

Digital Inclusion Through Algorithmic Knowledge: Curated Flows of Civic and Political Information on Instagram

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Abstract

Social media platforms are a critical source of civic and political information. We examine the use of Instagram to acquire news as well as civic and political information using nationally representative survey data gathered in 2019 in the US, the UK, France, and Canada ($n = 2,440$). We investigate active curation practices (following news organizations, political candidates or parties, and nonprofit organizations or charities) and passive curation practices (liking friends’ political posts and those from parties or politicians and nonprofits or charities). Young adults (18 to 24 years) are far more likely to curate their Instagram feed than older adults in all four countries. We consider two possible explanations for this behavior: political interest and an understanding of how algorithms work. Young adults have more (self-assessed) knowledge of algorithms in all four countries. Algorithmic knowledge relates to curation practices, but there are some cross-national differences. Algorithmic knowledge is theoretically relevant for passive curation practices and the UK sample provides support for the stronger role of algorithmic knowledge in passive than active curation. In all four countries, political interest positively relates to active and passive curation practices. These findings challenge depictions of young adults as news avoiders; instead, they demonstrate that algorithmic knowledge can help curate the flow of information from news organizations as well as civic and political groups on Instagram. While algorithmic knowledge enables youth’s digital inclusion, for older adults, the lack of knowledge may contribute to digital exclusion as they do not know how to curate their information flows.

Keywords

algorithmic knowledge; civic information; digital inclusion; Instagram; news; political interest

1. Introduction

Digital inclusion can be defined as “the activities necessary to ensure that all individuals and communities, including the most disadvantaged, have access to and use of information and communication technologies (ICTs)” (National Digital Inclusion Alliance, 2024). Access to information is a key purpose for the use of ICTs. This article will focus on digital access to civic and political information. Globally, citizens increasingly use digital platforms to access news, according to the *Reuters Institute Digital News Report* (Newman et al., 2020, 2023). Various studies examine access to news, finding that young citizens tend to seek or engage with news less frequently (Andersen et al., 2021; Eddy, 2022; Karlsen et al., 2020). Young citizens are especially reliant on digital platforms for news (Eddy, 2022). Thus, the affordances or architectures (Bossetta, 2018; Evans et al., 2017) of digital platforms affect the flow of civic and political information. Algorithms play an increasingly relevant role in accessing information on digital platforms; algorithmic knowledge differs by sociodemographic characteristics (Cotter & Reisdorf, 2020; Gran et al., 2021). From the perspective of digital inclusion research, algorithmic knowledge can constitute an asset that facilitates digital access to information (cf. Reisdorf & Rhinesmith, 2020). Young citizens tend to report higher levels of algorithmic literacy (Cotter & Reisdorf, 2020; Dogruel et al., 2022; Gran et al., 2021). Little is known, however, about how young citizens employ their algorithmic knowledge when curating their civic and political information flows on social media platforms.

When researching young citizens' digital access to information, it is important to consider their online information repertoires. Despite the increasing diversity of platform uses, research centers on a handful of platforms, especially Facebook and Twitter (Matassi & Boczkowski, 2023). In this regard, research output does not align with actual adoption rates. Instagram, for example, is more popular than Twitter in the UK, France, Canada, and the US (Newman et al., 2023). Still, Twitter studies are far more numerous than Instagram studies. Instagram use is growing (Newman et al., 2020, 2023); it is the most popular platform for those aged 18 to 24 (Newman et al., 2023). American research suggests that among teens, YouTube and TikTok are the most popular, with Instagram in third place (Vogels et al., 2022). Yet, we know little about how this platform is used to access civic and political information. Existing scholarship on Instagram has focused on students or youth exclusively (Alhabash & Ma, 2017; Kircaburun et al., 2020; Shane-Simpson et al., 2018; Sheldon & Bryant, 2016), which makes it difficult to know if observations about Instagram relate to the platform and its affordances (Evans et al., 2017) versus the distinct characteristics of its young user group.

Instagram enables users to follow civic and political accounts to increase access to civic and political information. However, following news organizations, civic groups, and political parties represents only one method of obtaining civic and political content on one's Instagram feed. Instagram's feed is determined, in part, by an algorithm (Bossetta, 2018). Users can engage (i.e., like) with civic and political content when friends, groups, or organizations post this content. This engagement with content provides input to the algorithm that this content interests the user. The algorithm should respond to this input by showing more of this type of information, as the algorithm is designed to provide relevant content to increase the time spent on the platform (Feezell et al., 2021; Thorson et al., 2021).

We explain these practices using the concept of “curated flows” (Thorson & Wells, 2016; Wells & Thorson, 2017) and the idea of active and passive customization (Cotter et al., 2019). Instagram users can actively curate political information on their feeds by following various groups and organizations (Cotter et al., 2019; Thorson & Wells, 2016; Wells & Thorson, 2017). Direct access through following accounts (active curation) requires

little understanding of how algorithms work. Users can also passively (or indirectly) curate the flow of this content by engaging with it and signaling to the algorithm what content they want to see (Cotter et al., 2019; Thorson & Wells, 2016). The study of liking as passive curation and the role of algorithmic knowledge in this passive curation are distinct contributions to the scholarship. In this article, we consider how age impacts the likelihood of engaging in civic and political information curation on Instagram, as well as the roles of political interest and self-assessed understanding of how algorithms work in this process. We test the robustness of our theoretical model across four Western democracies, offering a cross-national perspective related to algorithmic knowledge and curation practices.

Using a 2019 survey in four countries ($n = 2,440$), we find young adults are far more likely to curate civic and political information flows on Instagram than older age groups. This finding replicates across the four countries. Young people engage in active curation by following news organizations, political candidates or parties, and nonprofit organizations or charities, as well as passive curation by liking political content from friends, civic groups, and political candidates. We show that self-assessed knowledge of algorithms correlates with curation practices; the strength of this correlation depends on the country. In all countries, young adults report a higher self-rated understanding of algorithms than older adults. These findings challenge depictions of young adults as passive media consumers or news avoiders. It speaks to algorithmic knowledge as an asset (Reisdorf & Rhinesmith, 2020) that can facilitate digital inclusion, specifically in the context of civic and political information.

Our findings speak to a theme of digital inclusion, highlighting Instagram as a space for inclusion and youth's algorithmic knowledge as an asset for inclusion. Young adults use their understanding of algorithms to opt into receiving civic and political information. Young adults' inclusion on Instagram sharply contrasts discourses about youth's news avoidance or avoidance of traditional news (e.g., Andersen et al., 2021; Eddy, 2022; Toff & Kalogeropoulos, 2020). While we provide support for young adults' digital inclusion in civic and political uses of Instagram, we also document older adults' relative lack of inclusion. Older adults are less likely to report being knowledgeable about algorithms. Their lack of understanding may limit their ability to curate information flow on digital platforms that employ algorithms.

2. Curated Flows and Age Differences

Instagram use is growing (Newman et al., 2020, 2023). From 2020 to 2023, the *Reuters Institute Digital News Report* shows that Instagram use increased in France from 27% to 34% and in the UK from 30% to 36% (Newman et al., 2020, 2023). Regarding news use, the numbers increased from 9% to 16% in France and 3% to 6% in the UK. In the US and Canada, Instagram use and news consumption on this platform have remained consistent (Canada: 35%; US: 35%; news consumption in Canada: 10%; news consumption in the US: 12%).

Like most social media platforms, Instagram allows users to follow civic organizations and political groups to access civic and political information. Thorson and Wells (2016, p. 314) describe five sets of actors that contribute to one's flow of information on social media: journalists, strategic communicators, individual media users (personal curators), social contacts, and algorithmic filters. They explain that:

An individual receives a given message because of its selection by at least one of the entities present in their personal "public": because a peer has sent it to them, or a newspaper they follow has posted

it, or they have searched for it, or a strategist has paid for them to see it, or an algorithm thinks they might like it. (Thorson & Wells, 2016, p. 317)

Following a civic or political group or a news organization is part of cultivating one's "news feed" in the language of Facebook, the platform they study. Thorson and Wells (2016) describe this process as "curated flows." Other scholars have considered unfollowing or unfriending as well as changing settings as part of curation practices (Duggan & Smith, 2016; Gagrčin et al., 2023; Swart, 2021).

The concept of curation has been tested in other studies. For example, Gagrčin et al. (2023) examine curation, defined as following or reacting to news content, political organizations, or individuals and unfollowing/refraining from interacting with content. They do not test algorithmic knowledge but instead build in this idea with their measure, framing following as a desire to see more of this content and unfollowing as a desire to see less of it. Their measure combines both activities. They find that news curation affects campaign participation and vote choice certainty but does not affect turnout, attitude reinforcement, or affective polarization using a two-wave panel of Germans. We extend curation practices beyond these following activities, offering more nuances (active and passive curation) as well as introducing the concept of algorithmic knowledge to better understand passive curation as a strategic activity that is connected to political interest and helps to explain age differences in informational uses of Instagram.

Instagram users can passively (or indirectly) curate the flow of this content by engaging with it and signaling to the algorithm what type of content they want to see. Cotter et al. (2019) distinguish these processes as active customization (users decide who to follow/friend) and passive customization (users interact with content, i.e., click Like on posts). They find that passive customization positively relates to knowledge about algorithms and exposure to political content. We combine these concepts into "active curation" (following accounts with the desired information) and "passive curation" (engaging with the content to signal to the algorithm that more of this information is desirable).

Clicking on a news story will signal to the algorithm that this is preferred content; thus, a user wants to see more of it (Cotter et al., 2017; Thorson & Wells, 2016). The algorithm is designed to increase people's platform use (Thorson et al., 2021). While liking posts on social media has been dismissed as clicktivism or slacktivism (Vitak et al., 2011), liking has clear implications on algorithms and thus can be considered a legitimate way to invite more civic and political content onto one's news feed. However, viewing this activity as a strategic curation method assumes that the user knows how algorithms work. Different platforms track users' activities to differing degrees, a process known as datafication (Bossetta, 2018; Gagrčin et al., 2023; Poell et al., 2019; Thorson et al., 2021).

Instagram is a distinctive platform due to the age-related homophily in the user group. Specifically, 73% of young adults aged 18 to 24 use Instagram compared to 14% of seniors (Boulianne & Hoffmann, 2022). The portion of young adults on this platform is consistent in four Western democracies: the US, the UK, France, and Canada (Boulianne & Hoffmann, 2022). Pew Research Center suggests that Instagram use among American teens increased substantially between 2014/2015 and 2022 (Vogels et al., 2022). While few Instagram users follow news organizations on this platform, young adults are three times more likely to do so than seniors (Boulianne & Hoffmann, 2022). Moving beyond this single measure of news consumption, we examine age differences in curating civic and political information on Instagram. In this article, civic and

political information refers to Instagram posts from news organizations, political parties and candidates, and nonprofit organizations or charities, such as an environmental organization or the Red Cross. Furthermore, we seek to assess whether the differences are more prominent in the active versus passive curation of political information on Instagram:

H1: Compared to older adults, young adults engage more frequently in active and passive curation of political information on Instagram.

RQ1: Are age differences larger for active or passive curation on Instagram?

3. Algorithmic Knowledge

Instagram feeds are “moderately filtered” and organized chronologically, whereas Facebook feeds are “heavily filtered” and based on an algorithm that defines relevance (Bossetta, 2018). However, users can still game the Instagram algorithm to tailor the content that they want to see. Of course, algorithms also operate for news platforms and on Google (Haim et al., 2018), but this article focuses on Instagram.

Scholars point out that few people are aware of the role of algorithms in producing the content they see (Dogruel et al., 2022; Eslami et al., 2015; Gran et al., 2021; Hargittai et al., 2020; Rader & Gray, 2015; Zarouali et al., 2021). Older adults are less aware of how the Facebook algorithm works than young adults; this pattern has been replicated in surveys (Cotter & Reisdorf, 2020; Gran et al., 2021) and qualitative interviews (Dogruel et al., 2022). While this awareness of algorithms has been studied in relation to Facebook (Zarouali et al., 2021), we know little about people’s understanding of Instagram’s algorithm (Cotter, 2019; Swart, 2021) and the implications of this algorithmic knowledge on the ways that people access civic and political information on Instagram. As noted by various scholars, we have yet to understand how awareness of algorithms shapes how people use any platform (Hargittai et al., 2020; Zarouali et al., 2021), aside from a handful of qualitative studies of influencers (Cotter, 2019) and entrepreneurs (Klawitter & Hargittai, 2018):

H2: Knowledge of algorithms positively relates to the active and passive curation of information flows on Instagram.s

RQ2: Does knowledge of algorithms matter more for passive versus active curation on Instagram?

4. Political Interest

Political interest is a key motive for accessing civic and political information. While prior generations were motivated to consume civic and political information due to their sense of civic duty (Eddy, 2022), contemporary generations are motivated by political interest (Boulianne & Shehata, 2022). If they are not interested, they will likely avoid the news. Toff and Kalogeropoulos (2020) show that news avoidance is more common among young people than older people based on their 35-country sample. Karlsen et al. (2020) found that online news sources compensated for news avoidance of legacy media among young people, making age differences in news avoidance less pronounced but still significant in Norway from 1997 to 2016. Marquart et al. (2020) use a sample of Danish youth to examine who follows politicians on social media (Instagram and other social media). They find that political interest is the strongest predictor of

whether people follow politicians on social media. According to their survey, following politicians increases campaign participation among youth. As such, political interest is a critical variable for understanding the motivation to curate information flows to access civic and political information online.

A strength of the curated flow framework, according to Thorson and Wells (2016, p. 316), is “the ability to connect curation actions (personal filtering) with individual-level characteristics (partisanship, level of interest in politics, ability to customize digital flows).” Personal interest is an important predictor of these personal curation practices (Wells & Thorson, 2017). Furthermore, Thorson et al. (2021) use political interest as a predictor of active customization of content on Facebook, which triggers the algorithmic inference about interests and increases exposure to news and politics. To follow up on this finding and test the assumptions of the curated flows framework, we use a representative sample from four countries to examine the role of political interest in curating news and political information on Instagram:

H3: Political interest positively relates to active and passive curation of information flows on Instagram.

RQ3: Does political interest matter more for active versus passive curation on Instagram?

Figure 1 summarizes the hypotheses and research questions up to this point. While we rely on scholarship that tests one dimension of this complex figure, we offer a more holistic view of how age, algorithmic knowledge, political interest, and (active and passive) curation practices are interconnected. In particular, we consider more complex relationships (pathways) mediated through the key variables of political interest and understanding of algorithms.

The algorithm is designed to consider a user’s age and social network activities to predict content that will resonate with a user (Feezell et al., 2021). In particular, if the algorithm has determined that young people are not interested in news and politics, it may decrease exposure to this type of content. With our final research question, we examine the extent to which age differences in curation practices are mediated by an understanding of algorithms and political interest:

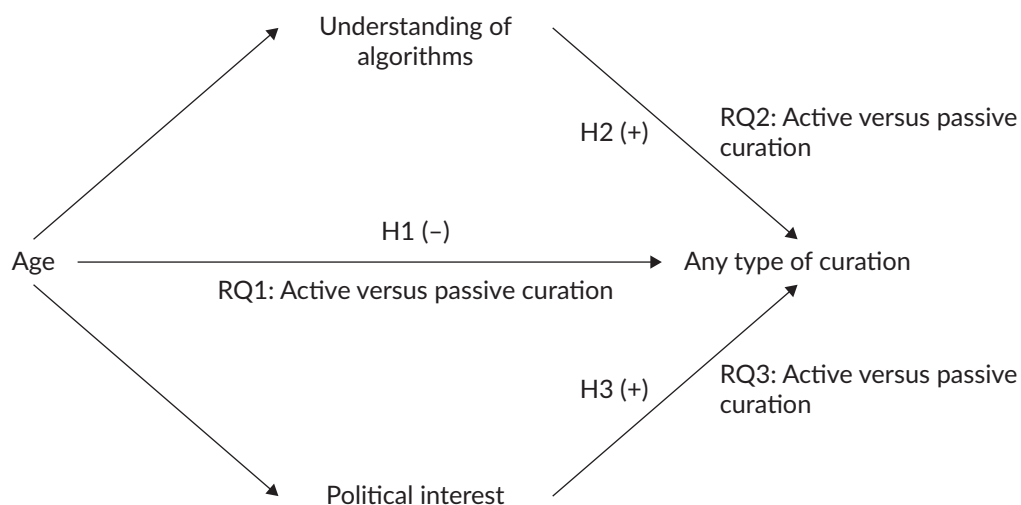


Figure 1. Conceptual model.

RQ4: To what extent are the age differences in curation practices mediated by knowledge of algorithms and political interest?

In other words, once we account for these critical mechanisms, do (direct) age differences persist, or do these two variables explain away the age differences we observe in relation to H1?

5. Methods

5.1. Sample

From September to November 2019, Kantar surveyed citizens in the US, Canada, France, and the UK using a questionnaire that the authors designed. The sample is based on an online panel with quotas to ensure the age, education, and sex representation of the population in each country. Respondents had to be at least 18 years old to participate. Including all ages in a study of Instagram is an important contribution to this field, enabling an analysis of age differences. The study is funded through the (Canadian) Social Sciences and Humanities Research Council and the other countries are chosen with Canada in mind: the US as Canada's only neighbour as well as France and the UK as the colonizing countries for Canada. The survey received human subjects ethics approval before data collection (File No. 101662), according to Canada's *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*. The data and replication files are posted at <https://doi.org/10.6084/m9.figshare.25483858.v1>.

5.2. Measures

For those who reported Instagram use ($n = 2,440$ of $6,291$) in the past year, we asked follow-up questions. For *active curation*, we used the approach from Cotter et al. (2019) and asked about following politicians, advocacy groups, and news organizations. We asked this as a series of yes/no questions, whereas they used a statement (i.e., I follow a lot of...) and a Likert or agreement scale. Guess et al. (2019) compare digital trace and survey data, finding that respondents are fairly accurate in reporting about the following of political figures. We asked whether the user followed on Instagram (a) a political party or candidate, (b) news organizations, and/or (c) nonprofit organizations or charities, such as an environmental organization or the Red Cross. Pooling across the countries, 14% of respondents followed a political party or candidate, 16% followed a news organization, and 14% followed a nonprofit organization or charity. In sum, these activities are rare. We added these different measures of active curation (0 to 3, Table 1, average = 0.44, $SD = 0.78$).

To measure *passive curation*, we also asked if users liked political posts from (a) their friends, (b) political parties or candidates, and/or (c) nonprofit organizations or charities. While Cotter et al. (2019) include liking as an activity, they combine this measure with reading a news story, watching a video about news, commenting on a news story, and sharing political posts on Facebook, which introduces some conceptual blurriness as commenting and posting political content are forms of political expression on social media rather than a curation of information (Lane et al., 2022). As noted, Gagrčin et al. (2023) do not consider these passive forms of curation. Again, we observe that these practices are rare. Pooling results from all countries: 23% of respondents have liked a friend's post, 18% have liked a nonprofit's post, and 16% have liked a post from a political party or candidate. We added these different passive curation measures (0 to 3, Table 1, average = 0.57, $SD = 0.89$).

Finally, we summed up all six activities to analyze any type of curation. On average, respondents engaged in one curation practice on a scale of 0 to 6 practices. All three measures of curation have a highly skewed distribution. As such, we performed a series of robustness tests to make sure the findings hold. We recoded the three curation variables into binaries (0 or 1) and repeated all of the analysis. Since the coefficients were similar whether curation was analyzed as count or dichotomous variables, we report on the count variables.

Several scholars have experimented with ways of measuring understanding or awareness of algorithms. Hargittai and Micheli (2019) include “algorithms” as a digital concept and use respondents’ self-assessed understanding of this concept as part of a scale of internet skills. The measure captures “awareness and understanding of the systems that operate behind-the-scenes to bring content to users” (Hargittai et al., 2020, p. 765). We asked respondents to rate their understanding of a series of digital concepts, but for this article, we focus on “algorithm.” Respondents selected responses from 1 (*no understanding*) to 5 (*full understanding*). The average score was 2.98 ($SD = 1.36$; Table 1).

Single-item measures of algorithmic knowledge are popular in this field of study. For example, in their paper examining age differences in algorithmic knowledge among Norwegians, Gran et al. (2021) asked respondents: “What kind of awareness do you have of algorithms being used to present recommendations, advertisements, and other content on the internet?” (p. 1783). Like our measure, they have a 1 (*no awareness*) to 5 (*very high awareness*) scale. They provide an extensive defense of their single-item measure (see Gran et al., 2021, p. 1783). In contrast, Zarouali et al. (2021) offer a more robust “algorithmic media content awareness scale” with five factors measured with 17 survey questions. Unfortunately, their scale has not been tested in relation to Instagram (only Facebook, YouTube, and Netflix). Also, we collected survey data before the availability of this new robust scale, so we are limited to a single item to measure the

Table 1. Descriptive statistics for the subsample of Instagram users.

	All countries (n = 2,440)	US (n = 699)	UK (n = 575)	France (n = 538)	Canada (n = 628)
Females (0 or 1)	57.50%	51.93%	65.91%	55.20%	57.96%
Education (1–4)	2.06 (1.08)	2.32 (1.11)	1.98 (1.08)	1.86 (1.08)	2.03 (0.99)
Age (18–91)	39.28 (15.03)	38.21 (13.85)	37.85 (14.10)	39.41 (15.55)	41.65 (16.37)
Frequency of Instagram use (1–4)	3.26 (0.79)	3.38 (0.76)	3.30 (0.80)	3.16 (0.79)	3.18 (0.79)
Understand algorithms (1–5)	2.98 (1.35)	3.21 (1.35)	2.75 (1.34)	3.03 (1.34)	2.89 (1.35)
Political interest (1–4)	2.68 (0.96)	2.91 (0.96)	2.60 (0.91)	2.48 (0.95)	2.66 (0.94)
Passive curation (0–3)	0.57 (0.89)	0.73 (1.00)	0.45 (0.79)	0.56 (0.85)	0.50 (0.84)
Active curation (0–3)	0.44 (0.78)	0.52 (0.83)	0.35 (0.71)	0.46 (0.77)	0.40 (0.77)
Curation (0–6)	1.00 (1.46)	1.25 (1.63)	0.80 (1.31)	1.03 (1.36)	0.90 (1.43)

understanding of algorithms. Other studies use qualitative interviews to assess awareness of algorithms (Dogruel et al., 2022; Hargittai et al., 2020; Rader & Gray, 2015). Cotter and Reisdorf (2020) explain that their survey was not designed to measure algorithmic knowledge, but they asked a question about people's perception that the following factors influence search engine results: location, history, relevance to search terms, advertising, and websites' popularity and online visibility.

Political interest was measured by responses to: "How interested would you say you are in politics?" The response options range from 1 (*not at all interested*) to 4 (*very interested*). The average is 2.68 ($SD = 0.96$; Table 1).

We control for the overall frequency of Instagram use as this use may impact network size (active curation) and understanding of algorithms. We asked respondents how often they used Instagram in the past 12 months (never, rarely, sometimes, and often). Also, we control for education (four categories) and age, which relate to views about algorithms (Gran et al., 2021). Table 1 provides descriptive statistics for these variables based on the subset of Instagram users in our cross-national sample.

6. Findings

To begin, we present Pearson's correlations among the variables (Table 2). The American Psychological Association encourages studies using structural equation modeling to include a correlation matrix (Appelbaum et al., 2018); as such, we follow this advice. We observe that active and passive forms of curation are highly correlated ($r = 0.533$, $p < 0.001$, Table 2). Furthermore, our key variables (age, understanding of algorithms, political interest, and different approaches to measuring curation) are significantly correlated ($p < 0.001$). In particular, age negatively correlates to the understanding of algorithms ($r = -0.224$, $p < 0.001$). Age also negatively correlates with curation practices ($r = -0.167$, $p < 0.001$) with small variations for active versus passive curation (within 0.04). Age positively correlates with political interest ($r = 0.125$, $p < 0.001$). In other words, young people are more likely to self-report understanding algorithms and engagement in curation practices but are less interested in politics. We also note that understanding of algorithms positively correlates with curation practices ($r = 0.267$, $p < 0.001$); the correlations do not differ much for active versus passive curation (within 0.03). Political interest positively correlates with curation practices ($p < 0.001$) with a stronger correlation for passive versus active curation (difference of 0.05).

Figure 2 presents a structural equation model that summarizes the relationships among the key variables. We used Amos 29 for this analysis, which enables testing of the direct and indirect relationships among variables. Standardized estimates from maximum likelihood estimations are reported. All models control for the effects of gender, education, and frequency of Instagram use on curation, algorithms, and political interest, but to simplify the figures, we do not report all these relationships. Instead, the complete set of results can be found in Table 3. Amos requires valid responses on all variables used in the analysis (listwise deletion); as such, the analysis is based on the subset that had valid responses on all survey questions used in this article ($n = 2,440$).

Older people are less likely to report their understanding of algorithms and less likely to engage in any type of curation ($H1: -0.14^{***}$); older people report greater interest in politics compared to younger people.

Table 2. Correlation matrix.

		Curation	Active	Passive	Females	Education	Age	Use	Algorithm
Curation	<i>r</i>	1							
	<i>p</i>								
Active curation	<i>r</i>	0.857	1						
	<i>p</i>	< 0.001							
Passive curation	<i>r</i>	0.893	0.533	1					
	<i>p</i>	< 0.001	< 0.001						
Females	<i>r</i>	-0.072	-0.064	-0.063	1				
	<i>p</i>	< 0.001	0.002	0.002					
Education	<i>r</i>	0.137	0.113	0.125	-0.021	1			
	<i>p</i>	< 0.001	< 0.001	< 0.001	0.293				
Age	<i>r</i>	-0.167	-0.128	-0.163	-0.128	-0.007	1		
	<i>p</i>	< 0.001	< 0.001	< 0.001	< 0.001	0.712			
Frequency of Instagram use	<i>r</i>	0.218	0.171	0.209	0.103	0.076	-0.240	1	
	<i>p</i>	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		
Understand algorithm	<i>r</i>	0.267	0.220	0.247	-0.149	0.243	-0.224	0.125	1
	<i>p</i>	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	
Political interest	<i>r</i>	0.321	0.257	0.303	-0.229	0.210	0.125	0.027	0.295
	<i>p</i>	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.188	< 0.001

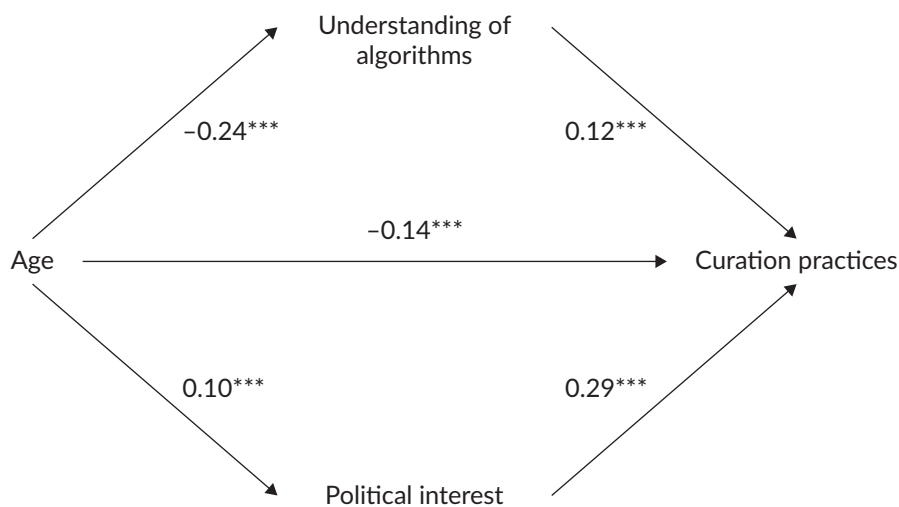


Figure 2. Any curation. Note: * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$.

Self-reported understanding of algorithms (H2: 0.12^{***}) and political interest (H3: 0.29^{***}) positively relate to curation practices.

RQ1 to RQ3 consider whether the effects of key variables differ for active curation versus passive curation. Figures 3 and 4 summarize these results and Tables 3 and 4 provide the full set of results. The figures replicate the results in Figure 2. The processes are quite similar for active versus passive curation. The estimates for age and active versus passive curation (RQ1) are within 0.03 (RQ1). As for RQ2, algorithmic knowledge has a similar role in active versus passive curation (0.11^{***}). Related to RQ3, political interest is more strongly related to passive than active curation (0.28^{***} versus 0.23^{***}).

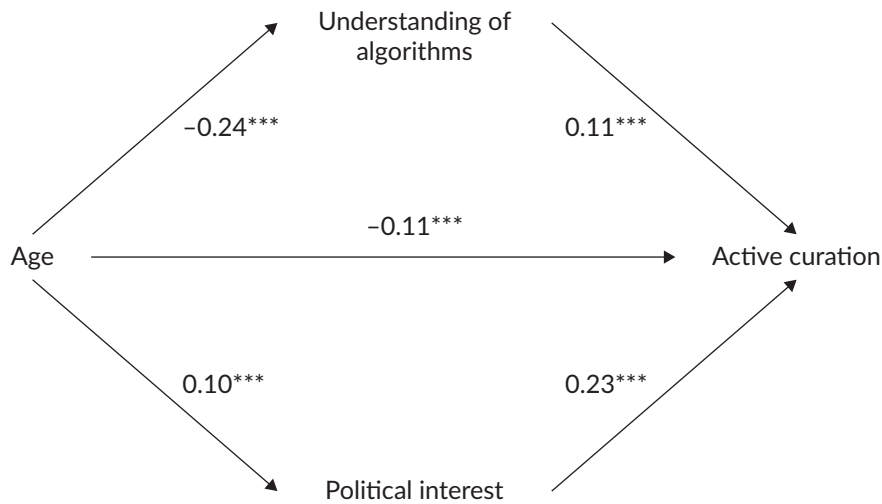


Figure 3. Active curation. Note: * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$.

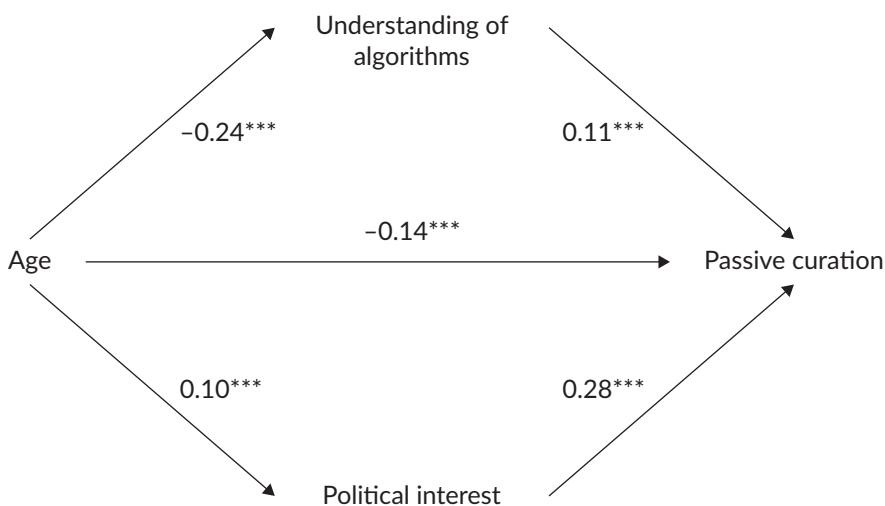


Figure 4. Passive curation. Note: * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$.

Table 3 offers the full set of results for the analysis in Figures 2, 3, and 4. Education positively relates to the understanding of algorithms, whereas being female negatively relates to algorithmic understanding. Age is the only demographic variable that significantly relates to curation practices. The frequency of Instagram use positively relates to all types of curation practices.

Related to RQ4, we find that the indirect effects (which include the mediated effects through political interest and understanding of algorithms) are not statistically significant (standardized effect of 0.003 or less depending on the type of curation). While age has large significant effects on curation practices, these effects are direct rather than indirect.

We outlined a robust theoretical model connecting age, algorithmic understanding, political interest, and curation practices, which should replicate across the different countries. In the following figures, we outline the country-specific results. In Figure 5, we present the results for any type of curation. In all four countries,

Table 3. Full mediation model results for different curation practices.

				Estimate	Standard error	<i>p</i>	Standardized estimates
Coefficients for all models of curation	Algorithm	←	Age	−0.022	0.002	***	−0.244
	Political interest	←	Age	0.006	0.001	***	0.100
	Political interest	←	Education	0.182	0.017	***	0.207
	Algorithm	←	Education	0.298	0.024	***	0.236
	Algorithm	←	Females	−0.481	0.052	***	−0.175
	Political interest	←	Females	−0.409	0.037	***	−0.213
Curation practices (0–6)	Curation	←	Age	−0.014	0.002	***	−0.142
	Curation	←	Algorithm	0.128	0.021	***	0.122
	Curation	←	Political interest	0.438	0.029	***	0.291
	Curation	←	Frequency of Instagram use	0.300	0.034	***	0.165
	Curation	←	Education	0.045	0.026	0.081	0.034
	Curation	←	Females	−0.067	0.056	0.229	−0.023
Active curation (0–3)	Curation	←	Age	−0.005	0.001	***	−0.106
	Curation	←	Algorithm	0.059	0.012	***	0.105
	Curation	←	Political interest	0.182	0.016	***	0.226
	Curation	←	Frequency of Instagram use	0.126	0.019	***	0.129
	Curation	←	Education	0.022	0.014	0.129	0.031
	Curation	←	Females	−0.036	0.031	0.244	−0.023
Passive curation (0–3)	Curation	←	Age	−0.008	0.001	***	−0.140
	Curation	←	Algorithm	0.069	0.013	***	0.108
	Curation	←	Political interest	0.256	0.018	***	0.278
	Curation	←	Frequency of Instagram use	0.174	0.021	***	0.157
	Curation	←	Education	0.023	0.016	0.143	0.029
	Curation	←	Females	−0.031	0.035	0.367	−0.018

older adults are less likely to engage in any type of curation practices (H1) and political interest positively correlates with curation practices (H3). In addition, in all four countries, older adults report lower levels of algorithmic understanding. Algorithmic knowledge is positively related to curation practices in three of the four countries with Canada being the exception (H2).

Age is more strongly associated with political interest in Canada (0.18^{***}) than in other countries. While we do not have an explicit hypothesis about age and political interest, this finding has implications for H4, which examines indirect pathways between age and curation (through political interest and algorithmic knowledge). Specifically, we find that the indirect effects (0.033) are stronger in Canada because of the stronger relationships on this pathway from age to political interest to curation. However, overall, the effect of age on curation practices is direct rather than mediated through other variables.

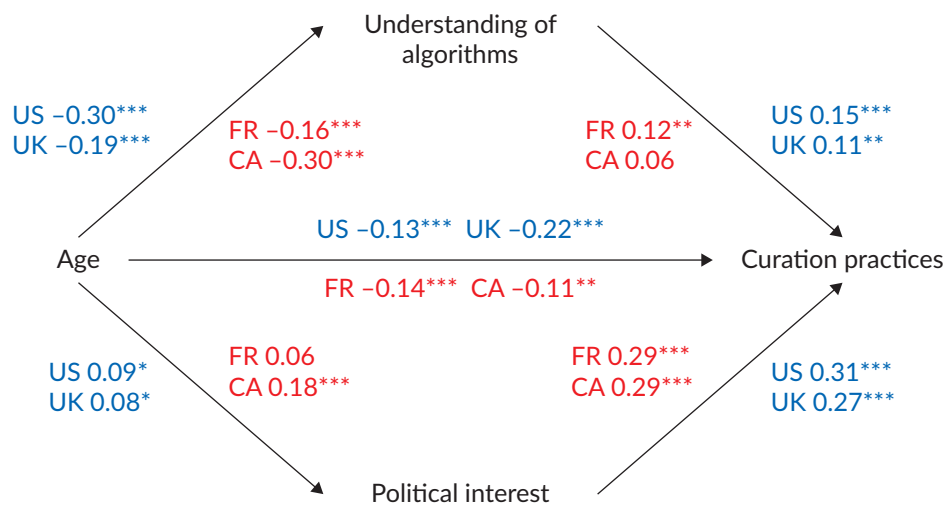


Figure 5. Curation practices in different countries. Note: * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$.

In terms of active and passive curation, the country-specific results are in Figures 6 and 7. Age predicts active and passive curation in all countries except France for active curation (RQ1). In the UK, age is a stronger (negative) predictor for active curation than passive curation (RQ1: -0.22^{***} versus -0.16^{***}). In France and the US, age differences are larger for active than passive curation. Understanding of algorithms predicts active and passive curation but only in two of the four countries. In terms of RQ2, understanding of algorithms is particularly important in passive curation in the UK (0.16^{***}) compared to active curation (0.03). Conversely, in France, understanding of algorithms relates to active (0.15^{***}) not passive curation (0.05). Furthermore, for all countries, political interest is more strongly correlated with passive than active curation (RQ3) with the largest difference in France (0.27^{***} versus 0.20^{***}). Finally, in terms of the indirect effects of age on curation (RQ4), the effects are not significant; the effects are largest for Canada for both passive (0.035) and active curation (0.023) than other countries, which can be partially explained by the strong correlation between age and political interest (0.18^{***}).

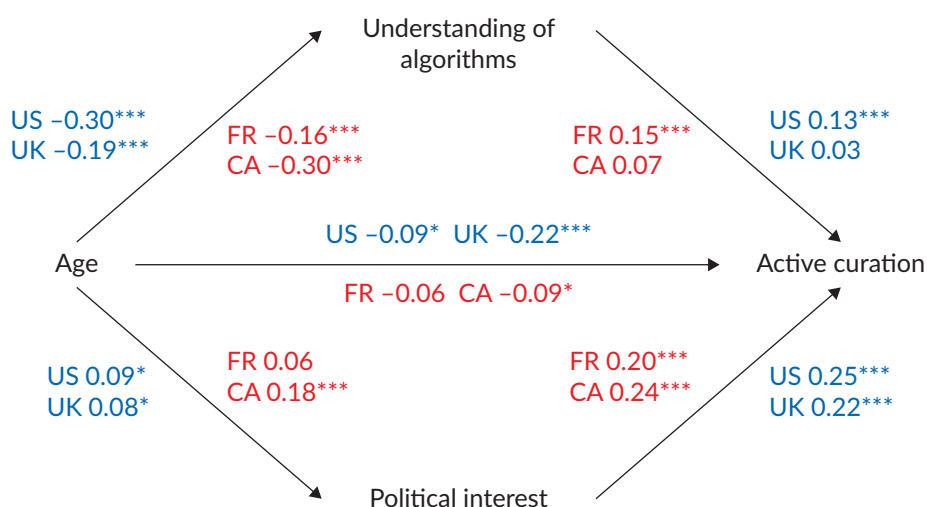


Figure 6. Active curation in different countries. Note: * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$.

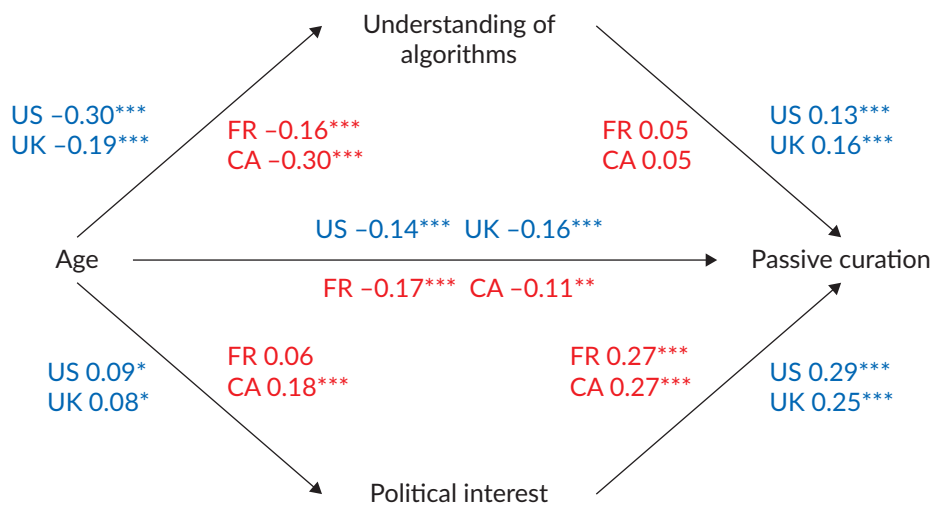


Figure 7. Passive curation in different countries. Note: * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$.

7. Conclusion

In sum, older people are less likely to engage in civic and political information curation on Instagram (H1). In the UK, age differences are larger for active curation than passive curation, whereas in France and the US, age differences are larger for passive curation than active curation (RQ1). In addition, we find that algorithmic knowledge increases engagement in passive curation, particularly in the UK (H2 and RQ2). Finally, political interest is the strongest predictor of curation and stronger for passive than active curation (H3 and RQ3), especially in France. Overall, we find support for the three hypotheses. Age directly relates to information curation on Instagram rather than being mediated through political interest and knowledge of algorithms (RQ4). These findings highlight the importance of social media platforms for the inclusion of young citizens in civic and political affairs. They also point to the importance of algorithmic knowledge for studying digital inclusion in this domain.

Different platforms offer different opportunities for curation because of different affordances (Evans et al., 2017) or digital architecture (Bossetta, 2018). While prior literature trivializes liking as clicktivism (Vitak et al., 2011), we consider this activity important to curating political information on Instagram. In particular, for those who understand how algorithms work (young adults), liking a post is a signal (Cotter et al., 2017; Thorson et al., 2021) to the algorithm to provide more content of this nature. This article shows that young adults are more likely to passively curate political information on Instagram than older age groups. Young people also engage in more active curation, i.e., following civic and political accounts, on Instagram compared to other age groups. Specifically, young people are more likely than older people to follow news organizations, political candidates or parties, and nonprofit organizations or charities, expanding on findings from Boulianne and Hoffmann (2022).

Most importantly, our findings offer new insights into the literature about generational differences in news consumption (Andersen et al., 2021; Boulianne & Shehata, 2022; Karlsen et al., 2020; Toff & Kalogeropoulos, 2020). Other scholarship focuses on traditional media, finding that young adults are consuming lower amounts of news and political information. In contrast, focusing on a platform that they use intensely, we find that young citizens are actually more likely than older adults to curate political information on this

platform. In addition, they engage in both passive and active curation. There are two related explanations for these curation practices. First, young adults understand algorithms to a greater degree than older adults, at least when considering self-assessed measures. This greater understanding turns liking into a meaningful activity; this engagement fuels the algorithm and can increase political content on one's feed. Second, political interest predicts curation practices. The relationship between age, political interest, and curation practices is complex. Young adults are less interested in politics, but those who are interested are more likely to curate their news feeds. This finding replicates claims about generational differences in the motive for consuming news. Boulianne and Shehata (2022) argue that the youngest generation is not motivated to follow news due to civic duty (also see Eddy, 2022); they are motivated by their own bias or proclivities, which include political interest. While we focus our findings on how political interest provides motivation for curation, the flip side is that those who are disinterested may not curate information on Instagram and instead unfollow or avoid civic and political actors and their informational posts.

This study is subject to some limitations. Following Gran et al. (2021), we used a single item to measure algorithmic knowledge, replicating their findings about age differences in relation to their Norwegian sample. We document this pattern using four-country survey data. Cotter and Reisdorf (2020) measure algorithmic knowledge with perceptions about the influence of six factors in shaping search engine results. Despite our different measurement strategies, we replicate their findings about age differences. While other algorithmic awareness measures have been developed (Zarouali et al., 2021), we do not know if these measures will work in a cross-national context. Future research might consider a more nuanced measure of algorithmic knowledge to offer further clarity about which dimensions influence active and passive curation practices. Perhaps a platform-specific measure of algorithmic knowledge is necessary, following Zarouali et al. (2021).

While we offer a robust set of measures about curation, highlighting "liking" as an important activity, we do not consider all types of curation practices. For example, we could also consider unfollowing as well as changing settings as curation practices (Duggan & Smith, 2016; Gagrčin et al., 2023; Swart, 2021). In addition, we measured different curation practices as a series of yes/no questions, which was appropriate in 2019 when few people engaged in curation. However, more contemporary data collection should consider the frequency with which people engage in curation. Finally, we focused on curation practices related to political candidates, news organizations, and civic groups (i.e., the Red Cross), leaving aside curation practices that may lead to exposure to fake news or other nefarious political actors. Yet, these curation practices might influence exposure to false or misleading information on Instagram. Survey-based studies suggest that Instagram use correlates with exposure to perceived misinformation (Blanco-Herrero et al., 2021; Chadwick et al., 2022; Neyazi et al., 2022).

Despite these limitations, our study offers several contributions: Applying curated flows (Thorson & Wells, 2016; Wells & Thorson, 2017) as our core conceptual framework, we contribute to research indicating that algorithmic knowledge may be an important asset facilitating digital inclusion, particularly in the context of information access. Previous studies on digital inclusion have highlighted the important role of digital skills and literacy (Correa et al., 2020; Reisdorf & Rhinesmith, 2020), but few have examined algorithmic knowledge. By focusing on a platform popular among younger users, we challenge a generalized assumption of young adults as disengaged or passive in their news access. We, instead, find that young adults are using their understanding of algorithms in a way that leads to inclusion, expanding their digital access to civic and political information to compensate for lower uses of traditional media. In fact, we provide evidence for older adults' lack of digital inclusion in the context of civic and political information online. Older adults do

not appear to have the same ability to understand and curate their flows of political information on a digital platform such as Instagram. This lack of access to online information may not matter much today because information is available to them offline. However, as governments and civic groups move information and services exclusively online, we may see a growing pattern of digital exclusion for older adults who lack the algorithmic knowledge to access or curate this information. Lastly, while not the focus of this study, our findings indicate that to understand the effects of “news-finds-me” and related passive information consumption on social media platforms, studies need to pay more attention to political interest. Our study shows that political interest is critical in understanding exposure to political information, particularly when considering passive curation as a practice of digital information access.

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Conflict of Interests

The authors declare no conflict of interests.

Data Availability

The data and replication files are posted at <https://doi.org/10.6084/m9.figshare.25483858.v1>

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