

RESEARCH

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MEDIA FOCUS ON THE ECOLOGICAL TRANSITION IN SOCIAL NETWORKS

EL ENFOQUE DE LOS MEDIOS SOBRE LA TRANSICIÓN ECOLÓGICA EN REDES SOCIALES

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RESUMEN

Introducción: El cambio climático representa una grave amenaza para la sociedad, y, por lo tanto, es esencial que los medios de comunicación se comprometan a concienciar a los ciudadanos sobre la necesidad de una transición ecológica. Dado que las redes sociales conectan a millones de personas que pueden actuar como difusores de noticias en sus perfiles personales, el tratamiento de la información en estas plataformas adquiere una importancia significativa. Este estudio tiene como objetivo general identificar y analizar el enfoque de la transición ecológica en seis medios de comunicación españoles en sus perfiles de Instagram y Twitter, que cuentan con más de 100,000 seguidores, durante los primeros seis meses de 2022. **Metodología:** Se llevará a cabo un análisis de contenido de las publicaciones relacionadas con la transición ecológica emitidas por estos medios de comunicación en ambas redes sociales. El análisis considerará diversas variables, como el porcentaje de noticias sobre esta temática emitidas mensualmente, los formatos y estructuras más utilizados, el enfoque de las informaciones, la cantidad de "me gusta" por publicación, el análisis de los comentarios recibidos, la descripción de los contenidos y la identificación de los

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actores más populares en este tipo de información, entre otras variables. **Resultados:** Los resultados indican que los medios de comunicación desempeñan un papel fundamental en la concienciación sobre la transición ecológica en España, especialmente a través de las redes sociales, donde tienen la capacidad de informar a un gran número de personas de manera instantánea. **Conclusiones:** Este estudio demuestra que los medios de comunicación son una fuente esencial de concienciación en España acerca de la transición ecológica, destacando su influencia a través de las redes sociales. La capacidad de informar a millones de personas de manera instantánea hace que los medios sean un canal clave para la difusión de información relacionada con la transición ecológica y la concienciación sobre el cambio climático.

Palabras clave: medios de comunicación, redes sociales, transición ecológica, cambio climático, comunicación digital, periodismo.

ABSTRACT

Introduction: Climate change poses a significant threat to society, and as such, it is imperative that the media include raising awareness about the need for an ecological transition as part of their objectives. Given that social media platforms connect millions of people who can act as amplifiers of news on their personal profiles, the treatment of information on these platforms takes on greater importance. This study aims to identify and analyze the focus on ecological transition by six Spanish media outlets on their Instagram and Twitter profiles, which collectively have over 100,000 followers, during the first six months of 2022. **Methodology:** A content analysis will be conducted on the posts related to ecological transition made by these media outlets on both social media platforms. The analysis will take into consideration various variables, including the percentage of monthly news related to this subject, the most frequently used formats and structures, the approach of the information, the number of likes per post, an analysis of the received comments, content descriptions, and the identification of the most popular entities in this type of information, among other variables. **Results:** The results indicate that media outlets play a key role in raising awareness about ecological transition in Spain, especially through social media, where they have the ability to inform a large audience instantly. **Conclusions:** This study demonstrates that media outlets are an essential source of awareness in Spain regarding ecological transition, highlighting their influence on social media. The capacity to inform millions of people instantly makes the media a crucial channel for disseminating information related to ecological transition and raising awareness about climate change.

Keywords: mass media, social networks, ecological transition, climate change, digital communication, journalism.

1. INTRODUCTION

Mass media experienced its peak with the emergence of television in the 1920s. However, it wasn't until the 1940s that it became a virtually indispensable component in households, around which families would gather to get informed or entertained. These were times when the traditional way of consuming news was through conventional television or listening to them on the radio. News programs and

journalists have adapted to new technologies and the incorporation of multiple devices (Rodríguez-Hernández et al., 2023).

Climate change has become an unprecedented threat to our society and requires urgent global action. In this regard, the mass media play a crucial role in informing and raising awareness among citizens about the need for an ecological transition.

With the advent of social media, the way in which the media conveys information has gained even greater importance, as these platforms connect millions of people and allow them to share news on their own personal profiles.

According to the Global Overview Report (We are Social, 2023), in January 2023, 57.8% of the world's population used the internet to obtain information, and 94% frequently visit social media platforms. Hence, the need to analyze how this topic is being addressed on virtual platforms.

To discuss the media's approach on social media, it is necessary to talk about cyberjournalism; this term is commonly used today and refers to journalism conducted on digital platforms. Cyberjournalism is the specialization of journalism that uses cyberspace to disseminate journalistic content (Salaverría, 2019). The concept is nuanced by highlighting that it is a type of journalism in which interactivity, hypertextuality, and immediacy are defining characteristics.

Journalists gather information, edit it, and publish it in an environment where sources multiply by the moment (Cruz-Álvarez and Suárez-Villegas, 2017), a detail that requires careful selection of information from these sources to convey credibility to the audiences. Credibility is the foundation of the stability of journalism, and people are more easily persuaded when the source is presented as credible (Mulero and Guerrero, 2020).

In general terms, the media must adapt to the format of social media and to an information style that has led to a departure from the conventionally established norms towards hybrid journalistic genres characteristic of cyberjournalism (Góngora and Lavilla, 2020).

1.1. The treatment of environmental information by the media on social networks

The dissemination and awareness-raising efforts carried out by the media are essential for society to transition toward an ecological shift. With this premise in mind, the publication of news related to ecological transition by the media on their official social media profiles is considered highly valuable, as these spaces have demonstrated their ability to widely disseminate information that can be shared in interpersonal encounters in our society (Lee et al., 2022).

The environmental movement is global in nature, and as such, social media can be used differently to expand awareness of this movement among audiences. Therefore, the use of hashtags or images can be impactful elements for Twitter users that can potentially persuade them (Boulianne et al., 2020).

Certainly, digital platforms like social media cannot guarantee a political handling of society's awareness of the need for an ecological transition. However, they are considered relevant subjects for empirical studies (Berglez and Al-Saqaf, 2021).

Media outlets need to use social media as a tool to reach audiences and thus influence them to be mindful of the planet's need for an ecological transition. However, social media are bidirectional communication channels, and it is noted that media outlets have had to adapt their communication style when using digital platforms.

In a society that no longer relies solely on traditional media such as newspapers, radio, or television for information but also uses social media to stay updated on the latest news, it becomes increasingly important to focus on how media outlets convey news about ecological transition on their social media profiles.

The way media outlets choose the topics they highlight on their digital platforms can be linked to the agenda-setting theory (McCombs, 1972), which is based on the idea that media guide the audience on what to think about (Cohen, 1964). This theory conditions audiences' perception of their reality by influencing their selection of topics to pay attention to. Thus, media outlets guide their social media profile audiences toward specific topics while leaving others aside.

As a result of agenda setting, people can process news in a particular way and develop a specific understanding of it or reorient their thinking on a specific topic. In fact, the way citizens focus their thoughts on a current news item, such as climate change, can be aligned with the framing theory, whose main premise is that a phenomenon can be viewed from a variety of perspectives and interpreted from multiple values or considerations (Núñez-Gómez et al., 2020).

Although the influence of online media has led to a new phase in agenda-setting due to the existence of social networks, this theory does not show significant changes in terms of how media outlets broadcast news on the internet (Naser, 2020).

At the same time, existing agenda-setting theories only achieve partial success in the contemporary environment of today's society, which revolves around social media (Langer and Gruber, 2021).

Media outlets face a challenge when it comes to setting the agenda through social media to ensure that audiences choose the framing they offer on current topics.

2. OBJECTIVES

The overall objective of this research is to identify and study the approach to ecological transition presented by six Spanish media outlets on their Instagram and Twitter profiles, where they have more than 100,000 followers, during the months of January to June of the year 2022.

The specific objectives are as follows:

1. Discover the importance of ecological transition-related information in the analyzed media outlets based on the percentage of content they publish on this topic on their Instagram and Twitter profiles.

2. Observe how these media outlets structure their posts on Instagram and Twitter and compare the approaches of the six media outlets with each other.
3. Highlight the most commonly used format by these six media outlets to inform their audiences about the field of ecological transition.
4. Reveal how different audiences receive content related to ecological transition from these six media outlets and how they react to it.
5. Identify the main themes and the most popular actors featured in the current discussions about ecological transition on Twitter and Instagram of the six analyzed media outlets.

3. METHODOLOGY

The aim is to analyze and compare the content published by six media outlets on their Instagram and Twitter profiles regarding the topic of ecological transition and its subtopics. This will involve a quantitative and qualitative research approach with an exploratory-correlational scope, using the interpretative content analysis technique.

For the content analysis, an analysis sheet is designed, starting from the walkthrough method (Light et al., 2018), which involves establishing the intended use environment of an application, in this case, the social media platforms Instagram and Twitter, identifying their operational patterns. Subsequently, an exploratory tracing is conducted based on participant observation, with researchers systematically interacting with the applications.

After listing the possibilities of interaction and emerging post types during a two-month daily observation period on the applications from May to June 2022, a preliminary analysis sheet was created. It was then compared with other research studies that have analyzed brand behaviors on the social media platforms under study (Castillo-Abdul et al., 2022). Subsequently, the instrument was reviewed in relation to the objectives of this study, defining it by ten variables categorized into five sections (Table 1). This analysis provides a comprehensive view of the variables that impact the audience.

The analysis variables will provide detailed information on how these traditional media outlets, with more than 100,000 followers on both Twitter and Instagram, broadcast and frame news related to ecological transition.

The analysis variables that have been applied to the twelve social media profiles, six of them belonging to Instagram and the other six to Twitter, are detailed in the following table:

Table 1

Analysis variables for Instagram and Twitter profiles.

Analyzed Section	Analysis variables.	Type of Variable
Content	1. Description of social media profiles. 2. Quantity of news articles published on ecological transition.	Independent
Enfoque	1. Analysis of the textual structure of the posts. 2. Style and tone used in the texts.	Dependent
Format	1. Qualitative description of the text. 2. Use of hashtags and links in the texts.	Dependent
Audience Reaction	1. Number of 'likes' or retweets and comments. 2. Identification of positive and negative responses in the comments.	Dependent
Theme	1. Most popular topics covered. 2. Key actors featured in the news.	Dependent

Source: Author's own work.

Regarding audience reactions, it should be noted that these platforms (Instagram and Twitter) provide records of sentiments and opinions on various subjects, "including hate speech or other forms of rejection that are expressed freely and without the barriers often present in offline spaces" (Arcila-Calderón et al., 2021, p. 23). This facilitates the capture of interactions and their classification based on sentiment analysis (Gil-Vera and Quintero-López, 2019): positive or empathetic interactions with the topic, negative interactions in the form of profanity, mockery, or insults, and a third category of neutral comments that do not fall into either of the two previous categories.

The publications made by six Spanish media outlets will be studied, including all three types of traditional media: radio, print, and television. Six generalist media outlets were selected for their prominence in Spain based on the number of readers in 2022 (print media), audience size (television media), and daily consumption time (radio media) (Statista, 2022; Fundación Luca de Tena, 2022).

The media outlets for which the analysis variables will be examined are: two television channels (Radio Televisión Española and Antena 3 Noticias), two newspapers (El País and El Mundo), and two radio stations (Cadena SER and Cadena COPE).

Below, in Table 2, the selected media outlets are listed along with the number of followers on their Instagram and Twitter profiles (data checked in November 2022).

Table 2

Followers of media outlets on Instagram and Twitter.

Media Outlet	Instagram	Twitter
El País	1.492.310	8.718.527
El Mundo	952.000	4.449.150
Antena 3 Noticias	375.343	2.069.863
Cadena SER	310.882	1.405.063
Radio Televisión Española	199.824	518.619
Cadena COPE	186.221	518.619

Source: Author's own work.

Data collection for this research took place from July to September 2022, and the posts from January 2022 to June 2022 (six months) were analyzed. The selection of these dates was determined based on ease of data access. Likewise, the first six months of the year were chosen to observe how information about ecological transition in the media and their social media profiles can contribute to early awareness among the public, serving an educational role right from the beginning of the year. It is also taken into account that throughout the twelve months of the year, weather events related to climate change can occur without temporal discrimination.

4. RESULTS

4.1. Description of the profiles and quantification of the content

The six media outlets analyzed have more than 100,000 followers on both Instagram and Twitter; however, there are substantial differences in the quantity of posts they have made on the study topic.

During the analyzed period, which covers the months from January to June 2022, the six media outlets have, at most, posted fifteen times per month on any topic related to ecological transition. It is worth noting that in both Instagram and Twitter, the news channel of Radio Televisión Española (RTVE noticias, n.d.) has been the most prolific, with a total of 39 posts on Instagram and 40 on Twitter during the six months of analysis.

In contrast, the media outlet that posted the least is Antena 3 Noticias (A3 Noticias, n.d.), with a total of 3 posts on Instagram and 8 on Twitter. The other four remaining media outlets have not posted more than 7 times at most, leaving many months with no content related to ecological transition. Among these four media outlets, it is noteworthy that Cadena COPE (Cadena COPE, n.d.) had the lowest number of posts on Instagram during the six months analyzed, with a total of 1 post.

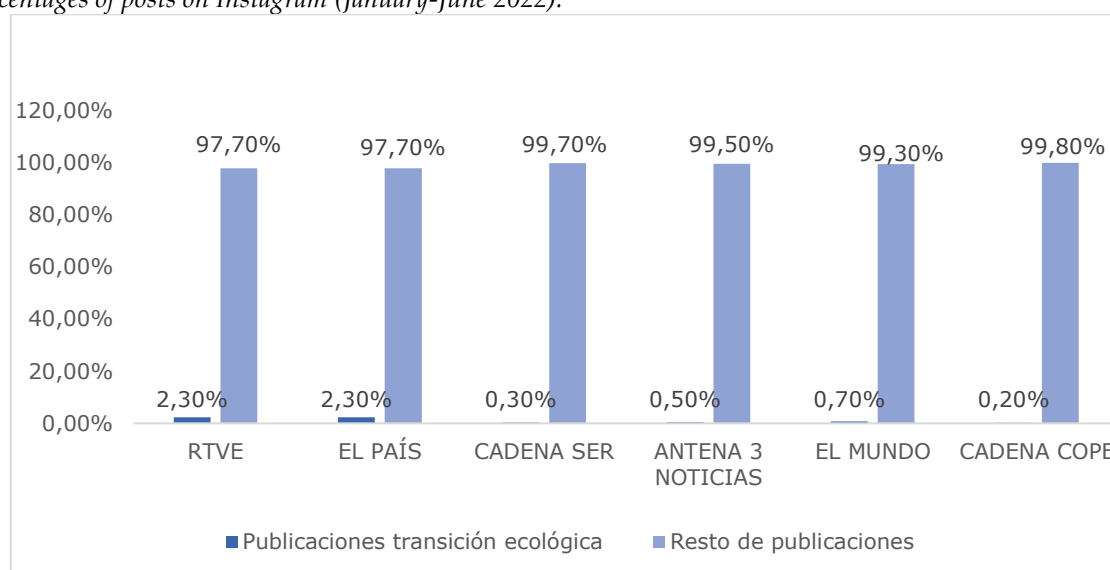
In general terms, information related to any of the areas related to ecological transition and the blue economy represents no more than 2.3% of the content published by these six media outlets on their Instagram profiles and no more than 0.3% on their Twitter content. The following graphs quantify the total information related to ecological

transition as a percentage of the relative amount of content related to other topics published on the analyzed social media platforms during the first six months of 2022, both on Instagram and Twitter.

In Figure 1 and Figure 2, it can be observed that, both on Instagram and Twitter, the space occupied by news related to the need for an ecological transition does not account for even 3% of the total posts made by the six media outlets during the analyzed period.

Figure 1

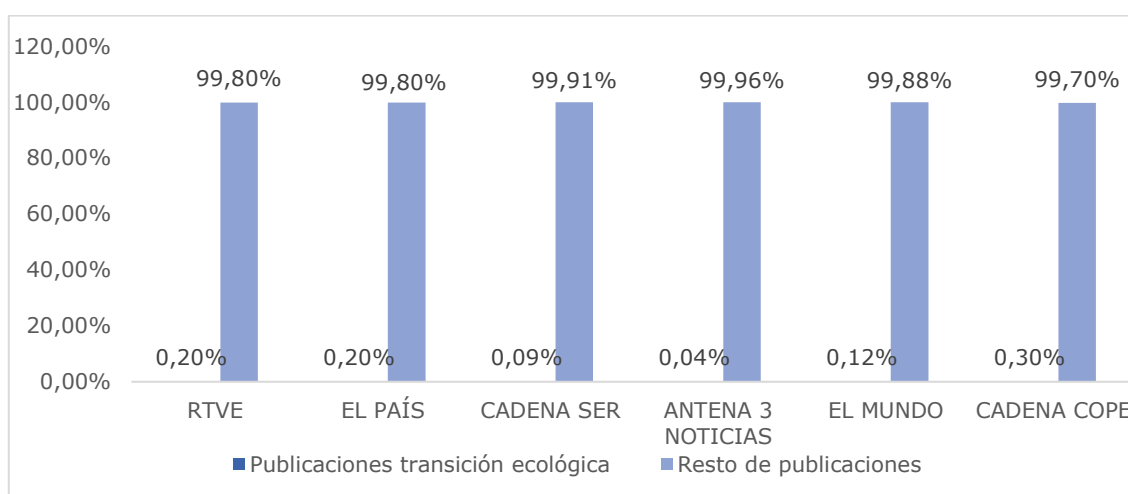
Percentages of posts on Instagram (January-June 2022).



Source: Author's own work.

Figure 2

Percentages of posts on Twitter (January-June 2022).



Source: Author's own work.

On the other hand, to observe in greater detail and in total numbers the significant numerical difference in posts on general and specific topics related to ecological transition between the social media profiles of the six media outlets analyzed, Tables 3 and 4 are presented.

Table 3

Total numerical posts on Instagram (January-June 2022).

Media Outlet	Total number of posts.	Number of posts related to ecological transition.
RTVE	1.682	39
El País	1.069	25
Cadena SER	774	3
Antena 3 Noticias	607	3
El Mundo	1.181	8
Cadena COPE	1.322	1

Source: Author's own work.

Table 4

Total numerical posts on Twitter (January-June 2022).

Media Outlet	Total number of posts.	Number of posts related to ecological transition.
RTVE	19.543	40
El País	8.496	27
Cadena SER	17.198	17
Antena 3 Noticias	19.611	8
El Mundo	8.279	10
Cadena COPE	8.762	21

Source: Author's own work.

Similarly, the common feature shared by the six media outlets regarding the arrangement of information on their social media profiles is that they all include a description, more or less detailed, explaining some details about these accounts.

In both cases, on both Instagram and Twitter profiles, the media outlets describe some general characteristics about themselves, such as: "the information and current events are found on this profile," "here are the news articles to read," "we are the most listened-to radio in Spain," "we provide detailed news," or "news, history, and much more."

Alongside this description, there is often at least one link that directs the user to the media outlet's website, as seen in the Twitter profiles of Cadena COPE (Cadena COPE b, n.d.) and Cadena SER (Cadena SER b, n.d.), for example.

Some profiles stand out, such as the Twitter profile of Radio Televisión Española (RTVE noticias b, n.d.), which includes links to its other social media accounts, such as Instagram, Facebook, and YouTube, in the description.

Likewise, El País (El País b, n.d.) on its Twitter profile uses a direct link to subscribe to its newspaper, along with Antena 3 Noticias (A3 Noticias b, n.d.) and El Mundo (El Mundo b, n.d.), which incorporate links to their official news channels created on the Telegram application.

4.2. Approach and format used by the media

On one hand, regarding the approach adopted by the media outlets on their Instagram and Twitter profiles, it can be observed that, in general terms, the various thematic areas related to ecological transition are presented in an informative tone. These media outlets use an informative style in almost all of their social media posts, including, when necessary, direct and indirect quotations from various actors involved in the news. In the case of El País, there are opinion columns where the journalist's opinion is included. Overall, the six media outlets present the information without bias and stick to the factual aspects of the news. Additionally, the only ecological transition-related news posted by Cadena COPE on its Instagram profile was sponsored.

On the other hand, regarding the format used by these media outlets on the two analyzed social media platforms, distinctions should be made between them as they adapt to the characteristics of each platform.

Firstly, it should be explained that the format most used by these media outlets on Instagram involves a combination of text and a photograph or image with a specific graphic design. None of the texts consist of less than four lines, except for El País (El País, n.d.), which occasionally publishes up to ten lines of text, or El Mundo (El Mundo, n.d.), which has the longest discourses among the six, presenting news with four or five paragraphs of five lines each. Taking all this into account, these media outlets usually accompany these texts with at least one hashtag per post; however, El País is the only one of the six that never uses such hashtags in its texts. Among the other five, the most commonly used hashtags are: climate change, heatwave, climate crisis, recycling, or the environment.

Secondly, regarding the audiovisual content they publish on Instagram, it can be seen that static images are the most chosen format. High-quality photographs stand out above the rest, often accompanied by the logo of the respective media outlet and a headline or quotation, usually highlighted in white or black to create contrast with the image. In some cases, entirely graphically designed images with the corresponding logo are published, including small pieces of information in a series of images presented in carousel format, which the social media platform provides. The two media outlets that make use of these designed images published in a group are El Mundo and Radio Televisión Española.

Although static images are the most used format by these media outlets, it should be explained that three of them use reel videos, to a greater or lesser extent, alongside the publication of static images. The first is El Mundo, which publishes almost all its content by generating videos consisting of a static image with its own logo and a moving headline; this is their primary content, with occasional photographs. The second is Cadena SER (Cadena SER, n.d.), which also uses reel format but in two

different ways: one, incorporating videos of their live broadcasts from the radio studio itself, and the other, editing vertical videos with subtitles and archival images. It should be noted that they do not always add their logo to these videos. The third and final one is Antena 3 Noticias, which uses reels to publish excerpts from their news broadcasts, subtitled and with the network's logo.

Continuing with the format used by the six media outlets, there are more similarities than differences among the different Twitter profiles than among the Instagram profiles. In all six Twitter profiles, the content consists of short text, approximately one and a half to two lines, along with a link that directs the audience to the media outlet's official website with the complete news article. The only two media outlets that include at least one hashtag in their tweets are Radio Televisión Española and El Mundo. However, the topics mentioned in these tags, such as "latest news" and "TVE data," do not correspond to the ecological transition topics they cover in their posts.

The audiovisual content that accompanies the majority of tweets from the six media outlets are the thumbnail images that are automatically generated when adding a link at the end of the text. There are cases where the thumbnail does not appear naturally, leaving the tweet without audiovisual content. The media outlet with the most tweets published without thumbnail images is Cadena SER, although Cadena COPE also does not make much use of thumbnails in these posts. In addition, three media outlets use panoramic format videos to a lesser extent than links to their websites. Radio Televisión Española incorporates videos on its Twitter profile but does not generate this content natively, instead, it retweets with a quote to use the videos published by the profiles of the different programs owned by the network. El País also includes moving images on its Twitter profile, and it should be noted that they occasionally use gifs. El Mundo's profile also uses videos, but to a lesser extent than the previous two.

Not all of the media outlets analyzed here use emojis on their Instagram and Twitter profiles, but it should be clarified that El Mundo, Antena 3, and Cadena COPE do use them, as a general rule, on their Twitter profiles. In general, it is confirmed that the news broadcast formats of the six media.

outlets, both on Instagram and Twitter, consist of relatively brief text and a static image accompanied by a headline.

4.3. Audience interaction

In general terms, the different audiences on both social media platforms, Instagram and Twitter, do not react positively to the information related to ecological transition provided by the media outlets. On both platforms, the majority of comments can be divided into two categories: denial and mockery.

However, there are also positive reactions from the audience, although they are very much in the minority, which can be categorized into two types: empathy and awareness.

On one hand, the negative comments are made by a large percentage of users who deny climate change and global warming, believing them to be inventions of both the Spanish government and the media outlets. Users who comment on various posts

claiming that climate change and its consequences are fabricated and unverified often resort to using offensive language and writing in all capital letters, which can be perceived as shouting.

For example, on January 15, 2022, in a post on Radio Televisión Española's Instagram profile, a user wrote in all capital letters, "stop media manipulation/communication" in response to a news article about greenhouse gases and climate change. Another example is a person who commented, "why don't you stop spreading information terrorism?" on an Instagram post from the Antena 3 Noticias profile regarding a cartoon about the heatwave on June 13, 2022.

Responses to tweets in the "denial" category are less extensive and often use GIFs to provoke or insult.

On the other hand, other negative comments categorized as "mockery" were observed, mainly in responses to Twitter posts. In this case, users use images known as "memes" or GIFs to make humorous or mocking comments about climate change, global warming, or the consequences of these on natural resource reserves.

The mocking comments found on Instagram also lack elaboration and often consist of laughing emojis accompanied by offensive words.

There are positive comments as well, albeit to a lesser extent, on the subject matter analyzed in this research. These can be categorized, as mentioned earlier, into two types: empathy and awareness.

In general, more positive comments have been found on Instagram than on Twitter. The majority of these user expressions are made using emojis such as sad faces with a tear, broken hearts, surprised faces, or clapping hands as a sign of support. Comments made exclusively with emojis can be considered under the "empathy" category.

Additionally, there are other more elaborated comments that can be categorized as "awareness." For example, a user commented, "a glimpse of what's to come with climate change" on an Instagram post from Radio Televisión Española on January 28, 2022, about the unprecedented storm that hit Greece at the beginning of that year. Another example was found on an Instagram post from El País on January 1, 2022, explaining the anomalies of high temperatures at the beginning of the year. The comment stated, "this is bad weather, it's bad news."

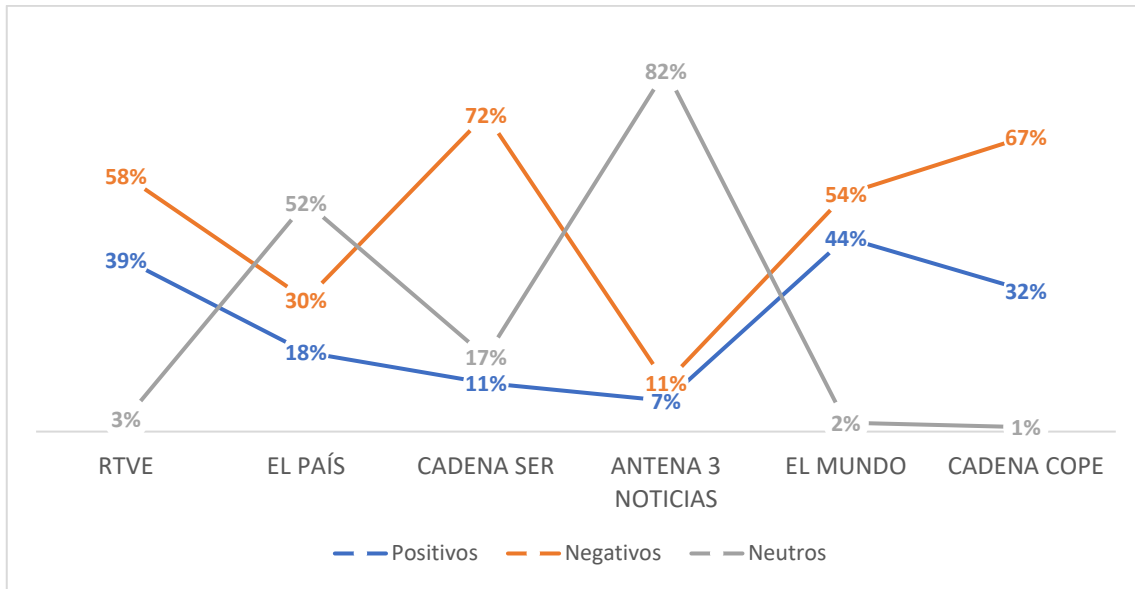
There are comments that cannot be classified as either positive or negative reactions to the published information. These comments included insults towards the journalist reporting the news, opinions on entirely different and random topics unrelated to the publication, or insults and offensive language, in some cases written in capital letters. These can be categorized as "neutral" comments since, although some may be offensive or unconstructive, they cannot be labeled as positive or negative regarding the topic discussed in the posts. This type of comment was noticed more frequently in Twitter posts than in Instagram posts.

Below are two charts showing the percentages of positive, negative, and neutral comments found during the six months analyzed in 2022 across the six media outlets, first on Instagram and then on Twitter. In Figure 3 and Figure 4, included below, the

percentages related to the qualities of the comments received on the six media outlets, both on Instagram and Twitter, are detailed, with positive comments having the lowest percentages across all social media profiles.

Figure 3

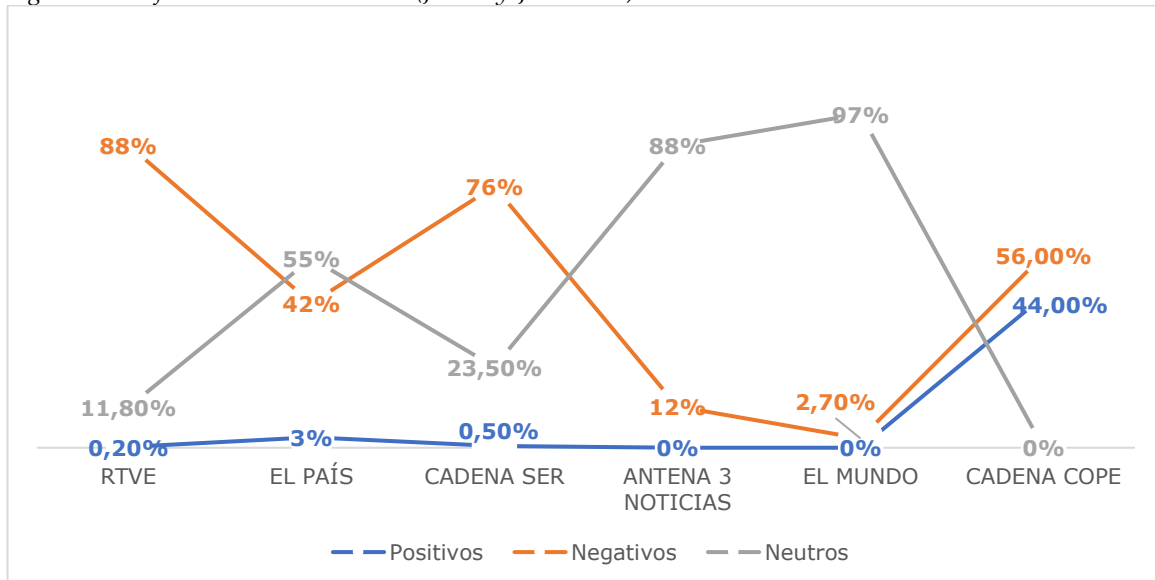
Categorization of Comments on Instagram (January-June 2022).



Source: Author's own work.

Figure 4

Categorization of Comments on Twitter (January-June 2022).



Source: Author's own work.

Interactions on social media platforms, particularly Instagram and Twitter, varied significantly among the six media outlets analyzed. The audience's engagement in

terms of "Likes" on Instagram and "Retweets" on Twitter was quite unequal across different profiles.

Regarding Instagram, there was a wide disparity in the number of "Likes" received by various media outlets. One particular post on El Mundo's profile, published on March 30, garnered a remarkable 25,828 "Likes." This post was related to a story about a Seed Bank in Norway, often referred to as the "Noah's Ark of plant seeds," as it houses over a million seed samples from around the world. On the other end of the spectrum, the post with the fewest "Likes" received just 106 and belonged to the Radio Televisión Española profile. This post discussed the planet's poor performance in terms of climate action, and it was published on June 5.

In general, Radio Televisión Española's Instagram profile had the highest average number of "Likes" per post, while Cadena COPE's profile received the lowest number of "Likes," with just 329 likes in a total of 1 post. Notably, there was no consistency among the six media outlets in terms of the total number of posts they made on the study's topic and the average number of "Likes" received per post. Some media outlets achieved a high number of "Likes" for a relatively small number of posts, such as El País with 25 posts and a total of 8,760 "Likes," or El Mundo with 8 posts and 11,820 "Likes."

Moving on to Twitter, the differences in the number of "Retweets" were not as pronounced as on Instagram. The tweet with the most "Retweets," precisely 5,581, belonged to El País's profile and was related to a story about the European Commission recognizing nuclear energy as "green," published on January 1. On the other hand, two profiles had two tweets with 0 "Retweets": Cadena SER, which reported on activists protesting against climate change in Paris on April 16, and Antena 3 Noticias, which shared a news piece about the release of a documentary to raise awareness about the socio-economic impact of climate change on June 8. There were numerous tweets on Cadena COPE's profile that received no "Retweets."

In general, El País had the highest arithmetic mean of "Retweets" with 363 from a total of 17 tweets on the study's topic, while Cadena COPE had the lowest arithmetic mean of "Retweets" with 4 from 21 tweets on the topic.

When comparing the total number of tweets published by the six media outlets during the six-month analysis in 2022 and the arithmetic mean of "Retweets" received in those posts, it appears that the percentages related to the number of "Retweets" received in relation to the number of tweets posted were more homogeneous among the six media outlets. However, two media outlets stood out with significantly higher averages: El País with 17 tweets and 363 "Retweets," and El Mundo with 12 tweets and 77 "Retweets," as they received a much more significant average number of "Retweets" compared to the other media outlets analyzed.

In general, Instagram posts received a higher number of "Likes" compared to the number of "Retweets" obtained by tweets. Furthermore, the total number of posts made on Instagram and tweets published on Twitter over the six-month period were

not uniform among the six media outlets. However, there was a more equitable distribution between the number of "Retweets" and the number of tweets published, compared to the number of posts and the "Likes" received on Instagram across all media outlets.

4.4. Most popular themes and key actors

As for the most reported themes on Instagram and Twitter profiles, which can be referred to as primary themes, four of them stand out as common among the six media outlets in general. These themes are the European Commission's request for nuclear energy to be considered green; extreme rain or hail storms and high temperatures defined as heatwaves; actions taken by environmentalists, and the demolition of the Teruel nuclear power plant.

To delve into the popularity of these themes in more detail, Tables 5 and 6 are presented with numerical totals, showing the number of times each theme has been covered by each media outlet on both Instagram and Twitter.

Table 5

Most Popular Themes on Instagram (January-June 2022).

Media outlet	Nuclear Energy	Storms	Heatwave	Ecologist Actions
RTVE	6	18	13	2
El País	7	8	8	2
Cadena SER	1	1	1	0
Antena 3 Noticias	0	1	2	0
El Mundo	2	3	2	1
Cadena COPE	1	0	0	0

Source: Author's own work.

Table 6

Most Popular Topics on Twitter (January-June 2022)

Media Outlet	Nuclear Energy	Storms	Heatwave	Ecologist Actions
RTVE	4	22	12	2
El País	2	13	9	3
Cadena SER	1	12	4	0
Antena 3 Noticias	0	4	3	1
El Mundo	2	3	5	0
Cadena COPE	1	12	8	0

Source: Author's own work.

There are several secondary topics that are common across multiple media outlets but do not appear in all six of the analyzed media. These less-mentioned topics include the excess of discarded masks as environmental pollutants, plastic waste, water reservoir depletion, drought, global warming, ecosystem extinction, harmful consequences of climate change on the planet, the implementation of the Waste Law, or the presence of microplastics in food.

It's also worth noting that there are three key actors that can be categorized as main protagonists common to all media outlets, as all six have published at least once about one of these actors. The most mentioned subjects in the information provided by these media outlets have been the European Commission, the Spanish Government, and references to environmental activists who take actions to raise awareness about climate change and its consequences on the planet.

In general, both the topics and the main actors have been included in the news objectively, with direct or indirect quotations, and without expressing value judgments or opinions about them.

5. DISCUSSION

In general, the agenda-setting theory developed by McCombs and Shaw (1972), based on Cohen's (1964) idea, can indeed be applied to how the media select the topics they highlight on their social media profiles. By choosing which news to publish on their social media profiles, the media guides the audience on what topics to think about. It can be inferred that if the media's agendas included a higher percentage of news related to the topic of this research on their social media profiles, they would, as the creators of the agenda-setting theory suggested, introduce new topics for their audiences to think about. It is necessary for the media to publish more than 2.3% of information (the observed percentage in this research) about climate change, global warming, or the need for an ecological transition on their social media profiles to take advantage of this didactic opportunity and to boost these topics in public opinion.

As explained by Igartua and Humanes (2004), citizens react to news by thinking that the events that receive the most coverage are the most important. Therefore, it can be assumed that the audiences of the analyzed media will not give enough importance to information related to the need for an ecological transition unless it holds a more prominent place in their agendas. This implies that if news about climate change does not have a significant presence in the social media profiles of the media, it may eventually disappear from the minds of the audiences, in line with the research by Berglez & Al-Saqaf (2021), which pointed out that social media are crucibles of audience discourse.

As observed in this research, the majority of the audiences expressing their opinions on the twelve profiles of the analyzed media outlets show direct rejection of the existence of a real danger to planet Earth. More than 50% of negative comments were found on 10 of the 12 social media profiles analyzed. Therefore, it can be assumed that

citizens may be exempt from believing in the truth of this information due to the minimal amount of it being published on the social media profiles of the media.

At the same time, it is necessary for citizens to be aware of the need for an ecological transition for the planet, and to achieve this, the media must actively play a part in raising awareness among the audiences. As Campos-Freire et al. (2016) explained, social media allows the media to engage in conversations and exchange their own and others' content. In this way, the media also establish two-way and direct communication with their audiences, obtaining first-hand information about how news is typically received and what kind of reactions and feelings it provokes in citizens, as observed in this research.

While it is true that the media rely on social media to reach wider audiences, there is an urgent need to increase news about climate change on these social media platforms, as they provide a direct channel of communication with the audiences.

6. CONCLUSIONS

In conclusion, after analyzing and comparing the twelve social media profiles, it can be established that the media do provide information on topics related to climate change, global warming, the need for an ecological transition, or the danger the planet faces due to pollution on these profiles. However, such information represents no more than 2.3% of the total compared to other topics they cover, suggesting that these topics do not receive significant importance in the agendas set by the analyzed media.

It is observed that all media outlets present news about ecological transition using a direct language and a purely informative tone; there appear to be no biases in the presentation of news. The informative genre is used in all media outlets, emphasizing direct quotes from the news protagonists, although in very few cases have op-eds been used to reflect the journalist's opinion.

In general, the compositional structure of publications on the social media profiles of the analyzed media outlets, both on Instagram and Twitter, consists of text accompanied by audiovisual content, predominantly high-quality photographs or images.

The most common audiovisual format used by the six analyzed media outlets is designed images or high-quality photographs, both on Instagram and Twitter. However, three out of the six analyzed media outlets (El Mundo, Cadena SER, and Antena 3 Noticias) combine these photographs with video content in reel format on their Instagram profiles. Although the predominant audiovisual format on both social media platforms is photography.

On the other hand, audiences on social media for the six media outlets, both on Instagram and Twitter, do not respond positively to information related to climate change, global warming, or ecological transition. It is highlighted that a considerable number of people who comment on different social media posts deny climate change,

compared to a small percentage of followers who empathize with the situation and express their concerns openly.

It is confirmed that the most popular topics on the social media profiles analyzed relate to extreme weather conditions such as heavy rains or extreme heat, the European Commission's request to consider nuclear energy as green, actions and demonstrations carried out by environmentalists or activists, and the demolition of the Teruel nuclear power plant. Likewise, it is mentioned that the main actors in these news stories are members of the Spanish government, the European Commission, and environmentalists.

In general, it is concluded that information related to ecological transition and blue economy is present in the social media profiles of the media outlets, although in a percentage that is not significant. However, it can be said that such information is published in a direct and informative style without being biased by the opinions of the journalists who write them.

Regarding the limitations of this study, it should be noted that the research is based on six specific media outlets in Spain, which limits the generalization of the results at the national or international level. Additionally, the limited time period may not reflect long-term trends in ecological transition coverage. Furthermore, content analysis can involve a degree of subjectivity in interpreting publications and their focus on ecological transition, while the chosen media outlets may set their own focuses based on editorial policies or undisclosed specific interests, which could introduce potential bias in the collected data.

On the other hand, this research opens up other future lines of inquiry, such as conducting a comparative study of the coverage of ecological transition and blue economy information in Spanish media with major European media outlets. Similarly, it could be investigated whether in the rest of Europe, these types of news receive the same or even more attention than in Spain, by expanding the sample of media outlets and social networks analyzed, including other social media platforms.

Likewise, further research could delve into the virality and influence of the accounts used as subjects of study and analyze the most "Liked" or most disliked posts, conducting focus groups with young and adult individuals separately. This would provide first-hand insights into how information related to ecological transition is perceived, distinguishing between age groups, and compare them with the opinions and comments that audiences express on social media.

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