

Informal Environmental Education and Green Citizenship: Greenfluencers and Romanian Gen Z's Eco-Conscious Social Media Practices

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Abstract: *This empirical study investigates how social media “greenfluencers” – content creators who promote environmental awareness and sustainable living through their online platforms – contribute to informal environmental education and the shaping of green citizenship among Romanian Gen Z by motivating the display of eco-conscious attitudes and environmental responsibility online. Through focus group discussions and a survey of 395 respondents, we assessed young people’s trust in greenfluencers, their criteria for following environmental content creators, and their willingness to post such content themselves as part of their green civic identity. Results show that, despite heavy daily engagement with social media and consistent following of influencers, most Romanian Gen Zers feel that greenfluencers have limited success in raising awareness and changing behaviors. Although many respondents feel empowered to tackle climate change, they hesitate to share environmental content on their social media pages. This reluctance highlights their distrust of social media platforms and their wish to avoid being perceived as influencers. Our findings reveal important challenges for leveraging social media in informal environmental education and fostering active green citizenship among youth in Romania.*

Keywords: *informal environmental education; green citizenship; social media; greenfluencers; eco-conscious attitudes; youth engagement.*

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Introduction

Social media (SM) is a powerful tool for communicating with young audiences, and how it is used to promote environmental topics has been a concern for recent research, focusing in the power of influencers specialized on these topics (also known as “greenfluencers”) to shape the opinions, attitudes, and behaviors of their followers. Most studies on social media influencers (SMIs) focus on advertising and marketing effectiveness when it comes to green content (Sharma, 2021; Breves & Liebers, 2022), particularly on how it affects purchase decisions, what are the best-selling strategies for green advertising, and to a more limited extent on the effect of influencer content on political engagement (DeKoninck & Schmuck, 2022). However, there is a growing need to understand how greenfluencers contribute to informal environmental education and the development of green citizenship – by which we refer to the active participation of individuals in environmental protection and sustainable practices, as part of their civic identity – among young people.

Building on the existing literature in the field, our research looks into how young people’s environmental attitude connects with their SM consumption habits, in the particular case of Romanian Gen Zers. Specifically, we examine the extent to which greenfluencers can foster eco-conscious behaviors and a sense of green civic responsibility among this demographic. In order to tackle this question, we initiated a focus group discussion with 8 people aged 18-25, at the time enrolled to complete university degrees in several fields connected to our research topic, as well as involved in the production of SM content. Consequently, we conducted a survey (N=395) that sheds light on Romanian Gen Zers’ level of trust and criteria for following SMIs disseminating environmental information, their knowledge and interest concerning current environmental challenges, perceived agency in addressing these challenges, and willingness to display eco-conscious attitudes on their own SM pages. By exploring these aspects, we aimed to clarify the informal educational role of social media in nurturing green citizenship among youth.

Main findings show that, despite granting a significant amount of their time to SM platforms every day and consistently following several SMIs, most Romanian Gen Zers think the latter rarely can increase awareness of social issues and can be just partially effective in changing the attitudes and behaviors of their followers. While most respondents have a well-defined sense of agency in tackling climate change, they do not choose to share environmental information on their SM pages, which reconfirms their distrust of such platforms and reticence in being themselves considered as influencers. This

reluctance to publicly display eco-conscious attitudes online highlights the complexities of fostering green citizenship through informal educational channels such as social media.

Green citizenship and environmental activism in the case of Gen Z

The Anthropocene epoch has reshaped discourses on citizenship, demanding a reimagining of civic responsibility in the face of planetary crisis. Critical narratives position education for sustainability (Pashby et al., 2020) as a key element for creating global citizens equipped to confront environmental problems and advocate systemic change (Oxley & Morris, 2013; Schattle, 2008). Within this paradigm, the combination of environmentalism with citizenship theory has given rise to the concept of green citizenship – a framework that encompasses ecological stewardship, co-responsibility, and an ethic of care as civic virtues (Dobson, 1995; Dean, 2001). The concept can be found in the official institutional discourse as well, with UNESCO’s platform Green citizens (UNESCO, n.d) identifying local actors for change and collecting citizen-led environment initiatives in search for participation. Green citizenship (Gabrielson, 2008) is a general term used to encompass different perspectives upon citizenship such as “environmental citizenship”, “ecological citizenship”, “ecological stewardship” or “sustainable citizenship”, covering different understandings of the relation between environment and citizenship. In a broad definition, it refers to “the responsible pro-environmental behavior of citizens who act and participate in society as agents of change in the private and public sphere, on a local, national and global scale, through individual and collective actions, in the direction of solving contemporary environmental problems, preventing the creation of new environmental problems, achieving sustainability as well as developing a healthy relationship with nature” (ENEC, 2018). As the “driving force of the transition” (European Commission, 2020, p. 22), European citizens are expected to play a key role in achieving the European Green Deal goals, by adopting sustainable consumption habits and changing their lifestyles and behavior as well as actively participating in policymaking. This expectation raises questions about European citizenship, such as whether it can be “greened” in order to meet the demands of sustainability and environmental stewardship (Machin & Tan, 2022).

Currently in their teens and twenties, Gen Zers are called “critical agents of change” in the UN’s 2030 Agenda for Sustainable Development and are often seen as an important group for activating the social transformations needed for combating anthropogenic actions accelerating climate change, biodiversity loss and other environmental problems. Generation Z, post-

Millennials, iGen, digital natives, or even “snowflakes” – the group of people born between the mid-1990s and around 2010 wears various labels, often associated with their media consumption habits, reliance on digital communication tools and how these elements impact their personality (De Witte, 2022). Though indeed not a monolithic group, with wide variations depending on region, social background, education, and various other aspects, Gen Z is a cohort presenting several distinctive features related to the technological advances, media penetration, socio-economic developments, and looming environmental crisis that characterize the era it was born into. In addition to their eagerness to use new technologies, Gen Zers have been described as showing interest in environmental protection and sustainable development initiatives and having a positive attitude towards volunteering and community involvement. Some are also more likely to adopt eco-conscious behaviors by buying eco-certified products, using means of transportation that pollute less, or recycling (Toma et al., 2023). However, studies also point to the fact that there is a significant perception-behavior gap, indicating that while post-Millennials may perceive green practices positively and may identify themselves as green consumers, this does not always translate into ecological consumer behavior (Dragolea et al., 2023; Deliana & Rum, 2019). A similar conclusion regarding the inherent contradictions and contrasts that characterize Gen Z can also be found in a study focusing on a series of self-portrayals made by young users on TikTok, showing how they creatively self-define their generation as being assertive and self-assured but also vulnerable and damaged (Stahl & Literat, 2022).

One famous example of this generation’s capacity to mobilize for social change is the Fridays for Future movement, which started as a series of school strikes led by Greta Thunberg in Sweden against the government’s perceived inaction in combating climate change. The movement’s current membership of millions of young people worldwide and the rise of Greta Thunberg as a climate change celebrity were largely made possible by a persistent and persuasive presence on social media (Jung et al., 2019).

In the case of Romania, the movement has activities limited to some major cities, according to its local website (FridaysForFuture.ro) and its Instagram account (@fridaysforfutureromania), even though 76% of the population believes that global warming is a severe problem (IRES, 2023). Pollution of air, rivers, lakes, and groundwater, as well as soil degradation, decline of natural ecosystems, and growing amount of waste, are among the top concerns in the repertoire of Romanian salient green issues (European Commission, 2020).

Social media is an important part of everyday life for a large part of

Romanians, with 13.3 million of them having active accounts on several platforms (out of a total population of 18.9 million). TikTok and Instagram have a relatively balanced appeal in the 16 to 34-year-old age group, while Facebook has declined in the past 2 years and is currently preferred mostly by the 45 to 54-year-old age group (MFB, 2024). TikTok has had a spectacular increase in user base and engagement all over the world in 2023 – and Romania was no exception – currently being, together with Instagram, a top platform for brands in practicing influencer marketing, according to the Romanian Transmedia Audit Bureau (BRAT in MFB, 2024).

The perceived credibility of green social media content

The degradation of the environment and climate change due to anthropogenic action have an increasingly prominent place on the public agenda in recent years, threatening to affect access to vital ingredients for a healthy life, such as clean air, drinkable water or nutritious food, all over the world, according to the World Health Organization. While green issues have been of interest in the international arena for several decades, recent developments connected to global warming, large-scale pollution, biodiversity loss, deforestation, etc., have led researchers and governments to raise alarm bells about the urgency of climate action. This led to attempts towards reaching an international consensus for collective efforts, such as the Paris Agreement in 2015 or the Glasgow Climate Pact in 2021, none of which produced tangible results for the deceleration of global warming so far (see IPCC, 2022). As an age group whose life will be deeply impacted by climate change in the future, Gen Zers are at the forefront of green activism while also paradoxically retaining close ties to consumer culture values, as a recent report shows (Oliver Wyman Forum, 2023).

Climate change is seen as a global emergency by over 70% of young people in 77 countries, according to the biggest poll on the topic conducted worldwide by UNDP and the University of Oxford, and implementing more green policies was voted as necessary by 86% of them (UNDP, 2024). However, connecting knowledge about climate problems and wishing for public policy changes does not always translate into personal lifestyle changes. A study comparing Millennials' and Gen Zers' perception of the relationship between climate change and personal health – including an evaluation of their knowledge, attitude, and behavior on the topic – concluded that both generations recognize changes in summer and winter temperatures but struggle to articulate their impact on their personal health. Moreover, both tend to see themselves as observers rather than active participants in acting against climate change, leading to a sense of passivity, also known as

“intergenerational buck-passing” (Petrescu-Mag et al., 2023).

Environmental knowledge is key in generating the behavioral changes needed for decelerating climate change. But where do Gen Zers get their up-to-date knowledge from? With media consumption habits attuned to technological advances, many get their news from social media, showing an inclination towards “visually and sonically pleasing content dripping with (authentic) personality”, choosing imaginative digital creators over certified experts or public officials while simultaneously struggling to make their way through omnipresent misinformation and fake news (Oliver Wyman Forum, 2023). Existing research shows that specialized mobile apps might also be effective in fostering and developing eco-conscious knowledge and attitudes (Chuan et al., 2024), in addition to a variety of formal, informal and transdisciplinary curriculum design initiatives focused on the environment (Bootrach et al, 2015; Stock et al., 2017).

The increasing amount of time spent on social media and the significant roles it has in young people’s lives – influencing how they connect, shop, or seek information and entertainment (WeAreSocial, 2023) – prompts us to believe such platforms extend their effect on how people perceive environmental issues as well. This is supported by recent research concluding younger generations prefer non-traditional news sources (digital outlets, blogs, social media), valuing timeliness and shareability, compared to older generations who maintain ties with traditional news sources (Anderson, 2024). The influential part of social media in acquiring environmental knowledge might be motivated by an existing gap between the scientific language and discourse practices used in mainstream media or formal education institutions for presenting environmental issues and the expectations of Gen Zers regarding how information should be presented and structured. For example, short videos known as reels have become particularly effective in maximizing reach and generating engagement on platforms such as Instagram and TikTok in recent years (Hutchinson, 2022; MFB, 2024). This can be linked to the shrinking attention spans resulting from changing media consumption habits in the digital age, information overload, and the widespread tendency to multitask (APA, 2023).

Effectively disseminating knowledge on climate change and climate crisis is vital to achieving larger-scale action from individuals and governments, and this can only be done using effective environmental communicators (Eichhorn et al., 2022). Due to social media platforms’ ascension in recent years and the amount of time users spend consuming their content, social media greenfluencers can be regarded as prominent environmental communicators, at least in the case of young audiences.

The specialized influencers promoting a sustainable lifestyle and eco-consciousness, also known as green living influencers or “greenfluencers” (Pittman & Abel, 2021), are digital creators who function as online opinion leaders and can have an important role in raising awareness and driving behavioral change (Dekoninck & Schmuck, 2022). They are known to be capable of influencing attitudes and consumer behavioral intentions, as studies in influencer marketing show (Kapoor et al., 2023). Due to media format requirements on platforms such as Instagram or TikTok, greenfluencers have the potential to present environmental matters in a less complex and visually attractive manner to young audiences, fostering engagement and individual responsibility in promoting sustainability (Huber et al., 2022).

Ranging from green brand endorsement (e.g., local/sustainable manufacturers, low-scale farming, no-packaging shops) to environmentally aware lifestyle advice (e.g., slow fashion, sustainable tourism, waste reduction) or appeals to activism (e.g., Fridays for Future, Extinction Rebellion), the greenfluencer scene is heterogeneous both in terms of content strategies and number of followers. High-profile personalities, such as Greta Thunberg, reach millions of followers on Instagram. However, influencers who promote sustainability and ecological awareness often enter the category of nano-influencers (up to 10K) or micro-influencers (up to 100K). Some focus exclusively on green topics, while others include them in a broader range of lifestyle themes. In some cases, content is exclusively business-oriented, focusing on promoting eco-friendly products (Kapoor et al., 2023), while in others, influencers act as opinion leaders and convey a more socially-oriented message. They engage audiences in adopting pro-environmental lifestyle changes rather than just particular products and might be scientists or activists (Boerman et al., 2022; Huber et al., 2022).

Despite wide-ranging variations, a common characteristic of greenfluencers (and SMIs in general) is the cultivation of a persuasive appeal based on creating credible content and maintaining congruence between personal image, as reflected in aspects such as behavior and expertise, and the green message or brand they endorse (Boerman, 2022). By offering a glimpse into their personal lives and making autobiographical references to build authentic narratives, SMIs create and maintain parasocial relations with their followers, who might envisage them as close friends providing advice regarding lifestyle, behavioral, or consumer choices. Building on Horton and Wohl’s (1956) theory regarding parasocial interactions and relations, several studies have argued that the strong and long-term emotional bond between SMIs and their followers is similar to an actual social relationship. In the case of greenfluencers, where a smaller number of followers leads to more

consistent engagement and trust (Pittman & Abell, 2021), this translates into an even stronger parasocial connection (Knupfer et al., 2023).

Credibility is a key persuasive strategy for SMIs and it is ensured through a mix of factors, namely (1) trustworthiness, or perceived honesty and truthfulness; (2) expertise, as resulting from the expressed knowledge, experience, or skills; (3) attractiveness, or the influencer's perceived physical or social charisma; (4) congruence or consistency in associating with particular entities or displaying certain behaviors (Boerman, 2022; Ohanian, 1990; Breves & Liebers, 2022). Other researchers have also included in this mix the quality of arguments, interactivity, and social advocacy as factors affecting perceived credibility (Xiao et al., 2018), as well as similarity, or the extent to which the follower identifies with the influencer, and familiarity, referring to the pre-existing information about the influencer (Munnukka et al., 2016).

Additionally, using frames that trigger certain emotions has also been demonstrated to affect the persuasive effect of greenfluencers significantly. A study focusing on the impact of positive vs. negative frames (gain vs. loss) in the context of environmental messages concluded that the use of the latter tends to reduce behavioral intentions, thus highlighting the importance of using gain frames as part of greenfluencers' messaging strategy (Olbermann et al., 2024). Recent research on effective persuasion in social media has also focused on how a combination of elements defining content (i.e., visual, auditory, linguistic or text-based, symbolic, social, and emotional) drives social media engagement behavior. Analyzing how such multimodal means of expression are used in Instagram stories, the study identified different effective content configurations that enhance engagement, concluding that "combinations of content elements, rather than individual elements in isolation, drive outcomes" and defining effectiveness in social media content design cannot be reduced to a single "recipe," but to several options using different interconnections between the content element (Lapresta-Romero et al., 2024).

In the case of Romanian influencers, previous studies concluded the need for a careful balance between advertising and non-advertising content, as too many commercial appeals have a negative effect on trustworthiness and on the long-term parasocial connections of SMIs with their followers, as well the importance of attractiveness, expertise (perceived quality content), authenticity and similarity in establishing influencer credibility (Balaban et al., 2019; Balaban et al., 2020).

Methodology

Building on existing research connected to the perceived credibility

and persuasive appeal of SMIs and their role in influencing young audiences, our empirical research focused on how eco-conscious attitudes are shaped and displayed in the case of Romanian Gen Zers. More specifically, we focused on the following research questions:

RQ1: Do Romanian Gen Zers find greenfluencer content credible?

RQ2: To what extent can greenfluencers motivate Romanian Gen Z to display eco-conscious attitudes on social media, thus contributing to informal environmental education and developing green citizenship?

In order to tackle these questions, we used a mixed methodology consisting of a focus group discussion and a survey – both meant to provide insights into how young people’s environmental awareness and interest connect with their social media consumption habits in the case of Romanian Gen Zers.

Data and research model

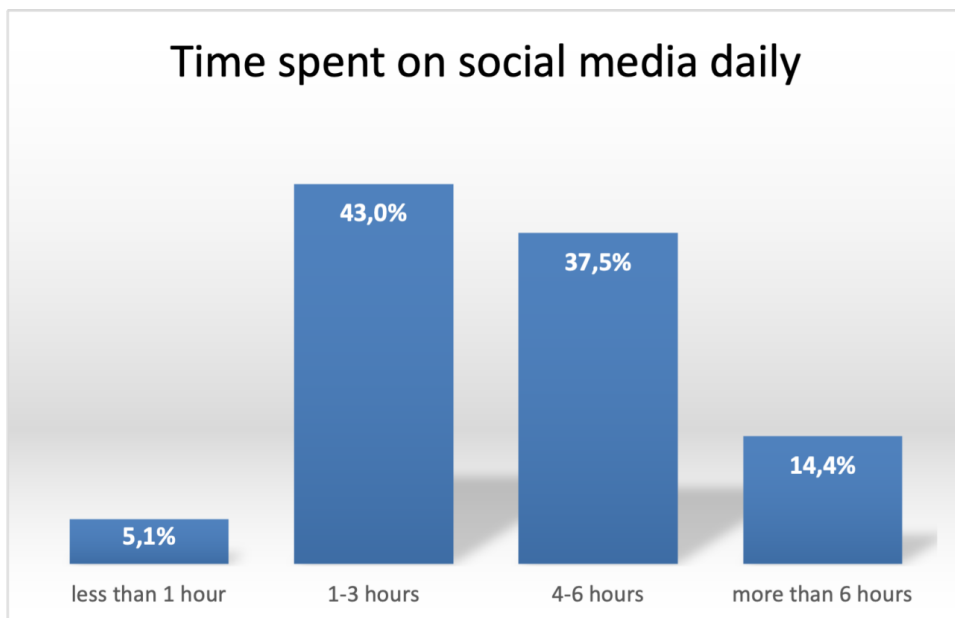
The data we analyzed resulted from two research methods: a focus group interview organized in April 2022 and a survey completed from April to June 2022. At that time, the world had just overcome the COVID-19 pandemic, a period of severe lockdowns that enhanced citizens’ interaction with technology. The investigated population was represented by young people between 14 and 25 years old from secondary school and universities in Romania.

Eight university students participated in the face-to-face focus group discussion organized at West University of Timisoara. The focus group research subjects were selected through an open call disseminated among the students at the West University of Timisoara, inviting participants who comply with the following criteria: demography (the persons outside the 18-26 years old interval were not eligible) and social media interests (influencers and opinion leaders were particularly welcomed). Their fields of study connected to our interdisciplinary research topic: they were enrolled to complete degrees in communication, journalism, psychology, digital media, political science, and geography. The participants’ particular areas of interest, including a knowledge base and practical skills, included social media communication, entrepreneurial education, storytelling techniques, environmental science, and advertising. Their practical expertise at the time of our research, mostly gained from volunteering, focused on designing data analysis, blogging or vlogging, organizing educational activities for children, coordinating an online student magazine, online marketing and social media management, copywriting, or coordinating a geographical association. The focus group interview was designed to initially test Gen Zers’ understanding

of what a “greenfluencer” is, thus helping properly calibrate the survey and the questionnaire’s content. The focus group interview guide comprised three sections: What is an influencer?; Communication and influencing techniques; Green attitudes.

The questionnaire we used in our survey consisted of four parts: assessing (1) the respondents’ social media consumption habits, (2) their perceptions and practices regarding social media influencing, (3) their green attitudes, and (4) demographical data. The first three sections operated with Likert ordinal scales, each question having multiple-choice answers. The demographics section questioned the respondents regarding gender, age, location, educational level, work status, spoken languages, and family income. Some of the questions had subsequent variables. The questionnaire required approximately 10 min. to complete (see Appendix A for the complete list of questions).

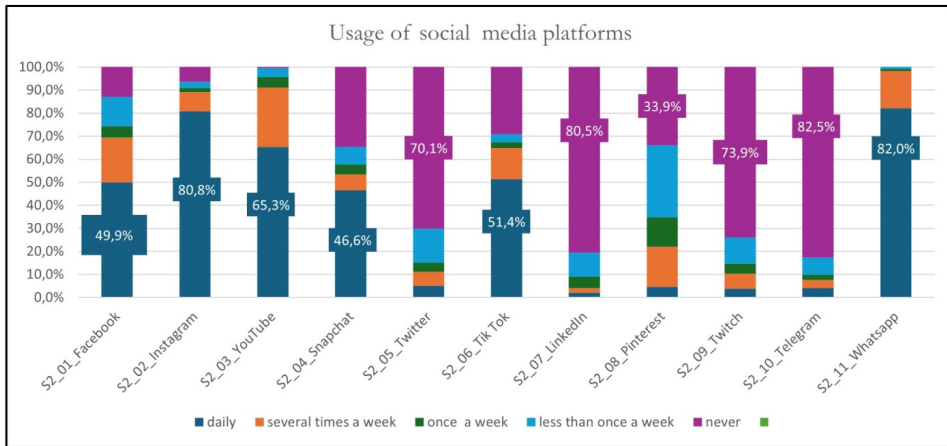
We initially tested the questionnaire on 5 respondents of different genders, ages, and educational levels, and no corrections were found necessary. It was subsequently applied in Timișoara (Romania), where young people from universities and secondary schools were asked to complete it through several in-person events connected to education. A computer-assisted data collection (CAPI) method was carried out via the online QuestionPro system. Out of the total number of 403 responses, the database was cleaned using the following criteria: demography (the responses outside the 14-26 years old interval were left out) and degree of completion (the incomplete questionnaires were left out). A total number of 395 questionnaires were considered for the analysis. The data was analyzed with SPSS, using frequency analysis, crosstab, and regression analysis. All survey participants were informed about the study’s purpose, assured of their anonymity, about their right to stop and withdraw at any time with no consequences and were notified that the survey data would only be published in aggregate form.



Source: Developed by the authors based on research data.

The respondents grant a significant amount of time daily for social media platforms: 43% spend between 1 and 3 hours, while 35% spend between 4 and 6 hours. Most prefer WhatsApp (82%), Instagram (80.8%), YouTube (65.3%), TikTtok (51,4%), Facebook (49.9%) and Snapchat (46.6%). On the other hand, the social media platforms almost never used by the respondents were Telegram (82.5%), LinkedIn (80.5%), Twitch (73.9%), and Twitter (70.1%).

Figure 3. How often do you use social media sites in your daily life?



Source: Developed by the authors based on research data.

To assess the credibility of SMI content from the perspective of Gen Zers, we focused on the following variables: trust invested in influencers (I1, I2), active behavior of following influencers on social media (I3), perception of SMI credibility (I5), and reasons for following (I11) and unfollowing (I13) SMIs.

Asked about the extent to which they trust people and organizations in general (I1), and when it comes to environmental issues in particular (I2), most respondents did not consider influencers as credible sources of information. As Table 1 shows, looking at the extreme answers (coded 1 and 4 on the 1–4 Likert scale; the darker the color, the larger the frequency of answers), it can be concluded that significantly more people (68.6%–47.3%) found their parents to be a trustful source of information, both “in general” and “on environmental issues.” On general topics, respondents rather trust their teachers (68.9%) and their peers, friends, and acquaintances (73.9%), while they rather distrust mass media (67.8%) and influencers (52.4%) and express a total distrust in politicians (49.9%). When the topic shifts to “environmental issues,” a large part of the respondents still consider their parents as totally trustful (47.3%), also showing increased trust in experts and renowned researchers (42.5%). Additionally, they rather trust their teachers (62%) and friends (63.5%). Even though the distrust in influencers and mass media decreases in this section compared to “general issues”, a large part of the respondents still rather distrust (39.5%) or totally distrust (34.4%) influencers on environmental issues.

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Table 1. How much do you trust the following people/ organizations? In general, and regarding environmental issues.

How much do you trust the following persons/organizations		1: total distrust	2: rather distrust	3: rather trust	4: total trust
I1_I2_01 parents	in general	0,5%	5,1%	24,8%	69,6%
	on environmental issues	3,0%	14,4%	35,2%	47,3%
I1_I2_02 mass-media	in general	19,0%	67,8%	12,9%	0,3%
	on environmental issues	21,3%	46,1%	29,9%	2,8%
I1_I2_03 influencers	in general	35,2%	52,4%	12,2%	0,3%
	on environmental issues	34,4%	39,5%	25,1%	1,0%
I1_I2_04 teachers	in general	1,5%	14,2%	68,9%	15,4%
	on environmental issues	4,6%	12,7%	62,0%	20,8%
I1_I2_05 NGOs	in general	11,6%	35,2%	51,4%	1,8%
	on environmental issues	12,9%	23,8%	51,4%	11,9%
I1_I2_06 friends	in general	2,0%	10,1%	73,9%	13,9%
	on environmental issues	3,8%	18,7%	63,5%	13,9%
I1_I2_07 experts, renowned researchers	in general	2,3%	6,1%	52,2%	39,5%
	on environmental issues	4,3%	6,8%	46,3%	42,5%
I1_I2_08 politicians, government	in general	49,9%	42,8%	7,1%	0,3%
	on environmental issues	46,3%	42,5%	9,9%	1,3%
I1_I2_09 famous CEOs	in general	23,0%	48,6%	27,1%	1,3%
	on environmental issues	27,8%	46,1%	24,8%	1,3%
I1_I2_10 public institutions (such as energy provider, water distribution company)	in general	14,4%	46,3%	38,0%	1,3%
	on environmental issues	17,2%	40,0%	37,2%	5,6%

Source: Developed by the authors based on research data.

On the other hand, when asked whether they follow several SMIs (I3), the answer was positive for the large majority of the respondents (71.1%), while only a minority (19.7%) do not. Moreover, when taking a closer look at the reasons affecting the credibility of an influencer (I5), Romanian Gen Zers considered that several aspects are to be taken into consideration (Table 2), including the SMI's display of good exemplary behavior (54.3%) and charity acts (51.6%) and high-quality visual content (51%). On the other hand, scandals, inappropriate behavior (72.4%), and inappropriate advertising (56.3%) were perceived as very damaging in terms of credibility.

Table 2. How much does the following affect the credibility of an influencer?

Variables	1: very damaging	2: slightly damaging	3: slightly improving	4: greatly improving
I5_01 many followers	12,70%	12,00%	42,00%	33,30%
I5_02 charity	2,50%	7,10%	38,70%	51,60%
I5_03 good exemplary behavior	4,10%	5,80%	35,80%	54,30%
I5_04 scandals, promotion of bad habits	72,40%	17,20%	6,60%	3,80%
I5_05 high visual content	3,80%	8,70%	51,00%	36,50%
I5_06 one-off advertisement	8,90%	34,10%	46,80%	10,20%
I5_07 long-term advertising partnerships (e.g. brand ambassador)	12,70%	25,70%	41,50%	20,10%
I5_08 inappropriate advertising, sponsorship	55,30%	32,40%	9,00%	3,30%

Source: Developed by the authors based on research data.

In order to additionally investigate the influencers' persuasive potential, we looked at why Gen Zers follow and unfollow SMIs (I11, I13). The data in Table 3 shows that the main reasons relate to him/her producing (45.1%) and, respectively, ceasing to produce (60.1%) quality content. The focus group interview revealed a similar idea in defining influencers, as they were described as "people who create quality content" and "who provide entertainment to those who follow them," but also who, for financial purposes, "create content that has a marketable purpose." Generally speaking, interviewees believed that the best influencing techniques are those that inspire people's confidence, emphasize vulnerability and the idea of "doing good," and promote positivity. Additionally, the quality of visual content was considered important ("simple," "colorful," "friendly," or "live and authentic"), as well as the extent to which it delivers awareness messages (e.g.,

through challenge campaigns, trendsetting). Moreover, the interviewees considered it important that a given content is adapted to what they consider to be the specifics of several different platforms (e.g., TikTok – “funny,” Facebook – “serious,” Instagram – “creative,” etc.).

Dealing with interesting topics (41.8%), providing entertainment (67.1%), and having a moderate interest in learning (53.3%) are important reasons to start following an influencer, according to survey data, while “becoming boring” (54.3%) is an important reason to unfollow. Moreover, following SMIs can be motivated by social relatedness: respondents are possibly interested in the SMI’s opinion (62.3%) and identify with that person (53.3%), while an influencer who no longer represents the cause of initial interest will be unfollowed by many (43.8%). The focus-group interview also revealed that participants appreciated the possibility of creating communities (social media groups) around a particular idea, which allows group solidification and a parasocial sense of belonging.

Table 3. Why are you following/ unfollowing an influencer?

Why are you following an influencer?	1: certainly not because of this	2: maybe because of it	3: certainly because of this	If you stop following an influencer, what is the reason?	1: certainly not because of this	2: maybe because of it	3: certainly because of this
I11_1 I find his/her content entertaining	13,30%	67,10%	19,60%	I13_1 because of lack of time	34,70%	51,60%	13,70%
I11_2 I am interested in his/her opinion	27,50%	62,30%	10,10%	I 13_2 I am not getting the usual content	16,60%	53,20%	30,30%
I11_3 he/she deals with interesting topics	4,10%	54,10%	41,80%	I 13_3 posting too many ads	20,00%	40,30%	39,70%
I11_4 he/she produces quality content	5,70%	49,20%	45,10%	I 13_4 for not producing quality content	8,90%	31,00%	60,10%
I11_5 for nice pictures, videos	14,90%	55,70%	29,40%	I13_5 gets boring me	9,20%	36,50%	54,30%
I11_6 I can learn from him/her	10,40%	52,20%	37,30%	I 13_6 no longer represents	14,30%	41,90%	43,80%

I11_7 I find myself in that person	26,70%	53,30%	20,00%	the cause/issues I started to follow			
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Source: Developed by the authors based on research data.

In order to explore the extent to which greenfluencers can be considered effective persuaders, the survey also investigated the following variables: the perceived role of SMIs in raising awareness of social issues (I6), the perceived effectiveness of SMIs dealing with social issues in changing people’s opinions or behaviors (I7), personal agency in fighting climate change (A2), interest in green issues (A4) and display of green attitudes on social media (A6).

When asked whether influencers raise awareness on social issues (I6), the majority of respondents (65.8%) chose “rarely” as the predominant answer, while only 29.8% thought influencers “often” have this effect. Moreover, 51.8% found influencers “partly effective” in changing people’s opinions and behavior, and 31.7% considered influencers “effective.”

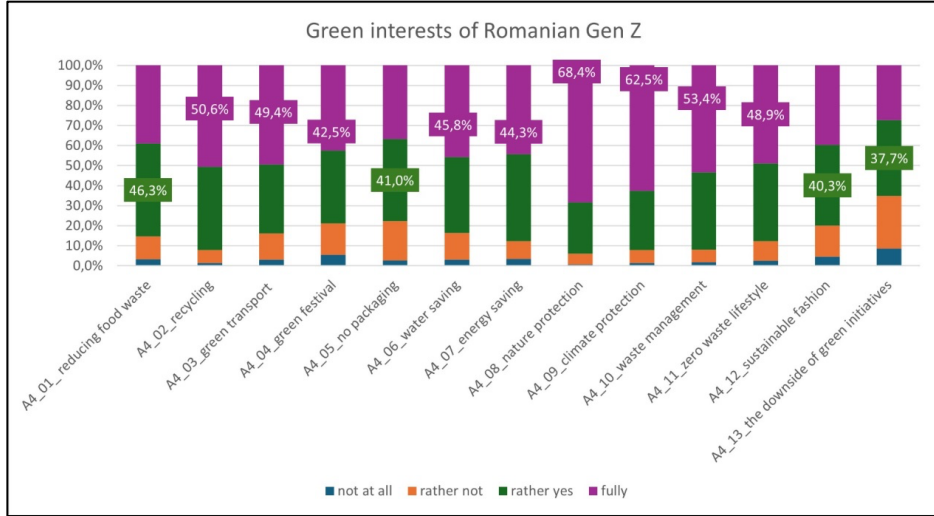
The last three questions explored the attitudes of the respondents. When asked whether their own “attitude and actions can change the current environmental/natural problems” (A2), a majority of answers expressed a positive perspective - “rather yes” (50.6%) and “fully agree” (24.8%). In comparison, only 18.7% answered “rather not” or “not at all” (5.8%). However, the focus group interviewees expressed a slightly nuanced idea: although young people are generally proactive to change and have self-confidence, they need to be encouraged and supported (primarily through public policies such as those promoting recycling). Otherwise, they risk remaining “just rebellious.”

When asked whether they share news about environmental topics on their SM page (A6), the respondents mainly gave negative answers: “no” (47,3%), “rarely” (38,2%), “often” (13,2%) and “always” (1,3%).

A detailed look into what Romanian Gen Zers consider as relevant green topics is provided in Figure 4, which highlights their interest in issues such as “nature protection” (68.4%) and “climate protection” (62.5%), and a moderate interest in more specific ones, such as “food waste” (46.3%), “no packaging” (41%), “sustainable fashion” (40.3%) and “the downside of green initiatives (pollution scandals)” (37.7%). The idea of climate change was seen by the focus-group interviewees as having multiple ramified effects beyond the actual warming of the planet, calling for several actions related to public communication and the education of the population, including in the area of

financial education and individual social responsibility – all of which would require rapid and effective methods to be implemented globally.

Figure 4. How interested are you in the following environmental topics?



Source: Developed by the authors based on research data.

Based on these results, we proceeded to further data analysis aimed at responding the two research questions. We investigated the predictors of considering greenfluencers as effective persuaders for Romanian Gen Zers to adopt eco-conscious attitudes.

Correlations and regression analysis

To test relations between several key variables, we proceeded to data analysis using correlations. Table 4 shows the relation between social media consumption habits (S1, S2) and actively following influencers (I3), on the one hand, and interest in green issues (A4) and displaying eco-conscious attitudes on social media (A6), on the other hand.

Table 4. Correlations between media consumption habits, interest in green issues, and displaying eco-conscious attitudes on SM

Variable	1	2	3	4	5
1. A4					
2. S1	.08				
3. S2	-.02	-.26**			
4. I3	-.08	.23**	-.24**		

5.	A6	.33**	.09	-.18**	.07	
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*= $p < .05$, ** = $p < .01$; $N = 395$

Source: Developed by the authors based on research data.

General social media consumption habits (S1, S2) and specifically following influencers (I3) do not correlate with interest in environmental topics (A4) in Romanian Gen Zers: there is no statistically significant relation here.

In order to test the relation between S2 (How often do you use SM sites in your daily life?) and A4 (How interested are you in the following environmental topics?), we used the Pearson correlation. The results indicate that there is not a statistically significant relation between the two variables $r(393) = -.02$, $p = .73$. Hence, the frequency with which Gen Z use social media (S2) does not correlate with their interest in environmental topics (A4).

Testing the relation between I3 (Do you follow influencers on any social media channels?) and A4 (How interested are you in the following environmental topics?) yielded a similar result. To test this result, we used the Spearman non-parametric correlation. The results indicated a very weak negative correlation and a statistically nonsignificant relation between the two variables $\rho(393) = -.08$, $p = .09$.

In order to test the relation between A6 (Do you share news about environmental topics on your social media page?) and A4 (How interested are you in the following environmental topics?), we used the Spearman non-parametric correlation. The results indicate a positive and statistically significant correlation between the two variables $\rho(393) = .33$, $p < .001$. Hence, the more Gen Zers are interested in environmental topics, the more likely they are to share news about such issues on their social media pages, thus displaying an eco-conscious attitude.

Furthermore, an ordinal logistic regression analysis (Table 5) was performed to investigate if A4 (How interested are you in the following environmental topics?) is a significant predictor for A6 (Do you share news about environmental topics on your social media page?). In this analysis, both Pearson chi-square test $\chi^2(86) = 87.25$, $p = .44$ and the deviance test $\chi^2(86) = 70.30$, $p = .89$ are non-significant. These results suggest a good model fit (the model fits the data well), hence the assumption is satisfied.

Table 5. Regression analysis on “green attitudes” and “sharing news on environmental topics”

		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Threshold	[A6 = 1,00]	4,187	,703	35,515	1	< .001	2,810	5,564
	[A6 = 2,00]	6,230	,740	70,776	1	< .001	4,778	7,681
	[A6 = 3,00]	8,859	,863	105,293	1	< .001	7,167	10,552
Location	[A4]	1,308	,210	38,826	1	< .001	,896	1,719

Source: Developed by the authors based on research data.

Therefore, A4 is a significant predictor for A6 (Table 5). The model explained 12,1% of the variance in sharing news about environmental topics on social media (A6) (Nagelkerke $R^2 = .121$). For every one-unit increase in the level of interest in environmental topics, there is a predicted increase of 1.31 in the log odds of a Romanian Gen Z being in a higher category regarding the frequency of sharing news about environmental topics on their social media page. There is a greater likelihood that Romanian Gen Zers with a higher level of interest in environmental topics will more frequently display an eco-conscious attitude on their SM page.

Additionally, we tested the relations between, on the one hand, the level of trust Gen Zers have in influencers (I1, I2), their perception of the effectiveness of SMI in raising awareness (I6) and in being efficient persuaders to change people’s opinions and behaviors (I7) with, on the other hand, a sense of agency in dealing with environmental issues (A2) and sharing news about green issues on their personal SM pages (A6) (see Table 6).

Table 6. Correlations between the level of trust, perceived effectiveness of influencers, personal agency in dealing with environmental issues, and displaying an eco-conscious attitude on SM

Variable	1	2	3	4	5	6
1. I1						
2. I2	.56**					
3. I6	.24**	.24**				
4. I7	.23**	.24**	.37**			
5. A2	.07	-.02	.06	.18**		
6. A6	.07	.11*	.10*	.15**	.11*	

Source: Developed by the authors based on research data.

We used the Spearman non-parametric correlation to test the relation between the level of trust (I1, I2) and perceived effectiveness in persuading

(I7). The results show a positive and statistically significant correlation between I7 and I1 (trust in influencers in general), with $\rho(392) = .23, p < .001$, and between I7 and I2 (trust in influencers regarding environmental-related issues), $\rho(392) = .24, p < .001$. The more trusted influencers are in general (I1) and regarding environmental issues in particular (I2), the more effective they are perceived in changing people's opinions or behavior.

The results also indicate a positive and statistically significant correlation between I6 (influencers contribute to raising awareness on social issues) and I1 (trust in influencers in general), with $\rho(390) = .24, p < .001$, and between I6 and I2 (trust in influencers regarding environmental related issues), $\rho(390) = .24, p < .001$. The more trusted influencers are in general (I1) and regarding environmental issues in particular (I2), the more frequently they are perceived as raising awareness on social issues.

The results of the Spearman correlation indicate a positive and statistically significant correlation between I2 (trust in influencers regarding environmental-related issues) and A6 (sharing news about environmental issues on personal SM page), with $\rho(393) = .11, p = .03, p < .05$. The more Gen Z trust influencers regarding environmental issues in particular (I2), the more frequently Gen Z share news about environmental topics on their social media pages (A6).

The results of the Spearman correlation also indicate a positive and statistically significant correlation between I6 (In your opinion, do influencers raise the awareness of social issues?) and A6 (sharing news about environmental issues on personal SM page), with $\rho(390) = .10, p = .04, p < .05$. The more frequently Gen Zers perceive influencers as effectively raising awareness on social issues (I6), the more likely they are to share news about environmental topics on their own SM pages (A6). The results also indicate a positive and statistically relevant association between I7 and A6, with $\rho(392) = .15, p = .002, p < .01$, and between I7 and A2, with $\rho(392) = .18, p < .001$. The more effective Gen Zers think influencers are in changing people's opinions or behavior (I7), the more likely they are to share news about environmental topics on their own SM pages (A6), and the more likely they are to think their attitude and actions can impact the current environmental problems (A2).

Discussion

The current study aimed to explore the connections between environmental attitudes and social media consumption habits in the case of Romanian Gen Z. More specifically, we were interested in finding whether (1) this cohort finds greenfluencer content credible and (2) to what extent these types of influencers are effective persuaders in motivating Romanian Gen Zers to display eco-conscious attitudes in social media, thus contributing to informal environmental education and developing green citizenship. Based on our research results, the following conclusions can be discussed.

Although they spend a significant amount of time daily on social media platforms and actively follow SMIs, Romanian Gen Zers distrust them and do not consider them credible sources of information. Even though distrust is lower in the case of green issues than general ones, most respondents still rather / totally distrust influencers who create environmental content. Young people have a closely knit network of trust based on proximity: they rather trust their parents, teachers, and peers before trusting SMIs, while politicians are the least trusted. The role of teachers as trustworthy is a promising area to be further investigated, in line with the assumption of Mihăilă et al. (2022), who identified educational background, i.e. the level of knowledge and appreciation of environmental values, as a factor of influence regarding the adoption of a favorable attitude and pro-environmental behavior. It is also partly in line with international studies such as the one authored by Eichorn et al. (2022), which states that, while formal education is a critical component in addressing the climate crisis, it should be supplemented with targeted knowledge dissemination and strategic communication campaigns that encourage public engagement.

It is worth noting that, while previous research has shown that SMIs can foster parasocial relationships with their audiences (Breves & Liebers, 2022; Knupfer et al., 2023), our findings suggest a more complex dynamic. Although respondents invest significant time in following SMIs, this does not appear to be directly linked to a lack of trust in their real-life relationships with parents, teachers or friends. In fact, as Table 1 indicates, respondents generally express distrust or even total distrust toward influencers. This suggests that, for Gen Z, SMIs are not viewed as substitutes for trusted real-life connections, nor are they necessarily perceived as “virtual” friends. Instead, the motivation to follow SMIs is driven more by a desire to access “quality content” (see Table 3), that is, to stay informed about current trends and be entertained, rather than to seek emotional connection. While some respondents cite interest in SMIs’ opinions or a sense of identification (“I find myself in that

person”) as reasons for following them, these factors do not appear to reflect a need to replace or supplement existing trusted relationships. Thus, the assumption that SMIs fulfil attachment or social interaction needs in the same way as peers or friends is not supported by the current findings.

Our study also revealed that high-quality visual content positively impacts the credibility of SMIs, which is in line with previous studies (Huber et al., 2022; Oliver Wyman Forum, 2023) and highlights the importance of designing effective environmental communication on social media in multimodal terms (Lapresta-Romero et al., 2024). Moreover, inappropriate advertising or behavior negatively impacts their credibility, which is in line with Balaban et al.’s conclusions about the necessity of carefully balancing commercial and non-commercial content in order to maintain trustworthiness (2019, 2020) and with Boerman et al.’s (2022) observations regarding congruence and consistency in constructing a personal image.

Although Romanian Gen Zers report a large number of followers, charity work, and exemplary behavior of SMIs as indicators of credibility, this perception does not appear to translate into increased engagement with green content: most respondents rarely or never post environmentally themed content on their own social media pages. One possible explanation for this lies in the nature of greenfluencers, who have been described as gathering smaller and more niche audiences with whom they build consistent engagement and trust (Pittman & Abell, 2021), entering the category of nano- or micro-influencers. This suggests greenfluencers may go under the radar for many Romanian Gen Zers, who pay more attention to macro- or mega-influencers (who might have celebrity status and potentially be involved in philanthropy, and display exemplary behavior), thus having a limited influence on our cohort’s environmental behaviors. Additionally, the reluctance to post green content may be a result of precarious environmental knowledge or education, a notion supported by respondents’ expressed interest in generic rather than specific green topics (see Figure 4). These factors indicate that the perceived credibility of popular SMIs, based primarily on the number of followers, charity work, and exemplary behavior, does not directly inspire Romanian Gen Zers to promote green content. Instead, more specialized influencers and in-depth environmental knowledge may be necessary to increase personal engagement with green issues within this group.

The focus group discussions also revealed positivity and “doing good” as appealing factors when it comes to SMI content, which reasserts the importance of using “gain” rather than “loss” frames in greenfluencer communication strategy to attract engagement (Olbermann et al., 2024).

Romanian Gen Zers have a strong sense of agency when dealing with

climate change: the largest majority think individual attitudes and actions can have an impact. Also, the more they trust influencers regarding environmental issues or consider that influencers raise awareness of social issues or change people's opinions or behavior, the more frequently they display eco-conscious attitudes on their SM pages. Trust in greenfluencers also correlates with Gen Zer's sense of agency. When convinced that their attitudes and actions can impact environmental problems, they are also convinced that SMIs can shape opinions and behaviors. This result aligns with understanding the self-determination theory and the value of intrinsic motivations among social media users to engage in certain behaviors (Kim & Drumwright, 2016).

Regarding the contribution to green citizenship, our findings indicate that while greenfluencers have a limited direct impact on motivating Romanian Gen Z to publicly express eco-conscious attitudes, they may still play a role in informal environmental education by raising awareness and reinforcing existing pro-environmental values among those already receptive to such messages. However, the broader development of green citizenship – encompassing civic participation, ecological stewardship, and a sense of responsibility (Dobson, 1995; Dean, 2001) – appears to depend more on prior environmental knowledge and formal education than on social media influence alone.

Our research also shows that social media consumption habits do not correlate with environmental attitudes in the case of Romanian Gen Zers. Social media greenfluencers can motivate the display of eco-conscious attitudes only in the case of followers who are already interested in environmental topics and who trust SMIs and their potential to create awareness and generate behavioral changes. Explanations of prior development of green attitudes should be further investigated, extending research on formal, informal and transdisciplinary environmental education curriculum design (Bootrach et al, 2015; Stock et al., 2017) or the role of pro-environmental mobile apps (Chuan et al., 2024).

A key finding here is that greenfluencers can be effective persuaders only in their social media echo chambers. These echo chambers involve Romanian Gen Zers with priorly acquired green attitudes who manifest a sense of agency in dealing with environmental problems and who trust the power of greenfluencing to change people's opinions and behavior.

Conclusions

Our study explores the connection between social media consumption habits and environmental knowledge and attitudes in the case of Romanian Gen Zers, focusing on the extent to which greenfluencers contribute to informal environmental education and the development of green citizenship by motivating youth to express eco-conscious attitudes on social media. This is particularly relevant in the age group cohort, whose members have been described as needing to become “critical agents of change” that can have an active societal role in decelerating climate change effects. The findings of this study provide guidance for educators and policymakers on how to develop targeted strategies to promote environmental issues among youth. Our analysis opens up new opportunities for further research on the role of formal and informal education in shaping young people’s attitudes towards the environment and the impact of social media on proactivity and self-determination towards leading a sustainable lifestyle.

The authors of the study are also aware of its inherent limitations. Firstly, it is based on a small convenience sample of young people from Romania, so it may not fully represent the broader Romanian Gen Z population, offering limited insight into demographic diversity and cultural variability. Generalizing its findings to all Romanian youth or to other cultural contexts should be done cautiously and requires further research with larger and more diverse samples. Secondly, further qualitative research, such as follow-up focus group interviews, would be helpful to gain a more in-depth understanding of young people’s sources of environmental knowledge and what shapes their eco-conscious attitudes and sense of agency in dealing with climate change prior to following greenfluencers.

The theoretical implications of this study are related to (1) advancing the research on greenfluencers and their potential role in building informal environmental education strategies; (2) the consistent role of previously developed green attitudes in displaying eco-conscious behaviors on social media; (3) providing insights into how greenfluencers may support, but not independently drive, the development of green citizenship among youth; (4) offering additional insights into how motivational factors like high-quality visual content and relatedness shape social media behavior among Gen Z.

The practical implications of this study address (1) formal and informal education professionals who can enhance the dissemination of environmental knowledge to fit the needs and expectations of our targeted cohort; (2) policymakers and communication professionals who can design targeted campaigns focusing on green issues or involving greenfluencers to attract Gen Z; (3) NGOs and activists who can gain insights into the perceived

credibility of greenfluencers, thus opening the way towards the creation of tailored communication and educational products to promote sustainability.

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Appendix A. Greenfluencer survey

Code	Question	Answer Options and codes on Likert scales
S1.	How much time do you spend online using social media platforms per day? Mark one!	1: less than 1 hour, 2: 1-3 hours, 3: 4-6 hours, 4: more than 6 hours
S2. S2_01 S2_02 S2_03 S2_04 S2_05 S2_06 S2_07 S2_08 S2_09 S2_10 S2_11	How often do you use social media sites in your daily life? Mark one per line! Facebook Instagram YouTube Snapchat X (Twitter) TikTok LinkedIn Pinterest Twitch Telegram Whatsapp	1: never, 2: less than once a week, 3: once a week, 4: several times a week, 5: daily
I1. I1_01 I1_02 I1_03 I1_04 I1_05 I1_06 I1_07 I1_08 I1_09 I1_10	IN GENERAL, how much do you believe in the following people/organisations? Mark one per line! My parents Mass-media Influencers Teachers Non-governmental organisations Peers (friends, acquaintances) Recognised experts and scientists in the field Politicians/Government Famous company directors Public institutions (utility company, e.g. water company)	1: not at all, 2: rather not, 3: rather yes, 4: fully
I2.	REGARDING ENVIRONMENTAL RELATED ISSUES, how much do you believe in the following? Mark one per line!	1: not at all, 2: rather not, 3: rather yes, 4: fully

I2_01 I2_02 I2_03 I2_04 I2_05 I2_06 I2_07 I2_08 I2_09 I2_10	My parents Mass-media Influencers Teachers Non-governmental organisations Peers (friends, acquaintances) Recognised experts and scientists in the field Politicians/Government Famous company directors Public institutions (utility company, e.g. water company)	
I3.	Do you follow influencers on any social media channels? Mark one!	1: no, I don't follow any, 2: yes, I follow some, 3: yes, I follow a lot
I5. I5_1 I5_2 I5_3 I5_4 I5_5 I5_6 I5_7 I5_8	In your opinion how much the following affects the credibility of an influencer? Mark one in a row! Many followers Charity Good exemplary behaviour Scandals, promotion of bad behaviours High visual quality of content One-off advertisement long-term advertising partnerships (e.g. brand ambassador) Inappropriate advertising, sponsorship	1: very damaging, 2: slightly damaging, 3: slightly improving, 4: greatly improving
I6.	In your opinion do influencers raise the awareness of social issues? Mark one!	1: never, 2: rarely, 3: often
I7.	In your opinion, how effective are influencers who approach social issues in changing people's opinion or behavior? Mark one!	1: not effective, 2: partly effective, 3: effective, 4: very much effective
I11. I11_1 I11_2 I11_3 I11_4	Why are you following an influencer? Mark one per line! I find his/her content entertaining I am interested in his/her opinion He/she deals with interesting topics	1: not because of this, 2: partly because of this, 3: solely for this reason

I11_5 I11_6 I11_7	He/she produces quality content For nice pictures, videos I can learn from him/her I find myself in that person	
I13. I13_1 I13_2 I13_3 I13_4 I13_5 I13_6	If you stop following an influencer, what is the reason? Mark one per line! Because of lack of time I am not getting the usual content Posting too many ads For not producing quality content Gets boring for me No longer represents the cause/issue I started to follow	1: certainly not because of this, 2: maybe because of it, 3: certainly because of this
A2.	According to your opinion, can your attitude and actions change the current environmental/natural problems? Mark one!	1: not at all, 2: rather not, 3: rather yes, 4: fully
A4. A4_1 A4_2 A4_3 A4_4 A4_5 A4_6 A4_7 A4_8 A4_9 A4_10 A4_11 A4_12 A4_13	How interested are you in the following environmental topics? Reducing food waste Recycling Green transport (public transport, scooter, e-car) Green festival (e.g. returnable glass) No packaging Water saving Energy saving Nature protection Climate protection Waste management (e.g. separate collection) Zero waste lifestyle Sustainable fashion The downside of green initiatives (pollution scandals)	1: not at all, 2: rather not, 3: rather yes, 4: fully
A6.	Do you share news about environmental topics on your social media page? Mark one!	1: no, 2: rarely, 3: often, 4: always
D2	Demography	

D3	D2. Your gender:	1: female, 2: male
D4	D3. Your age:	1: 14-17 year old, 2: 18-21 year old, 3: 22-25 year old, 4: older than 25
D5	D4. Your place of residence:	1: village / small settlement, 2: town, 3: capital city
D6	D5. Are you currently working?	1: no, 2: yes, in part-time, 3: yes, in full-time
D7	D6. Are you currently studying?	1: no, 2: yes: in high school, 3: yes: at university / college
D8	D7. What foreign languages do you speak? (English; German; French; Spanish; Portuguese; Italian)	0: no, 1: yes
	D8. How do you consider your family's living standard?	1: poor, 2: average, 3: wealthy, 4: rich