Content curation in live news. The case of the 2023 election days in Spain

Jesús Cascón-Katchadourian
Universidad de Zaragoza ✉ ⓘ

Javier Guallar
Universitat de Barcelona ✉ ⓘ

Carlos Lopezosa
Universitat de Barcelona ✉ ⓘ

Juan-José Boté-Vericad
Universitat de Barcelona ✉ ⓘ

ENG **Abstract.** This is the first study that analyzes in detail the curation of content in live news in the digital press. Known as Live News, these journalistic documents usually carry out exhaustive and updated monitoring in almost real-time of the current news, usually of relevant events, as in this case, elections. As a research methodology, we have followed the CAS method, Curation Analysis System, which has been used mainly in studies on journalistic *newsletters*, both from newspapers and independent authors. The CAS method is based on the analysis of various elements of content curation grouped into two dimensions (content and curation), among others: quantity of curated content; origin of the content (own or external); sources of information according to morphology (web pages, social networks...) and organization (media, official, citizens...); or curation techniques (summarizing, commenting, quoting...). As for the material, the Live News documents of eight Spanish newspapers were analyzed: four legacy media (*El Mundo, El País, El Periódico* and *La Vanguardia*) and four digital natives (*El Confidencial, elDiario.es, El Español* and *Okdiario*). Two election days in Spain in 2023 have been analyzed: the municipal and regional elections on May 28 and the national elections on July 23. These documents stand out due to a significant amount of curated content, surpassing the usual volume, with a predominance of current and real-time information. The newspaper that performed best in this study is *El País*.
Keywords: Content curation, news curation, live news, newspapers, elections, digital media.

ES Curación de contenidos en Noticias En Vivo. El caso de las jornadas electorales en España de 2023

Resumen. Este es el primer estudio que analiza con detalle la curación de contenidos en Noticias En Vivo de la prensa digital. Con la denominación de Noticias En Vivo o En Directo, estos documentos periodísticos suelen realizar un seguimiento exhaustivo y actualizado casi en tiempo real de la actualidad informativa, habitualmente de eventos de relevancia, como en este caso, unas elecciones. Como metodología de investigación se ha seguido el método CAS*, Curation Analysis System*, empleado fundamentalmente hasta el momento en estudios sobre *newsletters* periodísticas, tanto de diarios como de autores independientes. El método CAS se basa en el análisis de diversos elementos de la curación de contenido agrupados en dos dimensiones (contenido y curación) como, entre otros: cantidad de contenidos curados; procedencia del contenido (propio o externo); fuentes de información según morfología (páginas web, redes sociales...) y organización (medios de comunicación, oficiales, ciudadanos...); o técnicas de curación (resumir, comentar, citar...). En cuanto al material, se analizan los documentos En Vivo de ocho diarios españoles: cuatro *legacy media* (*El Mundo, El País, El Periódico* y *La Vanguardia*) y cuatro nativos digitales (*El Confidencial, elDiario.es, El Español* y *Okdiario*). Se han considerado dos jornadas electorales de España de 2023: la de las elecciones municipales y autonómicas del 28 de mayo y la de las nacionales del 23 de julio. Los documentos analizados destacan por una gran cantidad de contenidos curados —superior a la habitual—, entre los cuales predominan los de rango temporal actual y en tiempo real. El periódico con mejor comportamiento en este estudio es *El País*.
Palabras clave: Curación de contenidos, curación de noticias, Noticias En Vivo, diarios, elecciones.

1. Introduction

This research falls within the scope of analyzing the characteristics and forms of content curation in digital journalism and media, focusing specifically on a very particular and distinctive type of journalistic product: the so-called live or real-time coverage.

These journalistic products are characterized by providing continuous updates throughout an event as it unfolds, thereby covering a time span directly tied to the event, which can last several hours or even days. For this study, the Live documents from two informationally significant events have been selected: the two election days held in Spain in 2023 (the municipal and regional elections on May 28 and the general elections on July 23). This selection is based on the assumption that the undeniable informational importance of both events may potentially enable or facilitate a varied and meaningful use of the content curation practices under investigation.

1.1. Background

The concept of content curation, as it is currently understood and applied, is generally traced back to Rohit Bhargava's 2009 *Manifesto for the Content Curator* (Bhargava, 2009). In the context of the overabundance of information on the internet, Bhargava emphasized the need for a professional activity focused on selecting relevant digital content and reworking and contextualizing it to suit specific audiences.

Thorson and Wells (2015, 2016) describe how various flows and processes of digital content curation occur in today's internet landscape, identifying the different agents involved, from private citizens to companies, institutions of all kinds, and notably, media outlets.

In the specific realm of journalism and media, the concept of content curation has been applied and adapted since its inception, sometimes using related terms such as journalistic curation or news curation. A considerable body of literature on the topic already exists (Good, 2023 [2010]; Bradshaw, 2013; Guerrini, 2013). Research in this field has generally followed two main areas or approaches: curation conducted within and by the media themselves (Cui and Liu, 2017; Silva-Rodríguez, 2021; Upmanyu, 2024) and the curation of news by media outlets on social networks (Bruns, 2018; Mayerhöffer *et al.*, 2024).

Focusing on the first approach, content curation in media can be broadly associated with the practice of journalism itself, as journalists typically search, verify, and cross-check sources to incorporate them into their reporting. In this sense, every journalist must possess curation skills. Beyond this general association, the idea of curation in digital journalism emphasizes and applies particularly to journalistic pieces, sections, or outlets that prominently use selected digital content from various sources (Bradshaw, 2013; Díaz Arias, 2015).

Currently, the importance of content curation for media outlets is highlighted as it fosters audience loyalty, helps reach new audiences through specialized products, and "helps restore some of the credibility and authority that media outlets have lost in recent years" (Lopezosa *et al.*, 2023b).

Among the journalistic formats most closely associated with content curation today are newsletters sent via email, which have experienced significant growth in recent years and are now part of almost every newspaper's information offerings (Newman, 2020). Reflecting this trend, recent years have seen abundant research on journalistic newsletters (Rojas-Torrijos and González-Alba, 2018; Seely and Spillman, 2021; Guallar *et al.*, 2021a, 2022; Andringa, 2022).

While there is relatively extensive research on content curation in journalistic newsletters, this study aims to explore the characteristics of curation in another journalistic format—Live News—for which there is little research from this perspective.

This type of news product allows audiences to access real-time updates on events and situations as they unfold (Martínez-Costa *et al.*, 2018). It can cover a wide range of topics, from breaking news about significant events like natural disasters or political crises to live coverage of sports events, presidential elections, press conferences, and more (Gómez-Rodríguez and Bajaña-Villalva, 2024). Live News is classified under the informational genre of digital journalistic genre, alongside news reports and data journalism (Calvo, López García, and Aguar Torres, 2024).

It is worth noting that this type of journalistic piece does not have a single name. Common terms include Live or Real-Time News, as well as other variants such as Minute-by-Minute, Live Blogs, or Direct Reports (Thorsen and Jackson, 2018).

Live News began to be published regularly in digital newspapers in the early 2010s. Its origins are often linked to coverage of an emergency landing on the Hudson River (USA) in 2009, though its precedent can be traced back a few years earlier to the evolving updates on the front pages of newspapers during the coverage of the 9/11 attacks in 2001 (Bruns and Highfield, 2012).

In Spain, literature points to the generalization of Live News on the front pages of major digital outlets around 2010, influenced at the time by the real-time nature of social media, particularly Twitter (Guallar, 2011). In its early days, Live News was heavily associated with sports coverage, especially Spanish football league matches, before expanding to other topics (Calvo, López García, and Aguar Torres, 2024). Media outlets, pressured by the rise of citizen journalism and news dissemination on social platforms, especially Twitter, began to offer similar informational proposals (Hu *et al.*, 2012). Meanwhile, Usher (2018), in analyzing the immediacy and constant updates characteristic of breaking news, pointed out that these formats have been particularly promoted to compete with live television news.

Thus, whether due to competition with live broadcasts or the constant updates of news on social media and television, Live News is now fully integrated into digital press offerings, where it is common to see live coverage of major news events.

2. Objectives

The main objective of this study is to analyze the characteristics of content curation in Live News with-

in digital press outlets. In line with this objective, four research questions are proposed:

> RQ1: What are the characteristics of content curation in Live News in the digital press during a major event such as an election day?
> RQ2: What ranking of newspapers can be established in the studied sample regarding the quality of curation in their Live News?
> RQ3: What similarities and differences exist between curation in Live News and curation in other journalistic products such as newsletters?
> RQ4: What similarities and differences exist in the content curation of Live News between pure digital and legacy newspapers?

3. Methodology

The unit of analysis in this study is each Live News article. As the material for analysis, eight Spanish digital newspapers among the most widely read have been selected, ensuring an equal representation in the sample between legacy media and pure digital outlets. The analyzed media include four legacy outlets —*El País*, *El Periódico*, *El Mundo*, and *La Vanguardia*— and four pure digital —*El Confidencial*, *elDiario.es*, *El Español*, and *Okdiario*.

As mentioned earlier, the selected Live News articles cover two election days in Spain: the municipal and regional elections on May 28, 2023, and the general elections on July 23, 2023. Data were collected live from the media websites during the two election days and the following days and were subsequently processed using the CAS method, as detailed below. To study curated content, each Live News article was examined for links—whether in the text, an image, or embedded content (Figure 1)—to materials independent of the Live document itself (Figure 2).

Figure 1. Fragment of a Live News article from *El Confidencial* with two curated pieces content.

Source: *El Confidencial* (https://www.elconfidencial.com/espana/2023-07-24/resultados-elecciones-generales-espana-directo_3706288/).

Figure 2. Example of curation in a fragment of a Live News article from *El Periódico*.

Source: own elaboration based on https://www.elperiodico.com/es/elecciones/generales/20230723/elecciones-generales-2023-espana-encuestas-sanchez-feijoo-diaz-abascal-ultima-hora-directo-90155826.

The research method employed follows a descriptive and evaluative approach based on a multiple case study and expert analysis techniques (Morales-Vargas *et al.*, 2020), specifically using the CAS method (Curation Analysis System). This method, detailed in Guallar *et al.* (2021b), incorporates vari-

ous previous contributions on content curation, such as those of Deshpande (2013) and Cui and Liu (2017). It has been used in other studies analyzing journalistic curation (Guallar *et al*., 2021a; Guallar *et al*., 2022; Cascón-Katchadourian *et al*., 2022; Lopezosa *et al*., 2023a), which will be discussed in the final section.

The CAS method is based on a system for analyzing content curation, organized into a series of parameters and indicators grouped under two main dimensions: Content and Curation. Table 1 provides an overview of the parameters and indicators for each dimension. Specific details about each parameter and indicator will be presented in the Results section.

Table 1. *Dimensions, parameters, and analysis indicators according to the CAS method.*

Dimension	Parameter	Indicator
A. Content	A1. Quantity of curated content	Quantity
	A2. Time range	Timeless information
		Retrospective information
		Recent information
		Current information
		Real-time information
	A3. Origin	Own content
		External content
	A4. Source by type of organization	Official sources
		Corporate sources
		Media
		Citizens
	A5. Source according to morphology	Websites
		Blogs
		Social networks
		Secondary sources
B. Curation	B1. Authorship	Authorship
	Sense-making technique	Summarizing
		Commenting
		Quoting
		Storyboarding
	B3. Link function	Unmodified
		Describe (Sourcing curation)
		Contextualizing curation
		Interpreting curation
		Cite source
		Quote the author
		Call to action

Source: Adapted from Guallar *et al*. (2021b)

This method employs a binary scoring system for indicators (0-1), evaluating the absence (0) or presence (1) of an indicator. Following the original CAS method proposal, this study assigns equal weight to each indicator (1 point), without prioritizing some indicators over others. For example, in the case of temporal ranges, a retrospective curated content is assigned the same value as a current one. However, the CAS method introduces an exception to the binary scoring for the parameter Quantity of Content, where the scoring is multiple (0-3) based on the following scale: poor (0), fair (1), good (2), very good (3).

It is important to note that the scoring system is based on the premise that "the existence of greater variety in the use of each element that constitutes curation—from source types to sense-making techniques—will result in higher curation quality and, by

extension, in higher journalism quality offered to the public" (Guallar *et al*., 2021b).

Additionally, it should be clarified that decimal scores may appear in the media's results because two Live News documents are analyzed for each outlet, corresponding to the two election days. For example, if a media scores 2.5 on a specific indicator, this could be because one document received a score of 2 and the other a score of 3.

The resulting database used in this study can be accessed at:

https://dataverse.csuc.cat/privateurl.xhtml?token=b8e9beb9-0210-454c-8b3f-7e9cc0122928

4. Results

The results obtained from applying the CAS method to the Live News articles from the two 2023 election days in Spain across the eight selected digital newspapers are presented below, in the following order: Content Dimension, Curation Dimension, and Overall Data for the analyzed media outlets.

4.1. Analysis of the Content Dimension

4.1.1. Quantity of Curated Content

The analyzed Live News articles that publish the most curated content include 60 or more curated items. The evaluation of this indicator was conducted using a specific scoring system for this study: 1-30 curated contents: 1 point; 31-60 curated contents: 2 points; 60 or more: 3 points.

The overall average number of curated contents is 2.25 points, corresponding to between 30 and 60 curated items per Live News article. The quantitative analysis reveals that the 16 analyzed Live News articles contain a total of 1,114 curated contents, with an average of 69.6 curated items per article.

The outlets curating the most content are *elDiario.es* and *El País*, both achieving 3 points. However, *elDiario.es* stands out significantly, curating a total of 396 contents—218 during the municipal and regional elections and 178 during the general elections—compared to *El País*, which curated 170 contents (75 and 95, respectively), less than half as many. Following them are two other outlets, *El Confidencial* and *El Periódico*, with 2.5 points each. *El Confidencial* curated 150 contents (43 for the municipal and regional elections and 107 for the general elections), while *El Periódico* curated 117 (83 and 34). Next are *El Mundo* (93 curated contents: 50 and 43) and *La Vanguardia* (62: 36 and 26), each scoring 2 points. Finally, *Okdiario* scored 1.5 points with 54 curated contents (31 and 23).

As observed, some media curated significantly more content during one election day compared to the other, while others maintained a more balanced proportion. Overall, with the exception of *El País* and *El Confidencial*, most outlets curated more content during the municipal and regional elections than during the general elections.

4.1.2. Time range

By media, *El País* performs brilliantly in this parameter, achieving the highest score, as all time ranges are present in its Live News articles. *El Confidencial* and *El Español* closely follow with 4.5 points, missing only retrospective content on one of the days. Also performing well, and above average, are *El Periódico* and *La Vanguardia*, with 4 and 3 points, respectively. Finally, *El Mundo* and *Okdiario* score 2 points, and *elDiario.es* scores 1.5. The Live News articles from these three outlets are heavily focused on current curated content but show limited presence of other temporal ranges.

The most common temporal ranges of all Live News articles is current content, i.e., news published on the same day (1 point out of 1), followed by real-time content (0.75). This is understandable given that this last temporal range is a key feature of a document self-described as "Live." Further behind but close to each other are recent and timeless content, both scoring 0.56, with retrospective content trailing at 0.44.

The overall quantitative analysis of all the outlets highlights and further clarifies the above data, emphasizing the prevalence of the current time range, which accounts for more than half of the curated content across all outlets (699 out of 1,114, or 63%), with notable contributions from *elDiario.es* on May 28. Timeless (16%) and real-time (13%) content follow with similar proportions, while recent (6%) and retrospective (2%) content occupy more minor roles.

4.1.3. Origin

This parameter evaluates whether the curated content was created by the outlet itself or sourced externally, with a maximum score of 2 points per article if both types of content are included. Of the eight analyzed outlets, six achieve the maximum score of 2, as their Live News articles include both internal and external content. This is not surprising given the extensive nature of these documents, which feature a large amount of curated content. Conversely, *El Mundo* scores 1.5 points, with one of the two days lacking external content, and *El Periódico*, scoring 1 point, does not curate any external content.

Quantitative data indicate that the vast majority of curated content—1,048 out of 1,114 items (94%)—is internally sourced, while only 94 items (6%) are external. This highlights the overwhelming importance of internally sourced content in media curation practices.

4.1.4. Sources by Type of Organization

Live News articles exhibit a medium-to-high performance in this category, with an overall average of 2.38 out of a maximum of 4 points, corresponding to the four main groups of sources considered: media, official, corporate, and citizen. Media sources are clearly dominant, appearing in all articles across all newspapers. There is also significant use of official sources (0.63 points), followed by corporate sources (0.44 points) and citizen sources (0.31 points). Quantitative data emphasize the predominant use of media as a source for curation, accounting for 94% of the total curated content (1,046 out of 1,114 items).

By media, *El Confidencial* performs best in this category with 3.5 out of 4 points, followed by *elDiario.es* with 3 points. The rest rank in the middle, with *El Periódico* at the bottom, curating content exclusively from media sources. Comparing types of outlets, there is a notable difference between legacy media and pure digital outlets. The latter occupy the

top four positions (scoring between 3.5 and 2.5 points), while the legacy media are in the bottom four positions (scoring between 2.5 and 1 points). Legacy outlets tend to prioritize more traditional information sources, such as media and official sources, whereas pure digital outlets supplement these with content from citizens and corporate sources.

4.1.5. Sources by Morphology

Among the four source types considered in this parameter (websites, social media, blogs, and secondary sources), with a maximum score of 4 points, blogs and secondary sources rarely appear in Live News articles. In contrast, website content is always present across all outlets (1 point), and social media content also plays an important role (0.81 points), with only two exceptions: *El Periódico*, which never uses social media sources, and *El Confidencial*, which does not use them on one of the two days analyzed.

As with other parameters, quantitative data confirm and emphasize these trends. Website content dominates with 93% (1,044 items) of all curated content. By outlet, scores range from 2.5 to 1 points, with *El Español* performing best in this aspect (2.5 out of 4 points) and *El Periódico* performing worst (1 point).

4.2. Analysis of the Curation Dimension

4.2.1. Authorship

This parameter evaluates the identification of authorship in article bylines. The Live News format achieves a medium-high average score of 0.69 out of 1. Five of the eight analyzed outlets demonstrate good practices in this regard by consistently indicating authorship: *El Confidencial, El Español, elDiario.es, El Mundo*, and *Okdiario*, all scoring a full 1 point. On the other hand, *La Vanguardia* indicates authorship on one day but not on another, while *El País* and *El Periódico* do not indicate authorship, leaving the document attributed to the corporate authorship of the outlet. However, it should be noted that all newspapers tend to mention the names of journalists involved in the preparation of the information collected in the Live News format or, where applicable, those who sign the original curated content.

Finally, a differentiated behavior can be observed between legacy media and pure digital outlets: the latter always indicate authorship, whereas three out of four legacy media either do so partially or not at all.

4.2.2. Techniques

This section analyzes the techniques used to add value to curation, referred to as sense making in the literature (Deshpande, 2013; Guallar *et al.*, 2022), as adapted to press news: Summarizing (a primarily informative technique); Commenting (opinion-based or interpretative); Quoting (based on textual citation of the original content); and Storyboarding (connecting pieces of different formats through narration). The maximum score for this category is 4 points.

In this area, Live News achieves strong scores, with an overall average of 2.81 points, indicating a medium-high performance. The most outstanding outlets are *El País* and *La Vanguardia*, both scoring high with 3.5 points, followed closely by *elDiario.es* and *El Mundo*, which are near 3 points. These four

outlets effectively use a variety of curation techniques in their Live News.

By technique, the two most commonly used are Summarizing, which is always present in all Live News (1 point), making it the most characteristic technique of curation in digital newspapers, and Quoting, which is also very frequent (0.94 points), used to highlight statements by politicians or other relevant figures. It is also noteworthy that the long format of the Live News enables the use of Storyboarding, a technique that achieves a medium score (0.5). In contrast, the more subjective technique of Commenting is used more sporadically (0.38).

4.2.3. Function of Links

An analysis of the informational role of each hyperlink within the Live News, distinguishing between the following options (primarily following Cui and Liu (2017) and Guallar *et al.* (2021b)): Unchanged; Describe (sourcing curation); Contextualize (contextualizing curation); Interpret (interpreting curation); Cite the content source; Cite the author; and Call to action. Each category is worth one point, with a maximum score of 7.

The most frequently used link functions are Describe and Call to action (0.88 points out of 1). While the former is typical in journalistic curation, the latter is particularly significant in Live News, with frequent link expressions such as "read the full story here" or "click here to learn more." These are followed by links used to Cite the source (0.81), Unchanged (0.75), Cite the author (0.63), and Contextualize (0.56), the latter being more common in the early hours of election day with explanations about voting blank, checking the census, past election results, etc. Finally, the least used function is Interpret (0.25), which is more personal or opinion-driven.

Quantitative data add nuance to these observations. Among the top two functions, there are more links for Describe than for Call to action (347 and 277, respectively). In the middle categories, similar values are observed for Cite the author (232), Unchanged (227), and Cite the content source (200). Links for Contextualize are less frequent (43), while Interpret is very rare (4).

The average score across the eight newspapers is 4.75 out of a maximum of 7, indicating a medium-high level of performance. Among individual newspapers, *El País* stands out with a high score of 6.5 points, demonstrating a wide variety of hyperlink uses. Close behind are *El Periódico* with 5.5 points and *El Confidencial* and *elDiario.es*, both with 5 points. Conversely, at the lower end, *Okdiario* predominantly uses links for Describe and Call to action, with minimal presence of other functions.

4.3. Newspaper Ranking Based on Curation in Their Live News

The final ranking for content curation quality in Live News (Table 2) is led by *El País* (24 points), *El Confidencial* (22 points), and *El Español* (21 points). With a theoretical maximum score of 30 points based on the CAS method, these three newspapers achieve a medium-high position. *El País* achieves the highest overall score because its Live News curate a significant amount of content, cover all temporal ranges of

curation, effectively manage diverse sense making techniques (summarizing, commenting, quoting, and storyboarding), and maintain a broad variety in hyperlink usage.

Table 2. *Newspaper Ranking.*

Newspaper	Score
El País	24,00
El Confidencial	22,00
El Español	21,00
La Vanguardia	19,50
ElDiario.es	19,50
El Periódico	17,50
El Mundo	17,00
Okdiario	16,00

Source: own elaboration.

For its part, *El Confidencial* performs well in its Live News by curating a substantial amount of content, excelling in source variety by type of organization, and achieving strong results in temporal ranges, link provenance, and link management. Similarly, *El Español* stands out for its source diversity by morphology, particularly in its use of websites, social media, and secondary sources. It also demonstrates strong performance in curating various temporal ranges and balancing the curation of both its own and external content.

Overall, the rest of the newspapers fall within a mid-range in terms of curation quality, and even the newspaper at the lowest position, *Okdiario* with 16 points, is above the theoretical average of 15 points. Looking at this lower section of the ranking, *El Mundo* and *Okdiario* (17 and 16 points) are notable for being among the outlets that curate the least amount of content in the Live News section and for using the fewest functions in their links, generally scoring in the mid to low range across most of the analysis parameters.

In summary, the final scores clearly indicate that, due to their inherent nature as extensive documents covering significant news events, the Live News sections from election days maintain a substantial level of curation. None of the analyzed newspapers exhibit low curation levels, with all of them achieving mid to mid-high ranges in terms of curation quality.

4.4. Comparison with Other Curation Studies

The results of this research are compared below with those of previous studies using the CAS method for analyzing curation in media. Table 3 presents the data for the top five positions in the respective curation quality rankings from prior studies on: newsletters from Spanish newspapers and independent outlets (May-June 2019, Guallar *et al.*, 2021a); COVID newsletters from newspapers in the U.S. and four European countries (March and November 2020, Guallar *et al.*, 2022); independent newsletters in Spain (May 2021, Cascón-Katchadourian *et al.*, 2022); and independent newsletters in Latin America (January-May 2022, Lopezosa *et al.*, 2023a).

Table 3. *Top Positions in Curation Quality Rankings from Various Studies.*

Newsletters from Spanish newspapers and independent outlets (May-June 2019)	COVID Newsletters from newspapers in the U.S. and four European countries (March 2020)	COVID Newsletters from newspapers in the U.S. and four European countries (November 2020)	Independent Newsletters from Spain (May 2021)	Independent Newsletters from Latin America (January-May 2022)	Live News from election coverage by Spanish newspapers (May-July 2023)
El Despertador (El Español) — 19,41	Coronavirus. Lo que debes saber hoy (elDiario.es) — 24,25	Coronavirus. Lo que debes saber hoy (elDiario.es) — 24,00	África Mundi — 21,25	Copano — 24,25	El País - 24
Mientras Dormías (El Español) — 19,41	Politico Nightly. Coronavirus special edition (Politico) — 21,00	Coronavirus now (The Boston Globe) — 18,75	Fleet Street — 20,00	Lunes — 23,25	El Confidencial - 22,5
La Brúixola (Nació Digital) — 16,53	Coronavirus: ce qu'il faut savoir aujourd'hui (Le Figaro) — 19,75	Coronavirus: ce qu'il faut savoir (Le Figaro) — 17,00	Causas y Azares — 19,00	Mariel Lozada — 21,50	El Español- 22
Mixx.io — 16,13	Coronavirus Updates (The Washington Post) — 19,00	Coronavirus: l'essentiel à savoir (Le Parisien) — 16,75	Comunicación que importa — 18,50	Meio — 21,00	La Vanguardia - 20,50
El Despertador (Nació Digital) — 15,62	Coronavirus Briefing (The New York Times) — 19,00	VoxCare (Vox) — 16,50	Bee Letter — 18,50	La Wikly - 20,00	elDiario.es - 19,5

It should be noted that in the table, the score corresponding to this study (right column) has been adjusted for the parameter of content quantity to standardize it with previous studies. Following the guidelines of the CAS method, which states that the score for this parameter should be adapted to the characteristics of each product analyzed (Guallar *et al.*, 2021b), and given the high amount of curated content observed in Live News, the standard range of 1-10 curated contents: 1 point, 11-20: 2 points, more than 20: 3 points, was adapted. In this case, the range was: 1-30 curated contents, one point; 31-60, 2 points; more than 60, 3 points. For comparison with previous research, this section presents the score using the standard range.

Thus, it is observed that the Live News with the best scores in our analysis—those of *El País, El Confidencial*, and *El Español*, with 24, 22.5, and 22 points respectively—are at a high level, with scores similar to the best newsletters in the rankings of previous studies: Copano, Lunes, and Mariel Lozada (independent outlets from Latin America), Africa Mundi (independent outlets from Spain), and Coronavirus from *elDiario.es* (COVID-focused newsletters from newspapers in five countries).

Some nuances are observed, such as the slight improvement in curation quality over the years (the lowest results correspond to data from 2019), or that, among newsletters, independent outlets show a high richness in curation, while media outlets exhibit more diversity. However, the score obtained in the Live News sections of this study provides significant data, as newsletters have so far been considered the most suitable product for curating quality content. This study shows that the best Live News from newspapers are at a comparable high level.

5. Discussion and conclusions

The main achievement of this work can be identified as being the first to analyze in detail the curation of content in Live News, demonstrating the significant level reached during election days.

In fact, studies on Live News typically focus on television and radio (Guribye and Nyre, 2016; Ilan, 2021) and on new live-streaming technologies (Liang, 2012), with very few studies referencing Live News tangentially, as they mostly address new journalistic formats (Thorsen and Jackson, 2018) and emerging forms of news production and presentation on the web (Ekström *et al.*, 2013).

The following summarizes the main conclusions of this study. Regarding RQ1, the curation of content in Live News, at least in the case of major news events like election days, is characterized by the following: The typical profile of curation in Live News during an election day is that of a signed journalistic piece (with the exception of some legacy media), featuring a large amount of curated content, far exceeding what is usual in other news. The content predominantly falls within the current time range (the last 24 hours), along with some real-time and timeless content (such as tags for politicians). It mainly curates content from media categories and websites, with some links to official sources and the social network X. It

frequently uses summarization and citation techniques, and its links predominantly feature description or sourcing curation and calls to action, with less frequent citation of authors and unchanged links.

On the other hand, and addressing RQ2, a ranking of curation quality in these journalistic pieces has been established, where a legacy newspaper, *El País*, and two pure digital outlets, *El Confidencial* and *El Español*, stand out in the top positions. However, all the analyzed media generally receive good scores. From the discussion presented earlier with previous studies on newsletters, the significant level of curation achieved in these journalistic products is evident.

Regarding RQ3, when comparing the curation in Live News with studies on curation in newsletters, which include both media and independent newsletters (Guallar *et al.*, 2021a; Guallar *et al.*, 2022; Cascón-Katchadourian *et al.*, 2022; Lopezosa *et al.*, 2023a), similarities and differences are observed. Among the similarities, the media with the best scores in Live News achieve a score similar to the best newsletters. Additionally, both types of documents predominantly curate content from media outlets and web formats, with little content from secondary sources.

The observed differences are more significant. First, in the Content dimension, the number of curated contents is much higher in Live News than in newsletters. There is also, logically, a greater presence of real-time content in Live News compared to newsletters, except in some specialized ones (e.g., coronavirus). Independent newsletters mainly curate external content, while media outlets focus on their own content, with nuances between legacy and pure digital outlets, which will be discussed later. Furthermore, newsletters feature more content from citizens and social networks.

In the Curation dimension, some differences in authorship are observed, which is always present in independent newsletters, and with different circumstances in media newsletters. In terms of techniques, there is a greater presence of Comment in independent newsletters and Summarize in the other products analyzed, with a significant use of Quote in Live News. Regarding the function of the links, Live News shows more use of contextualizing curation, call to action, and quoting the content source, while newsletters feature more sourcing curation and unchanged links. The greater use of calls to action in Live News compared to newsletters can be attributed to the constant updating nature of these documents, which often provide brief summaries of other news (many times from the same outlet). The call to action serves to encourage the reader to click on these other news pieces from the same media, thus generating more web traffic. In the rest of the functions, the patterns are similar to those of independent newsletters.

Overall, the Live News analyzed from election days stand out due to the higher volumes of curated content in each document, thereby achieving a significant richness in content curation. It is important to highlight that this places them at levels similar to, or

even surpassing, newsletters, which have until now been considered the archetypical product of curation. However, as observed, there are significant differences among newsletters from media outlets, specialized ones, and independents.

Finally, regarding RQ4, on the curation of Live News in legacy media and pure digital outlets, the evaluation using the CAS system does not show major differences, but some nuances can be observed. Thus, legacy media more frequently curate traditional information sources, such as media outlets and official sources, while pure digital outlets are more open to citizen and corporate sources. Additionally, as seen in previous studies (Guallar *et al.*, 2022), there is more curated content from external sources in pure digital outlets, although in both cases, their own curated content predominates. Furthermore, in digital natives, the personal authorship of the Live News is always present, whereas legacy media either do not include it or do so partially, possibly due to the greater weight of the corporate brand in traditional media compared to digital natives.

Although it is true that our work uses the CAS method, which has been tested and academically evaluated in several studies, primarily on newsletters, this represents an initial approach to confirm the viability of this analytical method for other journalistic products. As such, this work is not without limitations. These limitations include the difficulty in assigning different weights to the indicators of the same parameter, as all are given the same value (1 point), which does not fully capture the possible differences in value among them. Another limitation relates to the analysis of the optimal (or non-optimal) use of curation, as CAS identifies curation techniques but does not assess their effectiveness. Additionally, limitations are observed in the analysis of the topic, as the news analyzed in this research only correspond to election days, and it is unknown what the curation quality level of this journalistic piece would hold true for other events.

In this regard, and based on the limitations identified, future studies could seek ways to assess the quality of content to determine, for example, if the summary is well done, if the commentary adds value, etc. It would also be of interest to count and study the updates or segments of each Live News item to determine their number and the percentage of curation relative to the total updates. Furthermore, to address the thematic limitations, it would be interesting to analyze Live News from various types of events, as well as to expand the analysis to media outlets from other countries.

6. Funding and Support

7. Authors' contribution

Conceptualization	Ideas; formulation or evolution of overarching research goals and aims.	Authors 1, 2.
Data curation	Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later re-use.	Authors 1, 2, 3 y 4.
Formal analysis	Application of statistical, mathematical, computational, or other formal techniques to analyse or synthesize study data.	Authors 1 y 4.
Funding acquisition	Acquisition of the financial support for the project leading to this publication.	Author 2.
Investigation	Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection.	Authors 1, 2, 3 y 4.
Methodology	Development or design of methodology; creation of models.	Author 2.
Project administration	Management and coordination responsibility for the research activity planning and execution.	Authors 1 y 2.
Resources	Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools.	Author 2.
Software	Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code components.	Author 4.
Supervision	Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team.	Authors 1 y 2.
Validation	Verification, whether as a part of the activity or separate, of the overall replication/reproducibility of results/experiments and other research outputs.	Authors 1 y 2.

Visualization	Preparation, creation and/or presentation of the published work, specifically visualization/data presentation.	Authors 3 y 4.
Writing / original draft	Preparation, creation and/or presentation of the published work, specifically writing the initial draft (including substantive translation).	Author 1.
Writing / review & editing	Preparation, creation and/or presentation of the published work by those from the original research group, specifically critical review, commentary or revision —including pre- or post-publication stages.	Author 2.

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Jesús Cascón-Katchadourian. Ph.D. in Social Sciences from the University of Granada and Assistant Professor at the University of Zaragoza. Member of the research group *Soft Computing and Intelligent Information Systems. He participates in several national research projects at both the University of Granada and the University of Barcelona. His research interests include digital humanities, bibliometrics, and content curation. ORCID: https://orcid.org/0000-0002-3388-7862

Javier Guallar. Ph.D. in Communication from Universitat Pompeu Fabra and in Documentation from Universitat de Barcelona, he is a professor in the Faculty of Information and Audiovisual Media at the University of Barcelona and a member of the Center for Research in Information, Communication, and Culture (CRICC). His teaching and research areas focus on content curation, media documentation, social media management, and academic communication. Principal investigator of the funded research project CUVICOM. As an author, he has published three books and more than 50 articles indexed in WoS or Scopus. ORCID: https://orcid.org/0000-0002-8601-3990

Carlos Lopezosa. Ph.D. in Journalism from Universitat Pompeu Fabra, Associate Professor in the Department of Library and Information Science and Audiovisual Communication at the University of Barcelona, and member of the Center for Research in Information, Communication, and Culture (CRICC). His doctoral dissertation focused on the study of ranking factors for content-intensive websites, particularly online media, as well as the evaluation of SEO analysis tools. He specializes in search engine optimization (SEO) and monetization systems based on high-quality content strategies. He has also been an adjunct professor at Universitat Pompeu Fabra, teaching in the Faculty of Communication. ORCID: https://orcid.org/0000-0001-8619-2194

Juan José Boté-Vericad. Professor in the Faculty of Information and Audiovisual Media (FIMA) at the University of Barcelona (UB) and member of the Center for Research in Information, Communication, and Culture (CRICC). Ph.D. in Philosophy (Linguistics and Information Science) from Universität Hildesheim (2022) and Ph.D. in Information and Knowledge Society Documentation from the University of Barcelona (2013). He has participated in various national and international research projects. He has been an adjunct professor at several universities, including UAB, VIU, and UOC, and has conducted academic stays at prestigious institutions. ORCID: https://orcid.org/0000-0001-9815-6190