Analysis of the coverage and discourse of the Sustainable Development Goals and the 2030 Agenda in the Spanish digital press (2015-2022)

Análisis de la cobertura y del discurso de los Objetivos de Desarrollo Sostenible y la Agenda 2030 en la prensa digital española (2015-2022)

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ABSTRACT

Introduction: This research offers a longitudinal view of the coverage, as well as the main characteristics of the discourse on the SDGs and the United Nations 2030 Agenda, after analysing the ten digital newspapers with the highest readership in Spain. Methodology: A quantitative and descriptive approach of the news items that mention this topic was carried out, followed by an interpretative analysis of the content of the full texts and, finally, a semantic analysis and text mining. Results: It is observed that the number of news items mentioning this issue has increased by more than 1000%, setting 2020 as a turning point from which the coverage of this issue has become generalised in the media agenda. Despite this increase, news content featuring the SDGs and the 2030 Agenda has been decreasing to minimum levels. In terms of discourse, the results reveal that the terms most
associated with 'SDG_2030Agenda' are 'UN', 'government', 'policies' and 'country'. The first three also appear in the associative analysis. In addition, four thematic groups are identified with terms that relate to: 'Global issues', 'UN', 'Institutional' and 'SDG Goals and Targets'. Discussion: The data show that, despite the increase in the number of news items, the prominence of this initiative has been inversely proportional. Conclusions: Content about the UN plan gives greater prominence to compliance by governments and institutions than to the content of the goals themselves.

Keywords: SDGs; 2030 Agenda; UN; Digital media; Coverage; Discourse; Semantic analysis.

RESUMEN
Introducción: Esta investigación ofrece una visión longitudinal de la cobertura, así como las principales características del discurso sobre los ODS y la Agenda 2030 de Naciones Unidas, después de analizar los diez periódicos digitales con más audiencia de España. Metodología: Se ha realizado una aproximación cuantitativa y descriptiva de las noticias que hacen mención a esta temática, para después efectuar un análisis interpretativo del contenido de los textos completos y, finalmente, aplicar un análisis semántico y de minería de textos. Resultados: Se observa que las noticias que citan este asunto han aumentado más de un 1000%, fijando el año 2020 como un punto de inflexión a partir del cual la cobertura de este tema se ha generalizado en la agenda mediática. Pese a este incremanto, los contenidos informativos con protagonismo de los ODS y la Agenda 2030 han ido decreciendo hasta niveles mínimos. En cuanto al discurso, los resultados revelan que los términos que más se asocian a ‘ODS_Agenda2030’ son ‘ONU’, ‘gobierno’, ‘políticas’ y ‘país’. Los tres primeros aparecen también en el análisis asociativo. Además, se identifican cuatro grupos temáticos con términos que se relacionan con: ‘Problemas globales’, ‘ONU’, ‘Institucional’ y ‘Objetivos y Metas de los ODS’. Discusión: Los datos muestran que, pese al aumento del número de noticias, el protagonismo que tiene esta iniciativa ha sido inversamente proporcional. Conclusiones: Los contenidos sobre el plan de la ONU dan una mayor difusión al cumplimiento por parte de los gobiernos e instituciones que al propio contenido de los objetivos.

Palabras clave: ODS; Agenda 2030; ONU; Prensa digital; Cobertura; Discurso; Análisis semántico.

1. Introduction

On September 25, 2015, the United Nations (UN) approved the Sustainable Development Goals (SDGs) in New York. This global action plan consists of 17 interconnected goals and 169 targets and received unanimous support from the UN's 193 member states. The SDGs are aimed at promoting people, the planet, and prosperity, while also strengthening universal peace and access to justice. Some of these goals include taking urgent action to combat climate change and its impacts, promoting just, peaceful, and inclusive societies, and building resilient infrastructure, promoting sustainable industrialization, and fostering innovation (UN, 2015a). The SDGs are part of the 2030 Agenda for Sustainable Development, which sets the guidelines for public policies on development and international cooperation until 2030 (UN, 2015b).

Regarding the role of knowledge in achieving these goals, Easterly (2015) argues that professionals within the sustainable development bubble mistakenly believe that the SDGs have captured the world's attention when, in reality, they haven't. He emphasizes the importance of raising awareness and understanding of these initiatives among society to translate them into successful actions. Cummings et al. (2018) suggest that the Agenda 2030 will fail unless the transformative power of knowledge is leveraged during its implementation. They highlight the need for opportunities for various groups to assume an active role.

In Spain, one of the first measures of the coalition government led by Pedro Sánchez, in June 2018, was the approval of the “Action Plan for the Implementation of the 2030 Agenda: Towards a Spanish Strategy for Sustainable Development”. In section 9.4 titled "Informing to Know. Raising Awareness to Act. Communicating to Transform: A Pact for the Communication of the 2030 Agenda," the goal was set to ensure that by 2020, 100% of the country’s population would be aware of this action plan and sensitized to the scope of the transformations
it entails. The role of the media is explicitly mentioned, defining them as an actor capable of multiplying the effectiveness of communication, awareness, and information actions carried out by other actors and entities (Government of Spain, 2018).

Since its approval, various studies have attempted to measure the level of public knowledge about the SDGs. Some studies demonstrate a high level of unawareness on this topic, such as the one conducted by DevCom, the Communication for Development Network of the Organization for Economic Cooperation and Development (OECD). This organization compared surveys conducted in several countries using different methodologies and found that only between 35% and 45% of people had heard about the SDGs, and awareness of the goals does not necessarily translate into knowledge (The SDG Communicator, 2017). A more recent survey conducted by the French platform Focus 2030 compared knowledge of the SDGs in four industrialized European countries. The main result once again highlighted a clear lack of awareness of this action plan: only 11% in France, 9% in the United States, 8% in Germany, and 7% in the United Kingdom had heard or read any content about the SDGs (Focus 2030, 2022).

In contrast to these studies, a survey conducted by the World Economic Forum indicates a higher awareness of the UN initiative. Specifically, it states that 74% of the global population has some knowledge of the goals (World Economic Forum, 2019). According to this organization, in Spain, 80% of the population has some knowledge of the SDGs, with only 5% being very familiar with them. However, two surveys conducted by the Center for Sociological Research (CIS) cast doubt on these figures. In 2019, only 10.8% of respondents claimed to know about or have heard of the SDGs (CIS, 2019), and a year later, this percentage rose to 29.4% (CIS, 2020).

Historically, various perspectives have addressed the level of interest in sustainability or sustainable development in the media. According to Du Pisani (2006), these expressions are trendy but also overused, often used without much thought given to their true meaning and implications.

Barranquero (2019) considers the communication of the SDGs and the 2030 Agenda as one of the areas of study in Communication for Development and Social Change (CDSC). Linked to the concept of media reform, he argues that the communication of the UN’s action plan is among the lowest levels of citizen participation, with the public mainly consuming media coverage of topics and debates in the field of cooperation.

To delve into the media’s perspective on sustainability and sustainable development, it is necessary to mention the three dimensions of these concepts: the ecological or environmental dimension, the social dimension, and the economic dimension (UN, 1997; Artaraz, 2002; Strange & Bayley, 2008; Cavagnaro & Curiel, 2012; United Nations Environment Programme & International Trade Centre, 2017). In relation to the environmental dimension, Rodrigo-Cano et al. (2019) introduce the concept of environmental educommunication, which they define as training for action that develops critical capacity and empowers eco-citizenship. They argue that currently, this aspect “does not achieve many of these sustainable development goals, highlighting the environmental dimension over the social dimension and, of course, neglecting the economic dimension” (p. 32).

In line with this argument, López et al. (2018) emphasize that the social aspect of sustainable development is often overlooked despite its crucial importance. Bebbington and Dillard (2009) indicate that this aspect presents diverse and more complex challenges in terms of specification, understanding, and communication compared to environmental sustainability, as there is no commonly accepted scientific basis for analysis or a common unit of measurement (p. 157).

Regarding how the media is disseminating the SDGs and the 2030 Agenda in their news content, McArthur and Zang (2018) state that global news coverage of these topics has increased over the years, especially during international summits. An international initiative highlighted by Herranz de la Casa and García-Caballero (2020) is the SDG Media Compact, launched by the UN in 2018 to invite major global media outlets to promote the SDGs. However, they mention that media outlets with the largest audiences or greatest influence are not actively participating.
In Spain, the authors mention some campaigns by national media outlets such as RTVE's "Por un Planeta Mejor" (For a Better Planet) by Radio Televisión Española (RTVE), as well as campaigns by private corporations such as Mediaset España and Atresmedia. However, these campaigns are not directly linked to the SDGs. The authors also highlight that specialized media outlets focused on social responsibility, such as Corresponsables, Ethic, Diario Responsable, Compromiso Empresarial, or Cultura RSC, have regularly incorporated the SDGs into their news content in recent years.

Regarding the role of specialized journalism, Toro-Peña (2020) advocates for utilizing the opportunity to occupy a relevant space in the implementation of the SDGs and the 2030 Agenda in society by providing content "that must serve to earn the support and social endorsement that guarantees quality media and journalistic work to contribute, through knowledge, to promoting critical behavior and attitude among an informed citizenship" (p. 776).

Regarding the discourse related to the SDGs in Spanish media, a report by CANVAS Estrategias Sostenibles and Graphext (2021) highlights four areas that account for more than 20% of the coverage related to the goals: environmental (SDGs 11 and 13), health (SDG 3), economic (SDG 8), and technological (SDG 7). The report also notes a trend of "majority coverage of sustainability from the environmental dimension, even linked to health" (p. 4), indicating the increased media focus on the SDG related to health and well-being following the COVID-19 pandemic. The study also indicates that the arrival of the coronavirus led to a decrease in the amount of news generated in Spain about sustainability and sustainable development.

Considering the media’s interest in sustainability, sustainable development, and the SDGs, several perspectives related to the specific interest of the print press are presented. Díaz-Nosty (2009) highlights that print media provides better contextualized solutions than other media platforms, such as television. This author proposes a strategy of communication for sustainable innovation, which is defined as "a change in the narrative consciousness of the media and a propositional aspect linked to its potential dissemination [...] a reallocation of the role of the media in societies whose culture of abundance accentuates the unsustainable nature of their future" (pp. 101-102).

Following the thesis of Barkemeyer et al. (2009), which demonstrates the increasing interest in sustainability among the world’s 115 most-read newspapers, Fischer et al. (2017) analyzed six major German newspapers between 1995 and 2015 and concluded that the proportion of articles explicitly using terms related to sustainability has doubled over these two decades. In line with the previous argument by McArthur and Zang (2018), they highlight years in which significant summits are held, leading to international agreements related to sustainability, such as the COP21 or the SDGs. This research also confirms that the political ideology of newspapers is a significant factor in the coverage of sustainability-related news.

Finally, Janoušková et al. (2019), after examining nearly 10,000 globally circulated English-language print newspapers between 2009 and 2018, conclude that the top five most published topics related to the goals were climate change (SDG 13), renewable energy (SDG 7), gender equality (SDG 5), extreme poverty (SDG 1), and access to justice (SDG 16), although in most cases, these news articles were not directly related to sustainability. In this regard, the research also points out that the media is missing the opportunity to frame topics of general interest within a broader and global concept such as the SDGs, which they consider the appropriate theoretical framework for such purposes.

2. Objectives

The general objective of this research is to provide a first empirical approach to the characteristics and trends of the coverage provided by Spanish digital press on the SDGs and the 2030 Agenda. This is achieved by analyzing a representative sample of Spanish digital newspapers over a period of eight complete years, from 2015 to 2022. Based on this main objective, the following specific objectives are established:
SO1: Determine the total volume of news articles (units of analysis) mentioning the SDGs and the 2030 Agenda during each year of the analysis period in a representative sample of Spanish digital newspapers. This aims to study the evolution and different stages of the presence of this topic in the media agenda.

SO2: Determine the percentage of mentions of the SDGs and the 2030 Agenda for each digital newspaper in the sample, as well as identify those that have mentioned this topic more or less frequently.

SO3: Establish the percentage of news content focused on the theme of the SDGs and the 2030 Agenda (units of analysis), and determine which digital newspaper outlets lead in the dissemination of this content.

SO4: After conducting a semantic analysis and text mining on the units of analysis, identify the terms that appear most frequently, the associations related to the terms 'SDGs' and '2030 Agenda', as well as the thematic clusters that emerge.

3. Methodology

The methodological process of this research consisted of three phases. The first phase involved a quantitative and descriptive approach to news articles mentioning the SDGs and the 2030 Agenda from 2015 to 2022 in the ten most widely read digital newspapers in Spain. The second phase involved an interpretative analysis of the content of the full texts, and the third phase involved a semantic analysis and text mining.

To select the sample of digital newspaper outlets for this study, the criteria of audience were followed, based on the latest report from the Digital News Report (Vara-Miguel et al., 2022) and the most recent data from the General Media Study (Asociación para la Investigación de Medios de Comunicación [AIMC], 2022). Among the digital newspapers ranking in the top fifteen positions in both indices, any non-national generalist newspapers were excluded. Digital portals of public or private radio and television stations were also not included, as written information is not their main activity. Thus, the sample of newspaper outlets for the research consists of:

- 20 Minutos-online
- ABC-online
- Elconfidencial.com
- elDiario.es
- El Español
- El Mundo-online
- El País-online
- La Razón-online
- La Vanguardia-online
- Okdiario

The analysis period covered from January 1, 2015, to December 31, 2022, encompassing eight complete years since the promulgation of the United Nations' plan.

The tool used to obtain the units of analysis for the research and determine the number of news articles mentioning the SDGs and the 2030 Agenda was the digital newspaper archive MyNews, which indexed 1,207 media outlets as of the end of 2022. The search algorithm used was: "Sustainable Development Goals" OR "SDGs" OR "Sustainable Development Objectives" OR "2030 Agenda". This algorithm allows for possible variations of the selected words that best define the object of study for this research and has been used in similar studies (Janoušková et al., 2019). This tool was also used to retrieve the complete texts of the units of analysis to develop SO4.
To obtain the number of units of analysis, the constructed week method was employed to reduce the initial sample of the research. Given the extensive time period (2015-2022) and the considerable number of newspapers (10), the quantity of newspaper articles found for analysis is very high and makes it difficult to analyze each one individually. This method allows for the review and elimination of a large number of elements without having to examine each one separately.

To achieve this, the constructed week method suggests that the units of analysis retrieved based on the selected terms be analyzed on one out of every eight days of the year, with the analysis of information for each week concentrated on a different day. The first week starts with Monday, followed by Tuesday from the second week, and so on. By avoiding distortions that would result from a limited information moment and preserving editorial patterns, the sample of texts analyzed is reduced to less than 25% of the total, ensuring its representativeness (Riffe et al., 1993; Hester & Dougall, 2007).

Regarding the criteria used to determine the news articles in which the SDGs and the 2030 Agenda have had relevant prominence, which is part of the analysis of these two specific objectives, it was analyzed if the news articles met one of the following characteristics:

- The issue is mentioned in the headline of the news article, as the headline has been the reader’s first approach to the information since the beginning of the 20th century, providing initial knowledge and guiding the reader on whether it interests them or not (García-Orosa & López-García, 2015, p. 834).

- The news article explicitly explains the scope of the SDGs and the 2030 Agenda and their transformative power (Gómez-Gil, 2018).

- The news article has a main theme related to the SDGs and the 2030 Agenda.

Finally, to define the attributes that shape the media discourse on the SDGs and the 2030 Agenda, the T-LAB tool for semantic analysis and text mining has been used. This tool has been recently employed in research analyzing media content on topics such as the social perception of homeopathy in the Spanish press (Martí-Sánchez & Roger-Monzó, 2018), the discourse of the press on nutrition during the COVID-19 pandemic (Roger-Monzó et al., 2021), or how generalist digital press addresses phenomena like crowdfunding (Berné-Martínez et al., 2021) and entrepreneurship (Cervantes-Zacarés et al., 2023).

In addition to T-LAB, other text mining tools have been used in a research study that employed a content analysis of news articles on sustainability, SDGs, and sustainable development, determining that the most frequently appearing words were 'environment,' 'social,' 'business,' 'agenda,' 'city,' 'challenge,' and 'peace' (Molina-Gómez et al., 2020).

4. Results

4.1. Evolution of the total number of news articles

After conducting a search for key terms related to the SDGs and the 2030 Agenda in the MyNews digital newspaper archive, the main results show that the UN action plan has gained prominence from the year it was promulgated, with 773 news articles, to 2022, where 8,509 news articles were recorded. In total, across the ten selected generalist digital newspapers as the sample, this topic has been mentioned in 35,458 news articles during the analysis period, with a cumulative growth of 1,000.78%.
When examining the annual increase recorded, as shown in Figure 1, it can be observed that 2019 had the highest growth in terms of the total number of news articles, with an increase of 96.86%. Notably, there were also significant increases in 2018 (71.45%) and 2021 (66.37%). However, during the final year of this analysis, 2022 saw the first and only decrease in the number of news articles, with a decline of 17.08% compared to the data from 2021.

4.2. Coverage by newspaper outlets

After confirming the widespread trend that the SDGs have been gaining presence in Spanish digital press since their promulgation, Table 1 shows, newspaper by newspaper, the total number of monthly news articles mentioning the UN plan. Regarding the conditional formatting of the table, the color of each cell facilitates the observation of lower figures, indicated in red and predominant during the early years of the analysis, while higher figures are indicated in shades of green, particularly noticeable for some newspapers between 2020 and 2022.

In general, considering the percentage of news articles in which each newspaper mentioned the SDGs and the 2030 Agenda, 20 Minutos ranks first (18.2%), followed by elDiario.es (17.1%), El Español (15.2%), El País (10.4%), La Vanguardia (9.8%), ABC (9.4%), El Confidencial (7.1%), La Razón (5.2%), Okdiario (4.9%), and finally, El Mundo (2.7%).
In order to distinguish the different stages of presence of this issue in Spanish digital newspapers, Table 2 illustrates, with a heat map, the annual number of mentions of the UN plan, with lower figures represented by cooler shades of blue and higher figures represented by warmer shades of red. It can be observed that, during the first five years, *El Confidencial*, *El País*, and *elDiario.es* stand out from the rest by offering a higher number of contents. This trend is joined by *20 Minutos* from 2017, and *ABC* from 2018. In this phase, the newspapers with lower figures are *El Español*, *El Mundo*, *La Razón*, *La Vanguardia*, and *Okdiario*.

From 2020, almost all newspapers provide news articles referring to the SDGs and the 2030 Agenda, even in cases where they had low figures in the previous stage, such as *El Español* or *La Vanguardia*, which now lead the news articles mentioning this topic, along with *20 Minutos* and *elDiario.es*. As for the newspapers with the lowest number of references to the UN-approved roadmap in recent years, they include *El Confidencial*, *El Mundo*, *La Razón*, and Okdiario, with an average of fewer than 50 monthly news articles between 2020 and 2022, as shown in Table 2.

Table 2: Annual evolution of news articles mentioning the SDGs and the 2030 Agenda in the main Spanish digital newspapers.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>20minutos</td>
<td>53</td>
<td>116</td>
<td>236</td>
<td>504</td>
<td>1330</td>
<td>1592</td>
<td>2238</td>
<td>383</td>
</tr>
<tr>
<td>ABC</td>
<td>49</td>
<td>94</td>
<td>154</td>
<td>334</td>
<td>751</td>
<td>1026</td>
<td>449</td>
<td>464</td>
</tr>
<tr>
<td>El Confidencial</td>
<td>140</td>
<td>240</td>
<td>245</td>
<td>412</td>
<td>599</td>
<td>445</td>
<td>253</td>
<td>192</td>
</tr>
<tr>
<td>El Español</td>
<td>2</td>
<td>12</td>
<td>14</td>
<td>22</td>
<td>127</td>
<td>361</td>
<td>1699</td>
<td>3155</td>
</tr>
<tr>
<td>El Mundo</td>
<td>18</td>
<td>24</td>
<td>42</td>
<td>57</td>
<td>139</td>
<td>222</td>
<td>235</td>
<td>229</td>
</tr>
<tr>
<td>El País</td>
<td>183</td>
<td>291</td>
<td>361</td>
<td>411</td>
<td>455</td>
<td>518</td>
<td>1118</td>
<td>354</td>
</tr>
<tr>
<td>elDiario.es</td>
<td>122</td>
<td>210</td>
<td>301</td>
<td>488</td>
<td>945</td>
<td>739</td>
<td>2423</td>
<td>845</td>
</tr>
<tr>
<td>La Razón</td>
<td>16</td>
<td>22</td>
<td>25</td>
<td>87</td>
<td>169</td>
<td>385</td>
<td>677</td>
<td>454</td>
</tr>
<tr>
<td>La Vanguardia</td>
<td>190</td>
<td>30</td>
<td>41</td>
<td>97</td>
<td>204</td>
<td>379</td>
<td>565</td>
<td>1964</td>
</tr>
<tr>
<td>Okdiario</td>
<td>0</td>
<td>5</td>
<td>10</td>
<td>38</td>
<td>104</td>
<td>501</td>
<td>605</td>
<td>469</td>
</tr>
</tbody>
</table>

Source: Author’s own work.

Indeed, after observing in section 4.1 that in 2022 there has been a significant decrease in the number of news articles mentioning the UN initiative for the first time, when looking at Table 2, it can also be noted that the media with the fewest mentions this year are *El Confidencial* and *El Mundo*, with 192 and 229 mentions, respectively. On the other hand, the media outlets that have published the most news articles throughout 2022 are *El Español* and *La Vanguardia*, with 3155 and 1964 mentions, respectively. These two newspapers have made more references in just one year than in the previous seven years, and, along with *ABC*, they are the only three media outlets that have increased the number of news articles compared to the data from 2021.

4.3. News about the SDGs and the 2030 Agenda

In addition to knowing the total number of news articles mentioning the SDGs and the 2030 Agenda, another objective of this research is to determine the quantity of content in which the UN plan has prominent relevance. To this end, the built-week technique was first applied, reducing the units of analysis from 35,458 to 4,303. Then, following the specified criteria in the methodological design, a manual selection of news articles was conducted, resulting in the percentages shown in Table 3.
As can be seen in the table, only 264 out of 4,303 units of analysis (6.14%) have the SDGs as the main theme. Furthermore, the relevance of this topic has been decreasing year after year, going from 21.88% of news articles in 2015 to 4.02% in 2022 (-81.63% over eight years). The most significant decline occurred in 2020, with a sharp drop compared to the previous year (-51.5%), and also in 2016, one year after the implementation of the goals (-38%). Only in 2018 and 2022, the percentage of news articles with prominence of the SDGs and the 2030 Agenda slightly increased, reaching 20.6% and 21.1%, respectively.

Regarding the distribution of digital newspapers that have published news articles with greater prominence on this topic, in Figure 2 it can be observed that 20 Minutos is in first place (58), followed by elDiario.es (53), El País (42), El Español (27), ABC (23), La Vanguardia (22), El Confidencial (19), La Razón (9), Okdiario (8), and finally El Mundo (3). This distribution shows similarities with the distribution of percentage mentions of the UN plan by each newspaper, detailed at the beginning of section 4.2.

### 4.4. Semantic analysis and text mining

The analysis of the linguistic corpus has been carried out using T-LAB, 2022 (version 8.1.2.5). It is a data analysis software that provides statistical and content analysis applications by identifying word patterns. This system, created by psychologist Franco Lancia (2017), allows for various types of analysis, such as those applied in the present study: firstly, a descriptive analysis was performed to identify the most frequent lemmas that appear in the journalistic texts dealing with the SDGs and the 2030 Agenda. Next, word associations focused on the main lemma under study were analyzed. Finally, the system identified a classification into four thematic groups.
T-LAB offers an automatic corpus normalization process where initially 1435 lexical units (lemmas or keywords) are shown. After applying the lemmatization process (renaming and relocating available lemmas), 770 lexical units have been identified, all of them located in the first decile. Given the size of the corpus, a minimum frequency threshold of 20 is set, which ensures the reliability of the statistical data.

The final base of the corpus has the following quantitative characteristics:

- Classified contexts < 3503 (>99.1%)
- Analyzed contexts < 3534 >
- Available partitions: 3-9 clusters
- Selected partition: < 4 > clusters

4.4.1. Descriptive analysis

The T-LAB tool distinguishes two types of information: elementary contexts and lexical units. The former refers to phrases, paragraphs, text fragments, etc. characterized by the same patterns of keywords. The lexical units are records that are referred to as labels classified according to custom dictionaries, semantic categories, or linguistic criteria. For example, in the case of this research, the terms 'SDGs' and 'Agenda' have been grouped and renamed as "SDGs_Agenda2030". Figure 3 presents the most frequent lemmas with a weight above 170.

It is observed that the second most frequent lemma after the analyzed term is 'UN' (704 times) as the driving organization behind the plan. The most frequently appearing lemmas are associated with references to the levels of action of the SDGs: 'world' (300), 'global' (182), 'international' (239), 'country' (459), 'Spain' (261), and 'local' (187). Terms related to the three dimensions of sustainable development are also present: 'social' (347), 'ecological-environmental' (233), and 'economic' (194). Finally, there are terms specifically referring to the goals: 'poverty' (SDG 1), 249 times; 'work' (SDG 8), 196 times; and 'economic' with a similar frequency of 194 mentions. Additionally, 'cities' appears 175 times; and 'sustainability' 186 times (SDG 11).

Therefore, based on the number of term occurrences in the corpus, the main Spanish digital newspapers present the SDGs and the 2030 Agenda from a general perspective, framing them with the promoting organization, the UN, along with the different levels of goal implementation and the three dimensions of sustainability and sustainable development: economic, ecological-environmental, and social. A level of specificity is found in the references to terms included in the 17 SDGs, as three of significant social interest have been explicitly identified. Table 4 shows examples of SDGs 1, 8, and 11.
ODS 1
Only a few countries have achieved this goal, and it should cause great shame to those governments that have not fulfilled the promise made to the world’s poorest people. But at the Addis Ababa Summit, awareness has been raised about the scale of the efforts needed to achieve the goal of eradicating poverty and hunger.

ODS 8
...and Decent Work for all. It is established to “sustain per capita economic growth in accordance with national circumstances.” Without quantifying it. However, a minimum of 7% annual increase in Gross Domestic Product is set for the least developed countries. The other major challenge included in this goal is to ensure that everyone has decent employment by 2030.

ODS 11
However, the Sustainable Development Goals, with their explicit recognition of the Paris Agreement and the commitments made there, provide a broad framework that the New Urban Agenda can access. Many commitments (such as leaving no one behind or ensuring that cities are sustainable and inclusive) are common to both agendas.

Source: Author’s own work.

4.4.2. Associative analysis
The radial diagram in Figure 4 visually represents the relationships between different lemmas or keywords. In the center, there is 'SDGs_Agenda2030' (the focus of the research), and around it, the lemmas that appear with the highest number of occurrences (statistically significant chi-square test, p<0.05). The lemmas with the highest occurrences are positioned closer (on either side) and at a distance proportional to their degree of association. As observed, the central lemma has a high cosine coefficient in relation to the lemma 'compliance'. The terms 'UN', 'government', 'policies', and 'commitment' are also significant.

Table 5 displays the data that quantify the relationship between 'SDGs_Agenda2030' (lemma A) and the other lemmas. The quantification of these relationships is represented by the selected association coefficient (Coef; cosine coefficient), the co-occurrence values between lemma A and lemma B (AB), the Chi² statistic, and the p-value, showing only the statistically significant lemma B (p<0.05).

Source: Author’s own work.
Table 5: Cosines of the corpus.

<table>
<thead>
<tr>
<th>LEMA_B</th>
<th>COEFF</th>
<th>CE_B</th>
<th>CE_AB</th>
<th>CHI²</th>
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</table>

LEGEND:
- LEMA (A) = selected lemma;
- LEMA (B) = lemmas associated with LEMA (A);
- COEFF = value of the selected association index;
- CE_B = total number of elementary contexts in which each associated lemma (B) is present;
- CE_AB = total number of elementary contexts in which both lemmas "A" and "B" are associated (co-occurrences);
- CHI² = chi-square value to verify the significance of co-occurrences;
- (p) = probability associated with each chi-square value (def=1).

Source: Author’s own work.
Table 6 shows some examples of elementary contexts in which the main lemma co-occurs with those that have the highest cosine values (COEFF).

**Table 6: Examples of elementary contexts with the highest cosine values.**

| Cosine 0.297: 'SDGs_Agenda2030' and 'compliance' | Will this ambitious agenda, whose achievement seems like a dream, be maintained? ERADICATING POVERTY IN ALL ITS FORMS EVERYWHERE. The main challenge is to end extreme poverty, which means that no one in the world will live on less than $1.25 a day by 2030. |
| Cosine 0.285: 'SDGs_Agenda2030' and 'UN' | Embedding the SDGs in the national context is key to success since the United Nations Global Compact initiative was launched in 2000. Companies participate in a synchronized manner to incorporate and respect fundamental rights and the rule of law in the countries where they operat. |
| Cosine 0.274: 'SDGs_Agenda2030' and 'government' | ...They are essentially challenges. Although the response primarily depends on national governments, local authorities, the business world, and civil society must also support this agenda of action and take the agreed-upon measures. So... |
| Cosine 0.242: 'SDGs_Agenda2030' and 'policies' | The Sustainable Development Goals enter the campaign. Seven politicians gathered to discuss the position of their respective political parties regarding the 17 Objectives of the post-2015 agenda (SDGs), ratified last September at the United Nations headquarters in New York. |

*Source: Author’s own work.*

These texts reveal a prominent associative focus on content with a marked political tone - news about government actions and countries - as well as the term 'compliance', which reflects the concern to achieve the goals set in the 2030 Agenda. The presence of the term 'United Nations' is also significant in these contents, as it serves as a reference in the media discourse.

### 4.4.3. Thematic analysis

In order to complete this analytical part, a clustering classification has been developed to obtain a representation of the corpus content through meaningful semantic groups. This tabulation has allowed determining the aspects addressed by the Spanish digital press when referring to the SDGs and the 2030 Agenda.

The corpus has been explored to obtain a representation of the content in significant thematic clusters. These clusters are sets of elementary contexts characterized by the same lemma patterns and can be described by the lemmas and variables that most characterize the elementary contexts they consist of.

The content has been classified into significant thematic clusters using an unsupervised clustering method (bisecting k-means algorithm) in T-LAB software, which performs co-occurrence analysis and subsequent comparative analysis. Context units that do not include a minimum of two co-occurrences of the initially selected lemmas have been excluded. The partition that best fits the statistical adherence of the sample corresponds to four groups with their respective lemmas, which are presented in Figure 5.
To characterize each of the groups, the keywords that compose them have been taken into account, and a label has been assigned to each one, marked in red. The percentages of each group, as shown in Figure 6, indicate a similar proportion.

Figure 5: Representation of the four thematic clusters.

Source: Author’s own work.

Figure 6: Percentage of occurrence for each thematic cluster.

Source: Author’s own work.
Table 7 presents an elementary context with the highest score attributed to each of the clusters.

**Table 7: Examples of elementary contexts with the highest score from each thematic group.**

<table>
<thead>
<tr>
<th>Cluster 1: Global issues</th>
<th>SCORE (500.306)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REDUCE INEQUALITY WITHIN AND AMONG COUNTRIES</strong></td>
<td></td>
</tr>
<tr>
<td>This goal not only calls for reducing the gap between rich and poor countries, improving the economic situation of the latter, but also includes a target to fight against the existing (and growing) inequality between the highest and lowest socio-economic classes within developed countries.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cluster 1: United Nations</th>
<th>SCORE (1586.153)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spain presents progress on the 2030 Sustainable Development Goals to the UN. Juan Pablo de Laiglesia, the Spanish Secretary of State for International Cooperation and for Ibero-America and the Caribbean, presented today at the UN the &quot;most relevant&quot; progress of Spain towards achieving the 2030 Sustainable Development Goals, launched in 2015 by the United Nations.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cluster 3: Institutional</th>
<th>SCORE (1043.693)</th>
</tr>
</thead>
<tbody>
<tr>
<td>€8 million to finance and promote the 2030 Agenda in local entities, specifically in all municipalities in Spain. Specifically, €1.5 million will be allocated to projects presented by local entities or groups of local entities with a population equal to or less than 20,000 inhabitants.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cluster 4: SDGs objectives and goals</th>
<th>SCORE (710.561)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Achieve gender equality and empower all women and girls. Ensure availability and sustainable management of water and sanitation for all. Ensure access to affordable, reliable, sustainable, and modern energy for all.</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Author’s own work.

5. **Discussion and Conclusions**

This research has provided the main characteristics of the discourse in the Spanish digital press regarding the SDGs and the 2030 Agenda, once the halfway point of the deadline set by the United Nations for the transformations sought by this action plan has passed. Following the line defined by other studies that point towards a greater journalistic interest in this topic, this article generally confirms the growing coverage by the Spanish digital press.

Regarding SDG 1, the ten most popular digital media outlets in Spain have mentioned the SDGs and the 2030 Agenda in a total of 35458 news articles. There is a transition from 773 records in 2015 to 8509 records in 2022, representing a growth of over 1000% during these eight years, where the usual trend is an upward trajectory. However, in the last year of analysis, there is a decrease in the number of news articles for the first time, a circumstance that will need to be analyzed in the coming years to determine if the SDGs and the 2030 Agenda no longer arouse the same interest from the Spanish press.

If this hypothesis were to be confirmed in the future, the influence of new scenarios present in the media agenda since 2022, mainly derived from the war in Ukraine, could be studied. These scenarios include "inflation, food security, energy crisis, increased pressures in the supply chain and global geopolitical competition, the breakdown of international security and governance systems, and collective capacity to respond to all of this" (Colomina, 2022, p. 1).
The data from this research also point to two different stages regarding the inclusion of the SDGs and the 2030 Agenda in the media agenda. In relation to what was proposed in SDG 2, section 4.2 presents the behavior followed by each digital newspaper throughout the analysis period, with 4 having the highest percentage of mentions on this topic (18.2%) and El Mundo having the lowest (2.7%).

The year 2020 represents a turning point, as between 2015 and 2019 this topic appeared with varying frequency in a limited number of media outlets, but after this first stage, starting from 2020, it became more widespread in the rest of the newspapers. In fact, the year of the COVID-19 pandemic outbreak has seen one of the largest increases in the number of mentions of the SDGs and the 2030 Agenda. These results may differ from those presented in the CANVAS Estrategias Sostenibles and Graphext report (2021), which indicates a decrease in news about sustainability and sustainable development. However, both research studies use different newspaper samples, analysis periods, and keywords to obtain the record units.

Another conclusion obtained from analyzing SDG 2 is that in 2022, there has been a widespread decrease in mentions, and this year, El Español and La Vanguardia have made more references in just one year than in the previous seven. It is worth noting that when the SDGs and the 2030 Agenda were enacted in 2015, La Vanguardia was actually the newspaper with the highest number of articles on this topic, although its interest declined during most of the subsequent years. These issues, and the causes that have motivated them, are of interest to explore in future research.

In relation to SDG 3, this research concludes that despite the trend of greater coverage on the SDGs and the 2030 Agenda, it does not translate into an increase in news articles with a prominent focus on this issue, as only in 6.14% of the cases, the UN plan has significant importance in the texts. During the analysis period, 20 Minutos, elDiario.es, and El País account for nearly 58% of the news articles where the SDGs and the 2030 Agenda play a leading role, with conservative newspapers giving less prominence to this issue, as the remaining 42% is distributed among seven newspapers closer to this ideological profile.

It may also be evident that, due to its novelty, the year in which the United Nations action plan was enacted had a prominent presence in the news (21.88%), but this has declined to very low levels (4.02% in 2022). These data allow us to conclude that the SDGs and the 2030 Agenda have gained greater coverage in the main Spanish digital newspapers, but the prominence they have received has been inversely proportional.

Regarding SDG 4, after conducting the semantic analysis and text mining on the units of analysis, the following findings have been observed: In the descriptive analysis, focused on the most frequently appearing words in the corpus, the term 'UN' is identified. Again, there are political terms such as 'government' and 'policies', as well as references to levels of action such as 'global', 'international', or 'local', and mentions of the three dimensions of sustainability and sustainable development (UN, 1997; Artaraz, 2002; Strange and Bayley, 2008; Cavagnaro and Curiel, 2012; United Nations Environment Programme and International Trade Centre, 2017).

Furthermore, the table of highest frequencies includes specific words found in the wording of SDG 1 (poverty), SDG 8 (decent work and economic growth), and SDG 11 (sustainable cities and communities). In this regard, the CIS Barometer (2020) mentioned earlier also reveals that, regardless of the level of knowledge about the SDGs, respondents associate the concept of 'sustainable development' with four goals, including 32% of the sample prioritizing the eradication of poverty (SDG 1) and 23.4% emphasizing sustainable economic growth and decent employment (SDG 8). The media discourse, in this sense, would align with the public in these two social sensitivities: concern about poverty and dignified work.

"In total, across the ten selected generalist digital newspapers as the sample, this topic has been mentioned in 35,458 news articles during the analysis period, with a cumulative growth of 1,000.78%"
In the associative analysis, apart from the term 'UN' appearing again, there is a prevalence of content with a political tone ('government' and 'policies'), as well as the word 'compliance'. The predominance of this type of discourse, more politicized, aligns with one of the trends highlighted in the study conducted by CANVAS Estrategias Sostenibles and Graphext (2021), which analyzes the relevance of the media in placing sustainable development on the public agenda.

The study is further complemented by a classification of significant thematic clusters, which reveal four clearly differentiated groups: 'Global Issues', 'UN', 'Institutions', and 'SDG Objectives and Targets'. This classification demonstrates an equitable distribution of discourse on the content of the action plan itself, the institution driving it, the difficulties and challenges to be overcome, as well as the initiatives being implemented by different Spanish public administrations.

Finally, after examining the results of the associative, thematic, and discursive analyses, it can be inferred that while the official website of the SDGs (UN, 2015a) indicates that "everyone has to do their part: governments, private sector, civil society, and individuals like you" to achieve the goals, the Spanish digital press is primarily focusing on terms corresponding to the institutional aspect. The other two stakeholders - the private sector and civil society- are relegated to a secondary position.

Based on the conclusions of this study, new topics of interest for future research and analysis are proposed, in addition to those mentioned earlier, such as:

- Studying the comparison of the discourse on the SDGs and the 2030 Agenda among the different analyzed digital newspapers and determining whether the ideology of each newspaper influences the discourse.

- Examining the attributes of the political agenda surrounding this UN action plan and verifying how they are reflected in the content of the media agenda.

- Replicating the analysis conducted in this research in specialized media outlets to determine the similarities and differences in coverage and discourse compared to the mainstream press.

- Conducting an associative analysis considering the three dimensions of sustainability and sustainable development to determine the weight each of them carries in the media discourse.

6. References


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