



MASTERARBEIT | MASTER'S THESIS

Titel | Title

When Birds of a Feather Divide: Filter Bubbles and their Possible
Influence on Informed Youth Citizenship

verfasst von | submitted by

Dott. Eva Lutz

angestrebter akademischer Grad | in partial fulfilment of the requirements for the degree of
Master of Science (MSc)

Wien | Vienna, 2025

Studienkennzahl lt. Studienblatt | Degree
programme code as it appears on the
student record sheet:

UA 066 550

Studienrichtung lt. Studienblatt | Degree
programme as it appears on the student
record sheet:

Masterstudium Communication Science

Betreut von | Supervisor:

Univ.-Prof. Mag. Dr. Desiree Schmuck BA

Introduction

Democracies face a rapidly evolving media landscape, where algorithmic infrastructures increasingly mediate access to political information (Kobellarz et al., 2024; Van Aelst et al., 2017). This transformation reconfigures how citizens engage in democratic processes, raising critical questions about the implications for political knowledge formation and informed participation (Jerit et al., 2006; Van Aelst et al., 2017).

The widespread accessibility of information has led to the assumption that online media fosters greater recognition of diverse perspectives and encourages political deliberation conducive to its potential to renew the democratic dialogue, supporting an inclusive and high-quality public discourse (Kobellarz et al., 2024; Garrett, 2009). Yet, while expanded media choices increase opportunities for political learning, they facilitate greater disengagement, particularly for individuals with low political interest. Easy avoidance of political content leads to diminishing news exposure, contributing to lower levels of political knowledge (Jerit et al., 2006; Prior, 2007).

The proposition that internet usage inherently promotes exposure to diverse political perspectives is further questioned by the concept of selective exposure (Kobayashi & Ikeda, 2009). While digital media environments offer unprecedented access to heterogeneous views, research suggests that individuals tend to engage predominantly with information aligned with their existing preferences (Kobayashi & Ikeda, 2009; Prior, 2007). The proliferation of media choices has shifted the emphasis toward individual preferences, reinforcing attitudinal congruence rather than ideological diversity (Kobayashi & Ikeda, 2009; Prior, 2007).

Algorithmic influence intensifies information fragmentation by curating content based on users' inferred interests and behavioral patterns (Beam & Kosicki, 2014). Platforms prioritize content that users are deemed to "care about most" (Instagram, 2016, as cited in Cotter, 2019), promoting homogeneous content streams that affirm their existing views by systematically excluding dissenting perspectives (Dylko et al., 2018). Thus, the internet's

potential for pluralistic discourse may paradoxically lead to greater ideological insularity and a decline in shared informational ground (Kobayashi & Ikeda, 2009).

A well-functioning democracy depends on civic participation and politically informed citizens, both of which depend on access to diverse information (Kobayashi & Ikeda, 2009; Van Aelst et al., 2017). When media exposure is limited to biased or one-sided content, it risks fostering a polarized electorate and undermining representative democracy (Beam & Kosicki, 2014). Thus, media diversity is a central goal, premised on the normative ideal of a democratic society with citizens accessing a broad array of sources and perspectives to be able to make balanced and well-considered decisions and form knowledge. Yet, concern persists that algorithmic filtering threatens this, resonating with ongoing debates on ‘filter bubbles’, potentially eroding shared civic knowledge and tolerance for dissent (EU High-level Group of Media Freedom and Pluralism, 2013; Helberger et al., 2016; Garrett, 2009).

Scholarship on algorithmic curation and filter bubbles largely addresses macro-level effects, offering limited insight into users’ experiences in political knowledge formation and democratic engagement (Dogruel et al., 2022; Hargittai et al., 2020). This gap is particularly relevant for younger demographics, who increasingly rely on algorithmically curated platforms as their primary source of political content (Newman et al., 2016). While some research has addressed users’ awareness of algorithmic influence (e.g., Swart, 2021), it often neglects how this awareness (or lack thereof) affects their political knowledge formation. This is particularly important given that social media platforms present dynamic spaces where political attitudes are continuously constructed, negotiated, and enacted (Papa & Photiadis, 2021). Moreover, institutional responses to these challenges remain underexplored. Understanding users’ algorithmic literacy is critical, but must be complemented by institutional efforts to promote algorithmic transparency, support digital education, and ensure equitable access to political information (Hroch et al., 2024).

By integrating perspectives from both users and institutional actors, this study investigates the socio-political implications of algorithmic content curation. It provides empirical insights into how political institutions aim to promote algorithmic literacy, support critical engagement with digital political content, and develop strategies to mitigate the effects of algorithmic systems.

Considering the research interest, the following research question was developed: **How do political institutions address the possible challenges posed by algorithmic curation on politically informed youth citizenship?**

The study advances scholarly discourse on digital media, political communication, and democratic participation, offering actionable recommendations for institutional communication practices aimed at supporting the political socialization of young citizens and reinforcing democratic resilience in algorithmically mediated spheres.

Theoretical framework and literature review

Defining political knowledge formation

Citizens rely on media to make sense of complex political developments in contemporary democracies (Van Aelst et al., 2017). As Andersen et al. (2020) argue, citizens require accessible information to meaningfully engage in democratic processes, making media a crucial facilitator of civic engagement.

Sustained exposure to political information via news media has consistently demonstrated a positive impact on the development of political knowledge (Andersen et al., 2020). Political knowledge, alongside political interest and political efficacy, constitutes a core dimension of political engagement. Given this relation, it is essential to examine how individuals learn from encountering political information. This study adopts the definition of political knowledge as proposed by Andersen et al. (2020), which includes “knowledge about recent happenings in politics and society that have been covered by the media” (p. 65) and the “feeling of being capable of understanding politics” (p. 120).

Building on this foundation, the present study conceptualizes political knowledge formation as the process through which individuals gather political information, enhancing their political knowledge, to be capable of forming well-reasoned political opinions, leading to informed political engagement.

Theoretical framework

Drawing on the theoretical model proposed by Thorson and Wells (2016), the flow of information on social media platforms is shaped by the interplay of five actors: professional journalists, strategic communicators, individual media users, social contacts, and algorithmic filters (Gagrčin et al., 2023). A closer examination of algorithmic filters reveals their conceptualization as “computer programs” (Cotter, 2019, p. 898), designed to collect and process extensive user data encompassing interests, preferences, and ideological orientations (Gagrčin et al., 2023). These filters do not merely organize information but actively curate informational environments of individuals, through prioritization, categorization, and filtration of everyday practices of individuals (Cotter, 2019; Eslami et al., 2015). In doing so, algorithms inherently embed normative assumptions, deciding on users’ behalf what constitutes relevance and newsworthiness, thereby exerting influence on exposure and understanding of sociopolitical realities by curating what news “find us” (Dogruel et al., 2022, p. 155). The design and function of algorithms are acted upon by commercial and strategic considerations, distributing information in ways that reflect and reinforce prevailing social, cultural, political and commercial logics (Cotter et al., 2017; Gillespie, 2014), creating attention to be sold to advertisers (Boulianne & Hoffmann, 2024; Bozdag, 2013).

However, individual users are allocated a significant degree of curatorial agency by actively curating political information presented on their feeds (e.g., by (un)following certain accounts) or engaging passively with content that aligns with their preferences (Thorson & Wells, 2016). Active curation demands minimal algorithmic literacy, whereas Boulianne and

Hoffmann (2024) identify a positive correlation between passive curation and users' algorithmic knowledge.

Building on Festinger's (1957) cognitive dissonance theory, personalization mechanisms intensify individuals' tendency to favor media and content aligning with existing attitudes, rather than those that challenge them (Dubois & Blank, 2018). Dissonant information tends to heighten feelings of uncertainty and discomfort, prompting a tendency to engage selectively with pro-attitudinal content as a means of mitigating cognitive dissonance (Festinger, 1957; Hart et al., 2009; Spohr, 2017). This exacerbates confirmation bias, as users demonstrate a preference for interaction with information consonant with their prior beliefs (Garrett, 2009; Papa & Photiadis, 2021).

This contrasts with Habermas's (1989) conceptualization of the public sphere as a discursive arena facilitating inclusive and rational-critical debate. The aim is to enhance mutual understanding in society by discourse and interpretations about facts and values, ultimately improving the performance of democratic policymaking through public reasoning (Brüggemann & Meyer, 2023; Habermas, 1989). Thus, concern arises that algorithmic influence fragments this democratic space by the formation of enclosed media environments, known as filter bubbles.

Filter bubbles

'Filter bubbles' refer to a concept introduced by Pariser (2011), describing the phenomenon in which algorithms personalize users' content, thereby isolating them from opposing viewpoints and diverse information. According to Pariser (2011), this narrows the users' informational exposure and potentially contributes to political polarization and reduced democratic discourse (e.g., Conover et al., 2021; Sunstein, 2022; Zuiderveen Borgesius et al., 2016).

Some studies suggest a lower degree of encapsulation than initially theorized (e.g., Bakshy et al., 2015; Dubois & Blank, 2018; Garrett, 2009). Further, empirical findings indicate

that, in most cases, limited exposure to opposing views arises not from deliberate avoidance by users but rather as an outcome of passive filtering mechanisms inherent with algorithmic systems (Dubois & Blank, 2018; Papa & Photiadis, 2021). Hart et al. (2009) further substantiate this position by demonstrating that individuals do not completely exclude dissenting perspectives; rather, they exhibit only a marginally reduced interest in opinion-challenging information without engaging in systematic avoidance (Garett, 2009).

As the isolating effects are not absolute and exposure to diverse content does occur, albeit unevenly across platforms and user demographics (Papa & Photiadis, 2021), this signifies that their impact is nonetheless dependent on individual users' algorithmic awareness and curation practices (Dubois & Blank, 2018). Thus, even if complete enclosure within filter bubbles is rare, the underlying algorithmic influence on information exposure is evident in various studies: Beam (2014) demonstrates that the use of personalized news systems has a direct negative effect on knowledge gain. Gagrčin et al. (2023) extend this perspective on algorithmic influence by showing that algorithmic news exposure can have mobilizing effects, highlighting not only the influence of algorithms on knowledge formation but also their capacity in promoting political engagement. However, studies (Dubois & Blank, 2018; Wells & Thorson, 2017) find that those with high political interest and diverse media consumption tend to avoid limited exposure and filter bubbles, underscoring the importance of supporting algorithmic awareness and knowledge as well as profound media education.

Algorithmic knowledge and literacy

According to Cotter and Reisdorf (2020), algorithmic knowledge “constitutes mere awareness that search results do not display all information sources equally and that certain information is prioritized” (p. 746). Algorithms are often conceptualized as ‘black boxes’ due to their complex nature and the limited transparency surrounding their operational mechanisms (Burrell, 2016; Rader & Gray, 2015). This opacity contributes to a widespread lack of algorithmic awareness and knowledge among users, many of whom are unaware that their

exposure to information is systematically mediated (Cotter & Reisdorf, 2020). Thus, algorithmic knowledge is a critical competency, enabling individuals to understand, assess, and contextualize the information curated by algorithmic systems (Cotter & Reisdorf, 2020). In its absence, individuals are less capable of discerning processes that govern content visibility, which in turn impairs their capacity to critically evaluate the credibility, representativeness, and intent of the information they encounter (Cotter, 2019; Dogruel et al., 2022). This reinforces asymmetries in informational autonomy, rendering users more vulnerable to manipulation and less able to reflect critically on political contexts (Cotter, 2019).

Cotter and Reisdorf (2020) argue, despite its increased prominence in public discourse, that algorithmic knowledge contributes to disparities in algorithmic literacy, influencing how individuals engage with information and communication technologies. As Klawitter and Hargittai (2018) suggest, “algorithmic skills remain the domain of a select few users” (p. 3505), highlighting persistent inequalities.

Research indicates that algorithmic literacy is dependent on socioeconomic resources, allowing for more frequent access and effective use of information and communication technologies (Cotter & Reisdorf, 2020). As a result, users are more likely to develop a deeper understanding of platform algorithms through accumulated experiential exposure (Cotter, 2019). This is further supported by the characterization of algorithms as ‘experience technologies’, indicating that users primarily develop an understanding of algorithmic systems through repeated interaction and practical engagement (Cotter & Reisdorf, 2020). Further, individuals with greater socioeconomic resources benefit from informal learning, as this is strongly mediated by the availability of social support and networks (Cotter, 2019).

Further, algorithmic knowledge varies according to sociodemographic characteristics (Cotter & Reisdorf, 2020; Boulianne & Hoffmann, 2024). Studies indicate that people aged 18-24 demonstrate higher levels of algorithmic literacy and are more likely to curate their content, compared to older generations (Boulianne & Hoffmann, 2024).

Boulianne and Hoffmann's study (2024) reveals a positive correlation between algorithmic knowledge, political interest, and both active and passive curation practices. This finding resonates with the framework proposed by Thorson and Wells (2016), underscoring its analytical strength in "connect[ing] curation actions (personal filtering) with individual-level characteristics (partisanship, level of interest in politics, ability to customize digital flows)" (Boulianne & Hoffmann, 2024, p. 6). Notably, political interest emerges as a predictor of active curation; consequently, young demographics exhibiting lower levels of political interest may demonstrate diminished active engagement with political information. This disengagement often manifests in avoidance strategies, such as unfollowing political actors, thereby limiting their exposure to political content (Boulianne & Hoffmann, 2024; Wells & Thorson, 2017). Consequently, algorithmic literacy emerges as a key dimension of digital inequality, wherein socioeconomically advantaged groups benefit in accessing information and critically reflect on algorithmic representation (Cotter, 2019).

While existing literature has established the significance of algorithmic literacy as a critical digital competence, a gap remains in understanding how varying levels of algorithmic literacy among young people affect their capacity to curate political information to form political knowledge on social media platforms (Cotter, 2019; Rader & Gray, 2015; Swart, 2021). Despite young users being increasingly subjected to algorithmic personalization and given pronounced reliance on online information, little is known about how they experience, acquire knowledge about, and respond to these curation processes (Newman et al., 2016; Noguera-Vivo & Grandío-Pérez, 2025; Swart, 2021).

A more comprehensive approach to algorithmic literacy must extend beyond users' assumptions about algorithmic functioning to critically examine the implications of algorithmic imaginaries, particularly everyday strategies and tactics through which users navigate political information within the structurally constrained environments of digital platforms (Swart, 2021). Further, an analysis of users' algorithmic literacy is essential for developing informed policy

measures, aiming to promote users' ability to critically engage with algorithmic systems, maintaining autonomy in information exposure (Dogruel et al., 2022; Boulianne & Hoffmann, 2024).

Thus, this research question aims to answer: *RQ1: How do young citizens perceive and navigate the influence of algorithmic curation on their political knowledge formation?*

Institutional relevance

As Hroch et al. (2024) emphasize, algorithmic literacy alone is insufficient to foster algorithmic transparency and accountability, recognizing that the societal impact of algorithms cannot be understood solely by analyzing user behavior. Instead, broader institutional, political, and economic structures must be considered (Hroch et al., 2024). Thus, moving beyond user-centered views, recent literature highlights that algorithmic systems result from negotiations among multiple stakeholders such as editors, executives, and developers, revealing institutional complexities and competing logics behind algorithmic curation (Monzer et al., 2020; Smets et al., 2022).

Various studies (e.g. Bodo, 2019; Bozdag, 2013) discuss the effects on news organizations by technological changes, arguing that algorithms take on the former gatekeeping responsibility of news organizations on “editorial decisions, serendipity and social relevance” (Gulla et al., 2021, p. 56), analyzing user behavior and targeting news stories to users inferred or known preferences and interests. Algorithms adapt news stories to readers' previous interests, failing to provide a diverse news environment and offering differing perspectives (Helberger, 2019). Thus, Gulla et al. (2021) argue, it remains contested whether the determination of newsworthiness should be assumed by algorithmic processes, given that this task constitutes a normative responsibility of journalists, providing users with qualitative information, challenging their perspective rather than merely satisfying immediate demands. Untransparent news recommendations might lead to doubt in news organizations, resulting in media being confronted with upholding their position in society as a “provider of fact-seeking

journalism and high-quality public debate” (Gulla et al., 2019, p. 66), affecting the “normative goals rooted in the democratic function of the news media” (Moller, 2022, p. 1459).

As the promotion of media diversity is widely acknowledged as a fundamental pillar of democratic resilience (Reid, 2024), the effective functioning of democracies relies on citizens’ exposure to a plurality of political perspectives (Flaxman et al., 2016). Consequently, it is imperative to expand the analytical scope to include how political institutions perceive the impact of algorithmic curation on informed citizenship (Smets et al. 2022). Given that political institutions depend on an informed population for meaningful democratic engagement, a comprehensive understanding of these perceptions is essential.

This leads to the formulation of *RQ2: How do political institutions perceive the influence of algorithmic curation on political knowledge formation for young citizens regarding the formation of filter bubbles?*

Algorithms and institutional visibility

Bodo (2019) argues that the technologies used for news personalization closely resemble those used for online advertising, creating a strong link between the two. As platforms employ algorithmic systems to customize both information and advertisements, they not only disrupt traditional news production processes but also directly compete with media organizations for audience attention (Bodo, 2019). This was more closely studied by Kreiss and McGregor (2019), highlighting the increasingly influential role of platforms as gatekeepers of political advertising. Ad delivery algorithms (e.g., on Facebook) on political advertising show that political campaigns increasingly assume the characteristics of digital advertising, preferentially exposing users to political advertisements aligned to the user’s believed preferences and demographics, leading to a limited unified public discourse (Ali et al., 2019; Carrella et al., 2025). This convergence underscores the broader political implications of personalization, where algorithms mediate not only news but also political messaging and campaign strategies, potentially limiting public visibility. Thus, a substantial body of research

provides important insights into the mechanisms and effects of algorithmic influence on political advertising, largely focusing on the technological and platform-driven dimensions (Ali et al., 2019; Bodo, 2019). Literature further highlights the effects of emotionalized content on engagement metrics (Brüggemann & Meyer, 2023), which are closely tied to the algorithmic amplification of highly interactive content. Social media platforms disproportionately reward emotionally charged and sensational content, often elevating hostile interactions and amplifying extreme voices (Bail, 2021).

This raises concern regarding institutional communication and how actors committed to providing non-polarizing, fact-based information achieve visibility in an environment where emotional salience functions as a primary driver for algorithmic reach. Although existing research has initiated to explore how users develop algorithmic skills, can curate algorithms to their benefit, and avoid potential harms, the institutional dimension of such strategies remains underexplored (Bucher, 2018; Hargittai, 2023). There is limited insight into how political institutions themselves interact with algorithmic systems and use them strategically, attempting to counteract limited exposure as well as seeking to communicate with a diverse audience, enabling citizen access to information.

To address this gap, the following research question is posed, focusing on an institutional approach: *RQ3: What strategies do political institutions employ to bridge emerging filter bubbles with their communication efforts?*

Institutional governance

Scholars highlight both the need for participatory governance frameworks for algorithmic and policy-driven content moderation in democratic contexts (Kreiss & McGregor, 2019). Algorithms, by filtering content and enhancing polarization, might contribute to the disintegration of the public sphere (Habermas, 2021). This tension underscores the necessity for governance models that seek to preserve and restore the public sphere's democratic

functions, supporting pluralistic discourse by embedding structural accountability into algorithmic processes (Brüggemann & Meyer, 2023).

Moreover, there is a considerable need to re-evaluate political influence on social media platform companies, making them more accountable and introducing policy changes aiming at increased transparency of platform logics and increased awareness of the interaction between them, policies, and affordances with external political forces (Gorwa, 2019; Hroch et al., 2024; Van Dijck, 2020). Platforms can be considered as fundamental political actors, shaping the digital public sphere through their control over online infrastructure. As they seek to decrease the participation of public institutions for their interests, scholars recommend increased attention to the institutional role in the process of negotiation with platforms on public value suggesting “governments at all levels, independent public institutions and nonprofits can and should be proactive in negotiating those values on behalf of citizens and consumers” (Van Dijck, 2020, p. 4).

In response, European (political) institutions have introduced two instruments for platform regulation, namely the DSA (Digital Services Act) and DMS (Digital Market Act), obligating platforms to inform users about “tools used for the purpose of content moderation, including algorithmic decision-making” (Hroch et al., 2024, p. 43). In addition, the EU Commission launched the European Centre for Algorithmic Transparency, aiming to analyze and evaluate program routines for increased algorithmic transparency.

Dogruel et al. (2022) point out that policy measures aimed at enhancing transparency and explainability of algorithmic systems have the potential to increase users’ awareness and understanding of algorithmic processes; however, there remains the question of how political institutions concretely support young citizens in Austria in navigating algorithmically curated information environments to foster diverse political knowledge. While regulatory frameworks focus on platform accountability, less is known about the specific institutional interventions designed to provide access to varied political perspectives and algorithmic literacy (Van Dijck,

2020). Existing research within the media literacy domain underscores that the comprehension of algorithmic mechanisms has emerged as a critical prerequisite for effective information consumption (Noguera-Vivo & Grandío-Pérez, 2025; Swart, 2021), signifying a growing need to educate individuals about facilitating access to political content and building algorithmic knowledge (Helberger et al., 2018; Noguera-Vivo & Grandío-Pérez, 2025).

Thus, this gap is addressed by the following research question: *RQ4: How do political institutions support young citizens in accessing information enabling diverse political knowledge formation?*

Method

This study adopts a two-fold research design, combining focus groups and expert interviews. Given the evolving nature of algorithmic systems and the absence of standardized measures, qualitative methods are particularly well-suited to capture the contextual and experiential dimensions of user understanding and behaviors (Klawitter & Hargittai, 2018), enabling a more nuanced understanding of algorithmic perception and engagement than quantitative analyses would currently allow (Dogruel et al., 2022). Guided by a systematic interview approach (Bogner et al., 2009), semi-structured protocols ensured thematic consistency while allowing flexibility to probe individual narratives (Lou, 2022). All sessions were held in German, audio-recorded, and transcribed non-verbatim for analysis.

The empirical component comprised three focus groups with Austrian residents and five semi-structured expert interviews. Experts represented three institutional domains: a non-partisan political institution (Austrian Parliament), two political parties (NEOS; opposition party), and two institutions engaged in media education.

Data collection

The focus group and interview protocols were designed to explore participants' subjective understanding and interpretation of algorithmically mediated online environments, without presuming technical knowledge (Hargittai et al., 2020). To avoid priming, the term

‘algorithm’ was deliberately avoided unless introduced by participants, following established methodological guidance (Hargittai et al., 2020), enabling participants to articulate their understanding in their terms (Swart, 2021). Similarly, no fixed definition of political information was provided; instead, the discussion was deliberately expanded to encompass any content participants perceived as relevant for the development of political knowledge (Swart, 2021). Open-ended questions further encouraged sharing of detailed personal experiences (Klawitter & Hargittai, 2018).

The focus group questionnaire¹ drew conceptually on Dogruel et al.’s (2022) framework of algorithmic literacy, encompassing four cognitive and behavioral dimensions: (1) awareness and knowledge, (2) critical evaluation, (3) coping strategies, and (4) creation and design skills (p. 118). Consistent with Swart’s (2021) call for an inductive approach, this framework served merely as a foundational guideline. Given the inherent opacity and evolving nature of algorithmic systems, standardized benchmarks for user literacy remain untenable, necessitating a context-sensitive, exploratory approach.

The interview questionnaires² centered on institutional strategies for promoting algorithmic literacy among youth. This semi-structured interview design was informed by relevant literature, with consideration of the work of Misoch (2019). The initial section of the interviews, paralleling the focus groups, was structured around the items by Dogruel et al. (2022), incorporating additional questions addressing perceived implications of algorithmic curation. Further, questions regarding institutional communication strategies for addressing algorithmic influence, as well as initiatives in education and policy development, were included. Given the exploratory nature, parts of the protocol moved beyond established literature to capture insights into institutional communication, education, and policy practices. To ensure contextual relevance, three distinct versions of the interview protocols were

¹ Focus group questionnaire is enclosed in the appendix

² Interview questionnaires are enclosed in the appendix

developed, adapted to each institution's specific mandate and expertise, reflecting the divergent roles and responsibilities across institutional types (Misoch, 2019).

Participants and procedure

A total of 14 participants (aged 18 to 25) were recruited for the focus groups using convenience and snowball sampling. To incentivize participation, a raffle for a €25 voucher was conducted. Sessions lasted between 38 and 53 minutes. The sample³ included seven female and seven male participants ($M_{Age} = 23.79$; $SD_{Age} = 1.37$). While individual groups were designed for internal homogeneity to foster open dialogue, the overall sample aimed for heterogeneity to ensure diverse perspectives. The focus groups were conducted in person at the university. After providing informed consent, participants completed a short questionnaire on demographics, political interest, and media use (Prior & Bougher, 2018). Discussions followed a semi-structured protocol, with follow-up questions and prompts used as needed to elicit deeper insights. Participants were debriefed following the conclusion of each focus group session to ensure clarity and address remaining questions.

Five in-depth semi-structured expert interviews were conducted, lasting between 37 and 57 minutes. Participants were recruited via email through public contact details or institutional referrals. To ensure a diverse set of participants, the selection aimed to include two comparable institutions to allow for direct comparison, alongside three institutionally distinct actors to enable inter-institutional contrasts. One planned interview could not be conducted due to scheduling constraints. Interviewees held senior roles in communication, digital strategy, education, or media literacy, ensuring relevant institutional expertise. For reasons of confidentiality, most institutional affiliations and expert identities have been anonymized upon request, except for the Austrian Parliament and NEOS⁴. Following informed consent,

³ A table with demographic details is enclosed in the appendix (Table 1)

⁴ A table of institutional codes is enclosed in the appendix (Table 2)

interviews were conducted in person or, if requested, via Zoom, following the pre-designed interview protocol, allowing for follow-up questions to deepen insights.

Ethical considerations

This study adheres to the standards of the EU General Data Protection Regulation (GDPR) and the University of Vienna's guidelines. Consistent with established principles for qualitative research, careful consideration was given to ensuring informed consent, safeguarding participants' privacy and confidentiality, maintaining researcher reflexivity, and minimizing any potential risks or harm to participation (Knott et al., 2022). Participants were informed about withdrawal rights, anonymization, data protection and the intended data use (Knott et al., 2022; Obelenè, 2009). Data were securely stored, with audio recordings deleted post-transcription.

Data analysis

Both focus groups and expert interviews were transcribed in German using AI software (Turboscribe), subsequently anonymized, and subjected to coding in MAXQDA. A structural coding scheme guided the focus group analysis. The initial codebook was developed deductively, drawing on predefined codes by items from the AMCA scale (Zarouali et al., 2021) and theory-driven dimensions by Dogruel et al. (2022), Festic et al. (2021), and Swart (2021), organized into cognitive, affective, and behavioral categories. Inductive codes were added throughout the process to capture emergent themes and concepts, with transcripts coded line-by-line using descriptive coding.

Expert interviews were analyzed inductively through line-by-line open coding, identifying emergent themes while remaining close to the data. Codes were developed organically without predefined categories. Constant comparison was employed to identify similarities and contrasts across responses.

Both focus groups and the expert interviews underwent thematic analysis (Braun & Clarke, 2006). Following initial coding, segments were reviewed and synthesized into broader

themes, allowing for the identification of overarching patterns and cross-thematic relationships. The codes and categories were examined to extract key themes pertinent to the research questions (Hargittai, 2023). Codebooks⁵ were developed to ensure a transparent coding scheme.

In a final step, findings were abstracted and contrasted with relevant theoretical frameworks. Illustrative quotes were selected and translated into English. Although calculating intercoder reliability can be valuable even in qualitative research, this was not feasible due to the limited resources of this study (O'Connor & Joffe, 2020). Nonetheless, to enhance coding validity, the coding scheme was thoroughly reviewed and refined through multiple reflexive sessions, during which inconsistencies were addressed and resolved.

Results

Focus groups

Participants primarily used social media for networking and entertainment, but acknowledged its relevance in accessing news and political information. Instagram emerged as the main platform for staying informed, valued for its accessible, rapid updates. Other platforms included X (targeted research), TikTok (entertainment), YouTube (in-depth content), Facebook (incidental exposure), and WhatsApp (shared statements).

While political content was regularly encountered, it was rarely sought out intentionally, typically appearing through social connections or following news accounts (Swart, 2021). Exposure automatically intensified during major political events, with participants noting additional active engagement, such as deliberate searches and consultation of alternative sources. Still, political engagement largely remained passive, limited to consumption, occasional sharing, or offline discussions. Given that all participants used Instagram, most insights on algorithmic curation centered on this platform.

⁵ The focus group and interview codebooks are enclosed in the appendix

In line with Swart (2021), the following part is structured along cognitive, affective, and behavioral dimensions, addressing RQ1, noting that, in practice, these dimensions often overlap and cannot be distinctly separated.

Cognitive dimension. The cognitive dimension encompasses users' conceptual understanding of algorithmic curation, awareness of their functions, and recognition of algorithmic cues (Swart, 2021).

Across all focus groups, participants exhibited a general, experience-based familiarity with algorithms, often referencing the term in early discussion. They demonstrated a user-centered understanding of algorithmic functioning, recognizing how personal actions, e.g., following, liking, sharing, or extended viewing, directly influenced prioritization in their feeds, resulting in predominantly receiving content from similar sources:

“I do notice, when I forward certain content within Instagram, that I then get more of this kind of content.” (FG1, Speaker 2, Line 102)

Reflection on algorithmic operations was often triggered by unexpected outputs, such as platform updates or curation errors, thereby revealing the underlying mechanisms:

“When Instagram has an update [...] I notice it because it's not my own preferences at all anymore and the posts are no longer tailored to me.” (FG3, Speaker 3, Line 80)

Perceptions of algorithmic behavior varied across platforms. YouTube was noted for presenting broader political diversity, particularly during elections, while TikTok was described as highly sensitive to minimal interaction, responding with rapid and aggressive content saturation. Instagram was perceived as comparatively less reactive and more homogeneous,

reinforcing like-minded perspectives. X was associated with algorithmic spirals into extreme content, including conspiracy and far-right content. Facebook and WhatsApp were noted to occasionally surface oppositional content, shared by user contacts.

Interestingly, one participant articulated a folk theory suggesting algorithmic surveillance via spoken conversation, recounting instances where verbal mentions of products seemingly triggered related content in a friend's feed. Similarly, uttering unrelated terms, such as 'washing machine', was believed to disrupt its personalization logic.

Affective dimension. The affective dimension concerns the sensory responses elicited by algorithmic encounters, offering insights into how algorithms are felt rather than understood. As Swart (2021) notes, such affective responses can prompt reflection and contribute to users' broader comprehension of algorithmic systems.

Personal reactions and evaluations. Participants articulated a nuanced understanding of algorithmic curation, oscillating between utility and concern, particularly regarding its role in influencing political knowledge formation. On the one hand, algorithms were valued for streamlining access to certain information, filtering content to match personal interests, and mitigating informational overload:

"I think it's quite useful if you can look at the things that you liked yesterday and can look at them again today." (FG3, Speaker 4, Line 99)

The comforting role of algorithms, particularly during emotionally intense periods (i.e., COVID-19), was emphasized, enabling users to avoid distressing or oppositional content.

Algorithms were frequently perceived as neutral tools, with participants stating minimal negative personal impact. This perception was often grounded in a sense of algorithmic literacy and self-regulation, emphasizing individual responsibility in mitigating algorithmic influence, noting that social media is not regarded as the primary source of political information:

“I don’t think I miss out on vital information. [...] Social media is an important part of how I consume news, but it’s not the main factor.” (FG3, Speaker 4, Line 128)

Nonetheless, the majority associated algorithmic curation with reinforcement of existing preferences, expressing concern that constant exposure to like-minded content could contribute to a distorted perception of political reality. Participants emphasized the need for conscious awareness and deliberate effort to diversify one’s feed to access a broader range of perspectives. Several noted that unless users actively seek alternative sources, critical political information may be absent from their feeds, particularly if such topics fall outside their inferred interests. Moreover, it was noted that the quality of political content encountered also hinges on the credibility of followed accounts, while mainstream news outlets were seen as reliable, content from influencers or meme pages was often viewed as overly simplistic interpretations of complex issues:

“That probably depends on which account you follow. If it’s accounts of newspapers or quality media, I think it can work. [...] If you only follow certain bloggers or meme pages, I think it can get difficult.” (FG3, Speaker 2, Line 135)

Perceived societal impact of algorithms. Participants expressed a strong sense of being situated within interest-based bubbles, often following accounts aligned with their demographics and perspectives, reinforcing a homogeneous information environment:

“The accounts I follow are mostly people around my age, probably also students. And then it’s hard to look beyond your own bubble, because you end up only engaging with opinions within your bubble.” (FG1, Speaker 4, Line 150)

Filter bubbles were frequently referenced to a growing societal division. Some emphasized the need to actively look beyond one's bubble and engage with divergent views to avoid blind spots and misperceptions of public consensus, noting the coexistence of isolated bubbles without interaction:

"You must actively counteract. [...] And that's where the lack of willingness [...] comes in, and that's why these bubbles just happen to exist." (FG2, Speaker 5, Line 256)

Participants stress that filter bubbles extend beyond digital spaces, manifesting in offline settings such as social circles. Urban-rural divides were commonly referenced, with several participants observing pronounced differences in political attitudes across geographic and familial contexts. One group remarked that political fragmentation becomes particularly evident offline, where the absence of a shared discursive foundation often leads to avoidance of political dialogue due to discomfort or perceived futility in achieving mutual understanding:

"When two bubbles meet, there is no shared context or consensus, making it extremely difficult to engage in meaningful discussions. In my experience, such conversations often break off, as they become uncomfortable for both parties." (FG1, Speaker 4, Line 194)

As social media enables users to selectively engage with like-minded content and avoid dissent, this contributes to a loss of dialogical culture and mutual understanding. Algorithms were perceived as tending to form binary political thinking, reinforcing the belief in a singularly

‘correct’ opinion, while marginalizing alternatives, noticing further argumentative competences, increasingly resorting to simplistic debates rather than substantiating their views:

"That's the mindset a lot of people have nowadays, that two opinions can't be right at the same time. [...] I think many have forgotten how to back up their opinion and to support it with arguments." (FG2, Speaker 2, Line 246)

Participants observed that algorithms tend to favor emotionally charged language and sensational content. This dynamic was seen to contribute to a gradual political radicalization, with clickbait and provocative framing amplifying polarizing narratives. One speaker acknowledged that parties like the FPÖ effectively exploited this logic early on, particularly through video-centric platforms (e.g., TikTok), gaining an algorithmic advantage that competing parties failed to counter. This was expanded to a structural tension between values of informed political discourse and the interaction-driven, commercial imperatives of algorithmic amplification, which often sideline factual content:

"Political parties use these algorithms to their advantage [...]. They won't change anything, because they make money from it. That's the whole point: to keep you on there as long as possible [...] so they'll only show you content that you like." (FG1, Speaker 2, Line 239)

Critical and normative reflection on algorithms. Participants closely linked educational attainment to algorithmic literacy, noting that individuals with lower levels of formal education exhibit limited awareness of algorithmic processes and may fail to recognize the significance of encountering diverse perspectives. This was attributed to structural deficiencies in media education and insufficient preparation for meaningful interaction.

Participants advocated for early, systematic integration of algorithmic literacy into school curricula, asserting that such competencies should be universally acquired:

"I think it should actually be part of the school curriculum, so that you're basically forced to engage with it and become aware of it." (FG1, Speaker 4, Line 233)

Beyond formal education, the importance of parental mediation was foregrounded, particularly as children encounter algorithmic systems from an early age. However, such guidance was considered limited due to a generational gap: current parents, not having grown up as digital natives, lack sufficient literacy themselves. Lastly, participants did not trace their algorithmic literacy to formal sources; instead, their knowledge appeared to emerge through personal experience and observation:

"I think that young people are already aware of this to a certain extent [...] since TikTok has taken this algorithm thing to the extreme, that everyone has a completely individual For You page [...]this has made people aware of it." (FG1, Speaker 3, Line 229)

Reflecting on the responsibility of social media platforms and political institutions, participants called for greater user insight into curation functioning, ensuring transparency and accountability. They simultaneously expressed skepticism regarding platforms' willingness for substantive changes, noting their business models are predicated on maximizing user engagement through emotionally resonant or ideologically affirming content. Accordingly, participants advocated stronger state regulation, including content labeling (e.g., for political advertising), comment monitoring, removal of hate speech, and legal provisions against disinformation.

Participants acknowledged structural challenges inherent in regulating transnational digital platforms through national policies. Political parties were viewed with skepticism in this domain, undermining their interest in shaping public discourse and maintaining electoral influence:

"One has to look at social media differently, because you can't expect it to serve as a foundation for constructive discussion, because it isn't. They are business models, and they must work." (FG1, Speaker 7, Line 201)

Behavioral dimension. Lastly, the behavioral dimension pertains to how users interact with and respond to algorithms (Swart, 2021). Participants demonstrated awareness of explicit curation strategies, allowing for user-directed curation of feed content.

Participants report strategically entering or avoiding informational bubbles by signaling interest (e.g., repeated views) or disinterest (e.g., rapid scrolling). In response to one-sided algorithmic feeds, they seek opposing viewpoints via alternative platforms with differing algorithmic logics or by accessing offline sources. One participant prefers retaining a curated Instagram feed while pursuing informational diversity elsewhere.

Some participants identified platform tools for managing algorithmic influence, including curating one's follower list, unfollowing, blocking, or deleting accounts, creating accounts to mitigate diverse exposure, and preventing deeper immersion into a particular direction. While features like marking content as 'not interesting' or inquiring 'why is this content shown' were noted, they were often underutilized.

Notably, participants frequently described their platform use as driven by comfort and entertainment. Despite awareness of algorithmic influence, many admitted to lacking the motivation to actively counteract it, favoring content aligned with their interests. Engagement

with opposing views is often intentionally avoided, with some explicitly rejecting such exposure during leisure time:

“I don’t want to get upset voluntarily. In my free time, I would rather listen to something else, I feel my time is a bit too valuable for that.” (FG2, Speaker 5, Line 140)

Expert interviews

The following results are structured according to the guiding research questions. As educational institutions do not engage in public communication, they were not considered for answering RQ3.

Perceived influence of algorithmic curation on political knowledge formation (RQ2).

Educational institutions. Algorithmic curation is problematized for shaping what information remains unseen (IVE1). With entertainment content dominating feeds, IVE1 argues that youth often miss political content entirely, stressing that it is unreasonable to expect political engagement from youth when relevant content is not algorithmically surfaced. If it appears, it is frequently emotionalized, simplified, and lacks journalistic quality:

“I believe the primary impact is that they don’t perceive these topics at all, because they aren’t even presented to them. And if they are, then it is in a highly emotionalized manner, not prepared in a journalistic way.” (IVE1, Line 94)

This may create a false sense of being informed, as individuals grow complacent, relying on simplified and self-confirming social media content rather than researching in-depth sources (e.g., party programs) (IVE2).

On filter bubbles, both speakers presented a nuanced view, claiming that while they are not inherently negative, their impact depends on age, context, awareness, and guidance:

“Filter bubbles are not necessarily a bad thing. [...] But it is important that young people can recognize and assess them.” (IVE1, Line 54)

Curated content is seen to be protective for young children, further suggesting that, equipped with awareness and skills to curate content and amplify meaningful themes, it becomes a valuable, empowering tool for youth. IVE1 noted that while some youth can demonstrate the capacity to navigate, others lack the skills or support to do so:

“Some young people are good at that. They can describe it well, they can present it clearly, and they can use the algorithm to have certain things shown to them. And others completely lack that kind of reflection and ability to make such an assessment. It really depends on the guidance they’ve had.” (IVE1, Line 59)

The ability to assess sources and understand algorithms largely depends on educational and social contexts, including parental involvement. IVE2 broadened the notion of vulnerability beyond young people, linking it rather to lower levels of educational attainment than age. Both interviewees (IVE1; IVE2) identified vulnerable groups, those with low media literacy, high emotional reactivity, or experiencing psychological distress or social exclusions, as particularly susceptible to harmful content:

“I do think that if you have vulnerabilities in your social environment, if you don’t have enough support from family or friends, then you’re definitely more susceptible to manipulation.” (IVE2, Line 138)

IVE1 stresses that political interest as a decisive factor driving engagement with political content, while IVE2 adds that it often stems from interest in specific topics rather than overall political interest.

Political parties. Whereas IVP1 considers the party's informative responsibility, but emphasizes its persuasive and value-driven messaging, IVP2 underscores a responsibility to inform beyond the scope of the party program. Noting that right-wing parties face fewer communicative constraints, IVP2 adheres to internal norms for factual messaging, limiting visibility but reflecting a long-term ethical commitment to its values.

Both speakers (IVP1; IVP2) note the need for audience-driven communication, necessitating relevance and resonance to achieve visibility. Parties state difficulties in attaining reach, particularly due to algorithms prioritizing emotional and sensational content:

"I think it's especially important in the digital sphere to consider what content is actually relevant, because nothing is punished as harshly online as irrelevance."
(IVP1, Line 47)

IVP2 further warns of a decline in factual discourse, as users increasingly conflate facts with opinions and prioritize emotional affirmation over evidence:

"I notice that it's becoming increasingly difficult to communicate with facts."
(IVP2, Line 103)

IVP1 states the party operates within a bubble, inherently formed by community-building and audience-aligned content. IVP2 considers bubbles useful for 'harmless' interest-based communication (e.g., BookTok), while underscoring their inherent risks as radicalization.

IVP2 observed that certain thematic domains appear to be pre-associated with ideological positions on TikTok, e.g., pro-EU content was unexpectedly disseminated to an FPÖ-aligned audience, eliciting hostile reactions.

IVP1 notes that while most people inhabit bubbles, the degree of awareness varies according to media literacy. IVP2 adds that academic elites are equally susceptible, as their bubbles might appear self-selected or legitimate:

“People always tend to assume that it’s people with a lower level of education. But I would counter that by saying there’s just as much of an academic filter bubble.”
(IVP2, Line 87)

IVP2 adds that algorithmic impact on information formation is contingent upon engagement, warning for passive media use, wherein individuals perceive themselves as informed without actively seeking information

The necessity of equipping youth with skills for political judgement is underscored, urging moving beyond habitual media use toward active engagement through dialogue, critical reading of party programs, and consultation of experts (IVP2). This is framed as integral to democracy education:

“All these ways of forming an opinion, [...] are not really taught directly in school, and that would be a part of democracy education: encouraging people more to form their own opinion.” (IVP2, Line 99)

Non-partisan political institution. IVI1 notes a shift from information scarcity ⁶ to attention scarcity⁷, stressing that the central challenge today is capturing and retaining public attention in fragmented audiences:

“The issue is not a lack of information, but rather a lack of attention. The key question is: how do we organize and direct attention toward our topics?” (IVI1, Line 10)

IVI1 identifies rising polarization on digital platforms as a central challenge for parliamentary communication: while democracy relies on mutual understanding, social media encourages pressure for clear group alignment and a loss of the “yes but” mindset essential for pluralistic dialogue:

“Communication far too often does not serve mutual understanding. That is, expressing something to be understood and to enter dialogue, but rather the opposite, namely, drawing boundaries and reaffirming one’s belonging to certain groups.” (IVI1, Line 58)

IVI1 asserts disagreement as the essence of democracy, reflecting the importance of upholding public trust in democratic institutions. The parliament serves as the space where societal differences are concentrated and made visible, reflecting that such must be articulated, debated, and resolved through discourse rather than avoided:

⁶ ‚Mangel an Information‘

⁷ ‚Mangel an Aufmerksamkeit‘

“A democracy without arguing is not a democracy. [...] There’s often this negative label that all the parliament does is argue. But that’s exactly what it’s about. That’s the purpose of a parliament: that these differences are addressed.” (IV11, Line 51)

IV11 notes that algorithmic restrictions and filter bubbles create isolated information spheres, hindering mutual understanding and reciprocal listening across societal groups, undermining the basic premise of democratic dialogue. Accordingly, filter bubbles not only constrain political debate but often prevent it altogether.

Ideally, journalism distinguishes facts and opinions; however, this boundary increasingly erodes, as opinions override factual consensus. According to IV11, this ‘freedom of facts’, wherein individuals selectively gather information to confirm their preexisting beliefs, is intensified within filter bubbles:

“The principle of ‘freedom of opinion’ is increasingly being extended into a kind of ‘freedom of facts’. The internet enables individuals, especially in filter bubbles, to form opinions and selectively search for ‘facts’ that support those opinions.” (IV11, Line 107)

Strategies to bridge algorithmic influence and filter bubbles (RQ3).

Political parties. IVP1 explains that the party navigates algorithmic constraints by choosing engaging topics to enhance reach, leveraging TikTok stitches, monitoring discourse through social listening, and employing creative hooks. High-relevance and polarizing topics (e.g., right-wing extremism) draw broader engagement, often resonating across party lines. Consequently, the party aims to produce timely and relevant content, using sharp and pointed language to maximize user interaction and algorithmic visibility, noting, however, that paid advertising remains the most reliable method to extend reach beyond existing filter bubbles.

Rather than pursuing a one-size-fits-all approach, the party adapts content to align with platform-specific trends and audience groups, including the use of short, informative videos designed to provide accessible political education (IVP2). IVP2 adds the necessity to continuously test and refine its communication. Social media intensely demands rapid responsiveness, high adaptability, and ongoing strategic learning:

“It’s a constant process of self-checking, just because something worked yesterday doesn’t mean [...] it will work the same way today. It’s a constant process.” (IVP2, Line 21)

The effectiveness depends, however, less on format than on topic relevance. Certain topics (e.g., pensions) generate significantly lower engagement than emotionally charged content (e.g., parliamentary speeches) (IVP1; IVP2):

“If there are topics that nobody wants to consume, then it becomes difficult to inform people about this content [...] because then we’re back to the problem of not reaching anyone.” (IVP1, Line 48)

Non-partisan political institution. The parliament employs a multi-platform strategy to effectively reach citizens ‘where they are’, adapting to platform dynamics, emphasizing brevity, engagement, and emotional appeal, to uphold visibility. Live streams of sessions, particularly on TikTok, have proven highly effective in stimulating public interest and participation. However, most effective strategies, such as negative emotionalization, conflict with the institution’s identity and normative mandate for neutrality, and increasingly rely on paid content:

“In addition, [...] you sometimes only make it to the top if you pay.” (IV1, Line 33)

Supporting citizens (RQ4).

Educational institutions. IVE1 notes initiatives for raising algorithmic awareness, such as educational materials and in-class workshops, however, relying heavily on reinforcement by teachers and parents. While the subject ‘Digitale Grundbildung’⁸ is considered a key step towards improving media literacy, the speaker expresses concerns that it often prioritizes technical competencies over critical media analysis. IVE2 highlights the ‘Grundsatzlerlass Medienbildung’⁹, which mandates the integration of media literacy across all subjects and grade levels, representing a comprehensive policy approach, but emphasizes its dependence on individual teachers’ awareness, competence, and willingness, resulting in significant variation in delivery and impact across schools.

Political parties. Both parties advocate for platform regulation on the political level. IVP1 mentions no additional communication efforts in supporting access to information, while IVP2 implements recurring formats on social media, e.g., live sessions with well-known politicians, short videos (e.g., Polit-Espresso), and experimentation with (video-) podcasts. It prioritizes low-threshold, inclusive access to political information by actively minimizing barriers to engagement, e.g., optimizing web content readability, incorporating gender-sensitive language compatible with text-to-speech technologies, ensuring easy understanding and inclusivity across diverse user needs:

“We must by no means get to a point where barriers to accessing information are put in place.” (IVP2, Line 146)

⁸ ,Digital education‘

⁹ ,Directive on media education‘

The party (IVP2) maintains ongoing dialogue with schools and universities to promote media literacy, actively gathering insights into current practices, challenges, and areas for improvement, using this feedback to inform policy development and support effective implementation.

Non-partisan political institutions. IVI1 emphasizes the Parliament's non-partisan role, dedicated to explaining democratic processes, procedural rules, and institutional frameworks:

"That is democracy education and providing explanations of how parliament works." (IVI1, Line 18)

Its main initiative, ensuring equitable access to political information, is structured around three objectives: transparency, information, and representation, including making parliamentary data publicly accessible by collaborating with, e.g., the University of Vienna.

Regulation and policy frameworks. Additionally, participants reflected the broader institutional responsibility for regulating algorithmic systems and promoting algorithmic literacy, identifying three domains, namely formal education, platform responsibility, and EU regulations.

Both parties stress integrating algorithmic literacy into education through the establishment of a dedicated subject, covering critical engagement, disinformation, and protective strategies. IVP2 advocates that trained teachers should instruct digital literacy, further calling for accessible media literacy training for adults:

"Digital competence is something that should be taught in schools, and there should be dedicated teachers for it. [...] We are also the only party that calls for this in adult education [...]. There should be low-threshold, ideally free, opportunities for continuing education in digital competence." (IVP2, Line 166)

Social media platforms are held responsible for algorithmic transparency and regulation, given their direct control over algorithmic design and functionality, however, acknowledging profit-driven logics and rejection of self-regulation (IVE2, IVP1):

“Primarily, platforms have the responsibility to run their companies and maximize their profits [...]. I would place little trust in the platforms to solve this problem themselves.” (IVP1, Line 163)

Consistent with all interviewees, platform regulation must occur at the EU level, given the extensive power of platforms:

“That is a question that can no longer be solved at the national level. You really need pressure on social networks at another level, for us, that means the EU.” (IVE1, Line 145)

IVE1 particularly emphasizes the need for robust regulatory enforcement, advocating for the Digital Services Act (DSA) as a crucial instrument.

Discussion

This study explored how political institutions address challenges posed by algorithmic curation on the political knowledge formation of young citizenship. By examining both user and institutional perspectives, it sought to provide insight into how young citizens perceive algorithmic influence, institutional responses, and strategies employed to ensure access to diverse political information.

Discussion focus groups

Participants demonstrated awareness of algorithmic functioning, often accurately describing how content is curated. Reflection emerged in moments when algorithmic outputs deviated from expectations, aligning with the concept of ‘expectancy violations’ (Hargittai et al., 2020; Rader & Gray, 2015), prompting increased awareness of the underlying curational mechanisms of an individual’s feed (Hautea & Rader, 2020).

Participants’ understanding of algorithmic functioning stemmed mainly from personal experience, rather than formal instruction, consistent with findings by Cotter and Reisdorf (2020). In line with Swart’s findings (2021), participants articulated folk theories, reflecting user-driven sense-making, contributing to the formation of ‘algorithmic imaginaries’ (Bucher, 2018), i.e., cognitive frameworks through which individuals conceptualize the functions and implications of algorithms. Participants view algorithmic curation as a useful information tool but express concerns about reduced exposure control (Groot Kormelink & Costera Meijer, 2014; Rader & Gray, 2015).

Findings reveal that nearly all participants referenced living within bubbles, online and offline. This observation offers a valuable practical perspective to the ongoing academic debate surrounding the contested existence of filter bubbles. A loss of common ground for political discourse due to filter bubbles was mentioned, supporting research (e.g., Kwak et al., 2005; Scheufele et al., 2006), finding that heterogeneity of networks and discussion positively correlates with political participation. This is particularly important, as the more citizens talk about politics, the more they become politically informed and take democratic responsibility (Scheufele et al., 2004).

Experiences of increased emotional debates and reduced dialogical engagement were shared, noting a tendency toward binary thinking and diminished tolerance for nuance in political conversations, whereas this can easily be avoided in digital spaces. Similarly, Brüggemann and Meyer (2023) contend that even in the case of cross-partisan encounters, users

often respond to dissonant frames with hostility or dismissal, rather than promoting dialogue. This further aligns with findings on negative out-group construction (Yu et al., 2021). Further findings align with the observation of Van Aelst et al. (2017) of a rise in sensationalist and superficial political journalism, underscoring the need for more fact-based, evidence-driven information to counteract increasing radicalization.

Contrasting Swart's findings (2021), participants perceived meaningful influence over algorithms, describing active strategies (Haim et al, 2018) to shape their feeds, reflecting a reciprocal relationship of user behavior and algorithmic output (Monzer et al., 2020). Platform-provided tools for customization (i.e., content preferences or feed customization settings) were rarely used, suggesting a gap between users' perceived and actual control of functionalities available to them. Additionally, participants acknowledged intentional avoidance of curation, echoing Swart's (2021) findings of reducing cognitively demanding content. As argued in literature (e.g., Hart et al., 2009), selective exposure to consonant information may shape political knowledge more than mere avoidance of dissonant information, underscoring the need to assess the impact of this conceptualization on informational diversity.

Responsibility for addressing algorithmic literacy was seen as multifaceted, requiring a coordinated approach between schools, parents, the state, and platforms.

Discussion interviews

Findings reveal a nuanced understanding of political institutions on how algorithmic curation shapes knowledge formation for young citizens. Institutions expressed concern that algorithms prevent encountering political content altogether. They highlight the challenge of being heard within attention-scarce, fragmented publics, as algorithmic systems increasingly function as gatekeepers (Gulla et al., 2021).

The reliance on interactive content, mainly emotional and sensationalist, and the emergence of a 'freedom of facts', contribute to eroding factual public discourse (IVP2; IVI1) and to a 'false sense' of being politically well-informed (IVE2). This aligns with concerns

raised by the EU High-Level Group on Media Freedom and Pluralism (2013) regarding the detrimental effects of personalized filtering on democratic deliberation.

Consistent with academic debates, institutions expressed divergent perspectives on filter bubbles. Parties noted their strategic purposes, particularly for community building and targeted communication. A salient observation needing to be addressed emerged regarding the pre-association of thematic bubbles to specific ideologies, complicating efforts to communicate information on these topics in a politically neutral manner.

Users can only benefit from algorithmic curation if they possess sufficient awareness and skills to actively manage their content exposure (Eslami et al., 2015; Rader & Gray, 2015; IVE1; IVE2; IVP2). Critical engagement with algorithms varies, largely contingent upon individuals' educational and social contexts (IVE1; IVE2), aligning with previous observations that socio-economic resources shape information acquisition through socialization and stratification, enhancing opportunities to encounter, process, and retain relevant information (Cotter, 2019; Cotter & Reisdorf, 2020). Findings suggest that algorithmic literacy is not exclusively contingent on formal education. In contrast, the capacity for critical engagement with algorithmically curated content and seeking out diverse discussion networks largely depends on individual motivation and sustained interest (Dubois & Blank, 2018; Kwark et al., 2005; IVE1; IVE2). This stresses the need to move beyond individual factors when explaining political knowledge formation (Van Aelst et al., 2017).

Social media increasingly facilitates group identity reinforcement by adopting binary alignment and rejecting complexity, contrasting democracy's need for disagreement and open discourse. Algorithmic constraints hinder mutual understanding and a shared communicative foundation, thereby obstructing meaningful discourse (IVI1).

The study reveals insight into a range of strategies to enhance content visibility, including using platform-specific features, creative hooks, and monitoring discourse through social listening (IVP1; IVP2; IVI1). Communication is adapted continuously through ongoing

trial and error to respond to algorithmic shifts (IVP2), tailoring content across platforms and audience, prioritizing topic relevance over format (IV4, IV5). Leveraging platform trends and user attention spans were further highlighted as central in reaching target audiences, while institutional actors refrain from the use of negative emotionalization or polarizing framing (IVP2; IVI1). Lastly, paid advertising is strategically used to reach beyond immediate bubbles, highlighting concerns about limited understanding of private regulation in digital political ads and the need for further research (Kreiss and McGregor, 2019; Papa & Photiadis, 2021).

Both literature and interview findings indicate a strong association between emotional language and algorithmic amplification (Brüggemann & Meyer, 2023). Studies further suggest a link between strongly partisan content and increased amplification (Huszár et al., 2022), which aligns with interviewees' observations that algorithms favor right-wing party communication. This suggests a possible connection between these dynamics, yet this relationship is currently underexplored.

Findings underscore institutional efforts to enhance algorithmic and media literacy, supporting calls for improved algorithmic understanding by Noguera-Vivo & Grandío-Pérez (2024) and Swart (2021). These include school subject 'Digitale Grundbildung', workshops and educational materials, as well as the implementation of the 'Grundsatzrlass Medienbildung' (IVE1; IVE2). While political parties primarily operate at the policy level, the use of accessible informational formats and explanation frameworks was mentioned (IVP2; IVI1). Institutional actors (IVP2; IVI1) partner with educational institutions, both to make political data accessible and to incorporate educational feedback into ongoing policy development.

Regarding algorithmic regulation, there was strong support for integrating algorithmic literacy into curricula (IVP1; IVP2), with further calls for adult educational programs. Platforms are expected to increase transparency, though this is often deemed inadequate due to platform economic logics (IVE1; IVP2; Boulianne & Hoffmann, 2024; Pasquale, 2015). Consistent with

the notion of Hroch et al. (2024) and Van Dijck (2020), interviewees agree that regulation must be addressed at the EU level.

Limitations and future research

This study is subject to several limitations that should be acknowledged:

First, due to the qualitative design, the findings are not intended to be generalizable but rather provide in-depth, context-specific insights. Further, due to the nature of this study, inter-coder reliability could not be established, limiting the reliability and replicability of the findings.

The sample size was limited (Focus groups, $N = 15$; interviews, $N = 5$), comprising participants skewing older and having relatively homogeneous educational backgrounds. Further, most participants reported a high level of political interest. Similarly, expert interviews lacked ideological diversity and one comparable institution, potentially narrowing the range of perspectives and political approaches. Given that the study used a non-probability sampling, it would benefit from a different sampling approach. Prior research suggests (e.g., Hargittai et al., 2020), focus group dynamics may inhibit individual expression, as participants might conform or self-censor due to the presence of perceived expertise of others. As a cross-sectional snapshot, the study cannot account for temporal developments in participants' algorithmic understanding, which is particularly relevant in a rapidly evolving digital media landscape.

The findings primarily focused on Instagram, though participants noted significant platform-specific differences, providing a possible pathway for future research. The concept of 'diverse exposure' further warrants further clarification, as its normative value remains underdefined (Helberger et al., 2018). As an initial mapping of institutional perceptions across three types, this study offers a foundation for deeper analysis of distinct institutional affordances. Future research could further explore how individuals engage with and interpret institution-specific content, particularly in relation to political knowledge formation.

Conceptual implications

This study offers a substantive contribution to the evolving discourse on algorithmic literacy by reframing it as a form of situated cognition, emerging not merely through formal education but everyday encounters. Findings demonstrate that algorithmic awareness is dialogically constructed through algorithmic imaginaries, underscoring users' interpretative frameworks in navigating algorithms, advocating for a more praxis-oriented understanding.

The study adds to debates on algorithmic awareness by illustrating that while user awareness of algorithmic curation is relatively high, its operationalization is contingent upon individual motivation to actively curate content. This foregrounds the need to move beyond static notions of awareness and interrogate the socio-psychological and contextual factors that drive or inhibit engagement, essential for advancing effective approaches to algorithmic literacy.

Challenging assumptions of algorithmic passivity, participants articulated ambivalent agency, demonstrating adaptive strategies curating their feeds and concern about unseen content. This resonates notions of algorithmic ambivalence and advances conceptualizations of youth citizenship as both algorithmically conditioned and strategically enacted.

Concerns regarding the fragmentation of the digital public sphere are foregrounded, standing in tension with the ethos of democratic discourse. By reinforcing ingroup validation and attenuating epistemic openness, algorithmic curation contributes to the limitation of dialogic engagement, undermining the communicative infrastructure essential for democratic pluralism.

Practical implications

The study advances discussion on institutional communication in algorithmic environments by emphasizing reach as a normative precondition for civic information provision. Rather than relying on emotional and polarizing content, findings call for a deeper institutional understanding of algorithmic amplification logics to develop strategies that align

with democratic values while remaining attuned to platform dynamics, advocating for recalibration of institutional praxis. Simultaneously, democratic institutions must reclaim discursive space by fostering inclusive, deliberative digital infrastructures that support pluralism.

Beyond formal education, there exists a pronounced consensus regarding the imperative for regulatory frameworks, particularly at the supranational level. The DSA is referenced as a critical instrument for enhancing transparency. This study supports calls for governance that transcends reactive content moderation and embeds structural accountability into the algorithmic processes of public communication platforms.

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Appendix

Table 1. Demographics of focus groups

Variable	N=14
Gender	
Female	7
Male	7
Age (years)	
21	1
22	2
23	2
24	3
25	6
Educational level	
High school diploma	4
Bachelor's degree	9
Master's degree	1
Political news consumption in social media	
Several times a day	10
Daily	4
Sometimes	0
Rarely	0
Never	0
Political interest	
Extremely interested	6
Very interested	8
Moderately interest	0
Slightly interested	0
Not at all interested	0

Note. The table illustrates demographics and information about levels of political interest and news consumption

Table 2. Focus group and interview IDs

Focus groups	
FG1	Focus group 1
FG2	Focus group 2
FG3	Focus group 3
IV Type 1 - Non-partisan political institution	
IVI1	Parlamentsdirektion Österreich
IV Type 2 – Political party	
IVP1	Oppositional party
IVP2	NEOS
IV Type 3 – Educational institution	
IVE1	Pedagogical education
IVE2	Media education

Note. The table provides institutional abbreviations for ease of reference

Table 3. AI disclosure

Source	Function	Used in chapters
GPT-4.0 (AI)	Wording check (ensuring clarity, academic tone and correct grammar)	Full study
Grammarly	Wording check (grammar)	Full study
DeepL Translate DeepL Write	Translation of transcripts for citations & abstract, wording check (ensuring clarity)	Full study
Turboscribe	Transcription	Method Results

Questionnaire focus groups

Fokusgruppe zum Thema ‘Algorithmische Kuration und Filterblasen‘

Fragebogen:

Vielen Dank, dass ihr heute hier seid und euch die Zeit nehmt, an dieser Fokusgruppe teilzunehmen.

Ziel der heutigen Runde ist es, eure Meinungen, Erfahrungen und Einschätzungen zu hören. Es gibt dabei keine richtigen oder falschen Antworten – im Mittelpunkt steht, was ihr denkt, erlebt habt oder persönlich wichtig findet.

Ihr müsst euch auch nicht auf eine bestimmte Meinung festlegen – ich möchte einfach verschiedene Perspektiven sammeln. Ich werde das Gespräch aufzeichnen, um euch voll und ganz zuhören zu können und später alles in Ruhe auszuwerten. Alles, was gesagt wird, wird selbstverständlich vertraulich behandelt und anonym ausgewertet. Wenn ihr zwischendurch Fragen habt oder etwas unklar ist, könnt ihr mich natürlich jederzeit unterbrechen. Außerdem könnt ihr jederzeit, ohne Angabe von Gründen, die Fokusgruppe verlassen.

Gibt es noch Fragen, bevor wir beginnen? Dann starte ich nun die Aufnahme, und wir können starten.

Informationsverhalten zu politischen Themen in Sozialen Medien:

In dieser Fokusgruppe geht es grundsätzlich darum, wie ihr euch in sozialen Medien über politische Themen informiert und wie ihr euch dazu eine Meinung bildet. Starten wir mit der ersten Frage, ganz allgemein:

- Aus welchen Gründen nützt ihr hauptsächlich soziale Medien?
 - > (Optional) Wie oft stoßt ihr dabei auf politische Inhalte?
- Verwendet ihr SM aktiv, um euch über politische Themen zu informieren oder werden euch automatisch politische Themen angezeigt? Gibt es jemanden der keine politischen Informationen über SM konsumiert?
 - > Welche Art von politischen Informationen nehmt ihr wahr – sind es spezifische Ereignisse oder eher allgemeine politische Themen?
 - > Wie aktiv seid ihr in sozialen Medien, wenn es um politische oder gesellschaftliche Themen geht? Konsumiert ihr eher Inhalte oder teilt ihr auch eure eigenen Meinungen?
- Unterscheidet ihr zwischen verschiedenen Plattformen, wenn es um den Konsum politischer Informationen geht? Falls ja, warum?

- > (Optional) Welche SM-Plattformen nützt ihr am häufigsten?
- > Von welchen Accounts bezieht ihr meistens eure Informationen?
(Nachrichten/Regierungs- oder Parteikonten/Unabhängige Institutionen)
- > Wie hilfreich findet ihr Inhalte dieser Accounts?

Wissensbildung & Algorithmische Kuration:

Die folgenden Fragen sind jeweils im politischen Kontext zu verstehen – also in Bezug darauf, wie du dir eine Meinung bildest oder dich über aktuelle Geschehnisse und allgemeine politische Themen informierst.

- Wenn ihr euch über politische Themen informiert und euch eine eigene Meinung bilden wollt – worauf achtet ihr dabei besonders?
 - > (Optional) Wie wichtig ist es euch generell, unterschiedliche Meinungen und Blickwinkel einzubeziehen?
 - > Ist es euch wichtig, Inhalte von verschiedenen Accounts zu sehen – vielleicht auch solche mit unterschiedlichen politischen Perspektiven?
 - > Nutzt ihr dafür auch andere Medien – zum Beispiel Zeitungen, Podcasts oder Fernsehnachrichten?
 - > Wie entscheidet ihr, welches Medium ihr für bestimmte Nachrichten nutzt? Gibt es da Unterschiede je nach Art der Information?
- Wenn wir jetzt wieder zu SM zurückkommen: Habt ihr das Gefühl, dass ihr hauptsächlich Inhalte seht, die euren bestehenden Meinungen entsprechen?
- Inwieweit habt ihr gemerkt, wenn ihr etwas liked oder bestimmten Personen folgt, euch ähnliche Beiträge angezeigt werden?
 - > Wie fühlt es sich für euch an, wenn ihr merkt, dass eure Feeds personalisiert sind? Inwieweit findet ihr das eher praktisch oder stört euch das?
 - > (Optional) Wie bewusst nehmt ihr wahr, dass Algorithmen beeinflussen, welche politischen Inhalte euch auf SM angezeigt werden?
- Glaubt ihr, dass die Personalisierung bzw. algorithmische Kuration von Inhalten eher hilfreich oder problematisch für eure politische Meinungsbildung ist?

- > Denkt ihr, dass euch durch diese Personalisierung wichtige Informationen für eure Meinungsbildung entgehen könnten? Warum oder warum nicht?
- > Glaubt ihr, dass Algorithmen eure politische Meinung sogar unbewusst beeinflussen? Warum oder warum nicht?

Fragen zum Bewusstsein für Filterblasen:

- Habt ihr schon einmal von Filterblasen gehört? Und glaubt ihr, dass Filterblasen häufig vorkommen?

(Optional) Durch algorithmische Kuration in SM können Filterblasen entstehen, d.h.

Nutzenden werden ähnliche Inhalte angezeigt, die ihnen zuvor gefallen haben. Filterblasen können zu politischer Polarisierung und Gruppenhomogenität beitragen oder den Zugang zu unterschiedlichen Standpunkten einschränken. Infolgedessen kann es für Bürger*innen schwierig sein, fundierte Entscheidungen zu treffen, da es an konträren Informationen und alternativen Quellen mangelt.

- Fühlt ihr euch persönlich von Filterblasen betroffen? Könnt ihr von euren Erfahrungen erzählen? (Das muss nicht unbedingt nur auf den politischen Kontext zutreffen)
 - o Wenn ja, inwieweit? Wenn nein, wieso?
- Inwieweit glaubt ihr, dass Filterblasen im Allgemeinen ein Problem in Hinblick auf einen vielfältigen politischen Diskurs darstellen können?

Fragen zur Umgangsweise mit Algorithmen und Filterblasen:

- Habt ihr euch schon einmal bewusst aus einer „Filterblase“ herausbewegt, um andere Perspektiven zu sehen? Falls ja, wie?
- Gibt es Strategien, die ihr bewusst nutzt, um eure Social-Media-Feeds vielfältiger zu gestalten?
- Könnt ihr euch diese Strategien vorstellen? - Browserverlauf löschen, Inkognito-Funktion nutzen, viele verschiedene Beiträge anklicken und like, um Vielfalt zu erzwingen, Explore-Button nutzen, Freunde/Seiten abonnieren
 - > Welche Strategien oder Tools nutzt ihr bereits davon?
 - > Inwieweit findet ihr sie sinnvoll?

Ausblick:

- Was glaubt ihr: Sind junge Menschen sich der Existenz von Algorithmen und potentiellen Filterblasen und deren Auswirkungen ausreichend bewusst? Falls nicht, woran könnte das liegen?
- Was könnte euch helfen, euch bewusster und vielfältiger über Politik auf SM zu informieren?
- Was sollten politische Institutionen/Parteien/Politiker*innen eurer Meinung nach tun, um sicherzustellen, dass die Menschen genaue und vielfältige politische Informationen erhalten?
- Sollte in der Schule oder an Universitäten oder Medien mehr über algorithmische Kuration und Filterblasen aufgeklärt werden? Warum oder warum nicht?
- Welche Änderungen würdet ihr euch bei der Darstellung politischer Informationen in SM wünschen?

Questionnaire interview (Non-partisan political institution)

Einführungstext			
Vielen Dank, dass Sie sich heute die Zeit genommen haben, mit mir zu sprechen. Ich untersuche, wie Institutionen den Einfluss von algorithmischer Kuration wahrnehmen, um das Bedürfnis zu verstehen, die Problematik der daraus entstehende Filterblasen zu thematisieren und Bewusstsein dafür zu schaffen. Des weiteren möchte ich analysieren, wie Institutionen ihre Kommunikationsmaßnahmen anpassen, um Filterblase zu überbrücken und Bürger*innen zu erreichen. Wichtig ist: Sie sind als Expert*in, also als Person, die in der Branche tätig ist, eingeladen, nicht als Repräsentant*in Ihrer Institution. Sie sind natürlich trotzdem herzlich eingeladen, Eindrücke aus Ihrer Institution zu schildern, diese werden dann später anonymisiert. Ich werde das Interview aufzeichnen, um Ihnen voll und ganz zuhören zu können und später alles in Ruhe auszuwerten. Selbstverständlich werden die Aufzeichnungen nur innerhalb unserer Forschung genutzt und pseudonymisiert, um Ihre Privatsphäre zu schützen. Haben Sie noch Fragen, bevor wir mit dem Interview beginnen? Dann starte ich nun die Aufnahme, und wir können mit der ersten Frage beginnen...			
Themenblock	Leitfrage Erzählaufforderung	Checkliste für zentrale Stichpunkte	Mögliche Nachfragen / Steuerungsfragen
Einstiegsfrage Allgemeine institutionelle Kommunikation (Einschätzung)	Können Sie einen Einblick geben, wie die online Kommunikation, bezogen auf SM, Ihrer Institution aussieht, welche Plattformen verwenden Sie für welche Inhalte, wen versuchen Sie damit zu erreichen?	Kommunikationsstrategie Plattformen Spezifische Inhalte & Formate Zielgruppen	Können Sie die Hauptziele der Kommunikation Ihrer Institution beschreiben? Ist es für Ihre Institution von besonderer Bedeutung, ein vielfältiges Publikum zu erreichen? Wer ist die Hauptzielgruppe Ihrer Kommunikation?
	Was sehen Sie in der Kommunikation politischer Institutionen als Hauptaufgabe bzw. tragen sie Ihrer Meinung nach damit auch eine gewisse Verantwortung?	Neutralität Zugänglichkeit & Vielfalt Transparenz Medienkompetenz	Welche Rolle spielt Ihre Institution bei der Bereitstellung neutraler und verlässlicher Informationen für Bürger*innen, um sich über Politik zu informieren? Ist es wichtig, unparteiische Informationen zu liefern?
	Halten Sie es für wichtig, dass Bürger*innen mit unterschiedlichen Standpunkten konfrontiert werden? (speziell für ein junges Publikum)	Meinungsbild Demokratischer Diskurs Filterblasen	Beziehen Sie in Ihrer Kommunikation verschiedene Perspektiven mit ein, oder legen Sie den Fokus eher auf allgemeine bzw. spezifische Inhalte?
	Was sind aktuelle Herausforderungen, denen Ihre Institutionen gegenübersteht, wenn es darum geht politische Informationen bereitzustellen?		

Themenblock 1: Algorithmische Kuration (Verständnis, Bewusstsein, Meinung)	Haben Sie bereits von algorithmischer Kuration in sozialen Medien gehört? Können Sie mir erklären, was Sie darunter verstehen?	Reichweite Informationsvermittlung Strategien Auswirkungen	
	Wie nehmen Sie als Institution den Einfluss algorithmischer Kuration in sozialen Medien auf die Verbreitung politischer Informationen wahr?		
	Welche Herausforderungen oder Möglichkeiten ergeben sich für politische Institutionen durch die algorithmische Kuration von Inhalten?		
	Welche Bedeutung messen Sie der algorithmischen Kuration bei der Auswahl und Präsentation von Informationen auf digitalen Plattformen bei?		
Themenblock 2: Wahrnehmung von Filterblasen (Verständnis, Bewusstsein, Meinung)	Durch algorithmische Kuration auf SM können Filterblasen entstehen, d.h. Nutzende werden ähnliche Inhalte angezeigt, die ihnen zuvor gefallen haben. Haben Sie bereits von Filterblasen gehört? Können Sie kurz erklären, was Sie darunter verstehen?	Perspektiven Politisches Meinungsbild Informationsvermittlung Polarisierung Demokratisches Meinungsbild	
OPTIONAL VERSTÄNDNIS FILTERBLASEN: Filterblasen können zu politischer Polarisierung und Gruppenhomogenität beitragen, schränken den Zugang zu unterschiedlichen Standpunkten ein und beschränken den Zugang zu umfassendem politischen Wissen. Infolgedessen kann es für die Bürger*innen schwierig sein, fundierte Entscheidungen zu treffen, da es an konträren Informationen und alternativen Quellen mangelt. Trotz der erheblichen Auswirkungen von Filterblasen ist das öffentliche Bewusstsein nach wie vor gering, und selbst diejenigen, die das Problem erkannt haben, wissen kaum, wie sie aus diesen Filterblasen ausbrechen können.			
	Inwieweit halten sie Filterblasen für ein Problem bzw. für eine Chance für Kommunikation im Allgemeinen und auch spezifisch für Kommunikation politischer Institutionen?		Inwieweit denken Sie, dass algorithmische Kuration zu Polarisierung und ideologischen Filterblasen führen können?
	Glauben Sie, dass Filterblasen auch positive Effekte haben können, z. B. in der gezielten Vermittlung von relevanten politischen Themen?		
	Halten Sie das öffentliche Bewusstsein für das Phänomen der Filterblasen für ausreichend? Falls nicht, warum?		

	Gibt es bestimmte Bevölkerungsgruppen, die Ihrer Meinung nach besonders anfällig für Filterblasen sind?		Speziell junge Bürger*innen informieren sich hauptsächlich über soziale Medien über Politik - Denken Sie, dass junge Bürger*innen aufgrund einer höheren Social Media Nutzung evtl. stärker davon betroffen sind?
	Inwieweit glauben Sie, dass Filterblasen einen Einfluss darauf haben, wie Bürger*innen sich über politische Themen informieren?		Welche Auswirkungen hat dies Ihrer Meinung nach auf die Meinungsbildung und die Vielfalt der politischen Debatte? Welche Rolle spielen dabei alternative Informationsquellen außerhalb sozialer Medien?
	Bemerken Sie Auswirkungen auf die Mediennutzung und Informationskompetenz junger Bürger*innen?		Denken Sie, dass junge Bürger*innen sich dessen bewusst sind und dementsprechend handeln?
Themenblock 3: Institutionelle Kommunikationsstrategien	Wenden Sie bestimmte Strategien an, um sicherzustellen, dass Ihre Kommunikation Ihre Zielgruppe erreicht und nicht durch Algorithmen eingeschränkt wird? Oder nutzen Sie Algorithmen und Filterblasen eher zu einem Vorteil für Ihre Kommunikation?	Plattformübergreifend Zielgruppenübergreifend Interaktiv/Partizipativ	Haben Sie nach der Anwendung dieser Strategien eine Veränderung in Ihrer Reichweite festgestellt?
	Nutzen Sie gezielt bestimmte Plattformen oder Formate, um algorithmische Beschränkungen zu umgehen und eventuelle Filterblasen zu vermeiden?		Haben Sie Unterschiede in der Reichweite bemerkt? Falls ja, worauf führen Sie diese zurück?
	Gibt es bestimmte Themen oder Inhalte, die durch Algorithmen besonders bevorzugt oder benachteiligt werden?		Wenn ja, können Sie Beispiele nennen?
Themenblock 4: Strategien zur Bewusstseinsstärkung	Setzt Ihre Institution spezifische Strategien oder Maßnahmen ein, um Bewusstsein und Transparenz über einen möglichen algorithmischen Einfluss auf politische Informationen zu schaffen und einen politischen Diskurs zu fördern?	Förderung Medienkompetenz Transparenz Förderung Dialog Aufklärung Algorithmen	Auf welche Weise kommunizieren Sie darüber? Kommunizieren Sie zum Beispiel offen darüber und informieren Sie die Bürger*innen über dieses Phänomen?
	Gibt es Initiativen, um einen gleichmäßigen Zugang zu vielfältiger politischer Information zu gewährleisten?	Vielfältige Quellen Unabhängige Medien Bildungsprogramme Unterschiedliche Formate	Können Sie diese Initiativen beschreiben?

	Arbeiten Sie mit externen Organisationen oder Medienplattformen zusammen, um diese Medienkompetenz zu fördern?		Bietet Ihre Institution selbst Initiativen zur Förderung der Medienkompetenz der Bürger*innen in politische Kommunikation an? Arbeiten Sie mit Schulen/Universitäten...zusammen, um die Medienkompetenz speziell bei jungen Personen zu fördern?
Abschlussfrage: Ausblick	Welche Rolle sollten Ihrer Meinung nach politische Entscheidungsträger und staatliche Institutionen bei der Bewältigung der durch algorithmische Kuration entstehenden Herausforderungen spielen?		
	Welche Schritte könnten auf politischer Ebene unternommen werden, um einen vielfältigeren Zugang zu politischen Informationen ermöglichen und somit einen ausgewogenen Diskurs zu fördern?		

Questionnaire interview (Political party)

Einführungstext			
Vielen Dank, dass Sie sich heute die Zeit genommen haben, mit mir zu sprechen. Ich untersuche, wie Institutionen den Einfluss von algorithmischer Kuration wahrnehmen, um das Bedürfnis zu verstehen, die Problematik der daraus entstehende Filterblasen zu thematisieren und Bewusstsein dafür zu schaffen. Des weiteren möchte ich analysieren, wie Institutionen ihre Kommunikationsmaßnahmen anpassen, um Filterblase zu überbrücken und Bürger*innen zu erreichen. Wichtig ist: Sie sind als Expert*in, also als Person, die in der Branche tätig ist, eingeladen, nicht als Repräsentant*in Ihrer Institution. Sie sind natürlich trotzdem herzlich eingeladen, Eindrücke aus Ihrer Institution zu schildern, diese werden dann später anonymisiert. Ich werde das Interview aufzeichnen, um Ihnen voll und ganz zuhören zu können und später alles in Ruhe auszuwerten. Selbstverständlich werden die Aufzeichnungen nur innerhalb unserer Forschung genutzt und pseudonymisiert, um Ihre Privatsphäre zu schützen. Haben Sie noch Fragen, bevor wir mit dem Interview beginnen? Dann starte ich nun die Aufnahme, und wir können mit der ersten Frage beginnen...			
Themenblock	Leitfrage Erzählaufforderung	Checkliste für zentrale Stichpunkte	Mögliche Nachfragen / Steuerungsfragen
Einstiegsfrage Allgemeine institutionelle Kommunikation (Einschätzung)	Können Sie einen Einblick geben, wie die online Kommunikation, bezogen auf SM, Ihrer Partei aussieht, welche Plattformen verwenden Sie für welche Inhalte, wen versuchen Sie damit zu erreichen?	Kommunikationsstrategie Plattformen Spezifische Inhalte & Formate Zielgruppen	Können Sie die Hauptziele der Kommunikation Ihrer Partei beschreiben? Ist es für Ihre Partei von besonderer Bedeutung, ein vielfältiges Publikum zu erreichen? Wer ist die Hauptzielgruppe Ihrer Kommunikation? Wie stellen Sie sicher, dass die von Ihrer Partei verbreiteten Informationen auch von Menschen außerhalb Ihrer üblichen Zielgruppe wahrgenommen werden?
	Was sehen Sie in der Kommunikation einer Partei als Hauptaufgabe bzw. tragen Parteien Ihrer Meinung nach damit auch eine gewisse Verantwortung?	Neutralität Zugänglichkeit & Vielfalt Transparenz Medienkompetenz	Welche Rolle spielt Ihre Partei bei der Bereitstellung neutraler und verlässlicher Informationen für Bürger*innen, um sich über Politik zu informieren?
	Halten Sie es für wichtig, dass Bürger*innen mit unterschiedlichen Standpunkten konfrontiert werden? (speziell für ein junges Publikum)	Meinungsbild Demokratischer Diskurs Filterblasen	
	Welche Verantwortung sehen Sie als Partei darin, die Bürger*innen auch über Themen zu informieren, die nicht direkt im eigenen Parteiprogramm vertreten sind, aber für die politische Meinungsbildung relevant sein könnten?	Meinungsbild Demokratischer Diskurs Filterblasen	Inwieweit sind Sie bereit, sich mit gegensätzlichen politischen Positionen auseinanderzusetzen, um eine ausgewogenere Darstellung von Themen in der öffentlichen Diskussion zu fördern?
	Was sind aktuelle Herausforderungen, denen Ihre Partei gegenübersteht, wenn es darum geht		

	politische Informationen bereitzustellen?		
Themenblock 1: Algorithmische Kuration (Verständnis, Bewusstsein, Meinung)	Haben Sie bereits von algorithmischer Kuration in sozialen Medien gehört? Können Sie mir erklären, was Sie darunter verstehen?	Reichweite Informationsvermittlung Strategien Auswirkungen	
	Wie nehmen Sie als Partei den Einfluss algorithmischer Kuration in sozialen Medien auf die Verbreitung politischer Informationen wahr?		
	Welche Herausforderungen oder Möglichkeiten ergeben sich für Parteien durch die algorithmische Kuration von Inhalten?		
	Welche Bedeutung messen Sie der algorithmischen Kuration bei der Auswahl und Präsentation von Informationen auf digitalen Plattformen bei?		
Themenblock 2: Wahrnehmung von Filterblasen (Verständnis, Bewusstsein, Meinung)	Durch algorithmische Kuration auf SM können Filterblasen entstehen, d.h. Nutzenden werden ähnliche Inhalte angezeigt, die ihnen zuvor gefallen haben. Haben Sie bereits von Filterblasen gehört? Können Sie kurz erklären, was Sie darunter verstehen?	Perspektiven Politisches Meinungsbild Informationsvermittlung Polarisierung Demokratisches Meinungsbild	
OPTIONAL VERSTÄNDNIS FILTERBLASEN: Filterblasen können zu politischer Polarisierung und Gruppenhomogenität beitragen, schränken den Zugang zu unterschiedlichen Standpunkten ein und beschränken den Zugang zu umfassendem politischen Wissen. Infolgedessen kann es für die Bürger*innen schwierig sein, fundierte Entscheidungen zu treffen, da es an konträren Informationen und alternativen Quellen mangelt. Trotz der erheblichen Auswirkungen von Filterblasen ist das öffentliche Bewusstsein nach wie vor gering, und selbst diejenigen, die das Problem erkannt haben, wissen kaum, wie sie aus diesen Filterblasen ausbrechen können.			
	Glauben Sie, dass Kommunikation einer Partei dazu beitragen kann, Filterblasen zu überwinden, oder sehen Sie den Fokus eher auf der Verstärkung der eigenen Botschaften und Werte?		Inwieweit denken Sie, dass algorithmische Kuration zu Polarisierung und ideologischen Filterblasen führen können?
	Glauben Sie, dass Filterblasen auch positive Effekte haben können, z. B. in der gezielten Vermittlung von relevanten politischen Themen?		
	Halten Sie das öffentliche Bewusstsein für das Phänomen der Filterblasen		

	für ausreichend? Falls nicht, warum?		
	Gibt es bestimmte Bevölkerungsgruppen, die Ihrer Meinung nach besonders anfällig für Filterblasen sind?		Speziell junge Bürger*innen informieren sich hauptsächlich über soziale Medien über Politik - Denken Sie, dass junge Bürger*innen aufgrund einer höheren Social Media Nutzung evtl. stärker davon betroffen sind?
	Inwieweit glauben Sie, dass Filterblasen einen Einfluss darauf haben, wie Bürger*innen sich über politische Themen informieren?		Welche Auswirkungen hat dies Ihrer Meinung nach auf die Meinungsbildung und die Vielfalt der politischen Debatte? Welche Rolle spielen dabei alternative Informationsquellen außerhalb sozialer Medien?
	Bemerken Sie Auswirkungen auf die Mediennutzung und Informationskompetenz junger Bürger*innen?		Denken Sie, dass junge Bürger*innen sich dessen bewusst sind und dementsprechend handeln?
Themenblock 3: Institutionelle Kommunikationsstrategien	Wenden Sie bestimmte Strategien an, um sicherzustellen, dass Ihre Kommunikation Ihre Zielgruppe erreicht und nicht durch Algorithmen eingeschränkt wird? Oder nutzen Sie Algorithmen und Filterblasen eher zu einem Vorteil für Ihre Kommunikation?	Plattformübergreifend Zielgruppenübergreifend Interaktiv/Partizipativ	Haben Sie nach der Anwendung dieser Strategien eine Veränderung in Ihrer Reichweite festgestellt?
	Nutzen Sie gezielt bestimmte Plattformen oder Formate, um algorithmische Beschränkungen zu umgehen und eventuelle Filterblasen zu vermeiden?		Haben Sie Unterschiede in der Reichweite bemerkt? Falls ja, worauf führen Sie diese zurück?
	Gibt es bestimmte Themen oder Inhalte, die durch Algorithmen besonders bevorzugt oder benachteiligt werden?		Wenn ja, können Sie Beispiele nennen?
Themenblock 4: Strategien zur Bewusstseinsstärkung	Setzt Ihre Partei spezifische Strategien oder Maßnahmen ein, um Bewusstsein und Transparenz über einen möglichen algorithmischen Einfluss auf politische Informationen zu schaffen und einen politischen Diskurs zu fördern?	Förderung Medienkompetenz Transparenz Förderung Dialog Aufklärung Algorithmen	Auf welche Weise kommunizieren Sie darüber? Kommunizieren Sie zum Beispiel offen darüber und informieren Sie die Bürger*innen über dieses Phänomen?
	Gibt es Initiativen, um einen gleichmäßigen Zugang zu vielfältiger politischer Information zu gewährleisten?	Vielfältige Quellen Unabhängige Medien Bildungsprogramme Unterschiedliche Formate	Können Sie diese Initiativen beschreiben?
	Arbeiten Sie mit externen Organisationen oder Medienplattformen		Bietet Ihre Partei selbst Initiativen zur Förderung der Medienkompetenz der

	zusammen, um diese Medienkompetenz zu fördern?		Bürger*innen in politische Kommunikation an? Arbeiten Sie mit Schulen/Universitäten...zusammen, um die Medienkompetenz speziell bei jungen Personen zu fördern?
Abschlussfrage: Ausblick	Welche Rolle sollten Ihrer Meinung nach politische Entscheidungsträger und staatliche Institutionen bei der Bewältigung der durch algorithmische Kuration entstehenden Herausforderungen spielen?		
	Welche Schritte könnten auf politischer Ebene unternommen werden, um einen vielfältigeren Zugang zu politischen Informationen ermöglichen und somit einen ausgewogenen Diskurs zu fördern?		

Questionnaire interview (Educational institution)

Einführungstext			
Vielen Dank, dass Sie sich heute die Zeit genommen haben, mit mir zu sprechen. Ich untersuche, wie Institutionen den Einfluss von algorithmischer Kuration wahrnehmen, um das Bedürfnis zu verstehen, die Problematik der daraus entstehende Filterblasen zu thematisieren und Bewusstsein dafür zu schaffen. Des weiteren möchte ich analysieren, wie Institutionen ihre Kommunikationsmaßnahmen anpassen, um Filterblase zu überbrücken und Bürger*innen zu erreichen. Wichtig ist: Sie sind als Expert*in, also als Person, die in der Branche tätig ist, eingeladen, nicht als Repräsentant*in Ihrer Institution. Sie sind natürlich trotzdem herzlich eingeladen, Eindrücke aus Ihrer Institution zu schildern, diese werden dann später anonymisiert. Ich werde das Interview aufzeichnen, um Ihnen voll und ganz zuhören zu können und später alles in Ruhe auszuwerten. Selbstverständlich werden die Aufzeichnungen nur innerhalb unserer Forschung genutzt und pseudonymisiert, um Ihre Privatsphäre zu schützen. Haben Sie noch Fragen, bevor wir mit dem Interview beginnen? Dann starte ich nun die Aufnahme, und wir können mit der ersten Frage beginnen...			
Themenblock	Leitfrage Erzählaufforderung	Checkliste für zentrale Stichpunkte	Mögliche Nachfragen / Steuerungsfragen
Einstiegsfrage Allgemeine institutionelle Kommunikation (Einschätzung)	Können Sie einen Einblick geben, wie die online Kommunikation, bezogen auf SM, Ihrer Institution aussieht, welche Plattformen verwenden Sie für welche Inhalte, wen versuchen Sie damit zu erreichen?	Kommunikationsstrategie Plattformen Spezifische Inhalte & Formate Zielgruppen	Können Sie die Hauptziele der Kommunikation Ihrer Institution beschreiben? Ist es für Ihre Institution von besonderer Bedeutung, ein vielfältiges Publikum zu erreichen? Wer ist die Hauptzielgruppe Ihrer Kommunikation?
	Welche Rolle spielt Ihre Institution bei der Bereitstellung neutraler und verlässlicher Informationen für Bürger*innen?	Neutralität Zugänglichkeit & Vielfalt Transparenz Medienkompetenz	Was sehen Sie in Ihrer Kommunikation als Hauptaufgabe?
	Halten Sie es für wichtig, dass Bürger*innen mit unterschiedlichen Standpunkten konfrontiert werden? (speziell für ein junges Publikum)	Meinungsbild Demokratischer Diskurs Filterblasen	Ist es wichtig, unparteiische Informationen zu liefern?
	Was sind aktuelle Herausforderungen, denen Ihre Meinung nach politische Institutionen gegenüberstehen, wenn es darum geht politische Informationen bereitzustellen?		
Themenblock 1: Algorithmische Kuration (Verständnis, Bewusstsein, Meinung)	Haben Sie bereits von algorithmischer Kuration in sozialen Medien gehört? Können Sie mir erklären, was Sie darunter verstehen?	Reichweite Informationsvermittlung Strategien Auswirkungen	
	Wie nehmen Sie als Institution den Einfluss algorithmischer Kuration in sozialen Medien auf die Verbreitung politischer Informationen wahr?		

	Welche Herausforderungen oder Möglichkeiten ergeben sich für politische Institutionen durch die algorithmische Kuration von Inhalten?		
	Welche Bedeutung messen Sie der algorithmischen Kuration bei der Auswahl und Präsentation von Informationen auf digitalen Plattformen bei?		
Themenblock 2: Wahrnehmung von Filterblasen (Verständnis, Bewusstsein, Meinung)	Durch algorithmische Kuration auf SM können Filterblasen entstehen, d.h. Nutzenden werden ähnliche Inhalte angezeigt, die ihnen zuvor gefallen haben. Haben Sie bereits von Filterblasen gehört? Können Sie kurz erklären, was Sie darunter verstehen?	Perspektiven Politisches Meinungsbild Informationsvermittlung Polarisierung Demokratisches Meinungsbild	
OPTIONAL VERSTÄNDNIS FILTERBLASEN: Filterblasen können zu politischer Polarisierung und Gruppenhomogenität beitragen, schränken den Zugang zu unterschiedlichen Standpunkten ein und beschränken den Zugang zu umfassendem politischen Wissen. Infolgedessen kann es für die Bürger*innen schwierig sein, fundierte Entscheidungen zu treffen, da es an konträren Informationen und alternativen Quellen mangelt. Trotz der erheblichen Auswirkungen von Filterblasen ist das öffentliche Bewusstsein nach wie vor gering, und selbst diejenigen, die das Problem erkannt haben, wissen kaum, wie sie aus diesen Filterblasen ausbrechen können.			
	Halten Sie Filterblasen für ein Problem im Kontext von digitaler Medienbildung?		Inwieweit denken Sie, dass algorithmische Kuration zu Polarisierung und ideologischen Filterblasen führen können?
	Glauben Sie, dass Filterblasen auch positive Effekte haben können, z. B. in der gezielten Vermittlung von relevanten politischen Themen?		
	Halten Sie das öffentliche Bewusstsein für das Phänomen der Filterblasen für ausreichend? Falls nicht, warum?		
	Gibt es bestimmte Bevölkerungsgruppen, die Ihrer Meinung nach besonders anfällig für Filterblasen sind?		Speziell junge Bürger*innen informieren sich hauptsächlich über soziale Medien über Politik - Denken Sie, dass junge Bürger*innen aufgrund einer höheren Social Media Nutzung evtl. stärker davon betroffen sind?
	Inwieweit glauben Sie, dass Filterblasen einen Einfluss darauf haben, wie Bürger*innen sich über politische Themen informieren und sich kritisch mit politischen Themen auseinandersetzen?		Welche Auswirkungen hat dies Ihrer Meinung nach auf die Meinungsbildung und die Vielfalt der politischen Debatte? Welche Rolle spielen dabei alternative Informationsquellen außerhalb sozialer Medien?

	Bemerken Sie Auswirkungen auf die Mediennutzung und Informationskompetenz junger Bürger*innen?		Denken Sie, dass junge Bürger*innen sich dessen bewusst sind und dementsprechend handeln?
Themenblock 3: Strategien zur Bewusstseinsstärkung	Setzt Ihre Institution spezifische Strategien oder Maßnahmen ein, um Bewusstsein und Transparenz über einen möglichen algorithmischen Einfluss auf politische Informationen zu schaffen und einen politischen Diskurs zu fördern?	Förderung Medienkompetenz Transparenz Förderung Dialog Aufklärung Algorithmen	Auf welche Weise kommunizieren Sie darüber? Kommunizieren Sie zum Beispiel offen darüber und informieren Sie die Bürger*innen über dieses Phänomen?
	Gibt es Initiativen, um einen gleichmäßigen Zugang zu vielfältiger politischer Information zu gewährleisten?	Vielfältige Quellen Unabhängige Medien Bildungsprogramme Unterschiedliche Formate	Können Sie diese Initiativen beschreiben?
	Arbeiten Sie mit externen Organisationen oder politischen Institutionen zusammen, um diese Medienkompetenz zu fördern?		Bietet Ihrer Institution selbst Initiativen zur Förderung der Medienkompetenz der Bürger*innen in politische Kommunikation an? Arbeiten Sie mit Schulen/Universitäten...zusammen, um die Medienkompetenz speziell bei jungen Personen zu fördern?
Abschlussfrage: Ausblick	Welche Rolle sollten Ihrer Meinung nach politische Entscheidungsträger und staatliche Institutionen bei der Bewältigung der durch algorithmische Kuration entstehenden Herausforderungen spielen?		
	Welche Schritte könnten auf politischer Ebene unternommen werden, um einen vielfältigeren Zugang zu politischen Informationen ermöglichen und somit einen ausgewogenen Diskurs zu fördern?		Wie könnte die Zusammenarbeit zwischen staatlichen Institutionen; Bildungsanbietern und Bürger*innen verbessert werden?

Codebook focus groups

Code	Description	Example	Source
Cognitive dimension (knowledge, awareness)			
<i>Awareness of algorithms</i>	Being aware of content filtering, automated decision-making, human-algorithm interplay, ethical implications	“You’re on someone’s page, and then there are immediately ten others that you can follow.” (FG2, Line 225)	Zarouali & de Vreese (2021, p.2); Dogruel et al. (2022, p. 119); Latzer et al. (2020, p. 151)
<i>Knowledge and understanding of algorithms</i>	Defined as internet users’ understanding: That information is automatically personalized and customized based on information the system collects and processes What type of information algorithms, in general, process How this impacts the content they encounter online	“As soon as you’ve clicked on one or two posts on a certain topic, you only get shown content like that from then on.” (FG3, Line 92)	Zarouali & de Vreese (2021, p.2); Dogruel et al. (2022, p. 119); Swart (2021, p. 5)
<i>Platform-specific awareness</i>	Recognizing how different platforms use algorithms differently	“I don’t really use TikTok much [...] but when I do, I really notice how strong the algorithm is.” (FG3, Line 85)	Swart (2021, p. 5); Dogruel et al. (2022, p. 119)
Affective dimension (emotions, attitudes, reflections)			
<i>Critical and normative reflection on algorithms</i>			
Algorithmic literacy and education	Calls for education, digital literacy, and awareness-building	“Of course, if people are better education and younger generations are prepared, then it helps a lot.” (FG3, Line 239)	Inductive code
Commercialization	Connection to commercial nature of SM companies as powerful	“These are business models, they have to work.” (FG1, Line 201)	Swart (2021, p. 6)
Knowledge formation	Reflections on how algorithms influence the process of forming knowledge (self-reflection, need for multiple perspectives, need for awareness)	“I would say, one needs to be self-reflective enough to see that there are also views.” (FG3, Line 104)	Inductive code
Policy and regulatory concerns	Perceived need for regulation, platform transparency and accountability, or EU-level action	“I would also include institutions, both politics and platform operators.” (FG3, Line 230)	Inductive code
<i>Perceived societal impact of algorithms</i>			
Effects on discourse	Concerns about how algorithms shape societal debates, spread of misinformation, fragmentation of shared spaces and reduction of diverse viewpoints	“Debating with other people is usually unpleasant in everyday life. On social media you can easily avoid that by simply interacting with or viewing posts from people who share the same opinion.” (FG3, Line 155)	Inductive code

Emotionalization and radicalization	Perceived amplification of emotionally charged or sensational content; beliefs about algorithm-driven exposure to extremist content	“But often, it drifts into this mode where people only talk about emotions, not about facts.” (FG1, Line 197)	Inductive code
Filter bubbles/selective exposure	Experiences of content curation narrowing informational diversity	“And then it becomes difficult to think outside the box, because you end up only engaging with the opinions within that bubble again.” (FG1, Line 151)	Inductive code
Reinforcement dynamics	Algorithms as process reinforcing existing beliefs, interest, or behaviors	“That means you get further reinforced in your own opinion, and you become more distanced from others.” (FG3, Line 172)	Inductive code
<i>Personal reactions and evaluations</i>			
Emotional response	Reflections through feelings of comfort, frustration, fear, confusion	“I do notice at some point that it bothers me in a certain way.” (FG3, Line 102)	Swart (2021, p. 6)
Negative attitudes/concerns	Expression of distrust, dissatisfaction or criticism	“There are statistics indicating that young people obtain almost all information through social media, and that becomes then problematic.” (FG1, Line 204)	Inductive code
Perceived neutrality	Neutral, little or no perceived personal impact; algorithms as neutral ‘formula’	“I think it’s okay. And I don’t believe you’re really missing out on anything essential.” (FG3, Line 131)	Swart (2021, p. 6)
Positive attitudes/perceived usefulness	Appreciation for personalization, efficiency or convenience; useful guides/‘traffic controllers’	“I think it’s practical to be shown content that you liked yesterday and might want to look again today.” (FG3, Line 99)	Swart (2021, p. 6)
Behavioral dimension			
<i>Content navigation strategies for knowledge formation</i>			
Active exposure to opposing views	Efforts to seek out with viewpoints that differ from one’s own	“It’s more of a conscious decision, I would say, to engage with opposing views.” (FG2, Line 138)	Inductive code
Avoiding dissonance	Tendency to avoid viewpoints that conflict with one’s existing beliefs or attitudes	“People don’t step outside of bubbles. [...] They don’t hear other opinions; they don’t want to hear them.” (FG2, Line 244)	Inductive code
Critical use of information	Thoughtful and analytical engagement with information, evaluating credibility, relevance, bias etc.	“Of course you can reflect for yourself, do you agree with them or not?” (FG2, Line 93)	Inductive code
Source credibility	Evaluation of reliability, trustworthiness and expertise of information source	“Even if it’s from <i>Der Standard</i> or a similar source, where you would generally assume the information is trustworthy, there’s still a tendency to reflect a bit more.” (FG1, Line 69)	Inductive code

Use of different sources/platforms/media type	Diversifying information gathering by utilizing multiple sources, platforms and types of media	“When I see news on Instagram and it interests me, I usually look it up again in more detailed formats or check whether there’s additional information.” (FG1, Line 71)	Inductive code
<i>General political information behavior</i>			
Active/passive exposure to information	Ways individuals are exposed to political information, either through active seeking or passive reception	“For example, Instagram through pages like <i>Der Standard</i> or accounts such as <i>Pol Edu</i> [...] to educate and access further information.” (FG2, Line 11)	Inductive code
Intentional avoidance of information	Deliberate decision to avoid information, limiting exposure to political information	“I don’t want to constantly consume politics, because for me social media isn’t primarily about politics, but rather entertainment.” (FG2, Line 154)	Inductive code
Selective exposure to information	Intentional exposure to certain events or types of information	“But as long there aren’t any elections coming up, I tend to engage with less, because my time feels more valuable for other things.” (FG2, Line 138)	Inductive code
<i>Interaction and intervention behavior</i>			
Effort and frustration in resistance	Role in shaping algorithms is limited; challenging algorithms take effort	“Because often I use the feature ‘I don’t want to see this’ and then I refresh and then the exact same thing appears again.” (FG1, Line 117)	Swart (2021, p. 7)
Intentional avoidance	Active avoidance of algorithmically curated platforms, features or content	“But I notice that I avoid consuming certain kind of content on social media so that it isn’t visible anymore.” (FG3, Line 71)	Latzer et al. (2020, p. 151)
Intentional intervention	Intervene in the composition of feed such as unfollowing account, liking etc.	“When there are certain posts that I don’t want in my feed, I tend to skip over them quickly.” (FG1, Line 216)	Inductive code
Use of platform features	Using available features (‘why is this shown to me’; adapt preferences of political content)	“On TikTok you can click to indicate you don’t want to see certain content.” (FG1, Line 117)	Inductive code

Codebook interviews

Code	Description	Example 1	Example 2
Perceived influence of algorithmic curation on political knowledge formation (RQ2)			
<i>Perceptions of algorithms</i>			
Algorithmic awareness & understanding	Being aware of content filtering, automated decision-making, human-algorithm interplay, ethical implications	“Well, that’s clearly related to the algorithms that I’m not shown things like that. Because based on my click and viewing behavior, it doesn’t suggest that kind of content to me.” (IVE2, Line 58)	“The algorithm analyzes me, what interest me right now [...] which video I watch and for how long, or even if I watch it twice, and then it shows me content that goes in a similar direction.” (IVE1, Line 32)
Critical reflection on algorithms	Captures reflections on how algorithmic systems shape digital experiences (Attitudes towards algorithms, influence of algorithmic curation)	“Every political orientation can find a very large target audience via social media and can continually serve and reinforce them.” (IGVE2, Line 116)	“I spend a lot of time on TikTok privately, and I noticed that my TikTok is bubble is completely different from that of my friends.” (IVP2, Line 38)
<i>Perceived societal impact of algorithms</i>			
Radicalization dynamics	Beliefs about algorithm-driven exposure to extremist content	“By now there are more and more studies showing that the TikTok algorithm, if you just keep scrolling, sooner or later becomes increasingly radical.” ((IVE2, Line 102)	“Especially regarding online radicalization among young people [...] where young people, due to their current life situation are very receptive to certain content and when they lack the ability to reflect.” (IVE1, Line 65)
Reinforcement dynamics	Algorithms as process reinforcing existing beliefs, interest, or behaviors	“That means the internet [...] not only allows you to form an opinion, but also selectively search for the facts that support and confirm you own opinion.” (IV11, Line 108)	“When I scroll through Instagram, I mostly see things that confirm my own opinion or things that interest me 100%, things that are relevant to me.” (IVP1, Line 106)
Effects on discourse	Concerns about how algorithms shape societal debates, spread of misinformation, fragmentation of shared spaces and reduction of diverse viewpoints	“In the comment sections, we see a lot of people who clearly have no interest in factual information at all, they just want to express their opinion, and whether it’s right or wrong doesn’t matter to them.” (IVP2, Line 103)	“Especially on digital platforms, communication far too often doesn’t serve mutual understanding. It’s not about expressing something to be understood or to enter dialogue, but rather drawing boundaries and reaffirming one’s belonging to a group.” (IV11, Line 58)
Filter bubbles/selective exposure	Experiences of content curation narrowing informational diversity	“It’s a phenomenon that we have to deal with. I don’t see it as a problem per se.” (IVE2, Line 90)	“That’s exactly what defines a filter bubble, this isolation, where you move withing your own, separate public sphere.” (IV11, Line 86)
<i>Critical reflection on knowledge formation</i>			
Cognitive and reflective capacities	Critical reflection of media consumption and knowledge formation,	“The question is whether there is such strong awareness, even if I know	“They curate their own feed in such a way that they have content that does

	presence/absence of awareness, cognitive engagement, capacity of critical thinking	curation exists, means that I’m equally critical of media consumption.” (IVP2, Line 101)	them good, that they also find helpful”
Inequalities in information access	Inequalities affecting how individuals process, critical reflect and engage with information	“And those young people from environments, where there’s a lot of reflection and where they’ve received media education, they simply don’t encounter that kind of content.” (IVE1, Line 70)	“I think people are often too quick to point to those with levels of education, but I would argue that there is just as much of a filter bubble among academics.” (IVP2, Line 87)
Motivational drivers of media use	Captures how motivation, interest and emotional engagement influence media interaction	“I think we shouldn’t confuse the different aspects of media use, whether it’s about information or entertainment, in many cases it’s about entertainment.” (IVI1, Line 116)	“Workshops are not fun, having to look at a source and evaluate it, young people don’t enjoy it, you really have to force yourself.” (IVE1, Line 128)
Limited exposure to information	Algorithmic restriction of visibility of information	“I think the major influence is that they don’t even perceive these topics at all because they’re simply not being shown to them. And if they are, then it’s in a very emotionalized, non-journalistic way.” (IVE1, Line 94)	“But that’s no longer easy, because hardly anyone really gets the whole range of information and the variety of opinions anymore.” (IVE1, Line 16)
Strategies to bridge algorithmic curation and emerging filter bubbles (RQ3)			
Content and strategies			
Strategic content framing	Strategically framing or adapting content to maximize visibility, engagement or reach	“I think it’s especially important in the digital space to consider what kind of content is actually relevant, because nothing is punished as much as irrelevance.” (IVP1, Line 47)	“Sensational tends to reach more people, content that provokes to some extent, in order to increase reach.” (IVP1, Line 117)
Content and format strategies for visibility	Use of formats, content, strategies to increase visibility of communication and engage audiences	“When I think of TikTok, there’s the option to use stiches and reactions to existing videos. That way you reach your own followers, but you might also reach a different audience.” (IVP1, Line 116)	“And what we’re currently seeing is that formats like TikTok livestreams work very well, especially with the target audience we have there.” (IVI1, Line 32)
Algorithmic influence on visibility	Influence of algorithmic systems on visibility and reach, algorithmic logics	“We see that algorithms make it difficult for us to gain more attention because we are committed to neutrality and therefore cannot emotionalize to the same extent that is done in political communication.” (IVI1, Line 65)	“My feeling is that it’s not equally easy for all institutions to gain reach, that institutions with certain positions and statements have it easier.” (IVE2, 27)
Ethical and responsible communication practices	Ethical and value-based approaches to communication	“We have boundaries, and something that seems to be effective, namely negative emotionalization, is something that we as an	“I think every political organization can start with itself and must take responsibility for communicating as

		institution cannot and do not want to engage in” (IV11, Line 70)	constructively and transparently as possible.” (IVP2, Line 176)
Efforts in supporting access to information (RQ4)			
<i>Access to political information</i>	Efforts to ensure political information is made readily and easily accessible to the public	“Yes, by making it as low-threshold as possible. We must not create barriers to accessing information.” (IVP2, Line 146)	“We are on TikTok, and the duty to inform citizen where they spend their free time [...] that is essentially our main mission.” (IVP2, Line 21)
<i>Education & media literacy support</i>			
Micro level	Initiatives aimed at promoting media literacy and political education, outreach efforts that target individuals directly	“In 2024, we conducted 4,300 workshops across Austria, targeting all kinds of audiences.” (IVE1, Line 6)	“We have formats with Beat called ‘Polit-Espresso’, where she focuses on specific thematic priorities.” (IVP2, Line 117)
Macro level	Structural or institutional efforts to integrate media literacy into broader educational frameworks	“There has been the decree on media education. It states that media education should be integrated into teaching in every subject, school level, and type of school.” (IVE2, Line 170)	“The introduction of the subject ‘Digitale Grundbildung’ is already an important step into the right direction.” (IVE1, Line 133)
<i>Regulation & policy frameworks</i>			
Educational responsibility	Perceived responsibility of educational institutions in fostering media literacy	“Digital competence is something that should be taught in schools, with an appropriate teacher assigned to it.” (IVP2, Line 166)	“That’s the reason why the Ministry of Education also said that digital competence needs to be brought into schools, to fulfill its responsibility.” (IVP2, Line 170)
Political institutional responsibility and governance	Perceived responsibility of political institutions (state actors, EU) to regulate digital platforms, reflecting calls for governance mechanism, legal enforcement and protective measures	“I believe that the regulation of algorithms can really only happen through states and it this case it has to be done through stronger alliances like the EU.” (IVP1, Line 163)	“It’s logically the responsibility of governments to ensure that young people are informed in schools.” (IVP1, Line 154)
Platform responsibility	Recognition of platforms accountability for managing content and compliance in response to regulatory frameworks	“But of course, the responsibility lies within the platform operators.” (IVE2, Line 236)	“And I had the feeling that TikTok is a bit afraid of the DSA and has taken measures [...] you can see that social networks do have options for actions.” (IVE1, Line 46)

Abstract English

Democracy depends on informed citizenry, yet the exposure to political information online is increasingly influenced, and often limited, by algorithmic influence. While existing research has addressed the perceptions of algorithms of individuals, little is known about it in an informational context, and how political institutions respond to these challenges and support informed youth citizenship. This study investigates how political institutions perceive and address the influence of algorithms on youth political knowledge formation and explores strategies they employ to support informed youth citizenry.

Drawing on a qualitative research design, three focus groups with young individuals (18-25) and five expert interviews with representatives from three types of political institutions (non-partisan political institution, political parties, and educational institutions) were conducted. Using thematic analysis, the study reveals high levels of algorithmic literacy among youth, including critical reflection on algorithmic influence and self-developed strategies to navigate algorithmic content filtering. Political institutions express concern about diminished exposure to political information online, citing challenges in reaching young audiences due to algorithmic preference for polarizing and emotionally charged content. They highlight resulting impacts on political discourse, marked by declining deliberative quality, reduced factual grounding, and group identity reinforcement. To counter these effects, institutions emphasize the importance of fostering algorithmic literacy, increasing public awareness, enhancing state-level regulation, and holding social media platforms more accountable. The findings contribute to emerging discussions on algorithmic influence and institutional responsibility in sustaining informed democratic participation among young citizens.

Keywords: Algorithmic curation, algorithmic literacy, political knowledge formation, institutional communication

Abstract German

Eine Demokratie ist auf informierte Bürger*innen angewiesen. Der Zugang junger Menschen zu politischer Information im digitalen Raum unterliegt jedoch zunehmender Einflussnahme algorithmischer Systeme, wodurch sowohl die Sichtbarkeit als auch die Vielfalt politischer Inhalte maßgeblich eingeschränkt werden kann. Während sich die bestehende Forschung primär auch individuelle Wahrnehmungen algorithmischer Systeme konzentriert, besteht weiterer Forschungsbedarf hinsichtlich ihrer Rolle im Kontext politischer Informationsvermittlung sowie der institutionellen Reaktionen auf diese Herausforderungen.

Die vorliegende Studie untersucht, wie politische Institutionen den Einfluss algorithmischer Kurationsmechanismen auf die politische Wissensbildung junger Erwachsener wahrnehmen und adressieren. Im Zentrum steht die Frage, welche Strategien politische Institutionen entwickeln, um eine informierte politische Partizipation junger Menschen unter den Bedingungen algorithmisch strukturierter Informationsumgebung zu fördern.

Im Rahmen eines qualitativ ausgerichteten Forschungsdesign wurden drei Fokusgruppen mit jungen Erwachsenen (18-25) sowie fünf Expert*innen mit Vertreter*innen unterschiedlicher politischer Institutionen (überparteiliche Organisation, politische Parteien und Bildungsinstitutionen) durchgeführt. Die thematische Analyse der Daten zeigt, dass junge Menschen über ein hohes Maß an algorithmischem Verständnis verfügen, algorithmische Einflussnahmen kritisch reflektieren und eigenständig Strategien zur Navigation algorithmisch gefilterter Inhalte entwickeln.

Seitens der politischen Institutionen wird insbesondere auf die Herausforderung verwiesen, die sich aus der algorithmischen Priorisierung polarisierender und emotionalisierter Inhalte ergeben. Diese erschweren es, junge Zielgruppen mit sachlich fundierter Kommunikation zu erreichen und tragen zur Destruktion des Diskurses sowie zur Verstärkung identitätsbezogener Gruppenbildung bei. Zur Gegensteuerung identifizieren die befragten Institutionen verschiedene Handlungsfelder, darunter die Förderung algorithmischer Kompetenz, die Stärkung gesellschaftlicher Aufklärung, die Ausweitung regulatorischer Maßnahmen auf staatlicher Ebene, sowie eine erhöhte Transparenz und Rechenschaft der Plattformanbieter.

Die Ergebnisse der Studie leisten einen Beitrag zur vertieften Auseinandersetzung mit dem Spannungsverhältnis zwischen Algorithmen und demokratischer Öffentlichkeit und verdeutlichen die Notwendigkeit institutioneller Strategien zur Sicherung informierter Bürger*innen.

Keywords German: Algorithmische Kuration, algorithmische Kompetenz, politische Wissensbildung, institutionelle Kommunikation