cosine similarity or other similarity measures (Reimers & Gurevych, 2019, p.1). Sentence-BERT was the most up-to-date text analysis method available at the time of writing, pre-trained on multiple languages including Korean. This method enabled us to define issues narrowly, whereas previous research has typically assumed genres or domains as issues (e.g., economy, education, health care). Using sentence-BERT with cosine similarity measure, we clustered news articles based on their headlines. The cosine similarity cutoff point of 0.75 was chosen after testing several cutoff points and manually checking the performance generated from each cutoff point. The clusters generated in this way were considered as *issues* in the present study.

Appendix 2 Formation of a shared-issue matrix

As shown in the top left of the following figure, if participant A reads news articles about issues W, Y, and Z, and participant B reads about issues X, Y, and Z, A and B share two issues in common. In this way, we calculated the number of issues that each individual shares with specific others, thereby creating a matrix of shared-issue frequencies between dyads (see the top right of the figure). Based on this matrix, we generated the similarity matrix of shared-issue frequencies using correlation method suggested by Anderberg (1973) (see the bottom right of the figure). We then identified the dyads whose similarity scores are 0.5[7] or higher as having shared-issue relations (i.e., forming ties between the said dyads) (see the bottom left of the figure). By doing so, we formed a one-mode, non-directed, and binary network, as shown in the bottom left of the figure.

Exemplary formation of a shared-issue matrix

Participants' News Consumptions by Issue [Participant X Issue]

	W	X	Y	Z
A	1	0	1	1
B	0	1	1	1
C	0	1	1	0
D	1	0	0	0
E	0	0	0	1
F	1	0	0	0
G	0	0	1	1

Shared-Issue Frequencies between Dyads [Participant X Participant]

	A	B	C	D	E	F	G
A		2	1	1	1	1	2
B	2		2	0	1	0	2
C	1	2		0	0	0	1
D	1	0	0		0	1	0
E	1	1	0	0		0	1
F	1	0	0	1	0		0
G	2	2	1	0	1	0	

Shared-Issue Matrix [Participant X Participant]

	A	B	C	D	E	F	G
A		0	0	0	0	0	0
B	0		0	0	0	0	0
C	0	0		0	1	0	1
D	0	0	0		0	0	0
E	0	0	1	0		0	0
F	0	0	0	0	0		0
G	0	0	1	0	0	0	

Similarity Matrix of Shared-Issue Frequencies [Participant X Participant]

	A	B	C	D	E	F	G
A		-0.242	0.439	-0.636	0.258	-0.636	-0.230
B	-0.242		0.000	0.000	0.312	0.000	0.185
C	0.439	0.000		-0.062	0.906	-0.062	0.605
D	-0.636	0.000	-0.062		0.091	0.300	0.108
E	0.258	0.312	0.906	0.091		0.091	0.495
F	-0.636	0.000	-0.062	0.300	0.091		0.108
G	-0.230	0.185	0.605	0.108	0.495	0.108	

[7] The threshold value can be set higher than 0.5, but this would result in very few ties being formed, making network analysis infeasible. Therefore, a threshold value of 0.5 was chosen, as it is the highest value within the range that meets the basic assumptions of SAOM.

Appendix 3 Parameters included in SAOMs

SAOM (Snijders, 1996) is an inferential network model that explains the evolution of networks over time. It assumes that, at any given moment, only a single tie changes (referred to as a 'mini-step'), and this change depends on the probability distribution based on the continuous-time Markov Chain Monte Carlo process. The probability distribution for tie creation and termination is specified by node covariates (i.e., node attributes and behaviors) as well as the network itself at that moment (Snijders et al., 2013). We built two SAOMs, one for each involvement group.

Our SAOMs include the *egoX* parameters for digital media repertoire and manual filtering to reveal the networking mechanism of personalized curation. Our models also include the *sameX* parameter for political homophily, the *simX* for ideological strength, and the *egoPlusAltX* for political knowledge to identify the networking mechanism of the shared-issue relations.

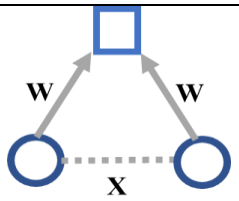
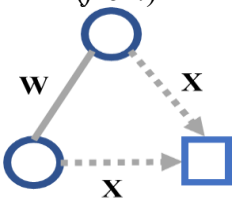
In addition, we included the *from* parameter to investigate the influence of the personalized curation network on the shared-issue network and the *to* parameter to examine the influence of the shared-issue network on the personalized curation network (see Appendix 1). Specifically, this cross-network dependency is estimated through two components: one component regarding a single tie change in the personalized curation network conditioned on the current state of the personalized curation network and the shared-issue network; and the other component regarding a single tie change in the shared-issue network conditioned on the current state of the shared-issue network and the personalized curation network. A tie change in *either* network drives changes in other ties in *both* networks, and thus influences the probabilities of next tie changes (Snijders et al., 2013)[8]. By including both *from* and *to* parameters, our models estimate which network effect becomes more likely as both networks co-evolve.

Alongside the variables aforementioned, we included gender (*sameX*), age (*simX*), and lifestyle value (*X* for a dyadic covariate) as control variables in our SAOMs. We also included endogenous network effects in our models to control for the purely structural effects, such as

[8] More details on the SAOM estimations of the co-evolution between a one-mode network and a two-mode network can be found in Snijders et al. (2013).

network density (*outdegree*), network transitivity[9](*cycle4* for a two-mode network), and the rich-get-richer dynamics[10] (*degPlus* for a one-mode network, *inPopSqrt* for a two-mode network).

Primary network configurations regarding variables of importance

	Network configuration (RSiena effect name)	**Description**	**Related variable**
Personal curation network	 (*egoX*)	The more the node attribute that participants have, the more likely they send out ties to genres	Digital media repertoire Manual filtering
Shared-issue network	 (*sameX / simX*)[11]  (*egoPlusAltX*)	Participants having the same/similar node attributes tend to form ties Participants having a certain node attribute tend to form ties	Political homophily Ideological strength Political knowledge
Co-evolution (Cross-network dependency)	 (*from*)  (*to*)	Participants tend to form shared-issue relations (X), when they choose the same genres (W) Participants tend to make the same outgoing choices of genres (X) over time as those to whom they have shared-issue relations (W)	Shared-issue network influenced by personalized curation network Personalized curation network influenced by shared-issue network

[9] In our two-mode personalized curation network, the network transitivity indicates the tendency for participants who share one genre choice to also share other genre choices. This tendency is similar to the phenomenon of friends of mine becoming friends with each other.

[10] The rich-get-richer dynamic (i.e., "preferential attachment" in network terminology) is a frequently observed network phenomenon (Barabási & Albert, 1999). It arises from endogenous effects embedded in a network where a node attracts more ties simply because it already has many ties.

[11] In RSiena, the *sameX* parameter applies to categorical variables, and the *simX* applies to continuous variables.

Appendix 4 Network density by level and by period

Regarding the personal curation network, nearly half of all possible ties were formed irrespective of involvement level and wave, as indicated by a network density of approximately 0.500. Network density is calculated by dividing the number of actual ties by the number of possible ties. For instance, a non-directed network with four nodes is fully connected when it has six ties (i.e., 6=(4x3)/2), which indicates a network density of one (i.e., 1=6/6). As such, a network density of 0.500 means that participants on average consumed about half of the 13 available genres. Considering that the news genres one frequently consumes tend to be routinized, shifts in curation behaviors did not occur significantly.

Regarding the shared-issue network, its density was 0.135 in wave 1, 0.354 in wave 2, and 0.221 in wave 3 for low-involvement participants, while it was 0.580 in wave 1, 0.697 in wave 2, and 0.508 in wave 3 for high-involvement participants. This indicates that, for both groups, the shared-issue networks were denser at the time of the Presidential Election (wave 2) than before (wave 1) or after (wave 3) the election. In addition, the density of the shared-issue network formed with low-involvement participants was far lower than that with high-involvement participants. Typically, network density exhibits an inverse relationship with network size (i.e., the number of nodes the network has)—the larger the network, the lower the density tends to be. Despite the fact that the network for the highly-involved (n=143) was larger than that for the less-involved (n=94), the former was much denser—a strong indication that the highly-involved participants were more engaged in shared-issue relations.

Involvement level	Period	Personalized curation network	Shared-issue network
Low	wave 1	0.501	0.135
	wave 2	0.500	0.354
	wave 3	0.466	0.221
High	wave 1	0.500	0.580
	wave 2	0.497	0.697
	wave 3	0.477	0.508

Appendix 5 Tie changes by period and by level

From wave 1 to wave 2, for low-involvement participants, a number of 1,1,42 ties were created, 394 ties were maintained, 184 ties were dissolved, and 2,558 ties were absent. For high-involvement participants, a number of 2,029 ties were created, 5,045 ties were maintained, 845 ties were dissolved, and 2,234 ties were absent.

These tie changes from wave 1 to wave 2 differed significantly from the changes from wave 2 to wave 3 (*Chi-sq*=1,064.795, $p<0.001$ for the low-involvement group; *Chi-sq* =1,748.874, $p<0.001$ for the high-involvement group)—in proportion, more ties were created/maintained in the former period, whereas more ties were terminated in the latter period. The dynamics of ties also differed significantly between the low-and-high involvement participants (*Chi-sq* =2,732.983, $p<0.001$ for tie changes from wave 1 to wave 2; *Chi-sq* =1,818.988, $p<0.001$ for tie changes from wave 2 to wave 3)—high-involvement participants created and maintained proportionately much more ties in both periods, compared to those with low involvement.

Involvement level	Period	Tie creation (No tie → Tie)	Tie maintenance (Tie → Tie)	Tie dissolution (Tie → No tie)	No-tie maintenance (No tie → No tie)
Low	During (W1 → W2)	1,142	394	184	2,558
	After (W2 → W3)	269	655	879	2,383
High	During (W1 → W2)	2,029	5,045	845	2,234
	After (W2 → W3)	614	4,396	2,673	2,187

References for Appendices

Anderberg, M. R. (1973). *Cluster Analysis for Applications: Probability and Mathematical Statistics.* New York, NY: Academic Press.

Barabási, A. L., & Albert, R. (1999). Emergence of scaling in random networks. *Science, 286*(5439), 509～512.

Reimers, N., & Gurevych, I. (2019). Sentence-bert: Sentence embeddings using siamese bert-networks. *arXiv preprint arXiv:1908.10084*

Snijders, T. A., Lomi, A., & Torló, V. J. (2013). A model for the multiplex dynamics of two-mode and one-mode networks, with an application to employment preference, friendship, and advice. *Social Networks*, *35*(2), 265-276.