Political Consumerism in the Attention Economy across six countries

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Abstract

Social media platforms (SMPs) such as Facebook, YouTube, and TikTok are increasingly scrutinized for employing attention-extractive algorithms to maximize users' time on the platform. This study draws on the concept of political consumerism to explore how users protest against SMPs by strategically withdrawing or applying their attention for ethical reasons. Results of a pre-registered survey (n= 5,685) across six countries (Brazil, Germany, Japan, South Korea, the UK, and the US) suggest that negative attitudes towards AI-based recommender systems and distrust in social media companies are most strongly associated with algorithmic resistance. A comparative analysis further reveals that users from Brazil are least likely to disengage from SMPs on ethical grounds. The paper also presents a natural experiment investigating political consumerism towards Twitter/X and the open-source alternative Mastodon before and after Elon Musk's acquisition of Twitter/X. The results show that this event induced no immediate shifts in user behavior.

Keywords: Attention-extractive Algorithms, Algorithmic Resistance, Political Consumerism, Social Media Platforms, Cross-national survey

Introduction

Social media platforms (SMP) such as Facebook, YouTube, and TikTok have fundamentally transformed people's daily lives. People use them to communicate with peers, receive news, or connect with like-minded people worldwide. However, SMPs also have a dark side. The Cambridge Analytica scandal, the Facebook Files revelations exposed by whistleblower Francis Haugen, and the Netflix documentary *The Social Dilemma* spotlighted the detrimental societal effects of SMPs. Much of the scrutiny focuses on the companies' AI-powered algorithms. Personalized recommendation algorithms are designed to capture users' attention and maximize their time on the platform. As a result, automated recommendations can be biased toward extreme and polarizing content leading to a surge in false information (Vosoughi et al., 2018) and inappropriate content recommendations for children (Papadamou et al., 2020). The empirical evidence for the harmful effects of SMPs on democracy and health is mounting (Lorenz-Spreen et al., 2022; Meier and Reinecke, 2021).

While researchers, policymakers, and journalists call for stricter regulations to counter the negative externalities of SMPs, a comprehensive study of bottom-up user resistance is lacking. This study fills this gap by providing a user-centric perspective. As the first of its kind, it applies the concept of political consumerism to the attention economy. Political consumerism refers to specific purchasing decisions with the aim of promoting social change. For instance, in October 2022, Elon Musk acquired Twitter/X. The ensuing scrutiny over political biases and questionable business ethics prompted many users to seek a more ethical alternative. In response, many users turned to the open-source SMP Mastodon. Five months after Musk's takeover, Mastodon gained more than 7.5 million new users, quadrupling the number of registered users (Statista, 2023b). This new form of political consumerism made headlines worldwide. While it remains to be seen if this was a sustainable form of user migration, the example has spurred hopes that bottom-up efforts can hold SMPs accountable and shape a responsible social media landscape.

This paper explores (1) if and how people strategically withdraw or apply their attention to SMPs for ethical reasons, (2) the individual drivers for engaging in such actions, and (3) cross-country differences. We ran a pre-registered survey (total n=5.685) in six countries: Brazil, Germany, Japan, South Korea, the United Kingdom (UK), and the United States of America (US). Since Musk's acquisition of Twitter/X occurred during our data collection, we further provide results of a natural experiment, comparing people's political consumerism of Twitter/X and Mastodon before and after the takeover.

The Complex Effects of Social Media Platforms

Social media companies have fundamentally disrupted traditional business models. They do not directly charge their customers for their services. Instead, these companies offer products and services for free and make profits by selling ad space. Even though this business model is highly profitable, it exposes a fundamental flaw in social media ecosystems (Fuchs, 2021): Platform companies compete for users' attention. The more attention they can capture, the more ads they can sell for higher prices, and the more revenue they gain. As the business model treats users' attention as a scarce resource, it is often referred to as the attention economy (Schirch, 2021). Thus, social media companies are highly incentivized to maximize users' time on the platforms. To achieve this goal, they use powerful AI-powered algorithms to recommend highly personalized content and products to their users. And they are very successful in doing that: Globally, people spend 151 minutes per day on SMPs (Statista, 2023a).

Empirical research across disciplines has investigated the effects of SMP use, primarily on democracy and health. Due to the rich literature, our research synthesis is mostly based on systematic literature reviews and meta-analyses.

Effects on Democracy

A systematic literature review on the relationship between social media use and different democratic indicators revealed that SMPs foster democracy in autocracies and emerging democracies while undermining it in established democracies (Lorenz-Spreen et al., 2022). More precisely, social media use is associated with increased political participation, such as voter turnout and engagement in political protests (Boulianne, 2015; Skoric et al., 2016). While the empirical evidence regarding the effects on political knowledge acquisition is mixed, more studies find positive than negative correlations (Lorenz-Spreen et al., 2022).

Moreover, the existing empirical evidence suggests that social media decreases citizens' trust in politics and the media and increases their populist attitudes (Lorenz-Spreen et al., 2022). While many studies find that social media use is correlated with political polarisation along partisan lines (Kubin and von Sikorski, 2021; Lorenz-Spreen et al., 2022), recent studies suggest a more complex relationship between both variables. Guess et al. (2023) and Nyhan et al. (2023) found that targeted recommendation algorithms increase overall usage, exposure to like-minded sources, and uncivil content but do not affect polarization, ideological extremity, or belief in false claims. However, evidence from a literature review shows that social media use is associated with increased levels of hate

(Lorenz-Spreen et al., 2022). The spread of disinformation and misinformation on SMPs is arguably another pivotal driver of polarization (Tucker et al., 2018). Indeed, two systematic literature reviews found an increasing trend in health-related misinformation on social media (Suarez-Lledo and Alvarez-Galvez, 2021; Wang et al., 2019). Such a flawed information ecosystem has complex ramifications for democracy. For instance, people tend to judge fake stories as true even when they are marked as "fact-checked" (Pennycook et al., 2018) and remember false content as if it were true (Murphy et al., 2019), making them more vulnerable to manipulation by bots.

Effects on Health

Meta-analyses and systematic literature reviews have synthesized ample empirical research investigating the effects of social media use on physical and mental health. Overall, evidence for the negative effect of social media use on mental health prevails (Meier and Reinecke, 2021). However, the effects are nuanced. For instance, even though time spent on SMPs increases loneliness among the general public and adolescents (Liu et al., 2019; Sarmiento et al., 2020), it can make older adults feel less lonely (Khosravi et al., 2016). Similar conditional effects have been shown for the association between social media use and depression, which seems to be particularly strong among children and adolescents (Keles et al., 2020; Sarmiento et al., 2020) and more pronounced for women compared to men (Yin et al., 2019). Furthermore, using SMPs is associated with lower self-esteem and life satisfaction (Appel et al., 2020). Particularly, photo and video-sharing SMPs such as Instagram can adversely affect users' body perception (Appel et al., 2020). For instance, social media is an important reason for undergoing plastic surgery (Eldaly and Mashaly, 2022) or developing eating disorders (Saiphoo and Vahedi, 2019).

In addition to mental health indicators, social media use is associated with other diseases and risk factors. For instance, smartphone use has been shown to impair sleep quality and quantity (Carter et al., 2016). Among children and adolescents, Vannucci et al. (2020) show small to medium correlations between social media use and general risky behaviors, especially substance use and risky sexual behaviors.

The mounting empirical evidence for the negative societal impact of SMPs has prompted calls for stricter regulation. In the European Union (EU), the Digital Services Act (DSA), the Digital Markets Act (DMA), and the General Data Protection Regulation (GDPR) aim to rein in the power of SMPs, for instance, by giving users an option to indicate that they do not want to be

targeted by personalized recommendation algorithms. While the need for top-down regulation of SMPs is urgent, it may take time to enact meaningful change. Thus, bottom-up efforts to hold SMPs accountable for their actions have gained momentum in recent years. For instance, through political consumerism, users can 'vote with their feet'. As users do not pay platform companies directly, they can instead strategically leverage their attention to express their voice and demand ethical practices, thereby actively shaping the attention economy.

Political Consumerism in the Attention Economy

Political consumerism is a form of political participation in which people apply their purchasing power to demand social change (Copeland and Boulianne, 2022). Consumers can either deliberately avoid products, brands, and companies for their objectionable practices (*boycotts*) or actively reward them for complying with the users' values (*buycotts*) (Copeland, 2014; Stolle and Micheletti, 2013). The reasoning follows a simple economic supply-demand rationale. In principle, boycotts and buycotts drive up the demand for ethically produced products, brands, and companies, incentivizing companies to comply with consumer demands by adjusting their business practices. Examples include abstaining from taking an airplane to reduce carbon emissions (boycott) or buying fairtrade coffee to support fair payment of local farmers (buycott). Other forms of political consumerism that are far less researched are lifestyle changes and communication. The former refers to fundamental lifestyle changes for ethical reasons (e.g., a vegan diet). The latter alludes to communicative actions by consumers to discuss political consumerism or motivate others to engage in it (Zorell and Denk, 2021).

These four forms of political consumerism can be conceptualized as components of lifestyle politics, defined as 'the politicization of everyday life, including ethically, morally, or politically inspired decisions' (de Moor, 2017: 181). Those who engage in lifestyle politics view their everyday choices as expressions of political values (Bennett, 2012). Despite significant global differences, individualist values and practices have grown in prevalence across most countries in recent decades (Santos et al., 2017). Comparative surveys like the World Values Survey (WVS) or the European Social Survey (ESS) show significant regional differences in boycotting behavior. While in the US, Canada, and Northern or Western Europe, a significant share of the population boycott products, people from African, Asian, and Latin American and Southern or Eastern European countries rarely engage in this form of political consumerism (Boulianne et al., 2022).

Applying the concept of political consumerism to the attention economy is not trivial. SMPs monetize their users' attention. In such a business model where people pay indirectly for the services, the users' purchasing power also shifts from money to attention and data. Thus, we conceptualize political consumerism in the attention economy as individual or collective actions in which users deliberately withdraw attention from morally questionable companies (*boycotting*) and/or apply attention to companies that adhere to users' values (*buycotting*). What sets political consumerism apart from adjacent ideas like digital disconnection (see Nassen et al., 2023) is its unique ability to link a specific behavior to an underlying ethical or political motivation, transforming it into a form of political participation. Examples include spending less time on SMPs or switching from one platform to another for ethical reasons. This may include a platform's commitment to data protection or the use of non-personalized, open-source algorithms. Such practices took center stage during the Twitter/X takeover by Elon Musk. Many Twitter/X users fundamentally opposed the business practices that Musk enforced, such as unbanning accounts that spread false information and conspiracy theories or firing employees via email without prior notice. As a result, the SMP Mastodon, an open-source alternative with similar affordances to Twitter/X, saw a surge in user sign-ups and active users. In other words, users who deliberately withdrew attention from Twitter/X and applied it to Mastodon instead engaged in political consumerism.

A global social movement against SMPs and the attention-extractive algorithms they deploy is lacking. Yet, two precedents illustrate coordinated initiatives to hold social media platforms accountable. First, in the #DeleteFacebook movement, users organized backlash against social media platforms through political consumerism (Brown, 2020; Mills, 2021). In the aftermath of the Cambridge Analytica scandal, the hashtag #DeleteFacebook was used to call for boycotting the platform. The campaign gained considerable attention on social media (Khosrowshah and Mitra, 2018) and traditional media discourses (Chen, 2018). In the months following the scandal, users adjusted their privacy settings, reduced their social media use, temporarily deactivated their accounts, or outright deleted their social media accounts and/or apps (Brown, 2020; Dindar and Akbulut, 2014; Perrin, 2018; Stieger et al., 2013) due to privacy and other social concerns. However, #DeleteFacebook quickly lost momentum and was eventually ineffective in achieving its goal (Mills, 2021). Second, the Time Well Spent movement (TWS) aims to align digital technology with core human values (Elouali, 2019). The movement gained traction through the Netflix documentary *The Social Dilemma,* which reached an estimated 100 Mio. viewers (Center for Humane Technology, 2020). TWS presses platform companies and software engineers to design sustainable and responsible algorithms

and applications. At the same time, the movement wants to empower users to make informed choices about their social media use.

Amid growing empirical evidence about the harmful effects of SMPs on users' (mental) health and important democratic pillars, exploring ways to mitigate such negative externalities is crucial. While new policies often take years to develop and implement, this study investigates bottom-up efforts to push for more responsible social media ecosystems. We explore how users deliberately withdraw and apply their attention to platform companies for ethical reasons. We ask the following research question:

RQ1: To what extent do users disengage from commercial social media platforms due to ethical reasons?

The efforts of the #DeleteFacebook and TWS movements, the popular 'The Social Dilemma' documentary, the 'Your Undivided Attention' podcast, and best-selling books like 'Digital Minimalism' (Newport, 2019) have raised awareness about the adverse impact of SMPs. According to surveys, about two-thirds of US citizens think that SMPs harm society, especially in terms of spreading extremism and misinformation (Auxier, 2020). Another study revealed that the youth is concerned about the negative impacts of SMPs, especially regarding safety (Harness et al., 2022). We contend that users' perception of social media risks affects their use of SMPs.

H1: High perceived risks of social media platforms lead to more disengagement from commercial social media platforms due to ethical reasons.

Algorithms recommend tailored content based on users' personal data. Aside from the information that users voluntarily share with platform providers, algorithms can infer additional information about users. According to Hinds and Joinson (2018) and Youyou et al. (2015), these can include sensitive information like personal traits, political attitudes, or sexual orientation. Surveys suggest that individuals in the US and Europe believe they have little control over their personal data and worry about their digital privacy (Directorate-General for Communication, 2019; Vogels and Gelles-Watnick, 2023). They also have complex views on how SMPs handle their personal data. Users generally consent to the use of their data to promote events, but they strongly object to micro-targeted political campaign messages on SMPs (Turow et al., 2009). Although people who are worried about online privacy do not necessarily engage in privacy-preserving online behavior (Kozyreva et al., 2021), we argue that privacy concerns affect users' consumption habits.

H2: High privacy concerns lead to more disengagement from commercial social media platforms due to ethical reasons.

Even though SMPs commonly employ AI-powered recommendation algorithms, many users are not aware of the implicit judgments these algorithms make (Powers, 2017). Fewer than 50% of users in Germany, the UK, and the US know that their social media feeds are curated by such algorithms (Eslami et al., 2015; Kozyreva et al., 2021). Young users often lack essential knowledge to safeguard themselves against algorithmic influence (Powers, 2017; Swart, 2021). Since awareness of algorithmic personalization is an essential step toward understanding and acknowledging their impact (Swart, 2021), we posit that it sways people to reduce their social media exposure for ethical reasons.

H3: High awareness of AI use in recommendation systems leads to more disengagement from commercial social media platforms due to ethical reasons.

Users may differ in how beneficial they perceive recommendation algorithms, for instance, to navigate the vast information landscapes. Empirical studies on individuals' attitudes towards recommendation algorithms have produced conflicting results, primarily because they investigated different types of algorithmic recommendations. Kozyreva et al. (2021) found that audiences from Germany, the UK, and the US largely object to targeted political campaigning and, in Germany and the UK, the personalization of news sources. However, according to other studies, users also perceive personal benefits from algorithmic selection, such as enhanced perceived control due to a reduction in feed volume (Monzer et al., 2020; Thurman et al., 2019). Irrespective of whether users generally hold favorable or unfavorable attitudes towards such algorithms, we reason that negative attitudes evoke more algorithmic resistance.

H4: Negative attitudes towards AI-based content recommendations on social media platforms lead to more disengagement from commercial social media platforms due to ethical reasons.

Given that the WVS revealed substantial global differences in regular political consumerism practices, it is likely that these trends translate to political consumerism in the attention economy. To support this argument, we draw on more empirical evidence: For instance, (González et al., 2019) find geographical variations in public reactions to the Cambridge Analytica scandal. Additionally, data from the WVS indicates that citizens from highly individualized societies like the US, the UK, and Germany tend to attribute responsibility for solving societal problems to individuals. Conversely, in less individualized societies such as

Brazil, Japan, and South Korea, citizens are more inclined to attribute greater responsibility to governmental institutions. Given that empirical evidence for country differences is scarce and inconclusive, we abstain from positing a hypothesis and instead ask:

RQ2: Are there cross-national differences in users' disengagement from commercial social media platforms due to ethical reasons?

Method

To answer the research questions and test the hypotheses, we conducted an online survey in six countries: Brazil, Germany, Japan, South Korea, the UK, and the US (for a detailed overview of deviations from the pre-registration, see Table A1 in the supplementary information). Our country sample was motivated by the fact that SMPs have had more negative implications in established democracies (Lorenz-Spreen et al., 2022), making citizens from these countries more likely to resist them. Other selection criteria included country diversity across continents and political cultures, as well as established digital infrastructures. We collected cross-sectional data through an online panel administered by Kantar Lightspeed. The questionnaire was translated into different languages by native speakers through Kantar. The ethics committee of the [*blinded for review*] approved the study.

Filtering Process and Sample Description

The fieldwork was conducted between October 13th and November 23rd, 2022. We used quotas for age, gender, and education in each country. A total of 6,300 respondents completed the online survey. They were incentivized through Kantar points redeemable for the countries' native currency. 615 respondents were excluded from the data set because of straight-lining, or completing the entire questionnaire (<270 sec.) or the question measuring the dependent variable (<7 sec.) unreasonably fast. The final sample consists of 5,685 respondents, ranging from 868 (Japan) to 1,044 (Brazil). The average age was 48.74 (*SD*=17.72) years and 51.2 percent of the sample identified as female. The average completion time was 18.2 (*SD*=2798.9) minutes.

Measurements

Most variables were measured on 5-point Likert scales with a residual option "I prefer not to answer". Cases in which we used a different measure are described below. Table A2 in the supplementary information (SI) shows the exact wording of all items.

Political Consumerism. Measuring a concept that links a specific behavior to its underlying motivation is inherently difficult. To address this, we employed a nuanced two-step process, drawing on existing political consumerism literature. First, respondents indicated which SMPs they used in the last 12 months. We included a selection of 17 commercial SMPs[1] based on their adoption in the six countries under investigation. Second, for each SMP a respondent used, we asked about the extent to which their use had changed over the last 12 months for ethical reasons (1=decreased a lot, 5=increased a lot). To facilitate clarity, we provided several examples for decreasing (e.g., because the platform contributed to spreading false information) or increasing (e.g., because the platform improved its privacy settings) SMP use due to ethical reasons. We computed a mean index so that decreases in SMP use represent boycotting behavior, while increases signify buycotting behavior (M=3.25, SD=0.72, α=.95). To assess the robustness of this measurement, we examined its correlation with overall changes in SMP use. The moderate mean correlation (r=.69) suggests that respondents could effectively distinguish between general changes in their SMP use and those motivated by ethical considerations.

Perceived risks of social media platforms. We constructed nine items to measure respondents' risk perceptions of SMP. The items include risks pertaining to democracy, health, privacy, and social cohesion. Subsequently, we formed a reliable mean index (M=3.33, SD=0.93, α=.91).

Privacy concerns. We measured people's privacy concerns with three items adopted from Knijnenburg et al. (2012). One item was inverse-coded and substantially decreased the reliability of the scale, even after re-coding. Therefore, a mean index consisting of the two remaining items (M=3.4, SD=0.97, r=.55).

Awareness of AI-based content recommendations. To measure users' awareness of AI-based content recommendations on SMP, we adopted a scale introduced by Zarouali et al. (2021). Four items addressed content filtering, three items referred to automated decision-making, three items measured the human-algorithm interplay, and three items alluded to ethical considerations. We constructed a reliable mean index (M=3.27, SD=1, α=96).

Attitudes towards AI-based content recommendations. Users' attitudes towards AI-based content recommendations were measured with three items which we adapted from Thurman et

[1] Facebook, Twitter, Pinterest, Instagram, YouTube, LinkedIn, Tumblr, Reddit, TikTok, Snapchat, WhatsApp, Telegram, LINE, KakaoStory, BAND, Kwai. We used the open-source platforms Mastodon and Signal for additional analyses (see A9 in the SI)

al. (2019) and Smit et al. (2014). A mean index showed good internal consistency (M=2.98, SD=1.08, α=.88).

Based on the existing empirical evidence synthesized in a meta-analysis by Copeland and Boulianne (2022), we included a set of control variables. *Political trust* was measured with three variables referring to the national parliament, politicians, and political parties (M=2.27, SD=1, α=.91). *Media trust* (M=2.68, SD=1.1), and *social media trust* (M=2.51, SD=1.09) were each measured with single-item questions adopted from the European Social Survey. We also measured *political interest* (M=3.46, SD=1.25) and *political partisanship* (1=very left, 11=very right, M=6.19, SD=2.46) with single-item questions. We assessed *news media use* with a measure suggested by the PEW Research Center (Barthel et al., 2020) by asking respondents how many days in a typical week they read, watched, or listened to news in eight types of media (0=0 days, 7=seven days): television, radio, print publications, news websites or apps, social media, news aggregators, podcasts, and smart speakers (M=3.41, SD=1.43). Finally, government vs. individual responsibility was assessed with a single-item question measured on a 10-point scale adopted from the WVS. It asks respondents whether the government or individuals should take more responsibility in providing for the basic needs of citizens (M=5.19, SD=2.73). The sociodemographic variables *gender* (51.2% female), *age* (M=48.74, SD=17.72), and *education* (50.6% tertiary education) were assessed with standard single-item questions.

Results

Our results section is structured in three parts: First, descriptive findings show the extent to which citizens engage in political consumerism with regard to SMPs (RQ1). This section further elaborates on the nuanced differences between countries and platforms. Second, we computed ordinary least squares (OLS) regression models to identify individual drivers of political consumerism (RQ2) and cross-country differences (RQ3). Third, we supplement our core findings with additional analyses that were not pre-registered. As our data collection coincided with the time frame during which Elon Musk assumed control over Twitter/X, we introduce the results of a natural experiment. All statistical analyses were conducted using R version 4.2.3 (all data and code are openly available: https://osf.io/z2smy/?view_only=d24e10a34dd74892b37d02d76fb37e47).

Descriptive results

Across all countries and platforms, we observe a subtle inclination for users to augment their attention to SMPs rather than diminishing it (M=3.25, SD=0.72). Substantial differences between SMPs and countries exist. Brazil (M=3.69, SD=0.83) stands out as people tend to apply considerably more attention to SMPs compared to people from the other countries in our sample, followed by the US (M=3.29, SD=0.81). In Germany (M=3.08, SD=0.55), the UK (M=3.11, SD=0.65), Japan (M=3.11, SD=0.5), and South Korea (M=3.13, SD=0.61), people only marginally increase their SMP use.

Examining disparities between SMPs yields noteworthy insights (see Figure 1). For instance, users in Brazil, the UK, and the US tend to gravitate toward instant messaging services such as WhatsApp and Telegram for ethical reasons. For two of the largest SMPs, Facebook and Twitter/X, ethically motivated engagement and disengagement balanced each other out in Germany, Japan, the UK, and South Korea. However, people in Brazil and the US display a greater tendency to increase their engagement with these platforms for ethical considerations.

[Figure 1 about here]

Assessing correlates of political consumerism

We computed OLS regression models to examine the individual drivers of political consumerism. Lower levels of the dependent variable indicate a decrease in attention to SMP for ethical reasons, while higher levels imply an increase. For hypothesis testing, we included perceived social media risks (H1), privacy concerns (H2), awareness of AI-based content recommendations (H3), and attitudes towards AI-based content recommendations (H4) as independent variables in the model. The countries were integrated as dummy variables, with Brazil being the reference category in Table 1. Finally, several controls were added (see Tables A3 - A8 in the SI for the results in each country).

[Table 1 about here]

The regression model explains 28% of the variance in political consumerism in the attention economy (adjusted R^2=.28, p<.001). Our results suggest that perceived social media risks are weakly and negatively correlated with the dependent variable (β=-0.06, p<.001): Respondents who perceive SMPs as posing a societal risk are more inclined to withdraw attention from them. As this finding aligns with our assumptions, we find support for H1.

Our study revealed a weak and positive correlation between users' privacy concerns and political consumerism (β=0.07, p<.001), indicating that individuals who are more concerned about their privacy are more inclined to increase their ethically-motivated use of SMPs. This result contradicts our initial hypothesis and does not support H2.

Awareness of AI-based content recommendations on SMPs is not significantly associated with the dependent variable (β=-0.02, p=.14): people do not change their use of SMPs due to ethical considerations when they are aware that AI-powered algorithms are used to recommend highly personalized content to its users. The results lend no support for H3.

We observe a positive correlation between users' attitudes towards AI-based content recommendations and political consumerism (β=.20, p<.001). Users harboring more negative attitudes towards personalized content recommendation on SMPs, the more likely they strategically disengage from these platforms. This variable shows a stronger association with the dependent variable compared to all other individual-level variables. The results, therefore, support H4.

Out of all control variables derived from the existing empirical literature on political consumerism, a lack of trust in social media had the strongest effect on users' inclination to withdraw attention from SMPs due to ethical considerations (β=0.15, p<.001). Additionally, our results suggest that the dependent variable was positively associated with political trust (β=0.05, p<.001), media use (β=0.01, p<.001), political interest (β=0.07, p<.001), and political partisanship (β=0.08, p<.001): respondents with diminished trust in politics, lower news media consumption, limited interest in politics and more left-leaning political attitudes tended to disengage from SMPs for ethical reasons. The analysis of sociodemographic variables indicates a significant association between the dependent variable and age (β=-0.05, p<.001) and education (β=-0.03, p=.02): older are more educated individuals reduced their SMP use.

Assessing cross-national differences

To explore differences between countries, we ran five additional regression models. These models shared the same set of variables as the one presented in Table 1, a different country serves as the reference group for each respective model. The regression coefficients of the distinct models are summarized in Table 2.

Our analysis unveils that users from Brazil exhibit a significantly higher tendency to apply more attention to SMPs due to ethical reasons compared to all other countries in our sample. We only find marginal differences between all other countries. Users from Japan and South Korea are more inclined to disengage from SMPs for ethical reasons than users from the UK or the US.

[Table 2 about here]

Additional analyses

We ran a separate OLS regression model to explore political consumerism of open-source alternatives to commercial SMPs (see table A10 in the SI). More specifically, we investigated user engagement vs. disengagement with the open-source platforms Signal (often seen as an ethical alternative to WhatsApp) and Mastodon (often seen as an ethical alternative to Twitter/X). The results show significant positive associations between the dependent variable and political interest (β=0.16, p=0.01) and user awareness of AI-based RecSys (β=0.12, p=0.04). Thus, the more users are interested in politics and the more they are aware that SMPs use AI-powered algorithms for personalized content recommendations, the more they deliberately turn towards open-source alternatives for ethical reasons. Moreover, we find a significant negative correlation between the dependent variable and perceived social media risks (β=-0.13, p=0.04), indicating that users also disengage from open-source SMPs when they believe that SMPs pose societal and individual risks.

On October 27, 2022, Elon Musk concluded the controversial takeover of Twitter/X. As our data collection coincided with this event, we present additional analysis of a natural experiment. Some respondents completed the questionnaire before Musk's acquisition of Twitter (pre-Musk group, n=3,454), while others filled out the survey after the takeover was officially announced (post-Musk group, n=2,231). Using independent sample t-tests, we investigated differences in political consumerism between both groups. We focus on Twitter and Mastodon. The open-source platform Mastodon is often perceived as an ethical alternative to Twitter and received much media coverage after Musk's Twitter acquisition. The results of two independent samples t-tests suggest no significant difference in Twitter/X (pre-Musk: M=3.45; SD=1.19; post-Musk: M=3.50; SD=1.20; t(1966)=-1.05, CI [-0.15, 0.05]) or Mastodon use (pre-Musk: M=3.60; SD=1.26; post-Musk: M=3.41; SD=1.30; t(164)=0.98, CI [-0.19, 0.58]) due to ethical reasons between the pre-Musk group and the post-Musk group.

Put succinctly, Musk's acquisition of Twitter/X did not affect user interactions with Twitter/X or Mastodon on ethical grounds.

Discussion

This study explores bottom-up efforts by individuals to hold SMPs accountable for contributing to detrimental societal outcomes. Drawing on the concept of political consumerism, we examine to what degree users "vote with their feet" to call for more ethical social media ecosystems.

User engagement vs. disengagement with SMPs due to ethical reasons

Our cross-country survey indicates that users tend to engage with SMPs slightly more than they disengage from them for ethical reasons. This finding sheds light on an intriguing phenomenon. Users seem to let SMPs off the hook. While consumers engage in boycotts and buycotts to hold offline companies accountable, users do not scrutinize social media companies in the same way. This is especially concerning, given their influence in shaping public discourse and opinion.

While more research is needed to disentangle this finding, we propose three hypotheses to explain this unexpected result: First, our "too early hypothesis" assumes that it may take time for people to fully understand that changing their consumption patterns has the potential to pressure SMPs to adopt more ethical practices, such as redesigning their attention-extractive algorithms or providing enhanced data protection. Although people have gradually embraced political consumerism in areas like purchasing organic products or reducing air travel, the correlation between social media use and more responsible SMPs may not be as apparent. The lack of a significant 'Musk-effect' in our data may support this hypothesis.

Second, our "bubble hypothesis" suggests that our initial expectation to find more disengagement from SMPs due to ethical reasons may have stemmed from our biases. User migrations from Twitter/X to the open-source platform Mastodon as witnessed among many academics, are unlikely to be representative of all users. Established SMPs like Twitter/X may be viewed as an ethical alternative for a particular need for certain demographics. This need may be receiving information from sources other than traditional media, which some users perceive as biased or unreliable.

Third, our “ethical attribution hypothesis” is predicated on the assumption that SMPs have become deeply ingrained in people’s lives, allowing them to stay connected to peers, receive relevant information, and acquire new knowledge or skills. As these affordances of SMPs may enrich users' lives, they may perceive their SMP use as something ‘ethical’ or ascribe ethical justifications to their SMP use.

If the overall result is confirmed by additional research, it could have significant implications for policymakers. Our findings suggest that grassroots methods such as user boycotts are unlikely to amass enough momentum to force SMPs to develop more socially responsible recommendation algorithms. This underscores the need for top-down regulation to mitigate the societal impacts of attention-extractive algorithms. A noteworthy approach by the EU includes the DSA. Art. 27 and Art. 38 of the DSA aim at empowering users by providing them with insights into how recommendation algorithms operate and giving them the option to choose non-personalized recommendations.

Individual drivers of political consumerism in the attention economy

Insights into individual characteristics are crucial to determining which user segments and demographics are most likely to scrutinize SMPs by changing their consumption patterns. Given the robust statistical power of our analysis resulting from the large sample size, we will focus on the most impactful findings rather than all statistically significant results.

Attitudes towards AI-based recommender systems emerge as a crucial factor. Users can form attitudes about recommender algorithms through personal experiences or secondary information. Events such as the Cambridge Analytica scandal or *The Social Dilemma* documentary have raised public awareness about the potentially harmful effects of attention-extractive algorithms. Our finding further highlights the need for regulation such as the DSA. It forces SMPs to be more transparent about the features they use to make personalized content recommendations. Such increased transparency can serve as important cues for users to form opinions about recommender systems. Moreover, our finding substantiates the notion that developing responsible recommender systems can also benefit SMPs themselves. By focusing on the beneficial attributes of recommender systems, such as aiding users in navigating the information overload on SMPs, rather than optimizing solely for attention extraction, platforms can shield themselves from user dissent.

Our research revealed that low trust in SMPs correlates with heightened disengagement from them. The decline of Twitter/X users, paired with the simultaneous increase of Mastodon users, illustrates that declining trust can spark change in user engagement for ethical reasons. The low overall mean of the SMP trust variable suggests that despite placing a considerable amount of distrust in SMPs, users still tend to increase their platform use for ethical reasons rather than decreasing it. This finding may substantiate our "ethical attribution hypothesis": Users attribute ethical value to their personal SMP use (e.g., maintaining relationships with peers) rather than rewarding the companies for their conduct.

Our study further reveals weak yet significant positive associations between the dependent variable and a set of variables derived from the political consumerism literature. These findings are consistent with Copeland and Boulianne's (2022) meta-analysis. However, we extend this literature in two significant ways. First, we apply the concept of political consumerism to a new context - SMPs in the attention economy. We find that well-established predictors of political consumerism, such as media use, political interest, political trust, and political ideology, are also correlated with political consumerism in the attention economy. This demonstrates that these predictors hold true even when purchasing power shifts from money to attention. Second, while previous meta-analyses did not differentiate between buycotts and boycotts, we find that media use, political interest, political trust, and political ideology tend to increase the use of SMPs for ethical reasons rather than decrease it.

Additional analyses revealed that higher general awareness about the use of AI-based recommender systems by SMPs and a high interest in politics make users more inclined to increase their use of open-source platforms Signal and Mastodon for ethical reasons. The findings indicate a need for digital and political literacy. Many users may be unaware of the fact that SMPs capitalize on user attention through AI-powered recommendation algorithms. The correlation with political interest could indicate that once users understand the political implications of social media - for example, the spread of misinformation - they seek more ethical, open-source alternatives. Civil society organizations can play a vital role in facilitating public education about attention-extractive algorithms. For instance, the Center for Humane Technologies provides several educational resources about the societal impact of SMPs.

Cross-country differences

Regarding country-level variance, two main findings stand out. First, users from Brazil are least likely to disengage from SMPs due to ethical reasons. Second, users from all other countries show relatively similar levels of political consumerism with regard to SMPs.

A possible explanation for the first finding is the importance of SMPs for social movements and activism in Brazil. The country has a vibrant civil society, with numerous grassroots campaigns advocating for social, environmental, and political change. These movements leverage SMPs to disseminate information, rally supporters, and coordinate actions. In this context, Brazilians might view their engagement with SMPs as an ethical choice, contributing to the broader goals of these movements and fostering positive change. Additionally, it is essential to consider the role of SMPs in shaping political discourse in Brazil. With traditional media outlets often criticized for being biased or controlled by powerful interest groups, SMPs might be seen as an alternative source of information and a more democratic space for political debate. This perception could explain why Brazilians turn towards SMPs for ethical reasons.

We explain the similar levels of political consumerism in Germany, Japan, South Korea, the UK, and the US by highlighting the commonalities among these countries. Despite the diversity in political cultures, media structures, and cultural values, all these countries uphold established democratic values, have advanced digital infrastructures, and exhibit low levels of corruption. A systematic literature review suggests that SMPs tend to exert the most adverse impacts in such robust democracies (Lorenz-Spreen et al., 2022). Public discourse in these nations may scrutinize the negative ramifications of SMPs on individuals and society. As early adopters of new technologies, users in these societies may have developed similar expectations about SMPs and similar patterns in political consumerism. Given the similarities in these countries, policies developed in the EU may also be effective in other countries, as demonstrated by the GDPR. Art. 27 and Art. 38 of the DSA can therefore inform regulation in other countries, forcing SMPs to be more transparent about the configuration of their recommendation algorithms and allowing users to choose non-personalized alternatives.

Limitations and avenues for future research

Five main limitations of our study suggest promising directions for future research. First, several empirical challenges emerge when applying the concept of political consumerism to

the attention economy. For instance, the study highlights the need for refined and validated measurements of political consumerism in the attention economy. This concept is inherently complex, as it links behavior to specific motivations. What sets social media use apart from products typically researched in the literature is the lack of suitable alternatives or the high social switching costs. More research comparing established and attention-based forms of political consumerism is needed. Second, we relied on self-report measures to assess participants' political consumerism, which may be biased. Future research could benefit from incorporating behavioral measures of political consumerism. Third, our study used cross-sectional data, which precludes us from making causal inferences about the relationships among variables. To establish causality, experimental or longitudinal designs are required. Finally, while sampling across three continents, our sample did not include any African countries due to feasibility issues. To further explore the phenomenon of political consumerism in Africa and other countries from the global south, future research should aim to include even more diverse samples.

Conclusion

This study investigates bottom-up resistance against attention-extractive algorithms deployed by SMPs. By applying the concept of political consumerism, we explored users' inclination to strategically withdraw or apply attention to SMPs as a form of protest against platform companies. Our findings indicate that despite general distrust in SMPs and awareness of the risks associated with SMPs, users hardly hold social media companies accountable through individual actions. As this form of bottom-up resistance is unlikely to emerge in the near future, more emphasis needs to be placed on top-down regulation to protect individual users and societies from the potentially harmful effects of SMPs. The EU has recently made progress in this direction by ratifying the DSA, which aims at increasing algorithmic transparency and empowering users to opt out of targeted recommendations. Similar to the GDPR, the DSA has the potential to inform regulation in other countries to mitigate the adverse impacts of attention-extractive algorithms and reinforce user agency.

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Figure 1 | Users' Engagement vs. Disengagement with Commercial Social Media Platforms Due to Ethical Reasons per Country

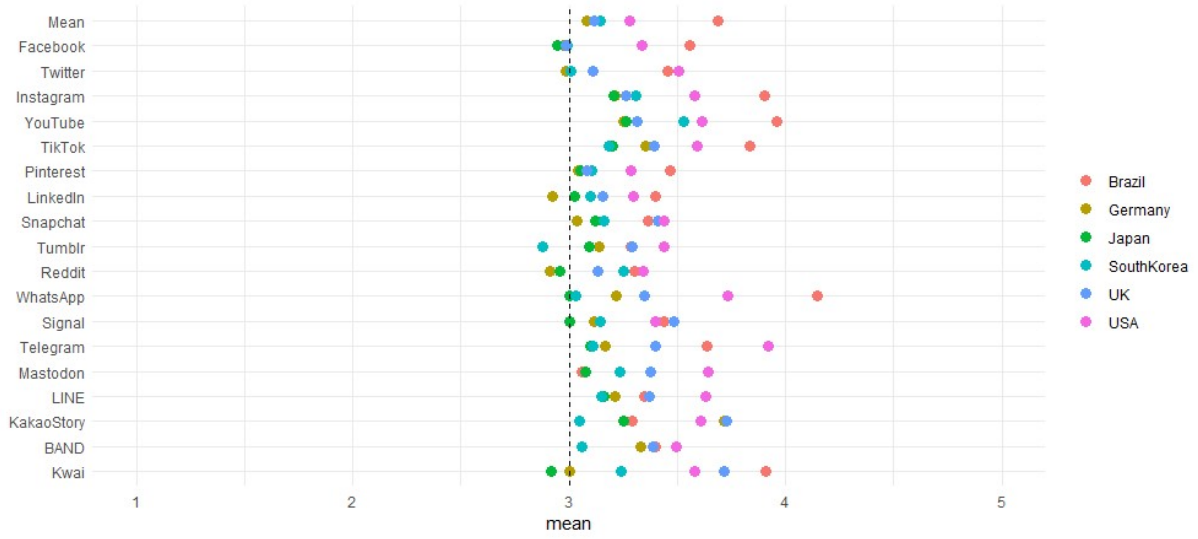

Table 1 | Effects on Users' Engagement vs. Disengagement with Commercial Social Media Platforms Due to Ethical Reasons

	Commercial SMPs				
Variable	*b*	*SE(b)*	*β*	*t*	*95% CI (b)*
Germany	-0.36***	0.03	-0.19	-10.98	[-0.43, -0.30]
Japan	-0.41***	0.03	-0.21	-12.82	[-0.48, -0.35]
South Korea	-0.41***	0.03	-0.21	-13.56	[-0.47, -0.35]
UK	-0.31***	0.03	-0.16	-9.77	[-0.37, -0.24]
USA	-0.30***	0.03	-0.16	-9.82	[-0.36, -0.24]
Perceived Social Media Risks	-0.04***	0.01	-0.06	-3.88	[-0.07, -0.02]
Privacy Concerns	0.05***	0.01	0.07	4.82	[0.03, 0.07]
Awareness of AI-based RecSys on SMPs	-0.02	0.01	-0.02	-1.49	[-0.04, 0.00]
Attitudes towards AI-based RecSys on SMPs	0.13***	0.01	0.20	12.96	[0.11, 0.15]
Political Trust	0.04**	0.01	0.05	3.01	[0.01, 0.06]
Media Trust	0.00	0.01	0.10	0.44	[-0.02, 0.03]
Social Media Trust	0.10***	0.01	0.15	9.14	[0.08, 0.12]
News Media Use	0.05***	0.01	0.01	7.23	[0.04, 0.06]
Political Interest	0.04***	0.01	0.07	4.93	[0.02, 0.06]
Political Partisanship	0.02***	0.00	0.08	5.75	[0.02, 0.03]
Government vs. Individual Responsibility	0.01	0.00	0.02	1.35	[-0.00, 0.01]
Age	0.00***	0.00	-0.05	-3.64	[-0.00, -0.00]
Gender	-0.03	0.02	-0.02	-1.82	[-0.07, 0.00]
Education	-0.03*	0.01	-0.03	-2.43	[-0.05, -0.00]
Constant	2.58	0.08		30.50	[2.41, 2.75]
Observations	4931				
R^2 (Adjusted R^2)	0.28 (0.28)				
Residual Std. Error	0.61 (df=4911)				
F Statistic	99.69*** (df=19; 4911)				

*Note. *p<0.05; **p<0.01; ***p<0.001*

Table 2 | Pairwise Comparisons of Countries Based on *b*-Values

	b-values				
	Brazil	Germany	Japan	South Korea	UK
Germany	-0.36***				
Japan	-0.41***	-0.05			
South Korea	-0.41***	-0.05	-0.00		
UK	-0.31***	0.06	0.11***	0.11***	
USA	-0.30***	0.06	0.11***	0.11***	-0.00

*Table shows the b-values of five different regression models each using a different country as the reference group. *** p<.001. ** p<.01. * p<.05*