

PRO-ENVIRONMENTAL ADVERTISING STRATEGIES OF GREATEST IMPACT AMONG COLLEGE AUDIENCES

**ESTRATEGIAS PUBLICITARIAS
PROAMBIENTALES CON MAYOR IMPACTO
PARA LA AUDIENCIA UNIVERSITARIA**

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Abstract: The aim of this study is to know the opinion of undergraduate students (N=296) on the most impactful advertising strategies to design future environmental awareness campaigns. The methodology is empirical, non-experimental, descriptive, exploratory, and analytical. It focuses on examining the opinion of respondents about the preferred communication channels used to transmit pro-environmental messages, the audio-visual formats that draw their attention, the most persuasive narrative, the most impactful messages, and the people they find most credible for pro-environmental campaigning. The findings show that young audiences prioritize social media; real images; informative and testimonial narratives; catastrophic, hopeful, and inspirational messages; and nature is the main protagonist of stories. In conclusion, these campaigns should take advantage of the potential of social networks and select the most suitable advertising strategies to ensure their impact and encourage change towards eco-sustainable actions.

Key Words: Narratives; Advertising; Sensitization; Environment; Youth.

Resumen: El objetivo es conocer la opinión de los universitarios (N=296) sobre las estrategias audiovisuales más impactantes para diseñar futuras campañas publicitarias para la concienciación medioambiental. La metodología es empírica, no experimental de tipo descriptivo, con carácter exploratorio y analítico, centrada en analizar la opinión de los encuestados sobre: los canales de comunicación preferidos para transmitir mensajes proambientales, los formatos audiovisuales que despiertan su atención, la narrativa más persuasiva, los mensajes más impactantes y los personajes que les ofrecen mayor credibilidad para incorporar en campañas proambientales. Los resultados reflejan que la audiencia juvenil prioriza los medios sociales; las imágenes reales; las narrativas de tipo informativo y testimonial; los mensajes catastrofistas, esperanzadores y movilizadores; y prima la naturaleza como protagonista de los relatos. En conclusión, estas campañas deben aprovechar el potencial de las redes sociales y seleccionar las estrategias audiovisuales más idóneas para garantizar su impacto y propiciar el cambio hacia acciones ecosostenibles.

Palabras clave: narrativas; publicidad; sensibilización; medioambiente; jóvenes.

1. Introduction

For decades, institutional advertising on environmental issues has aimed at raising public awareness to promote civic behaviors to preserve nature (Lee, 2011). In the aftermath of the pandemic, the current widespread concern regarding the environment has increased because of the obvious deterioration of the planet through the overexploitation of natural resources, massive waste dumping, pollution, etc. (McNeely, 2021). The need to raise global awareness about the climate crisis is also involving institutions and non-governmental organizations (Conrad & Oleart, 2020), although Quiroga (2019) points out that environmental policies should be strengthened. There are campaigns focused on raising awareness in society, using social media (Liang et al., 2021; Madhavi, 2019), and which seek to engage citizens to transform their attitudes and make them more eco-sustainable (Buil et al., 2017; Senes & Ricciulli-Duarte, 2019).

To this end, raising awareness among the younger generations is key to help preserve the planet, hence the efforts made at school to promote environmental education (Liao & Li, 2019; Sukma et al., 2020). At the same time, the media are taking responsibility by warning mankind of the uncertain future that lies ahead if we do not take care of the natural environment (Zeng et al., 2020). The study by Campello et al. (2011) analyses the evolution of ecological advertising in the press and regret that it is scarce and intermittent, limiting its impact on audiences. Nowadays, public and private entities are launching campaigns supporting sustainable development and promoting proactive attitudes through different channels (Holfelder, 2019; Kipp & Hawkins, 2019). In these campaigns, young people become protagonists, and they are empowered as advocates of change towards a more planet-friendly and sustainable society (Jung et al., 2020).

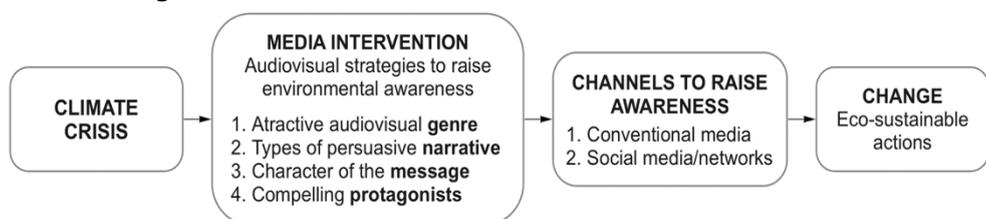
Conventional media such as television, cinema or advertising are imbuing their discourse with environmental values, in the same way as new social media such as YouTube and networks such as Facebook, Instagram, TikTok, Twitter, etc. (Alarcón & Álvarez, 2020; Shafer et al., 2020), in an attempt to align with the objectives of the 2030 Agenda for Sustainable Development (United Nations, 2015) and to be closer to young audiences. There is an emergence of specific advertising narratives that appeal to the audience with simple stories aimed at persuading them to respect biodiversity, while promoting proactive behaviours linked to consumption reduction, recycling, and reuse (Wall et al., 2019). Brands, meanwhile, are trying to change their priorities in their advertising communication, intending to be relevant not only to consumers but also to society (Chang et al., 2019; Nurunnabi et al., 2020) and joining the greenwashing trend (De Freitas et al., 2020).

Without a doubt, all the representations of environmental reality provided by the advertising discourse contribute to the process of cultural configuration that young people adopt (Bergmann & Ossewaarde, 2020; Fonseca & Castro, 2022). This also affects their eating habits linked to organic-labelled products (Jayakumar & Kiruthiga, 2019). For this reason, it is interesting to analyse their self-perception regarding the level of awareness they have on this issue, as well as to know what sustainable actions they take and to identify the importance they place on the different media to raise awareness. The aim is also to know their opinions on the preferred formats and channels, narrative strategies, and messages that they believe have the greatest impact. This will provide the keys to the effective design of advertising formats that contribute to raising awareness about environmental protection among young audiences.

2. Climate crisis and advertising strategies for raising awareness among young people

The critical current situation calls for a shift towards a more ecocentric perspective, leaving aside abusive anthropocentric behaviours as Francisco (2015) states in the encyclical *Laudato si*. Although most people consider themselves aware of environmental issues, this self-perception does not always materialize in tangible sustainable actions (Debrah et al., 2021), and not everyone knows or perceives the seriousness of the climate crisis in the same way, which determines their behaviour (Gelino et al., 2021; Masson & Otto, 2021). For this reason, a great deal of resources is being allocated to the design and dissemination of incisive advertising formats, aimed at provoking specific responses that can be translated into tangible attitudes based on social commitment. It is necessary to intervene through different channels to ensure that the behaviour of citizens leads to sustainable actions (recycling, water, or energy consumption reduction, etc.) that can contribute to reduce the climate crisis that threatens the planet (Figure 1).

Figure 1. Media interventions in the face of the climate crisis



Source: Own elaboration.

Advertising strategies to raise public awareness about the environment may adopt different narratives: a) *documentary*, to explain the phenomenon, processes, causes and consequences of the deterioration of the planet, by resorting to experts, simulations, demonstrations, etc. (e.g. Laforet, 2019); b) *storytelling*, the recreation of stories that can help the audience identify with eco-sustainable plots, by emotionally involving them so that they take action (e.g. United Nations, 2018), or in a critical way, by denouncing negative behaviours (Cutts, 2012); c) *testimonial*, whose protagonists embody the role of nature giving voice to its complaints with a persuasive tone (e.g. Nature is speaking, Conservation International, 2014); d) *information pills*: i) presentation of incidents and developments affecting the environment or climate change (plastic accumulation, garbage, dumping at sea, etc.) (e.g. United Nations, 2017), ii) information about environmentally friendly guidelines and behaviours, such as recycling (e.g. Imedes Grupimedes, 2011).

Often, some audiovisual discourses adopt a persuasive tone, opting for positive messages with an educommunicational value (Buchanan et al., 2018; Viteri, 2021), offering citizens guidelines for sustainable behaviours from a proactive and hopeful vision, and encouraging mobilization (Citelli & Falcão, 2020). Others, on the contrary, give priority to a dystopian, catastrophic, warning and even shaming tone, simulating situations that generate rejection (Griffin, 2018); and although the nature of the message may have a greater or lesser impact and address the critical spirit of the audience, it does not always lead to attitudinal changes resulting in eco-sustainable behaviours (Lavuri, 2021).

The persuasive capacity of some audiovisual discourses lies in the balanced combination of creativity and empathy, so it is necessary to create messages that favour the affective-emotional link with the audience (Brosch, 2021), from a positive and hopeful perspective that encourages mobilization. There are also catastrophist messages -from a behavioural approach (Bulfin, 2017)- that warn of a dystopian demise (Krøijer, 2020), showing reprehensible human behaviours and their fatal consequences. Others resort to portraying characters as positive role models, or use stories starring families, children, young people, intergenerational groups, or even nature itself to appeal to different audiences. They also often feature actors or actresses, as well as influencers, who share their own experiences, taking advantage of their power of attraction and familiarity to persuade and raise awareness among their followers (Wielki, 2020).

Although Sabre (2014) points out some guidelines to increase the value of environmental advertising, emphasizing aesthetic aspects, however, these advertising strategies aimed at raising awareness do not always follow a prior study identifying the elements that have the greatest impact on their target

audience. Strategies for raising environmental awareness among young audiences are moving from conventional talks or workshops with experts to increasingly sophisticated formats supported by augmented or virtual reality (Cai, 2013; Hsu et al., 2018). At the same time, billboards, press, radio, television, cinema, networks, and social media coexist to offer different channels to persuade different audiences of the need to protect the environment (Kim et al., 2020). Most of them provide guidelines to collaborate in solving existing problems and preventing future ones, by increasing the awareness of the ecological footprint that their actions represent (Sahoo & Sethi, 2022), by promoting positive attitudes that result in eco-sustainable behaviours (Debrah et al., 2021), by relying on humour (Griese et al., 2018), and by fostering a peaceful coexistence between human beings and their environment.

This research, thus, focuses on the opinion of university students about the advertising strategies that have the greatest impact on them so that this data can be used in the design of future environmental awareness campaigns.

3. Materials and methods

The research is empirical, non-experimental, exploratory (collection of opinions), descriptive (using descriptive statistics like frequencies and percentages), and analytical, according to Newby (2010). The research questions are the following:

1. Q1- What is the level of environmental self-awareness of university students?
2. Q2- What are the sustainable actions undertaken by this university audience?
3. Q3- What importance do you give to the different communication channels to increase your environmental awareness?
4. Q4- Which audiovisual format captures your attention the most?
5. Q5- In your opinion, which advertising narrative strategy is more persuasive?
6. Q6- What type of message has the greatest impact on them?
7. Q7- Which characters are the most believable for them?

To answer these questions, the following objectives are proposed:

1. O1- To identify the level of environmental self-awareness of university students.
2. O2- To learn about the sustainable actions undertaken by this university audience.

3. O3- To verify the importance of the different communication channels to raise their environmental awareness.
4. O4- To determine which audiovisual format captures their attention to a greater extent.
5. O5- To identify which advertising narrative strategy is the most persuasive.
6. O6- To learn what type of message has the greatest impact on them.
7. O7- To determine which characters are the most credible to them.

In addition, we have identified potential differences according to the degree the students are studying. Subsequently, the variable «level of ecological awareness» was constructed based on their level of self-awareness and the sustainable actions they take. And, in view of the results, we present the keys to design campaigns that contribute to raise awareness among young people in an effective way to protect the environment.

3.1. Sample

The non-probabilistic and intentional sample included university students (N=296) who voluntarily participated in the *Go Green!* environmental education training project, promoted by three Spanish universities during the 2021-2022 academic year. They are distributed as follows: University of Oviedo 20.6%, University of Valencia 38.9% and International University of Catalonia 40.5%. Of these students, 59.8% belong to the Education degree courses and 40.2% to Communication degree courses, with a predominantly female presence (87.5% vs. 12.5%). The participants answered an online opinion questionnaire between February and March 2022.

3.2. Instrument

The Audiovisual Strategies for Environmental Awareness (ASEA) questionnaire -designed *ad hoc*- consists of 42 items (Table 1). It has a high level of reliability, with a Cronbach's Alpha of 0.900. Its validation was carried out by means of confirmatory factor analysis, which concludes its good discrimination to evaluate the competence level of the students. Likewise, the KMO sample adequacy measure has a high value (0.807). Bartlett's Sphericity Test yielded a Chi-Square value of 2702.360, which for 703 degrees of freedom has a significance level of 0.000, so the correlation matrix can be factored.

Table 1. Instrument ASEA

Variables related to the environmental awareness of young people.	
1. Level of environmental self-awareness	Extremely aware Moderately aware Barely aware Not aware
2. Sustainable actions undertaken (Never=1, Sometimes=2, Always=3)	Separating waste Reducing water consumption Taking light bulbs, batteries, toxic items, etc. to the clean point. Buying bio/eco products Saving electricity at home
Variables related to young people's opinion on the most suitable audiovisual strategies to raise their awareness	
1. Importance given to the different communication channels (None=0, Little=1, Moderate=2, A lot=3)	Radio Television Digital press Billboard YouTube Facebook Instagram Twitter TikTok Workshops with experts
2. Level of attention according to the audiovisual format (None=0, Little=1, Moderate=2, A lot=3)	Real images Animation Fiction Dystopian simulation
3. Level of persuasiveness of each narrative (None=0, Little=1, Moderate=2, A lot=3)	Testimonial Documentary Storytelling Information pills
4. Level of impact according to the type of message (None=0, Little=1, Moderate=2, A lot=3)	Educational Hopeful Mobilizing Catastrophic Warning Shaming
5. Level of credibility according to the character/s (None=0, Little=1, Moderate=2, A lot=3)	Families Young people Children Intergenerational group Concerned actor/actress An influencer Nature itself

Source: Own elaboration.

3.3. Procedure

The program used was the SPSS-V26. After performing a descriptive analysis of the variables under study, it was determined that the sample did not meet normality criteria with the Kolmogorov-Smirnov test ($p=0.001$); therefore, the contrast of means for the degree variable -Education or Communication- was performed with the Mann-Whitney U test ($p<0.05$), while the rest of the variables were measured with the Kruskal-Wallis test. We also compared the type of communication channel that university students prefer with some other variables.

4. Results

An analysis of the relationship between the students' level of environmental self-awareness and the sustainable actions they take shows that although 68.9% consider themselves to be quite aware and 8.8% extremely aware, 22.3% are barely aware while 53.7% always separate waste, 45.9% reduce water consumption and 44.3% save energy, 60% of the least aware never reduce water consumption, nor do they separate waste (56.0%) or save electricity (55.6%). Not surprisingly, comparing the students' level of self-awareness with their actions shows that the less aware students are, the fewer actions they implement (Table 2).

Table 2. Level of environmental self-awareness vs. sustainable actions implemented by students

Level of environmental self-awareness		None		Little		Moderate		A lot		TOTAL	
		N	%	N	%	N	%	N	%	N	%
I separate waste	Never	1	4.0	14	56.0	9	36.0	1	4.0	25	8.4
	Sometimes	0	0.0	36	32.1	71	63.4	5	4.5	112	37.8
	Always	0	0.0	15	9.4	124	78.0	20	12.6	159	53.7
I reduce water consumption	Never	0	0.0	9	60.0	6	40.0	0	0.0	15	5.1
	Sometimes	1	0.7	30	20.7	103	71.0	11	7.6	145	49.0
	Always	0	0.0	26	19.1	95	69.9	15	11.0	136	45.9
I take light bulbs, batteries, toxic items, etc. to the clean point.	Never	0	0.0	21	36.8	33	57.9	3	5.3	57	19.3
	Sometimes	1	0.8	23	19.0	89	73.6	8	6.6	121	40.9
	Always	0	0.0	21	17.8	82	69.5	15	12.7	118	39.9
I buy environmentally friendly bio/eco products.	Never	1	2.1	22	46.8	24	51.1	0	0.0	47	15.9
	Sometimes	0	0.0	42	18.3	166	72.5	21	9.2	229	77.4
	Always	0	0.0	1	5.0	14	70.0	5	25.0	20	6.8
I save electric energy	Never	0	0.0	10	55.6	7	38.9	1	5.6	18	6.1
	Sometimes	1	0.7	34	23.1	105	71.4	7	4.8	147	49.7
	Always	0	0.0	21	16.0	92	70.2	18	13.7	131	44.3
TOTAL			1	0.3	65	22	204	68.9	26	8.8	296

Source: Own elaboration.

In an attempt to find a more objective variable, and after obtaining significant correlations (bilateral level of 0.01) between the variables of «level of the students' environmental self-awareness» and «sustainable actions implemented by students», we established a new variable out of the original two: «level of ecological awareness». It has five levels: very low (between 0.00-0.20); low (between 0.21-0.40); medium (between 0.41-0.60), high (between 0.61-0.80) and very high (between 0.81-1.00) (Table 3).

Table 3. Level of ecological awareness according to students' degree studies

Level of environmental self-awareness	Very low N(%)	Low N(%)	Medium N(%)	High N(%)	Very high N(%)	TOTAL N(%)
Education	0(0.00)	0(0.00)	14(51.8)	111(59.3)	52(64.2)	177(90.3)
Comunication	0(0.00)	1(100.0)	13(48.1)	76(40.6)	29(35.8)	119(60.7)
TOTAL	0(0.00)	1(0.3)	27(9.1)	187(63.2)	81(27.4)	296(100.0)

Source: Own elaboration.

A total of 90.6% of the students have a high or very high level of ecological awareness, followed by medium (9.1%), low (0.3%) and very low (0.0%). Also, students in Education degree courses have a higher level of awareness. A comparison between the variables «level of environmental self-awareness» and «level of ecological awareness» reveals a high correlation; according to Pearson's Coefficient, it is highly significant (0.534). Table 4 shows that as the level of self-awareness increases, the level of ecological awareness increases too, and the difference in means is statistically significant ($p=0.000$).

Table 4. Levels of environmental self-awareness and ecological awareness

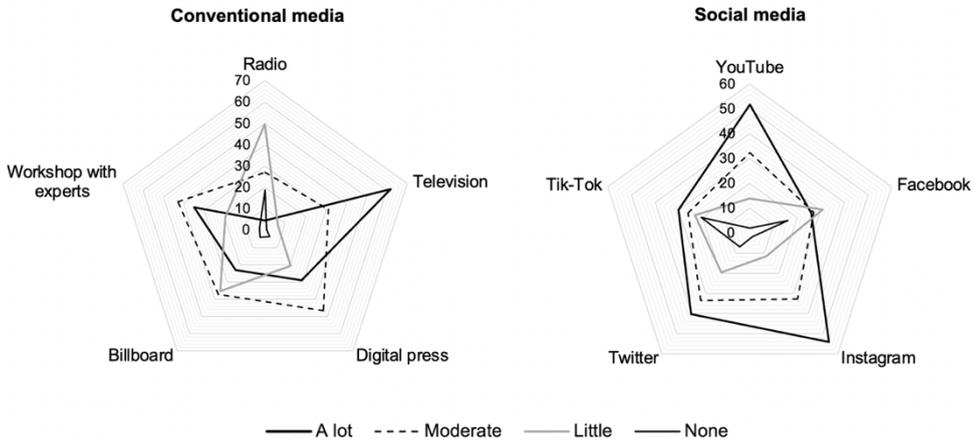
Ecological awareness	Level of environmental self-awareness					TOTAL	
	None N(%)	Little N(%)	Moderate N(%)	A lot N(%)	TOTAL		
					N(%)	X	
Very low	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0.0	
Low	0(0.0)	1(1.5)	0(0.0)	0(0.0)	1(0.3)	2.0	
Medium	1(100.0)	23(35.4)	3(1.5)	0(0.0)	27(9.1)	2.1	
High	0(0.0)	39(60.0)	141(69.1)	7(26.9)	187(63.2)	2.8	
Very high	0(0.0)	2(3.1)	60(29.4)	19(73.1)	81(27.4)	3.2	
TOTAL	1(0.3)	65(22.0)	204(68.9)	26(8.8)	296(100.0)	2.9	

Source: Own elaboration.

4.1. Importance placed on different communication channels

Communication channels consist of conventional media (radio, television, press, billboard and expert panels) and social media (YouTube, Facebook, Instagram, Twitter and TikTok). Figure 2 shows the importance that university students place on different media (both conventional and social) when receiving pro-environmental messages. 61.8% of the sample give more importance to television, followed by Instagram (54.1%) and YouTube (51.7%).

Figure 2. Importance placed on different communication channels



Source: Own elaboration.

University students place more importance on social media than on conventional media (45.3% vs. 31.8%), although they also consider conventional media to be quite important (64.9% vs. 41.6%) (Table 5).

Table 5. Importance according to the type of communication channel

	Conventional media N (%)	Social Media N (%)
None	0 (0.0)	0 (0.0)
Little	10 (3.4)	39 (13.2)
Moderate	192 (64.9)	123 (41.6)
A lot	94 (31.8)	134 (45.3)
X	3.28	3.32
DT	0.521	0.695

Source: Own elaboration.

Regarding the degree studies of the students, there are significant differences in the channels they prefer to receive environmental protection messages. In Education studies, students significantly favour radio, workshops with experts, Facebook, Twitter and TikToc. On the other hand, those in Communication studies consider that billboards are an important channel to convey these messages, although not in a significant way (Table 6).

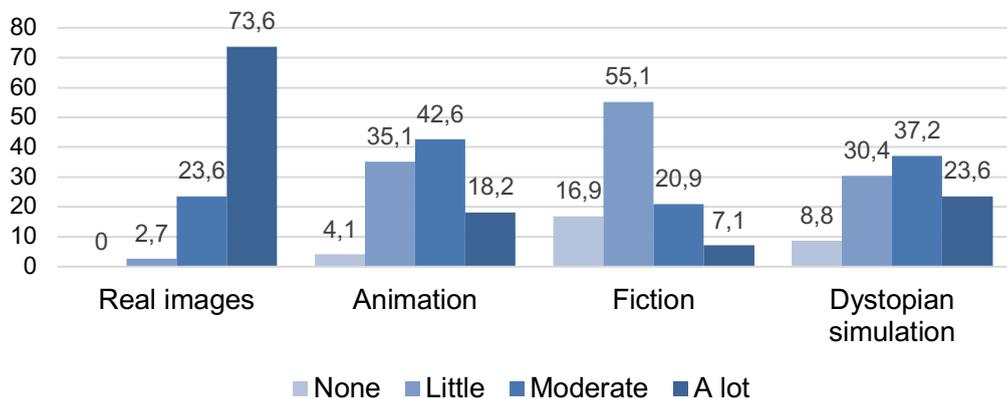
Table 6. Importance of the communication channel and degree studies

	Education		Communication		Total		U Mann-Whitney
	X	DT	X	DT	X	DT	
Radio	2.31	0.810	1.97	0.688	2.17	0.780	0.000
Television	3.60	0.596	3.45	0.710	3.54	0.647	0.099
Digital press	3.06	0.799	2.93	0.810	3.01	0.805	0.214
Billboard	2.74	0.819	2.88	0.875	2.80	0.843	0.101
Workshops with experts	3.24	0.741	2.88	0.845	3.10	0.803	0.000
YouTube	3.33	0.788	3.34	0.797	3.34	0.790	0.869
Facebook	2.84	1.004	2.31	1.015	2.63	1.040	0.000
Instagram	3.35	0.799	3.45	0.686	3.39	0.756	0.403
Twitter	3.21	0.902	2.87	0.938	3.07	0.931	0.001
Tik-Tok	2.79	1.076	2.46	1.148	2.66	1.115	0.017

Source: Own elaboration.

4.2. Audiovisual formats that best appeal to students

73.6% of students reported that the presence of real images helps to get their attention more than animated stories, fictional stories, or dystopian simulations (Figure 3).

Figure 3. Percentage description of the audiovisual formats that draw their attention

Source: Own elaboration.

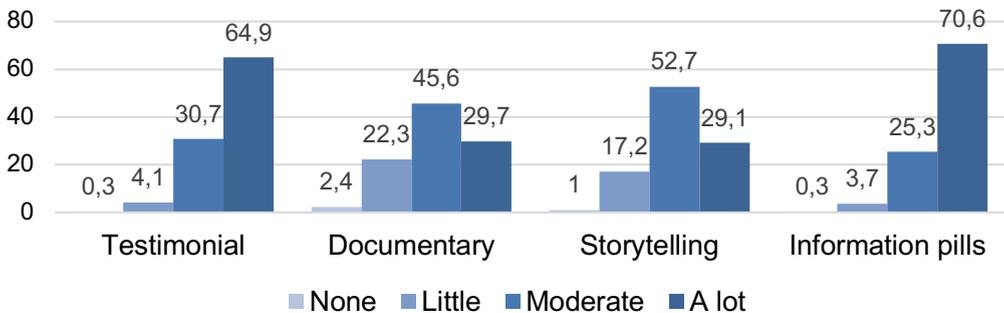
The contrast of means between the level of students' ecological awareness and the format they prefer yields significant differences ($p=0.049$). Those most environmentally involved report that real images are the most appealing to them (Low: $X=2.00$; Medium: $X=3.68$; High: $X=3.74$; Very high: $X=3.85$), while those who are less eco-conscious prefer animation.

In the case of the degree studies, animated images are significantly ($p=0.002$) more appealing to Education students than to Communication students ($X=2.86$ vs. $X=2.58$).

4.3. Narratives and persuasive power

According to 70.6% of university students, information pills are the narrative with the greatest pro-environmental persuasive power, followed by testimonials (64.9%) (Figure 4).

Figure 4. Percentage description of narratives and their persuasive power



Source: Own elaboration.

The type of narrative is often associated with the information channel used to broadcast pro-environmental messages. Consequently, when comparing the means of both variables, there are significant differences. For instance, those who prefer conventional media give greater importance to documentaries ($p=0.006$; Little: $X=2.93$, Moderate: $X=3.00$ and A lot: $X=3.23$) and information pills ($p=0.034$; Little: $X=3.62$, Moderate: $X=3.73$ and A lot: $X=3.80$). Meanwhile, those who prefer social media or networks place greater importance on stories ($p=0.001$; A little: $X=2.93$, Moderate: $X=3.15$ and A lot: $X=3.24$); which is logically connected to the forms of expression of the different social networks, such as TikTok short videos or Facebook and Instagram stories.

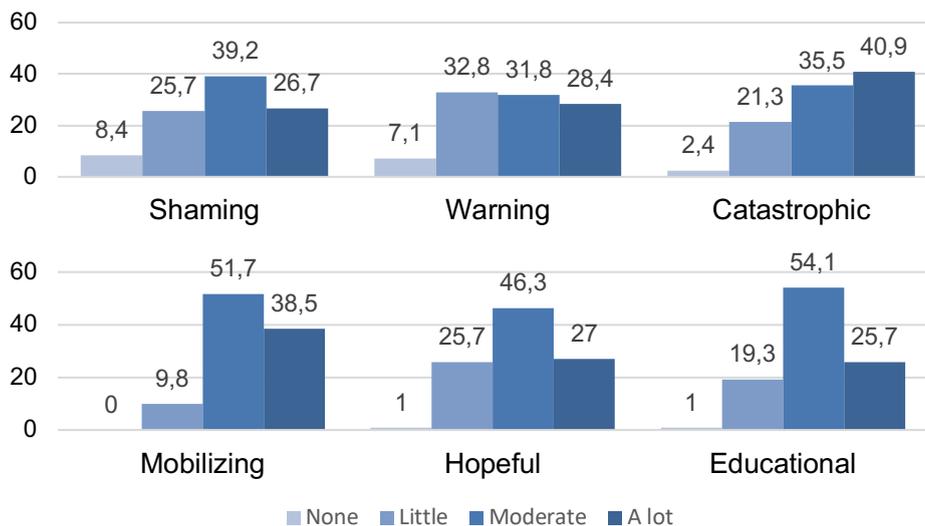
In the case of the degree studies, the contrast of means reveals significant differences as to which narratives have the greatest persuasive power ($p=0.001$). Thus, stories are the most persuasive narratives for Education students in comparison to Communication students ($X=3.21$ vs. $X=3.10$).

4.4. Impact of messages according to typology

The type of message used to raise awareness about the environmental deterioration affects young people in different ways. Overall, participants have

polarized opinions; they consider catastrophic, hopeful and mobilizing messages to be the most impactful (Figure 5). On the one hand, they prefer apocalyptic messages that depict a dark future full of catastrophes; on the other hand, they go for messages with a more positive perspective, open to proposals and solutions that will improve the environment.

Figure 5. Percentage description of the impact of messages according to typology



Source: Own elaboration.

The participants' level of environmental awareness is related to the type of message that most resonates with them. Mobilizing messages have a significant impact on those who are more aware ($p=0.050$; Low: $X=3.00$, Medium: $X=3.23$, High: $X=3.26$ and Very High: $X=3.43$), as they consider that encouraging pro-environmental behaviours is more effective.

The difference in means between the type of message and the preferred communication channel is significant. Educational messages have the greatest impact in both conventional ($p=0.001$; Little: $X=2.90$, Moderate: $X=2.95$ and A lot: $X=3.26$) and social media ($p=0.004$; Little: $X=2.79$, Moderate: $X=2.96$ and A lot: $X=3.14$), while hopeful ($p=0.003$; Little: $X=2.40$, Moderate: $X=2.94$ and A lot: $X=3.17$) and mobilizing messages ($p=0.014$; Little: $X=3.10$, Moderate: $X=3.22$ and A lot: $X=3.44$) have a greater impact in conventional media. Regarding the degree studies, only educational messages show significant differences, having a greater impact on Education students ($p=0.000$) than on Communication students (Table 7).

Table 7. Impact of messages according to typology and degree studies

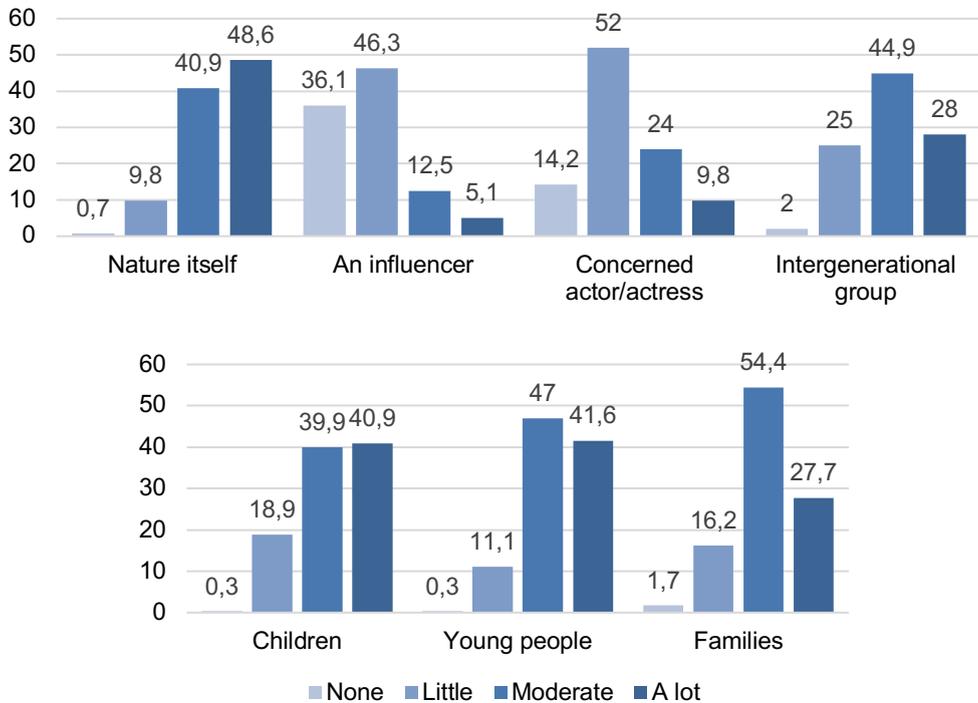
	Education		Communication		Total		U Mann-Whitney
	X	DT	X	DT	X	DT	
Educational	3.23	0.670	2.77	0.657	3.04	0.700	0.000
Hopeful	2.98	0.750	3.01	0.765	2.99	0.755	0.713
Mobilizing	3.27	0.615	3.32	0.663	3.29	0.634	0.380
Catastrophic	3.10	0.819	3.22	0.855	3.15	0.835	0.164
Warning	2.86	0.903	2.75	0.967	2.81	0.929	0.311
Shaming	2.84	0.893	2.85	0.953	2.84	0.916	0.795

Source: Own elaboration.

4.5. Credibility of the characters

The characters of these audiovisual discourses offer different degrees of credibility to university students. When nature itself is the protagonist, the stories provide a great deal of credibility. These are followed by stories with young people and children. Interestingly, influencers, actors and actresses are the least credible characters.

Figure 6. Percentage description of the characters' credibility



Source: Own elaboration.

Students with a higher level of ecological awareness consider that stories are more credible when nature is the protagonist ($p=0.018$; Low: $X=2.00$, Medium: $X=3.07$, High: $X=3.37$ and Very High: $X=3.49$). The same happens with stories starring intergenerational groups ($p=0.002$; Low: $X=2.00$, Medium: $X=2.63$, High: $X=2.95$ and Very High: $X=3.22$).

Students who prefer conventional media consider that the most credible characters are intergenerational groups ($p=0.032$; Slightly: $X=2.70$, Moderate: $X=2.92$ and A lot: $X=3.16$), families ($p=0.006$; Little: $X=2.50$, Moderate: $X=3.04$ and A lot: $X=3.22$), and nature itself ($p=0.013$; Little: $X=3.00$, Moderate: $X=3.34$ and A lot: $X=3.49$). On the other hand, those who prefer social media give greater credibility to stories starring young people ($p=0.049$; A little: $X=3.16$, Moderate: $X=3.22$ and A lot: $X=3.40$).

In addition, there are significant differences between the characters' level of credibility and the degree studies of the participants. Education students give greater credibility to stories starring children ($p=0.033$) and intergenerational groups ($p=0.024$), while Communication students consider nature itself the most credible ($p=0.012$) (Table 8).

Table 8. Credibility of the characters and degree studies

	Education		Communication		Total		U Mann-Whitney
	X	DT	X	DT	X	DT	
Families	3.11	0.738	3.03	0.663	3.08	0.708	0.202
Young people	3.30	0.653	3.29	0.705	3.30	0.674	0.934
Children	3.29	0.740	3.10	0.764	3.21	0.754	0.033
Intergenerational group	3.07	0.769	2.87	0.791	2.99	0.783	0.024
Actor/actress	2.31	0.790	2.27	0.890	2.29	0.830	0.385
Influencer	1.92	0.838	1.79	0.791	1.86	0.820	0.201
Nature itself	3.26	0.695	3.45	0.674	3.38	0.687	0.012

Source: Own elaboration.

5. Discussion and conclusions

In response to the initial research questions, the study has revealed the following. In general terms, the level of environmental self-awareness among university students is high (RQ1). However, approximately a quarter of them admit having little or no awareness, which makes them a potential audience for this type of audiovisual interventions. Participants have implemented various sustainable actions into their daily habits, although their involvement in this project led them to reflect on what stills needs to be done (RQ2). This shows the gap between their level of self-awareness and their actual ecological awareness, as Ajzen & Fishbein point out (2000). More specifically, environmental awareness campaigns should focus on aspects such as the reduction of water

consumption, waste separation and energy saving, mainly to persuade those who are the least aware. In addition, young audiences prefer social media to receive pro-environmental messages, although television is seen as a complementary medium for raising their awareness.

To draw young people's attention to the environment, they generally prefer the use of real images, given their higher persuasive power. However, audiovisual formats such as animation appeal more to those individuals with a lower level of ecological awareness (RQ4). Similarly, students in Education prefer animation, perhaps due to its educational component, which is often used by different institutions to guideline behaviours and to convince or dissuade audiences on critical issues (Da Silva et al., 2021). Therefore, environmental awareness campaigns should combine both formats to reach the audience as a whole.

Information pills are the narrative with the greatest impact on university students, favouring the presentation of dramatic data about the planet's deterioration (RQ5); these are followed by narratives that rely on scientists' or spokespersons' testimonies in defence of the environment, seeking to emotionally involve the audience. In addition, they consider that documentary-like narratives are more suitable for conventional media, such as television, while stories are more appropriate to be transmitted on social media or networks, as they fit better with their way of expressing and communicating (short videos on TikTok or Twitter and stories on YouTube, Facebook or Instagram) (RQ3). In this sense, following a modelling approach (Bandura, 2009), audiovisual content should provide real data on the ecological footprint of our activities in the planet and show the repercussion of these activities on the deterioration of our health and wellbeing, adapting to the characteristics of each media.

In terms of the type of message, young people state that catastrophic, hopeful and mobilizing messages are the ones that have the greatest impact on them (RQ6). However, there is a polarization in their opinions, since mobilizing speeches have the greatest impact on those who are more aware, by inviting them to participate and become involved more actively in pro-environmental proposals, as highlighted by Soutter and Boag (2019). On the other hand, those less aware are significantly moved by catastrophic messages, as they provide stark evidence of ecological disasters and provoke a change in their attitude; they are also moved by mobilizing and educational messages, which motivate them to follow eco-sustainable behaviour guidelines. Under no circumstances do they prefer shaming messages that show and ridicule their actions, nor do they prefer warning messages which are seen as a way to make them feel guilty.

For this reason, campaigns should focus on positive messages, aimed at involving young audiences, regardless of the channel used.

Regarding the credibility given to the stories, respondents give greater credibility to stories with nature as a protagonist, but also those starring young people, children and families (RQ7). It only seems logical that showing the greatness of nature and its deterioration would move audiences, as it appeals to their conscience. And using characters that allow the audience to identify and project themselves guarantees their emotional involvement. Also, the more ecologically conscious university students give more credibility to the stories featuring nature and intergenerational groups, compared to those who are less ecologically conscious. In contrast, influencers, actors and/or actresses are the least credible as pointed out by Lopes et al. (2020), perhaps because of the display of their lifestyle, often far from environmental values. Therefore, the design of audiovisual content should give priority to the role of nature and use characters that favour the emotional projection of young audiences. Specifically, they should adapt to the channels preferred by users and consider the characteristics of each medium. Families and intergenerational groups provide more credibility in conventional media, while stories portraying young people provide more credibility in social media or networks.

Additionally, given that the study has been conducted in the academic context, and after revealing differences between the degree studies analysed, where Education students are more aware than the Communication ones, there is an evident need to incorporate environmental content in their training transversally. The media undoubtedly have a crucial role to play in raising environmental awareness, especially through advertising in the form of educommunicational campaigns (Bermejo, 2021). They must also take advantage of the potential and reach of the media and social networks to target a wider audience. To this end, it is essential to select the most suitable advertising strategies to ensure their impact and foster change towards eco-sustainable actions.

The contribution of this research lies in the analysis of the opinion of young people regarding the impact of audiovisual strategies to make them aware of caring for the environment, thus initiating a new line of key research to guarantee the sustainability of the planet. This study provides data for guidance that can serve as the starting point for a more in-depth analysis. Advertising agencies and institutional organizations can conduct this analysis with a broader sample and include other audiences in order to design effective media interventions that can reverse the bad ecological situation we are putting our planet in.

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