Article

Instaworthy? Examining the Effects of (Targeted) Civic Education Ads on Instagram

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Abstract

The last few years have witnessed a growing societal and scholarly interest in the potential of online political microtargeting to affect election outcomes in favor of parties and candidates. It has often been rightly pointed out that political microtargeting can pose risks to electoral integrity in democracies. But can political microtargeting also benefit democratic functioning? Very little is known about the potential of political microtargeting to affect citizens' attitudes towards politics and increase their civic participation. To address this paucity, this article presents a preregistered online experiment conducted in Germany among young adults ($N = 445$), examining whether (targeted) civic education ads on Instagram increase political interest, efficacy, and civic participation. An innovative methodological approach to studying political microtargeting is deployed, exposing respondents to civic education ads in a mock Instagram feed, personalized in real-time based on individual preferences. We find no direct evidence of (targeted) civic education ads, leading us to believe that (targeted) ads do not unconditionally affect political interest, efficacy, or civic participation.

Keywords

civic education; civic participation; Instagram; online advertisements; political microtargeting

Issue

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1. Instaworthy? Examining the Effects of (Targeted) Civic Education Ads on Instagram

Political campaigning has undergone major changes throughout the last decade. Social media play a central role in election campaigns (Boulianne, 2020; Dimitrova & Matthes, 2018), and targeted ads have become a standard feature (Baldwin-Philippi, 2017; Chester & Montgomery, 2017). Over the past few years, online political microtargeting (PMT) has received a considerable amount of critical attention. After it became known that PMT had been employed in the Brexit "vote leave" and Trump 2016 presidential campaign, its potential to jeopardize the integrity of elections was widely lamented, and PMT was said to be a major contributor to the electoral victories (e.g., Cadwalladr, 2017; Grassegger &

Krogerus, 2017). But PMT has not only been used in the US or UK but also in Germany—In the European elections in 2019, a total of 1.5 million euros was spent on PMT (Jaursch, 2020).

A growing body of scientific research has responded to the need to investigate the effects of PMT and evidence finds that targeting ads indeed increases the likelihood to vote for a certain party or candidate and strengthens party ties (e.g., Krotzek, 2019; Lavigne, 2020; Zarouali et al., 2020). However, little is known about the effects of PMT beyond its potential to influence election outcomes in favor of the advertised candidates and parties. The question of if and how PMT can benefit democratic functioning, for instance by educating citizens about civic duties in democracies, has attracted very little attention. Limited research has been carried

out on the effects of online civic education and even less on the effects of targeted civic education. Zuiderveen Borgesius et al. (2018) argue that PMT could be beneficial to democracy by reaching citizens who opt out of traditional news media, strengthening their political interest, and mobilizing them to politically participate.

An important segment of society that uses social media as a source of news content on the internet (55%) are the 18- to 24-year-olds. Although they often see posts from traditional news providers, 39% of youths indicated social media as the most important source of news (Hölig et al., 2022). Seeing that they get a significant amount of information through social media platforms like Instagram, it can be expected to influence the way they learn about politics, how their opinions and attitudes are formed, and if and how they will engage in political processes. This idea is supported by previous research that found more overall significant effects of social media consumption on political engagement among young adults compared to general population samples (Boulianne & Theocharis, 2020).

This study, therefore, sets out to empirically investigate whether PMT is effective in increasing political engagement and participation likelihood of young citizens (18–25 years old), whose political preferences and political behavior are still developing (Neundorf & Smets, 2017). We believe that seeing online ads can boost both political participation and institutions can thus use PMT to successfully mobilize citizens.

To this end, a pre-registered online survey experiment was conducted investigating two main research questions, namely (a) whether civic education ads on Instagram can increase political engagement and civic participation among young citizens between 18 and 25 years old, and (b) whether this effect can be amplified by targeting the ads based on political issue preference. An innovative methodological approach is used, generating a personalized mock Instagram feed based on respondents' preferences in real-time, which has never been done before. Respondents are exposed to either no civic education ads, three neutrally framed civic education ads, or three civic education ads tailored and targeted toward their political issue preference assessed pre-treatment.

2. Targeted Political Ads and Civic Participation: State of the Art and Expectations

This article examines the effects of online PMT. PMT is a type of online behavioral advertising in which data about people's personal information and online behavior is collected for the sake of displaying targeted political advertisements to them (Zuiderveen Borgesius et al., 2018). Turow et al. (2012) outline two characteristics of microtargeted political ads: They are (a) targeted to individuals of a certain population (choices about whom to target, how, when, and why are being made based on data analysis) and (b) tailored to individuals based on, for

instance, their socio-demographics, location, interests, and values. The last few years have witnessed a growing scholarly interest in PMT (Bodó et al., 2017). Message targeting and tailoring have been often used in persuasive communication and have proven to be a successful strategy (Matz et al., 2017).

Empirical evidence on the use and effects of PMT is growing (e.g., Hager, 2019). In previous work, several authors have pointed out the risks of PMT. According to them, these reach from, for instance, privacy invasions (Bennett, 2015), opacity and subterfuge of voters (Tufekci, 2014), manipulation, political polarization, and spread of disinformation (Gorton, 2016; Susser et al., 2019). Zuiderveen Borgesius et al. (2018), however, argue that certain aspects of PMT can also be beneficial to democracy. Specifically, it is suggested that PMT could be used to mobilize voters to cast their vote or other forms of political engagement, such as political interest and political knowledge, and political participation of citizens. Ads can be specifically tailored to people's interests and values and thus might be perceived as more relevant. According to the authors, there is a window of opportunity to reach citizens who opt out of traditional media, such as young citizens, via targeted political ads on social media. Targeted information can then be used to mobilize citizens into political or civic action, ranging from behaviors (such as participation and turnout) to political engagement (such as political interest).

The strategy of targeting political ads is closely related to the theory behind the elaboration likelihood model (ELM). In their landmark article, Petty and Cacioppo (1986) established the ELM, which argues that persuasive messages are processed with different levels of thought (elaboration). Central route processing occurs when motivation and ability to process the message are high, while peripheral route processing occurs when motivation and ability to process the message are low. The personal relevance of a message is the most important predictor of cognitive elaboration. As the personal relevance of the message increases, the intensity and/or complexity of processing increases. Attitude changes that result from central route processing are more persistent over time and more predictive of behavior. This finding has been transferred to an online setting by Tam and Ho (2005), who have been able to show that online advertorial content matched to individual preferences heightens elaboration and increases the likelihood to accept an advertised offer.

The few empirical analyses on PMT that have been conducted tended to focus on the effects of ad congruence on voters' attitudes and voting intentions toward individual candidates and political parties. Therein, it has been demonstrated that citizens are more strongly persuaded by targeted political ads that are congruent with their personality traits, as such ads positively affect citizens' attitudes and voting intentions towards both individual candidates (Krotzek, 2019) and political parties

(Zarouali et al., 2020), and reinforce party ties (Lavigne, 2020), thus confirming the ELM.

When discussing the implications of their results, scholars often point to threats of PMT, such as subliminal persuasion of voters by political elites. Interestingly, less attention has been devoted to the beneficial impact of PMT on democratic functioning, investigating its potential to increase voter turnout, political interest, or even political participation of citizens. One such study is a field experiment by Haenschen and Jennings (2019), who examine the effect of banner ads related to a municipal election in Texas, targeted at millennial voters. They argue that this generation often abstains from voting because they (a) cannot find reliable sources of information and (b) are not incentivized to do so through their peers. They find that banner ads, strategically displayed to this age group and containing messages targeted towards this group's interests (suggesting a credible source and inducing a social norm of voting), impacted the voting turnout of millennials, but only in competitive districts. But it remains a question whether PMT can, through distributing civic education messages, increase political engagement beyond voting turnout.

In general, much of the literature on civic education centers around offline forms of civic education, as part of secondary education. Recent studies, for instance, examined the effects of civic education embedded in schools on pro-democratic attitudes (e.g., Feddes et al., 2019) and civic participation (e.g., Bowyer & Kahne, 2020). Significantly less is known about the effects of online civic education (on social media). One recent experimental study by Finkel et al. (2021) suggests that online civic education in the form of educational videos, in the new democracy of Tunisia, reduces authoritarian nostalgia, increases democracy support, political efficacy, and the likelihood to engage in campaign-related political behavior, but further work is required to build on this finding.

The overarching aim of civic education in democracies is the development of civic competence (Peterson et al., 2010). Civic education refers to all consciously planned and organized, continuous and targeted measures by educational institutions, to equip adolescents and adults with the prerequisites that are necessary for civic participation in democratic societies (Andersen, Bogumil, et al., 2021). Multiple studies have demonstrated that civic education in a classroom setting can strengthen political interest (e.g., Galston, 2007), political efficacy (e.g., Martens & Gainous, 2013), and political participation (e.g., Galston, 2004; Kahne et al., 2007). Besides, as mentioned above, two recent studies have demonstrated that online civic education content has similar beneficial effects on democratic citizenship (Finkel et al., 2021; Haenschen & Jennings, 2019), but research on this matter is still in its infancy.

According to traditional political socialization theory, the impressionable years that shape citizens' political preferences and behaviors go beyond school age and lay between the ages of 17 to 25 (Neundorf & Smets, 2017; Niemi & Jennings, 1991). Political preferences and political behavior of this age group are still developing and therefore make this age group susceptible to external influences (Neundorf & Smets, 2017), for instance to media effects (Andersen, Ohme, et al., 2021). Young citizens increasingly opt out of traditional news media, such as TV and newspapers, and instead use social media as a source of political content (Hölig et al., 2020). Therefore, social media such as Instagram, hold great potential for educational institutions (e.g., agencies for civic education) to promote political engagement, which encompasses, among others, political interest, efficacy (Andersen, Ohme, et al., 2021), and civic participation among young citizens. Furthermore, Instagram is also seen as a political marketing platform (Muñoz & Towner, 2017, p. 291). It is not only used by a lot of people, in particular younger citizens, but it is also a very visual platform that can be used for *branding* (Brands et al., 2021). In our case, that would mean more awareness of agencies that promote civic engagement. Once aware of the agency and the issues, people might be more likely to be mobilized into political action or become politically interested. Furthermore, Instagram is seen as an aesthetic platform and uses visually attractive images that draw attention (Pereira Caldeira, 2021). Taken together, this effect could be amplified by placing targeted and therefore more relevant civic education content in the form of ads (Zuiderveen Borgesius et al., 2018). An important side note is that although Instagram is quite popular among young adults, in Germany, in the case under study, "only" 27.7% of youngsters between 18 and 24 used Instagram (Statista, 2022), meaning that there is still 70% of young people that is not on Instagram. Moreover, it is not clear that those that are active on Instagram also actually see political ads on their Instagram feed. This article, however, aims to provide a first insight into how political online ads on social media sites can boost civic education, and we think that using a mock Instagram feed serves this explorative purpose well.

Drawing on Petty and Cacioppo's (1986) ELM and Tam and Ho's (2005) online application of the model, we argue that targeted civic education ads which are personalized to political issue preference will be more relevant to the individual. Therefore, the ads will more likely be processed at the central route, which again increases the likelihood that people's attitudes (political interest and efficacy) and future behaviors (mobilized into civic participation) will be affected, compared to untargeted civic education ads. This article specifically examines if online civic education ads on Instagram can positively affect political engagement (i.e., interest and efficacy) of young citizens in an established democracy (Germany), and whether this effect can be amplified through microtargeting.

We will include general political interest based on the work of scholars who have established a significant effect of civic education on general political interest

(e.g., Galston, 2007), and who have demonstrated that political interest continues to grow in young adulthood up to the age of 25, after which it remains stable (e.g., Neundorf et al., 2013). We will furthermore examine the effect of (targeted) civic education ads on issue-specific political interest since it has been noted that the political interest of young people often centers around political issues (e.g., Soler-i-Martí, 2015), and because the ads will be targeted based on pre-assessed preference for certain political issues. Because of the context of this study, the Covid-19 pandemic, we focus on online forms of civic participation. Recent studies in the field of political participation (e.g., Andersen, Ohme, et al., 2021; Gibson & Cantijoch, 2013) have acknowledged that technological changes have enabled new forms of participation (such as liking a politician's social media page, signing online petitions, etc.), that go beyond traditional activities such as taking part in physical demonstrations. During the Covid-19 pandemic, these are realistic forms that can easily be executed from home and do not require physical action. Lastly, the effect of (targeted) civic education ads on political efficacy will be examined. Political efficacy is composed of two forms (i.e., internal and external political efficacy) that relate to different concepts. External political efficacy relates to an individual's perception about how the political system responds to their demands, whereas internal political efficacy relates to perceived competence to politically participate (e.g., Craig et al., 1990; Morrell, 2005). We focus on internal political efficacy, as the ads are designed to increase the recipients' competence to politically participate (Ads 1 and 2), by incorporating several suggestions about ways to politically participate online, as well as their confidence (Ad 3), by emphasizing that they can make a difference by participating.

Based on the theoretical framework and current gaps in the literature, we test the following preregistered hypotheses:

- Civic education effect: Compared to respondents exposed to a feed without civic education ads, respondents exposed to a feed including neutral (untargeted) civic education ads are subsequently more likely to engage in civic participation practices (H1a), display higher levels of general political interest (H1b), issue specific political interest (H1c), and display higher levels of internal political efficacy (H1d).
- Targeting effect: Compared to respondents exposed to a feed including neutral (untargeted) civic education ads, respondents exposed to a feed including targeted civic education ads are subsequently more likely to engage in civic participation practices (H2a), display higher levels of general political interest (H2b), issue specific political interest (H2c), and display higher levels of internal political efficacy (H2d).

Neundorf et al. (2016) find that civic education in schools can compensate for inequalities that result from differences in family socioeconomic status and the frequency of student–parental political discussions regarding political engagement in adult life. But although civic education is a central mission of schools in Germany, it is implemented very differently in different types of secondary schools. A study by Achour and Wagner (2019) has shown that students at grammar schools (*Gymnasien*), which are typically attended by students of higher socioeconomic status, not only receive more extensive civic education but also rate it as more diverse and participatory compared to students of other types of schools. The authors argue that such differences in students' access to (high-quality) civic education solidify inequalities because students are not being equally prepared to participate in democracy. Based on Achour and Wagner's (2019) and Neundorf et al.'s (2016) findings, we argue that (targeted) online civic education especially affects citizens who are less aware of the possibilities to politically participate, because they have received less and poorer-quality civic education in school and/or have not experienced parental political socialization. Among more politically knowledgeable people, we expect a ceiling effect to occur, as the information provided in the civic education ads is not new to them. We, therefore, arrive at the following moderation hypotheses, which can be classified as a contingent convergent positive moderation effect (Holbert & Park, 2020), as shown in Figure A1 of the Supplementary Material:

- Moderation of the civic education effects: The civic education effects (H1a, H1b, H1c, and H1d) are conditional on respondents' level of political knowledge, in the sense that there is a ceiling effect for respondents with higher levels of political knowledge. The higher a respondent's level of political knowledge, the smaller the civic education effect becomes in increasing respondents' civic participation (H3a), general political interest (H3b), issue-specific political interest (H3c), and internal political efficacy (H3d).

3. Method

To test these hypotheses, we conducted a pre-registered online survey experiment among German Instagram users between 18 and 25 years old for one week (27/05/2021–4/06/2021). To maximize this study's external validity, we embedded the experimental treatment ([targeted] civic education ads) within a personalized mock Instagram feed, which was generated in real-time based on participants' previously made choices. We decided to focus on Instagram as a social media platform seeing that Twitter did not allow ads and Facebook is less popular among young people. It is nevertheless important we furthermore utilized the information gathered pre-treatment to tailor the civic education ads

based on participants' preferences for certain political issues. The sample was randomly divided into three groups, namely the control group, which was exposed to a mock Instagram feed containing no civic education ads; the untargeted treatment group, which received a mock Instagram feed containing neutral civic education ads; and the targeted treatment group, which was exposed to a mock Instagram feed including targeted civic education ads, tailored to their personal political issue preference.

This study was pre-registered via OSF (see https://osf.io/rjnf3/?view_only=675a8a3753d1419db49fd4e670 49562c). All deviations from the original pre-analysis plan are either highlighted in this section or in the supplementary files. We also tested whether the targeting effect is mediated by ad liking, perceived relevance, and targeting recognition to better understand the underlying mechanisms of targeting. Due to an error in the timing of the manipulation check, these variables cannot be used in our study.

3.1. Sample

Political socialization theory hypothesizes the height of one's impressionable or formative years to be situated between the ages 17 to 25 (Neundorf & Smets, 2017; Niemi & Jennings, 1991), which led us to focus on this age group. Using the services of the panel research company Dynata, a total of 445 German Instagram users between the ages of 18 to 25 were successfully recruited. Respondents that did not pass the attention check were excluded from the sample. As each treatment group contained at least 130 respondents ($n_{control}$ = 146, $n_{untargeted}$ = 150, $n_{targeted}$ = 149), the sample fulfils the size criteria specified in the pre-registration of this study to reach a statistical power of 80%, assuming a moderate effect size of d = 0.35. The final sample had a mean age of 21.49 (SD = 2.20). Furthermore, the sample consisted of 284 (64%) females, 158 (36%) males, and three (<1%) respondents that identified as neither female nor male; 68.8% of respondents had a technical or general university entrance qualification or higher. In terms of political ideology, the sample was more oriented towards the left of the political left–right spectrum. On an 11-point left-right scale (min = 0, max = 10, M = 4.39, SD = 2.17), 48.1% of respondents placed themselves left of the center (x < 5), while 25.8% of respondents placed themselves directly in the center (x = 5). Lastly, more than 80% of the final sample reported using Instagram daily, and less than 8% reported their Instagram usage to be once a week or less.

3.2. Procedure

Guiding the development of the final experimental design, we first conducted a pilot study among 89 German-speaking respondents aged 16–25, with the main goal of optimizing the quality of the feed and experimental treatment. The pilot study led to no major changes to the research design.

The final survey consisted of four steps. First, we collected a range of pre-treatment measures, including political issue preferences, to which the civic education ads were tailored in the targeted treatment group. The following two steps aimed to replicate respondents' user experience on Instagram. First, respondents were asked to "follow" a range of preselected Instagram channels, to enable generating a personalized mock Instagram feed in the following step, in which respondents in the treatment groups were exposed to the experimental treatment. In the final step, we assessed a series of post-treatment measures, including the main dependent variables. An overview of the survey procedure is provided in Figure 1. Example screenshots of the civic education ads can be found in the Supplementary Material (Figure A2).

Prior to recruitment, the potential respondents were asked to participate using their smartphones, to aim for a similar user experience compared to Instagram. After introducing participants to the survey and receiving their consent, the following variables were assessed: age, gender, education, political issue preference, social media use, and need for cognition. We kept the number of politically focused variables in this step as small as possible, to prevent priming respondents on political matters prior to the experimental treatment. As the forthcoming targeting of the targeted treatment group was based on participants' responses to the political issue preference question, this question needed to be included in this step of the survey. Respondents were asked to rank five political issues (climate, poverty, racial injustice, migration, and gender equality) based on how important they personally perceived each issue to be. The issues were selected based on a thorough analysis of the most relevant political issues among the target population (Calmbach et al., 2020; Horton & de Haan, 2019; Prellberg, 2019). To distract from the actual purpose of the study prior to the experimental treatment, we also assessed respondents' social media use habits and need for cognition.

In the next step, respondents were presented with a total of 50 actual Instagram channels and asked to choose the seven channels which they were most likely to follow in real life. This enabled building a mock Instagram feed in the following step which closely replicated respondents' personal real-life experiences on Instagram. The list of Instagram channels consisted of mostly well-known Instagram channels, brands, or personalities and was compiled with the goal of covering a broad range of interests within the target population. The pilot study, including 89 respondents aged 16–25, revealed that each channel was selected at least once and that respondents were generally satisfied with the preselection of channels. About 81% of respondents in the pilot study agreed with the statement "the channels available for selection were sufficient."
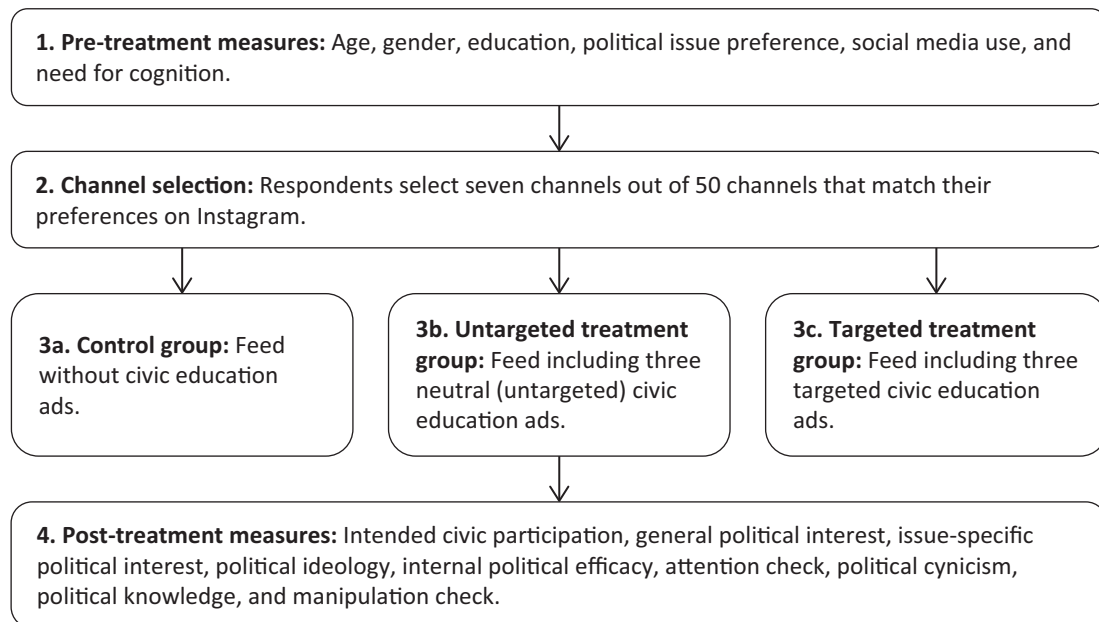
1. Pre-treatment measures: Age, gender, education, political issue preference, social media use, and need for cognition.

2. Channel selection: Respondents select seven channels out of 50 channels that match their preferences on Instagram.

3a. Control group: Feed without civic education ads.

3b. Untargeted treatment group: Feed including three neutral (untargeted) civic education ads.

3c. Targeted treatment group: Feed including three targeted civic education ads.

4. Post-treatment measures: Intended civic participation, general political interest, issue-specific political interest, political ideology, internal political efficacy, attention check, political cynicism, political knowledge, and manipulation check.

Figure 1. Flow diagram of the procedure.

Subsequently, a personalized mock Instagram feed was automatically generated by displaying a series of posts in random order and vertically arranged, to enable respondents to "scroll" through the feed on their smartphones as they would in a real-life setting. Using a timer, respondents had to stay on the mock feed for two minutes before they could continue to the questions. Most respondents only stayed for the mandatory two minutes on the feed with a few exceptions ($n = 4$). Seeing that all respondents had to take some time to scroll through the feed, we do not expect an effect of exposure to the ads. For each channel selected, two posts were displayed, along with, in the treatment groups, three fictional sponsored posts (ads) by the German Federal Agency for Civic Education (Bundeszentrale für politische Bildung, or bpb, for short), containing civic education messages. The German Federal Agency for Civic Education is an organization affiliated with the Federal Ministry of the Interior and is responsible for promoting civic education among German citizens. Consequently, respondents in the control group saw 14 posts and respondents in the experimental groups saw 17 posts in total. Respondents were randomly assigned to the control group, the untargeted treatment group, or the targeted treatment group. In the pilot study, 94% of the respondents thought that the mock Instagram feed was realistic and 93% generally liked their feed. About 94% of respondents in the pilot study agreed with the statement "the Instagram feed was realistic," and about 93% of respondents in the pilot study agreed with the statement "I liked the Instagram feed."

The sponsored posts displayed to the two treatment groups were identical in their content, layout, and design and only varied in their framing, which was either neutral for the untargeted treatment group or, in the targeted treatment group, framed towards each respondent's personal issue preference as indicated in the political issue preference question. Therefore, a total of six versions (one neutral, five framed towards political issues) of each of the three civic education ads were created. The first ad suggested several forms of online civic participation to engage in via social media, the second ad called upon signing, sharing, and creating online petitions, and the third ad aimed to motivate and strengthen political engagement. In the pilot study, 91,84% of respondents thought that the ads provided useful suggestions for ways to politically participate (online).

The manipulation check, asking all respondents whether their feed included posts from channels that they did not select prior to the generation of the feed (answer options: "yes," "no," "I don't know"), indicated that treatment groups noticed the sponsored posts (ads), as they were significantly more likely ($M = 0.60$, $SD = 0.49$) than the control group ($M = 0.21$, $SD = 0.41$) to respond to the manipulation check with "yes," $t(443) = -8.46$, $p = .000$, 95% CI ([0.30, 0.49]).

After exposing respondents to their personalized mock Instagram feeds, the dependent variables, additional variables as well as attention and manipulation checks were assessed. The questions were asked in the following order: civic participation, general political interest, issue-specific interest, political ideology, internal political efficacy (item battery includes attention check), political cynicism, political knowledge, and manipulation check.

The dependent variable "intended civic participation" was measured by taking the respondent's mean of the answers to eight questions about civic participation actions in relation to their previously indicated preferred topic ($M = 4.01$, $SD = 1.36$, Cronbach's $\alpha = 0.89$).

To measure general political interest, we asked respondents to indicate their general political interest ("How interested are you in political matters in general") on a seven-point Likert scale ranging from 1 (*not at all*) to 7 (*very strong*; $M = 4.50$, $SD = 1.56$). To measure respondents' top issue interest, we assessed respondents' interest (on the same scale as before) in the issue previously ranked as their *top issue* ("How interested are you in [topic]," $M = 5.71$, $SD = 1.41$). The fourth dependent variable, internal efficacy, was measured by asking respondents about their ability to understand important political issues and their confidence to take an active part in discussions about political issues (Beierlein et al., 2014). These items were combined by averaging the responses ($M = 4.50$, $SD = 1.48$, Cronbach's $\alpha = 0.81$, $r = 0.68$).

To test the moderation hypothesis (H3), or thus political knowledge, respondents were asked to indicate the party affiliation of five members of the German parliament with different degrees of popularity (Angela Merkel, Heiko Maas, Sahra Wagenknecht, Horst Seehofer, and Aminata Touré), of which only an image was provided. The political knowledge variable was calculated by counting the correct answers to the five knowledge questions ($M = 1.96$, $SD = 1.29$, $H = 0.39$).

3.3. Analytical Strategy

We tested the main treatment effects (H1 and H2) through ordinary least square linear regression models predicting (a) intended civic participation, (b) general political interest, (c) top issue interest, and (d) internal efficacy, through dummy independent variables indicating the three experimental groups, the untargeted treatment condition being the omitted (baseline) category. The untargeted treatment group was selected as the baseline category to enable a more accessible interpretation of the results with regard to the two main hypotheses. We furthermore tested whether political knowledge moderates the civic education effect (H3)

through a linear regression model predicting the four dependent variables through a dummy variable to indicate the untargeted treatment effect (untargeted treatment group compared to the control group), the variable "political knowledge," and their interaction (untargeted treatment * political knowledge).

4. Results

First, we look at how being exposed to untargeted (H1) or targeted (H2) civic education ads affect (a) civic participation, (b) general political interest, (c) issue-specific political interest, and (d) internal political efficacy. Table 1 shows the results of H1 and H2. As the untargeted treatment group was defined as the baseline category, it is possible to determine whether the hypotheses can be confirmed by the data solely through the regression coefficients displayed in the table.

The first hypothesis that respondents in the untargeted treatment condition—compared to the control group that received no ads—display higher levels of intended civic participation (H1a), general political interest (H1b), top issue interest (H1c), and internal efficacy (H1d) cannot be confirmed. As can be seen in Table 1, the data shows no significant effect of the civic education messages (control group compared to untargeted group) on either of the four dependent variables. H1 is thus not supported.

Furthermore, we expected that respondents in the targeted treatment group condition—compared to the untargeted treatment group—display higher levels of intended civic participation (H2a), general political interest (H2b), top issue interest (H2c), and internal efficacy (H2d). As the results of the civic education effect, the hypothesized targeting effect was not significant. Therefore, none of the hypothesized main treatment effects (H1 and H2) were supported. We also ran the model as a series of pairwise comparisons. This gave no different significant effects compared to the complete model. This finding suggests that being exposed

Table 1. Results of the linear regression analyses explaining the dependent variables (intended civic participation, general political interest, top issue interest, and internal efficacy) through the randomly assigned experimental groups (N = 445).

	Intended civic participation (a)	General political interest (b)	Top issue interest (c)	Internal efficacy (d)
Experimental Group (Ref.: Untargeted)				
Control	−0.29 (0.16)	−0.00 (0.18)	−0.02 (0.16)	−0.08 (0.17)
Targeted	0.01 (0.16)	0.22 (0.18)	0.14 (0.16)	0.08 (0.17)
Constant	4.10*** (0.11)	4.43*** (0.13)	5.67*** (0.11)	4.50*** (0.12)
R^2	0.010	0.005	0.003	0.002
F	2.30	1.03	0.57	0.41

Notes: Values are unstandardized coefficients; standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

to civic education ads, even when they are specially tailored to one's political preferences, has no significant effect. Previous studies did find a positive effect on voting turnout of millennials but focused on banner ads (Haenschen & Jennings, 2019).

4.1. Moderation of the Civic Education Effect

Next, we hypothesized (H3) that the civic education effects are conditional on respondents' level of political knowledge, in the sense that there is a ceiling effect for respondents with higher levels of political knowledge. The higher a respondent's level of political knowledge, the smaller the civic education effect becomes in increasing respondents' intended civic participation (H3a), general political interest (H3b), issue-specific political interest (H3c), and internal political efficacy (H3d). We thus expect the effect of civic education ads to be larger for respondents with lower levels of political knowledge.

The interaction term in Table 2, however, suggests no significant interaction effects of the civic education treatment and political knowledge on any of the four dependent variables were found. This result thus indicates that there is no significantly different effect for participants with different levels of political knowledge.

5. Discussion

The purpose of this study was to determine (a) whether civic education ads on Instagram increase political engagement and (intended) civic participation among young citizens and (b) whether targeting these ads on political issue preferences increases this effect. We did not find a significant effect of exposure to untargeted or targeted civic education ads on Instagram on intended civic participation, general political interest, top-issue interest, or internal efficacy. Both neutral civic education ads, as well as ads that are specifically tailored to the

participants, did not create a significant change in our dependent variables. This is in line with previous work that shows that the mobilization effects of digital political ads in an election campaign context may be more modest (Aggarwal et al., 2023; Coppock et al., 2022) or more dependent on specific circumstances (Haenschen, 2022). We also expected that youngsters with less knowledge about politics would be more receptive to the information in the ads. We did not find support for the conditional role of political knowledge, indicating that in this study civic education ads do not seem to influence those who had low political knowledge. In sum, while (targeted) civic education ads might hold great potential in reaching specific groups of voters and mobilizing them into (intended) political action and activating engagement (interest and efficacy), this study has not found evidence to support this.

The present study is among the first to examine the effectiveness of targeted and general civic education ads on Instagram and therefore delivers important insights into whether targeting on social media can be used in a way that is beneficial to the functioning of democracies. Our findings suggest that the impact of civic education ads on Instagram might be limited which has important implications for civic education organizations and advocacy organizations aiming to promote political engagement and mobilize participation among young adults. Much of the literature on political targeting is rather pessimistic in nature. It focuses on the manipulation of citizens, discouraging voters, ignoring groups of voters, or sending voters different pieces of information by not giving a full picture (Bayer, 2020; Zuiderveen Borgesius et al., 2018). Other scholars pointed to the more beneficial use of targeting, for instance, Bayer (2020, pp. 9–10) argues that:

It could be exceptionally effective in transmitting useful messages to citizens on…social values with which

Table 2. Results of the linear regression analyses explaining the dependent variables (intended civic participation, general political interest, top issue interest, and internal efficacy) through the treatment effect (untargeted compared to control group), political knowledge, and the interaction of the treatment effect and political knowledge (n = 296).

	Intended civic participation (a)	General political interest (b)	Top issue interest (c)	Internal efficacy (d)
Untargeted treatment group (Ref.: Control group)	0.01 (0.16)	0.22 (0.18)	0.14 (0.16)	0.08 (0.17)
Political knowledge	0.04 (0.09)	0.37*** (0.10)	−0.01 (0.09)	0.35*** (0.09)
Untargeted treatment group × political knowledge	0.06 (0.13)	0.08 (0.13)	0.08 (0.13)	0.03 (0.13)
Constant	3.74*** (0.21)	3.72*** (0.22)	5.66*** (0.21)	3.74*** (0.21)
R^2	0.016	0.118	0.003	0.101
F	1.63	13.01	0.27	10.99

Notes: Values are unstandardized coefficients; standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

it can greatly benefit society. In this perspective, data-driven political micro-targeting has the potential to increase the level of political literacy and the functioning of deliberative democracy, by incentivizing deliberative discussion among those voters who are interested and who feel involved.

This study provides little evidence for this optimistic view. The lack of effects could therefore signify that young adults care less about the ads that they see on Instagram. The external validity of the experiment design is high. The mock Instagram feed had the same look and feel as a real Instagram feed and seeing that respondents could pick the seven accounts they would also potentially follow on their real Instagram, we have come very close to recreating a very realistic setting. In this light, we argue that it might be that being on the social media platform very often, most young adults are constantly seeing (targeted) ads. They could have just become so accustomed to it they simply scrolled past them without giving them any attention. Additionally, it might also be that civic education is a topic that just does not appeal to young adults, even if it is about a theme that they themselves indicated they considered important, especially if it aligns with their own beliefs. Moreover, the ads were, in Instagram norms, quite dense in information and not as attractive compared to other visual content. This might also have contributed to the respondents just scrolling past without taking the effort to read the text. Research has shown that the attention span of young adults on social media sites is very limited and expecting the respondents to read multiple sentences might have been too optimistic. In addition, Instagram is in its very nature a platform that is highly focused on visuals. We tried to make our ads visually appealing by working with bright colors and images that would get the attention of the respondents, but it is very much possible that our ads could not compete with the other posts on the feed that featured cute dogs, celebrities, or delicious food. This might also have contributed to respondents just scrolling past the ad. The basic features of a civic education ad may generally be difficult to reconcile with the requirements of a good Instagram post. Civic education ads, and by extension other ads with a substantive political message, are always going to have a certain density that may not be suitable for the fast pace of Instagram. Seeing that this study is the first to assess the influence of civic education ads on Instagram, our results suggest that distributing civic education messages through Instagram might be less effective.

Although this study provides valuable insights, there are some important limitations that could also be relevant for future research. First, this study was conducted among German young adults, so it is difficult to assess whether our findings are context specific. The German context is similar to most other Western European countries in terms of Instagram use and political context, so we expect that our results are generalizable to other Western European countries. Our findings are in line with previous research that found either no or small effects of political elites' use of PMT, but more research that focuses on civic education and PMT in other countries could give a better insight into our findings. Until now, most research has focused more on the political elite's use of targeted ads, while many other organizations, such as governmental bodies and NGOs, use targeted ads to mobilize and inform citizens. We argue that more insight is needed into governmental and other organizations' use of targeted ads.

Second, we measured the effect of civic education ads by displaying participants (except those in the control group) to ads in between posts of Instagram pages they liked at the beginning of the experiment. In our design, three ads were shown in between 14 posts on the Instagram pages that participants liked. In real life, the ratio between ads and "normal" posts is more equal. Almost after every two posts, ads are shown on Instagram. Therefore, it is possible that respondents did not notice the (targeted) ads. Furthermore, respondents in the control condition have been exposed to 14 posts, whereas respondents in the experimental conditions have been exposed to 17 posts. Future studies building on this work should rule out this possibility methodologically, by making the ads more present on the mock Instagram feed.

A third limitation is that the political issues provided to respondents, and on which the ads were ultimately targeted, were issues that rather appeal to more left-leaning individuals. However, to remain within a practically reasonable scope, we had to select those political issues that would be most relevant to the target population, which also tends to be more left-leaning. Furthermore, the exploratory analysis revealed that more right-leaning respondents did not dislike the ads more because of the political issues mentioned in the targeted ads, but for a different reason. Therefore, future research might want to (a) explore why more right-leaning citizens are more opposed to civic education messages and (b) find a way to make online civic education more appealing to a broader audience.

The mock Instagram feed we used in this study approaches the real Instagram feed very closely and future research could use this design as well. Research into PMT is still very limited so there are many avenues that could be pursued in future research. Civic education ads are a very specific form of political ads. Future research could focus on other variants to further distinguish if and when PMT can be successful. The ELM has been supported by previous research in other fields of communication but evidence in the field of political communication is lacking. Politics adds another complex layer to the already complicated field of persuasive communication. Only by further researching PMT can we make a realistic assessment of the potential benefits and threats of this strategy that might (or maybe only in a very limited way) change the way political campaigning will evolve.

Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited). This study was pre-registered via OSF (see https://osf.io/rjnf3/?view_only=675a8a3753d1419db49fd4e67049562c).

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