The Mobilizing Power of Influencers for Pro-Environmental Behavior Intentions and Political Participation

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Abstract

So-called “influencers” increasingly use their popularity on social media to raise their voice to promote political topics such as climate change, human rights, or party politics. As digital opinion leaders they may exert a powerful influence on their followers’ attitudes and behavior, motivating them to protect the environment or to engage in political participation online. Based on the Gateway Hypothesis, we argue that these online activities may translate into offline participation over time. To test these assumptions, we conducted a two-wave panel study during the national parliamentary elections in Austria with a national quota sample (N_{T2} = 564). Findings reveal that following political influencers who post about elections or party politics increases online participation, which predicts higher offline participation over time. Moreover, following environmental influencers who promote content revolving around sustainability and climate change strengthens pro-environmental behavior intentions over time, which is also related to increased offline participation.

Keywords: social media influencers, environment, political participation, panel study

The Mobilizing Power of Influencers for Pro-Environmental Behavior Intentions and Political Participation

In 2019, a popular German influencer named *Rezo* released a YouTube video attacking the governing German conservative party CDU for climate inaction, which motivated an alliance of more than 70 YouTubers to release another video making a statement against conservative or right-wing parties due to their negligence of the pressing issue of climate change. Both videos received millions of views and international media attention that was unprecedented for influencers' content. The Green Party won the subsequent 2019 EU elections, receiving more than a third of first-timer votes (Allgaier, 2020). That same year, young people from all over the world were mobilized by one solitary school striking girl to take part in the so-called *Fridays For Future* protests, which took place in numerous cities worldwide to raise awareness on climate change (Jung et al., 2020). With 4.9 million followers on Twitter (Greta Thunberg, n.d.) and 11.5 million on Instagram (Greta Thunberg, n.d.), social network sites (SNSs) have played a pivotal role in Greta Thunberg's climate activism efforts going viral.

Overall, the availability of SNSs has made it easier for young people outside the political establishment to voice their opinions about political topics like climate change, human rights, or migration to a large audience. Recent events such as the *Rezo* revolt have demonstrated that so-called influencers, who have been conceptualized as digital opinion leaders (e.g., Casaló et al., 2020; de Veirman et al., 2017), may exert a powerful influence on their followers' attitudes and behavior including political participation. Enjoying high credibility for non-political topics such as music, beauty, fashion, and gaming, influencers may use their close bond to their followers (Sakib et al., 2020; Schmuck, 2021) to promote not only products and brands (Casaló et al., 2020), but also their political opinions and values.

Thus far, however, the consequences of following social media influencers for political participation remain virtually unexplored. Specifically, it is unclear whether following influencers who talk about political or environmental topics translates into behavioral intentions or even more frequent actual participation. Therefore, in this study, we aim to fill this crucial research gap and investigate within an online two-wave panel study during a national election campaign whether following political and environmental social media influencers is related with followers' pro-environmental behavior intentions and their political online and offline participation over time.

Characteristics of Social Media Influencers

The growing popularity of social media has made it easier for some people to gather a high number of online supporters around themselves, in some cases even as many as over a million people (Wielki, 2020). Addison Rae, PewDiePie and Nikkietutorials are some SNS users that have made their way to global fame through TikTok, Youtube or Instagram. Due to their sizeable network, these so-called social media influencers function as digital opinion leaders (Casaló et al., 2020; de Veirman et al, 2017) and may use their close bond with their audience to exert a powerful influence on their followers' attitudes and behavior (Casaló et al., 2020; de Bérail et al., 2019; Youssef & Lebdaoui, 2020). The existing literature has brought forward three key characteristics of traditional opinion leaders in the offline realm: 1) they represent certain values, 2) they are more socially active than others with a high number of social ties, and 3) they have a high level of expertise and knowledge about a certain topic (Katz, 1957). Especially because of this third requirement, applying the notion of opinion leadership to social media influencers may become questionable, considering that they are not necessarily well-informed about the topics they endorse on their platform. Due to this lack of expertise, influencers may also use their platform to—intentionally or unintentionally—originate misinformation scandals, such as mis-selling the infamous 'Fyre Festival' event (Graham,

2019) and giving inaccurate or confusing health (Mena et al., 2020) or COVID-19 related advice (Abidin et al., 2021). Yet, being an opinion leader does not always necessarily correspond with high expertise: Trepte and Scherer (2010) found that two types of opinion leaders, 'informed' and 'uninformed' ones, can be distinguished. Both types can enjoy high levels of opinion leadership, despite 'uninformed opinion leaders' only having average knowledge about a certain topic, whereas 'informed opinion leaders' can be considered experts in a certain topic. Therefore, social media influencers may influence their followers' attitudes and behavior, regardless of the level of expertise they maintain.

Besides their opinion leadership, self-presentation (Dhanesh & Duthler, 2019; Khamis et al., 2017) and the ability to monetize their following (Jin et al., 2019) have been put forward as defining characteristics of social media influencers as well. Advertising research has found convincing evidence for endorser effects, which are similar to those of other media performers such as athletes, actors and musicians (Wang et al., 2013; Wu, 2013). Yet, social media influencers cannot be conveniently put alongside Julia Roberts parading perfume or George Clooney drinking his coffee. In contrast to traditional mass media like television, radio and movies, social media influencers enjoy higher levels of relatability leading to attitude homophily (Sokolova & Kefi, 2020) or wishful identification (Schouten et al., 2020) among followers. Researchers have also found that followers perceive intense parasocial relationships with influencers (e.g., de Bérail et al., 2019) that can be described as an enduring relationship between a media performer and a user, which is asymmetric, because it is only perceived by the user but not the media performer (Dibble et al., 2016). Although not in the context of social media influencers, Stehr and colleagues (2015) merged the concepts of parasocial relationships and opinion leadership. They argue that parasocial opinion leadership emerges when 1) a media user ascribes certain attributes to a media communicator based on a parasocial relationship, which 2) allows for a gradual influence of the media communicator on the user's opinions and

attitudes by fulfilling at least one of three functions: complexity reduction, providing orientation, or arousal of interest. Extrapolated to social media influencers who talk about political or cause-related topics, these functions may explain how influencers impact their followers' attitudes and behavior for better or for worse. While there is certainly a risk of influencers misusing their popularity to spread misinformation or contribute to polarization (Abidin, 2021; Lawson, 2021; Mena et al., 2020), their engagement for political or cause-related topics might also fuel their followers' political participation, which has been found to be a key outcome of digital media use (Boulianne & Theocharis, 2020).

Social Media Influencers and Online Political Participation

Political participation refers to all forms of involvement in which citizens express their political opinion to—directly or indirectly—influence politics (Vissers & Stolle, 2014). Even though political participation is one of the cornerstones of a well-functioning democracy (Barber, 1984), traditional forms of political participation are declining in Western societies (Towner & Munoz, 2016; Turcotte et al., 2015). The rise of the Internet and its online platforms offers citizens new ways to engage in politics (Gil de Zúñiga et al., 2012, 2014), so participation can manifest in online behavior (e.g., engage in political groups, uploading videos on YouTube about politics) in addition to offline behavior (e.g., polling, voting, joining an activist movement).

Since influencers communicate about political topics on SNSs, they are most likely to mobilize their followers' online participation. As online opinion leaders they may exert considerable political influence on these platforms (Weeks et al., 2017). Potential pathways of their influence can be seen in the functions of parasocial opinion leadership (Stehr et al., 2015). That is, influencers might make complicated topics more comprehensible. Moreover, influencers may provide orientation for their followers on controversial topics by offering certain values, norms and political beliefs or arouse their followers' interest by broadening

their horizons and drawing their attention to new or previously unnoticed topics. These processes may in turn impact followers' levels of self-efficacy, thus increasing their perception of being sufficiently capable or knowledgeable to participate in the political process (Eckstein et al., 2013; Yang & DeHart, 2016).

Although, there is a lack of research on influencers' impact on political participation, the existing evidence suggests that social media use may stimulate online political participation (Gil de Zúñiga et al., 2014; Kim & Chen, 2016; Wang & Shi, 2018; see Boulianne, 2015 for meta-analytical findings). For instance, Vissers and Stolle (2014) found that SNSs play a substantial role in political activity online. Their study on online participation and Facebook-only participation showed that both mobilization and reinforcement are at work. This strongly suggests that Facebook, in their case, mobilizes a group of people, who would otherwise be hard to engage and reinforces the politically active to get even more engaged. Although many studies in this area focus on younger citizens (Moeller et al., 2018), Towner and Munoz (2016) found that social media effects on political participation are not limited to younger age groups. Their study on Boomers' political engagement in an online environment shows that middle-aged people also turn to social media to communicate and obtain political information.

Despite the prominence of social media influencers and their potential to impact their followers' attitudes and behaviors, the consequences of social media influencers' communication on audiences have been mostly neglected thus far—especially, in the realm of political social media influencers. Yet, research in other areas suggests that following the content of social media influencers may mobilize their audiences, for instance, in the realm of health-related behavior (Sakib et al., 2020) or environmental conscious diets (Phua et al., 2020). Based on the described theoretical rationale and this existing empirical evidence, we hypothesized that following influencers who post about political topics such as elections or party politics would increase online political participation:

H1: Following influencers who post about political topics increases online political participation over time.

Social Media Influencers and Environmental Mobilization

Since the advent of *Fridays for Future*, the number of influencers who focus on the topics of sustainable lifestyles and environmental protection has grown exponentially over the past few years (Phua et al., 2020). These influencers aim to raise awareness about environmental topics such as climate change (Allgaier, 2020) and promote a specific lifestyle they find desirable such as buying sustainable fashion or following a vegan nutrition (Maares & Hanusch, 2020; see Schmuck, 2021 for an overview). This type of environmental communication can and should not be equated with communication about formal political topics such as political actors, processes, or institutions (Suuronen et al., 2021). Topics such as the environment, LGBTQ rights and veganism are more directly related to a political cause without the mediation of political organizations or institutions (Soler-i-Martí, 2015). In the absence of such political intermediary, these cause-related topics are more accessible and prone to change on an individual level. Influencers have been found to engage vigorously in topics that are related to political causes such as climate change (Allgaier, 2020), health (Phua et al., 2020), LGBTQ (Abidin, 2019), or racism (Carney, 2016).

Since these topics are often controversially discussed and highly polarized in the public debate as the example of climate change illustrates (Chinn et al., 2020), influencers may play an important role as opinion leaders for these topics. Additionally, climate change is a highly complex matter that benefits from communicators who manage to simplify the issue (Allgaier, 2020) or who provide orientation for their followers by communicating moral values such as sustainability. Moreover, by weaving “green” topics in their communication about health, fitness, or fashion (Riedl et al., 2021), influencers may raise attention for these issues among followers who had not been previously interested in environmental protection. Finally, by

sparking the idea that individual efforts can be adopted to meet the challenges of climate change, environmental influencers may also encourage efficacy beliefs among their followers (Phua, 2016).

Yet, in contrast to communication about traditional party politics, cause-oriented political communication might not directly translate into traditional forms of online (e.g., contacting a politician) or offline (e.g., joining a party) participation. Instead, we argue that for cause-oriented political topics, first an intention needs to be formed to become active and do something about it. In the realm of environmental politics, this might be the behavioral intention to protect the environment. This concept can be defined as the likelihood of people's engagement in a specific behavior (Ajzen & Fishbein, 1980), such as protecting the environment, and is often referred to as pro-environmental behavior intentions in this context (Carfora et al., 2017; Chin et al., 2018; Mostafa, 2013).

As self-perceived educators for environmental topics (Maares & Hanusch, 2020), influencers' communication about how to recycle, how to save energy, or why to avoid certain consumer goods (e.g., food, fashion, Haider, 2016) may have an impact on their followers' behavioral intentions to protect the environment. There is first evidence suggesting that influencers' communication can strengthen behavioral intentions such as intentions to become vegan (Phua et al., 2020) or compliance intentions toward health-related behavior (e.g., following a healthy diet). In the realm of environmental communication, Johnstone and Lindh (2018) found a link between the importance of following influencers and sustainability awareness. Taken together, these findings suggest that environmental influencers may fuel their followers' intentions to protect the environment. Thus, we hypothesize:

H2: Following environmental influencers increases pro-environmental behavior intentions over time.

Although researchers have underlined the potential of Greta Thunberg's *Fridays For Future* tweets in motivating online behavior (Boulianne et al., 2020), little to no research has been done on the predictive power of pro-environmental behavior intentions on online political participation (Andersen et al., 2020). Drawing from the Theory of Planned Behavior (Ajzen, 1985), which postulates that behavioral intentions need to be formed before individuals perform a behavior, it can be expected that environmental behavior intentions function as a predictor for subsequent behavior. Indeed, many researchers who have used the Theory of Planned Behavior as a foundation found that pro-environmental intentions predict subsequent environmental behavior (Chen, 2016; Dienes, 2015; Masud et al., 2016; van Riper et al., 2013; Xue et al., 2021), although some have found an intention-behavior gap for habitual behavior (e.g., Lin, 2013). Since pro-environmental intentions can be understood as a cause-related political topic, it is comprehensible that these intentions do not only predict traditional environmental behavior such as recycling, but—in response to influencers' online communication—also translate into action in the online realm stimulating more online political participation. Hence, we hypothesize:

H3: Pro-environmental behavioral intentions will result in higher online political participation over time.

Online Participation as Predictor of Offline Participation

Social media influencers communicate in the online realm per definition and therefore be more likely to stimulate interactions and participation in the same environment (Casaló et al., 2020). Yet, it remains unclear whether online participation in response to social media influencers' communication can translate into the offline realm. Overall, the relationship between online and offline participation is contested, which is visible in the presence of a variety of different hypotheses on the relation between online and offline political participation e.g., the 'Independence Hypothesis', arguing that online and offline participation work

independently (Emmer et al., 2012), the 'Spillover Hypothesis', considering online participation as an extension of offline participation (Delli Carpini & Keeter, 2002), and the 'Reciprocity Hypothesis' (Vissers & Stolle, 2014), claiming that online and offline activities mutually influence each other (see also Kim et al., 2017).

Yet, since citizens first and forward get into contact with social media influencers in the online realm, this study leans on the so-called 'Gateway Hypothesis', which postulates that online participation nurtures subsequent offline participation (Conroy et al., 2012; Harlow, 2012; Kim et al., 2017; Wang, 2007). The main argument behind this relationship is that the online context is a less demanding environment, where users can build on their skills and competences, before heading to a more demanding environment, such as the offline context (Kim et al., 2017). In addition, social media platforms serve as political facilitators, as political activities can occur in a way that is very similar to their offline counterparts, yet much more convenient (Conroy et al., 2012). The distribution of user-generated content, for instance, makes it easier for social media users to engage in the public debate and initiate direct communication with policy makers (Wang, 2007). Mobilization theory underlies this rationale, arguing that the Internet can expand citizen participation by decreasing the costs of participation (e.g., time, money, social interaction) (Krueger, 2002; Vissers & Stolle, 2014). Moreover, online participation may subsequently translate into offline political participation, because it improves citizens' perceptions of self-efficacy (Gil de Zúñiga et al., 2012; Towner, 2013).

Thus far, the 'Gateway Hypothesis' has been validated in several domains such as online prevention in health communication (Navejas et al., 2012) and politics (Bode, 2017; Breuer et al., 2015; Mercea, 2012). Therefore, drawing from the Gateway Hypothesis and the above-described evidence, we assume that online participation will fuel offline participation over time. Our last hypothesis, therefore, states:

H4: Online political participation will result in higher offline political participation over time.

Figure 1 provides an overview of all hypotheses.

Method

This study was part of a larger two-wave online panel survey in the context of the national parliamentary election 2019 in Austria (i.e., in a six-week-interval) that covered other topics in addition to social media influencers' communication (Stubenvoll & Matthes, 2021). In total, 1206 participants started the online survey, of which 1105 completed the full survey at Time 1 and 564 participants finished the second survey (retention rate: 50%). The survey company *Dynata* collected the data based on representative quotas for Austria regarding age (M_{age} = 46.46, SD_{age} = 15.49 ranging from 18 to 83 years) and gender (50 % women). The sample is heterogeneous with regard to educational degrees (31 % compulsory school or vocational school degree, 13 % secondary school degree, 32 % high school degree, and 24 % university degree). The first wave took place from July 24 until August 6, 2019, the second wave from September 13 until September 22, 2019. The total survey took 25 minutes to finish.

Measures

All items are shown in the Appendix. Upon presenting participants with a definition and examples of influencers, we asked them how often they followed influencers on SNSs who post about political topics, i.e., "I follow influencers on social media (e.g., Youtube, Instagram) who post about political topics (e.g., national elections, migration, European elections"); M_{T1} = 2.07, SD_{T1} = 1.67, or environmental topics, i.e., "I follow influencers on social media (e.g., YouTube, Instagram) who post about the environment and sustainability (e.g., climate change, vegan nutrition, fair fashion, Fridays For Future, waste avoidance"); M_{T1} = 2.20, SD_{T1} = 1.76, using a 7-point Likert scale from "I strongly agree" to "I strongly

disagree". Additionally, we measured pro-environmental behavioral intentions with two items using a 7-point Likert scale (e.g., "I am willing to make sacrifices to protect the environment; r_{T1} = .789, n_{T1} = 564, p_{T1} = .000; r_{T2} = .804, n_{T2} = 564, p_{T2} = .000). We measured online (e.g., "Commenting a political post on social media;" M_{T1} = 0.98, SD_{T1} = 1.48; Cronbach's α_{T1} = .77; M_{T2} = 0.90; SD_{T2} = 1.38; Cronbach's α_{T2} = .74) and offline political participation (e.g., "Participating in demonstrations or protests on political topics;" M_{T1} = 0.77, SD_{T1} = 1.27; Cronbach's α_{T1} = .72; M_{T2} = 0.72, SD_{T2} = 1.28; Cronbach's α_{T2} = .75) with six items each based on Vissers and Stolle (2014) using a dichotomous scale (1 = yes, 0 = no). We added the six activities to a summative index ranging from 0 to 6.

Data Analysis

We tested our hypothesis with path analyses using the *lavaan* package in R (Rosseel, 2012). The dataset and analysis scripts can be found on the Open Science Framework (OSF) (https://osf.io/d9sk8/?view_only=359b3d4e9d844c4a9e19b3a5a4a0fda9). We ran auto-regressive models, which means that we included levels of the outcome at Time 1 as covariate, e.g., pro-environmental behavior intention at Time 1, to predict change in levels of the outcome at Time 2, e.g., pro-environmental behavior intention at Time 2. We estimated all associations via the time lag from Time 1 to Time 2. In addition, we controlled gender, age, education, use of social media platforms, use of instant messaging platforms, use of newspapers for political information, use of TV news for political information, and political ideology, as findings from previous research have indicated that gender, age, education, exposure to political information in the news media (Andersen et al., 2020), and social media use (Gil de Zuñiga et al., 2014) are relevant predictors of political participation. Additionally, we included political ideology as covariate, as environmental protection is a topic associated with the political left in Austria in general and in the 2019 parliamentary elections, in particular (Eberl et al., 2020).[1]

Results

Table 1 and Figure 2 present the results. Our path analysis showed a good model fit (Chi^2/df ratio = 1.78, CFI = 0.998, TLI = .97, RMSEA = .043, 90% CI [.00, .10]). Results revealed that following political influencers at Time 1 was positively related to online political participation at Time 2 (b = 0.15, SE = 0.05, p = .003), lending support to our first hypothesis (H1). In line with our second hypothesis (H2), findings showed that following influencers who post about the environment at Time 1 was positively associated with pro-environmental behavioral intentions at Time 2 (b = 0.11, SE = 0.05, p = .031). Furthermore, we found that pro-environmental behavioral intentions at Time 1 were unrelated to online political participation at Time 2 (b = 0.02, SE = 0.03, p = .535). Thus, we had to reject our third hypothesis (H3). Finally, we found that online political participation at Time 1 was significantly related to offline participation at Time 2 (b = 0.13, SE = 0.04, p = .002), which is in line with our fourth hypothesis (H4).

We also found a weak, but significant direct relation of pro-environmental behavior intention at T1 with higher offline participation at Time 2 (b = 0.07, SE = 0.03, p = .027). Among the covariates, we found a significant relationship of gender, age, and education with pro-environmental behavior intentions in that women, older people and the higher educated had higher pro-environmental behavior intentions. Additionally, we found that newspaper use for political information led to increased online participation over time.[2]

Additional Analysis

To test for reverse causality, we also ran a cross-lagged path model (Model fit: Chi^2/df ratio = 2.11, CFI = .994, TLI = .951, RMSEA = .050, 90% CI [.02, .08]). Findings indicated a significant impact of online participation at Time 1 on following political influencers at Time 2 (b = 0.13, SE = 0.05, p = .021), implying a reciprocal relationship between following political influencers and online political participation. We did not find any other reverse relationships.

We also ran additional analyses to test whether following social media influencers has an impact on specific online participative actions, controlling the same covariates as in the main analysis. We found significant effects for four out of six items of the online participation index we used in our study. These specific items described more demanding online behaviors, e.g., participating in an online petition about politics (b = 0.05, SE = 0.02, p = .003) contacting a politician or journalist about politics (b = 0.04, SE = 0.01, p = .006), writing well-founded political comments on social media (b = 0.03, SE = 0.01, p = .022), founding an online group to discuss politics (b = 0.02, SE = 0.01, p = .028). Less-demanding online actions, such as sharing, liking, or commenting on a political post, were not significantly correlated with following political influencers. This could imply that people who follow political influencers are more invested in politics and are thus more likely to perform actions that are more politically motivated. In line with the main findings, following an environmental influencer was not directly significantly associated with any of the online participation items.

Discussion

This study set out to investigate, for the first time in a longitudinal context, whether following social media influencers who post about political and environmental topics contributes to online and offline participation during an election campaign. To that end, we conducted a two-wave panel survey among a national quota-based sample of Austrian citizens. Leaning on previous literature arguing that social media influencers function as opinion leaders (Casaló et al., 2020), who can reduce the complexity of political topics, provide orientation, or arouse their followers' interest (see Stehr et al., 2015 for opinion leaders in the mass media), we expected these popular SNS users to engage their followers to participate in politics by either addressing traditional party politics or more cause-oriented politics such as climate activism.

Our findings show that following influencers who raise awareness about political topics such as elections may explain online participation beyond the influence of established predictors such as traditional political media use or general social media use. These results are in line with previous studies that reported a similar association of online participation with the use of social media as such (Gil de Zúñiga et al., 2014; Kim & Chen, 2016; Wang & Shi, 2018). However, this work advances the existing research by shedding light on the specific role of social media influencers for political participation, which is crucial, since compared to other social media content, influencers may exert a stronger impact on their followers due to the parasocial relationships they build with their followers (de Bérail et al., 2019). In this respect, our empirical findings are an extension of the body of research that has already explored the effects of influencer content on their followers' attitudes and behavior in other contexts such as body image, fitness, and nutrition (e.g., Sakib et al., 2020; Sokolova & Perez, 2021). Our findings add to this existing research by revealing that influencers who are not political professionals, but sporadically interweave political topics with other content, may have a mobilizing effect on followers' political participation during an election campaign. Moreover, additional analyses revealed—for the first time—a spiral effect between following political influencers and online participation, implying that these behaviors are intertwined and have a predictive power over one another.

In addition, we found that following influencers who raise awareness about cause-related topics such as the environment was associated with higher pro-environmental behavior intentions over time. These findings support previous research on pro-vegan messages on Instagram predicting greater behavioral intentions to become vegan (Phua et al., 2020). Possible explanations for this finding may be that influencers motivate their followers to change their behavior by creating a sense of empowerment or strengthen self-efficacy (Phua, 2016), which results in higher compliance intentions (Sakib et al., 2020).

Furthermore, we found that both pro-environmental behavioral intentions and online participation predicted offline participation over time, complementing previous research on the Gateway Hypothesis (Kim et al., 2017; Bode, 2017) and providing support for higher online participation fueling offline participation. While Boulianne's (2019) meta-analysis revealed that media use and civic engagement are not related, more recent studies found such a relation for social media use in general (Bode, 2017; Boulianne, 2015; Breuer et al., 2015; Mercea, 2012). However, this work advances the field by specifically identifying an impact of following social media influencers on participation, which has not been shown before.

Contrary to our expectation, we found that pro-environmental behavior intentions did not translate into more online participation. A potential explanation for the absence of such an effect could be that numerous environmental protests took place at that point in time (e.g., *Fridays For Future*), which could have possibly nurtured the willingness to participate offline, rather than online.

It is also important to note that our study took place during the election campaign of the 2019 national parliamentary elections in Austria, in which a high proportion of our participants intended to vote, which has likely increased attention for political topics and processes. As such, a campaign period provides a fruitful context to investigate the influence of information encountered in the media or on SNSs, as media attention is higher in such periods and latent issue positions such as environmental protection or climate change are heightened (Song & Boomgaarden, 2017). Yet, follow-up research should investigate whether these findings differ in non-election times, as social media influencers who address political topics might receive more attention and may have a stronger impact on their followers' participation behavior during election campaigns compared to regular periods. Due to the electoral context, this study was conducted with a six-week interval between the two panel waves. We deemed this period sufficient to observe changes in participation due to exposure to influencer's content for the

following reasons: First, the famous case of the German influencer *Rezo*, whose pro-environmental video had an impact on the outcome of the EU elections a couple of weeks later, shows that influencers can alter their followers' participation behavior in the short-term. In addition, Andersen and colleagues (2020) found that participation among the young generation, which is the main audience of social media influencers, is short-term oriented, cause-related and thriving in election times, which is why changes in participation behavior are likely to be observed in this context. However, future research should consider both, short-term and long-term effects of influencer's communication, using experiments and so-called measurement-burst designs, which combine situational with long-term assessments (Stawski et al., 2015).

Implications

This study has some important implications. From a theoretical perspective, our findings confirm the Gateway Hypothesis (Kim et al., 2017), which provides researchers with a solid starting point to better understand the association between online participation and subsequent offline participation in the context of influencers' communication. Furthermore, our findings also have notable practical implications, as they suggest that social media influencers have potential in mobilizing people for political and social causes. Therefore, social media influencers may be an important partner for future collaborations with governments, NGOs, and other organizations to raise awareness for cause-oriented political topics. However, we must also acknowledge the risk of this "power" being misused, for instance, for negative causes like hate and violence, for radical protesting or for spreading misinformation (Abidin et al., 2021). Stories of social media influencers fueling racism in the beauty industry (Lawson, 2021) and giving confusing advice on health topics of all sorts (Mena et al., 2020) underline that they may also use their platform to engage in false advertising, hate speech and misinformation. Therefore, in the future, academics and practitioners should consider both, beneficial as well as detrimental outcomes of following influencers on SNSs.

Limitations

Of course, this study has some notable limitations. First and foremost, we did not assess the specific content participants were exposed to. However, remembering the detailed content of influencers one was exposed to may be too demanding for survey participants, as they might follow multiple influencers who post content with a high frequency. Thus, follow-up experimental studies should be conducted to investigate which specific content by social media influencers is most mobilizing for their followers.

Additionally, we assessed general online and offline political participation, not specific political actions associated with pro-environmental causes. Thus, future research should not only distinguish between different forms of participation, but also between different cause-related purposes of participation (see e.g., Andersen et al., 2020). Moreover, our key independent variable measured whether participants followed influencers or not. Future research should investigate the influence of exposure intensity and type (i.e., intentional or incidental). Additionally, we theorized potential explanatory mechanisms for the relationships found here (e.g., complexity reduction, providing orientation, arousal of interest, and self-efficacy), but did not explicitly test them, which warrants follow-up research.

Furthermore, we had only two panel waves, which allowed us to consider between-subjects, but not within-subjects associations. Upcoming studies should use more measurement points to be able to distinguish person-specific effects from between-subjects effects. Moreover, although we included several covariates, it is possible that there are unmeasured third variables which explain the associations found here.

Despite these limitations, our study is the first to shed some light on the mobilizing potential of social media influencers addressing political and environmental topics on social media by testing these relationships over time among a national sample. Additionally, this

study not only controls for autoregressive effects, but also for a wide range of predictors of political participation identified in previous literature (e.g., gender, age, education, other forms of social media use, traditional media use for political information, and political ideology), therefore allowing to investigate the incremental impact of influencer's communication on political participation beyond the influence of more established predictors.

Endnotes

[1] Since our study took part during the 2019 national parliamentary elections, we also assessed participants' intentions to vote in this election at T1, which revealed that 83 % planned to vote.

[2] Given that the distribution of online and offline participation was over dispersed, we also ran the analyses using negative binomial regression analyses for these outcomes. The results of these analyses were essentially the same in their significance and directionality as the ones presented here.

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Table 1

Path Model including Autoregressive Effects

	Pro-Environmental Behavior Intentions (T2)		Online Participation (T2)		Offline Participation (T2)	
Predictor	*b*	*SE*	*b*	*SE*	*b*	*SE*
Gender (T1)[1]	0.21*	0.10	-0.09	0.09	-0.05	0.10
Age (T1)	0.01*	0.00	0.00	0.00	0.00	0.00
Education (T1)	0.26*	0.10	-0.06	0.09	-0.12	0.10
Social Media Use (T1)	-0.04	0.03	0.01	0.03	-0.04	0.03
Instant Messaging Use (T1)	0.04	0.03	-0.02	0.03	0.00	0.03
Newspaper Use for Political Information (T1)	0.01	0.02	0.04*	0.02	0.03	0.02
TV Use for Political Information (T1)	0.02	0.02	-0.01	0.02	0.02	0.02
Political Ideology (T1)	-0.01	0.02	-0.03	0.02	-0.00	0.02
Following Environmental Influencers (T1)	0.11*	0.05	-0.05	0.04	-0.06	0.05
Following Political Influencers (T1)	-0.10	0.05	0.15**	0.05	0.09	0.05
Pro-Environmental Behavior Intentions (T1)	0.65***	0.03	0.02	0.03	0.07*	0.03
Online Participation (T1)			0.62***	0.03	0.13**	0.04
Offline Participation (T1)					0.49***	0.04
R^2	0.53		0.59		0.43	

Note. N_{T2} = 564, T1 = Time 1, T2 = Time 2. [1] Male is reference category, * $p < .05$. ** $p < .01$. *** $p < .001$

Chi^2/df ratio = 1.78, Comparative Fit Index (CFI) = 0.998, Tucker-Lewis Index (TLI) = .97, Root Mean Square Error of Approximation (RMSEA) = 0.043, 90% CI [.00, .10]

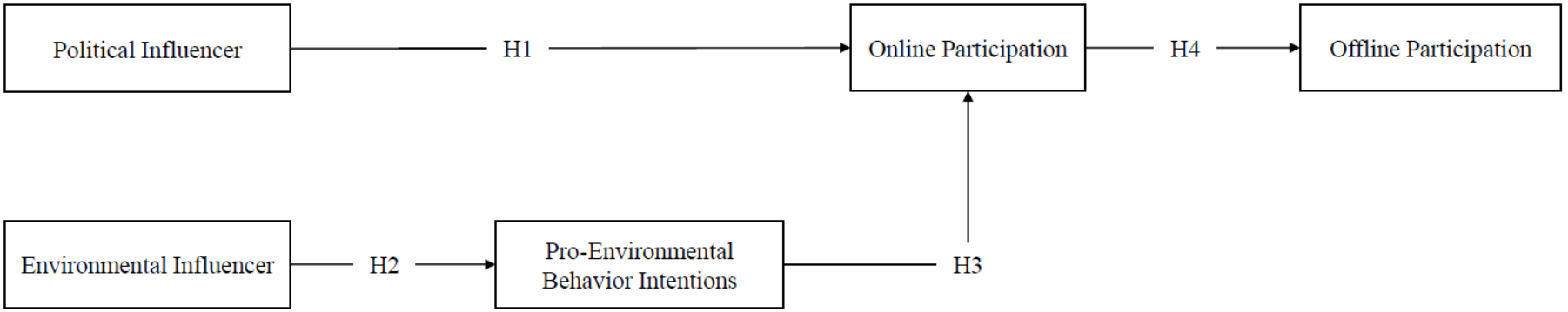

Figure 1. Hypothesized Model.

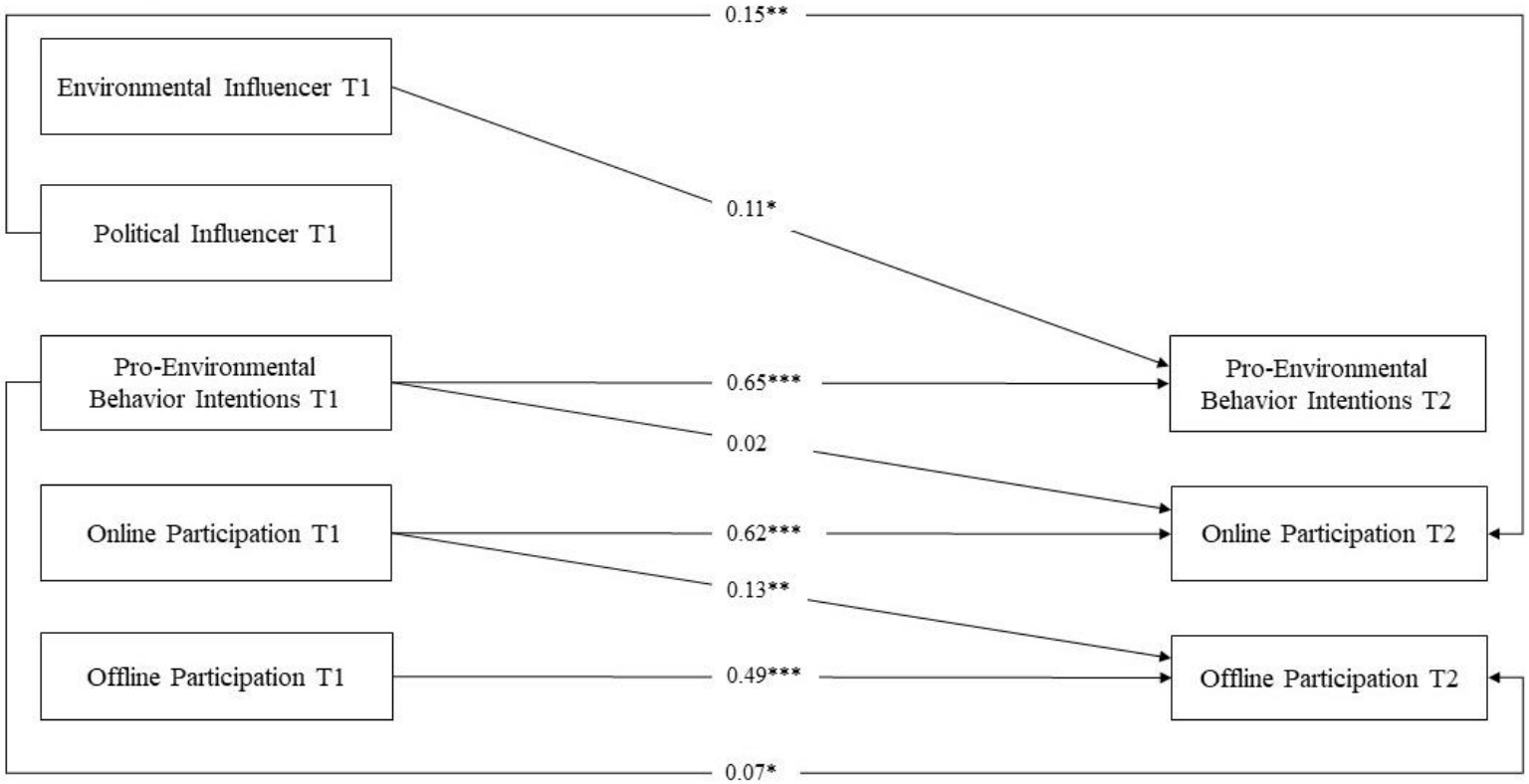

Figure 2. Results. N_{T2} = 564

Note. Unstandardized Coefficients. T1 = Time 1, T2 = Time 2. * $p < .05$. ** $p < .01$. *** $p < .001$

APPENDIX

Measures

Definition influencers:
- On social networks like Instagram and YouTube, there are so-called influencers. These are users who have a strong presence in social networks through many friends/followers and express their opinion on certain topics, brands, or products. Examples of such influencers are, for example, DariaDaria, Greta Thunberg, Julien Bam or Rezo.

Following political influencers: M_{T1} = 2.07, SD_{T1} = 1.67
- I follow influencers on social media (e.g., Youtube, Instagram) who post about political topics (e.g., national elections, migration, European elections).

Following environmental influencers: M_{T1} = 2.20, SD_{T1} = 1.76
- I follow influencers on social media (e.g., Youtube, Instagram) who post about the environment and sustainability (e.g., climate change, vegan nutrition, fair fashion, FridaysForFuture, waste avoidance).

Pro-Environmental Behavior Intentions: 7-point scale, M_{T1} = 5.15, SD_{T1} = 1.46; Cronbach's α_{T1} = .90; M_{T2} = 5.12, SD_{T2} = 1.44; Cronbach's α_{T2} = .90
- I am willing to make sacrifices to protect the environment.
- I am willing to change my behavior to change the state of the environment.

Online Political Participation: Have you performed these activities in the past six weeks? 0 = no, 1= yes, M_{T1} = 0.98, SD_{T1} = 1.48; Cronbach's α_{T1} = .77; M_{T2} = 0.90; SD_{T2} = 1.38; Cronbach's α_{T2} = .74
- Sharing or liking a political post on social media.
- Commenting a political post on social media.
- Participation in an online petition on a political issue.
- Writing a longer political online commentary (e.g., Facebook message, email, blog entry etc.) to convince others with political arguments.
- Contacted a politician or a journalist via email or social media to point out political problems.
- Founded groups dealing with political topics on social media (WhatsApp, Facebook, etc.) to draw attention to political problems.

Offline Political Participation: Have you performed these activities in the past six weeks? 0 = no, 1= yes, M_{T1} = 0.77, SD_{T1} = 1.27; Cronbach's α_{T1} = .72; M_{T2} = 0.72, SD_{T2} = 1.28; Cronbach's α_{T2} = .75
- Participation in demonstrations or protests on political topics.
- Participation in an assembly (e.g., in a community or school) where political issues were discussed.
- Being active in political organizations, e.g., party, association, student organizations etc.
- Informed others in conversation about political events or opportunities to participate (e.g., election, petition, etc.)
- Use of a sticker, cloth bag, ballpoint pen or similar from a political party.
- Participation in a political signature campaign that I came across by chance (e.g., on the street).