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INFORMATION ABOUT THE METAVERSE: AN APPROACH IN THE MAIN SPANISH GENERALIST NEWSPAPERS

Nadia Alonso López: Polytechnic University of Valencia. Spain.
naallo1@har.upv.es

Aurora Forteza Martínez: International University of La Rioja. Spain.
aurora.forteza@unir.net

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ABSTRACT

Introduction: This study analyzes media coverage of the metaverse in the Spanish press, highlighting how information regarding the term is handled. **Objective**: To analyze the news coverage of the metaverse between 2021 and 2024 and determine the predominant themes, media framing, and publication frequency. **Methodology**: A content analysis was conducted on 220 news articles from *El País*, *El Mundo*, and *ABC* published between October 2021 and October 2024. Articles were selected based on the inclusion of the word "metaverse" in the headline or sub-headline and were coded using an ad hoc category system. **Results**: Findings indicate a high frequency of publication during the first year, which progressively declined in the second and third years. Economic, technological, and sociocultural perspectives predominate in the coverage. **Discussion**: The media outlets studied focused their reporting on technological and business-related issues, favoring optimistic, market-oriented viewpoints while giving less attention to ethical and artistic aspects. **Conclusions**: News coverage of the metaverse was initially high but subsequently became fragmented; it centered on economic, technological, and commercial angles that suggest an optimistic, market-centric vision, while addressing ethical, educational, regulatory, and risk-related dimensions to a lesser extent.

Keywords: Metaverse; newspapers; journals; information; technology

1. INTRODUCTION

The metaverse is envisioned as a tool with the potential to drive media innovation and transform how media outlets interact with their audiences; furthermore, its integration into media could offer a way to overcome the challenges faced in reaching younger audiences, who have traditionally been more distant from such content (Fieiras-Ceide et al., 2024). As Hadi et al. (2023, p. 142) put it, the metaverse is "a network of digitally mediated spaces that immerse users in shared, real-time experiences." Although not a new phenomenon, the metaverse has emerged as a subject of news coverage; its media representation is crucial for analyzing how society interprets its scope, risks, and possibilities. Moreover, its public meaning is largely shaped by journalistic narratives that explain, simplify, or problematize it (Maddocks et al., 2024; Deng & Matthes, 2023). In this regard, media coverage helps define which dimensions are central and which are relegated to the background in the discursive construction of the "metaverse." In a context defined by technological expectations and institutional rhetoric aimed at fostering its adoption, journalistic narratives play a structuring role by amplifying forward-looking visions, highlighting uncertainties, and reinforcing specific corporate interests. Thus, reporting on the metaverse entails active participation in its symbolic construction, shaping public perceptions that can influence its social legitimacy and guide its future evolution (Sanchez-Acedo et al., 2023).

1.1. The Metaverse: Defining Characteristics

First, the key conceptual antecedents of the metaverse are presented in order to define the scope of the study. The metaverse is not structured as a single space, but rather as a multiplicity of environments or an interconnected network of virtual worlds (Crespo-Pereira et al., 2023). In this sense, it is defined as a network of digital spaces enabling an unlimited number of users to interact through shared, real-time experiences that encompass both social and commercial activities (Fieiras-Ceide et al., 2025).

Academic literature agrees that a virtual experience must meet three fundamental criteria to be considered a metaverse (Sidorenko-Bautista, 2025; Sidorenko-Bautista et al., 2024; Sidorenko-Bautista & Herranz-de-la-Casa, 2024):

1. Real-time interactivity with the environment and other users.

2. The presence of an avatar through which the user is represented or embodied.

3. The persistence of virtual worlds..

In this context, the metaverse is characterized by its multi-screen nature and heterogeneity, as it is accessible via various devices such as mobile phones, computers, and Virtual Reality headsets (Sidorenko-Bautista, 2025; Sidorenko-Bautista & Herranz-de-la-Casa, 2024). The underlying technologies include Virtual Reality (VR), Augmented Reality (AR), Mixed Reality (MR), and Spatial Computing.

Collectively, these technologies aim to provide immersive experiences that integrate sensory, interactive, and emotional dimensions, approximating the conditions of physical experience in the non-virtual environment (Sidorenko-Bautista & Herranz-de-la-Casa, 2024; Crespo-Pereira et al., 2023; Herranz-de-la-Casa et al., 2019; Mütterlein, 2018; Vázquez-Herrero & López-García, 2017).

A defining characteristic of the more advanced metaverse—often associated with Web 3.0—is decentralization; this aims to make the environment's operation independent of any central authority and to grant users greater control, countering the dominance of large corporations seen in Web 2.0 (Fieiras-Ceide et al., 2025; Richter & Richter, 2023). This decentralization, underpinned by blockchain technology, also enables users to manage their data and content securely and autonomously (Sixto-García & Andrade, 2025). However, limited interoperability between platforms remains a key obstacle, creating fragmented experiences that hinder the full realization of the metaverse in its most advanced form (Fieiras-Ceide et al., 2025).

From a psychosocial perspective, users represent themselves in these virtual environments through avatars, a practice that fosters the construction of distinct virtual identities (Bonales-Daimiel et al., 2025). For Generation Z, the metaverse serves as a space for self-expression and socialization. This virtual dimension can satisfy a need for escapism by allowing individuals to adopt identities different from those they project in non-virtual contexts. However, this freedom also entails risks related to the transgression of norms and values, as users may engage in behaviors they would avoid in offline environments due to fear of social or legal repercussions. In this context, it is crucial to establish robust ethical standards addressing issues such as privacy, consent, algorithmic bias, and digital rights (Fieiras-Ceide et al., 2025).

In the corporate and institutional spheres, the metaverse acts as a strategic asset for brand management and marketing. Public administrations—particularly in Asia and the Gulf region (e.g., South Korea, Indonesia, Dubai, Singapore)—have adopted the metaverse as an emerging communication channel, focusing on tourism narratives and the promotion of digital and cultural assets (Sidorenko-Bautista et al., 2024).

Consistent with social science literature on the metaverse (Crespo-Pereira et al., 2023) and findings by McKinsey (2022), initiatives developed to date have focused primarily on marketing activities, product and digital twin development, and the organization of events and conferences. Furthermore, it is estimated that over the next three to five years, the communication and entertainment sectors will allocate approximately 15% of their digital investment to the metaverse.

1.2. News Treatment and the Construction of Reality

This section examines the background of news coverage as a basis for analyzing media treatment. This treatment involves processes of selection, prioritization, and interpretation of facts, through which media professionals contribute to the construction of social reality from a perspective that aspires to objectivity and neutrality. However, journalistic objectivity is a subject of debate in the literature,

with some approaches considering it impossible, since the very selection of facts necessarily introduces a component of subjectivity, and others defending it as a required normative principle. In this sense, the way a topic is covered significantly influences the social perception that is constructed around it (Ufarte Ruiz & Murcia Verdú, 2025; Salas-Blanco & Estanyol-Casals, 2022). Based on this, the study is structured around a theoretical framework centered on Agenda Setting and Framing theories.

The influence of the media on public opinion is articulated through two main mechanisms: Agenda Setting and Framing. Agenda Setting theory argues that the media have the capacity to determine the relevance of issues on the public agenda (McCombs, 2004; McCombs & Shaw, 1972). This theory highlights that, by prioritizing certain issues or aspects to the detriment of others, the media influence how the public perceives social reality. Its impact manifests itself on two levels: on the one hand, the issues selected and highlighted by the media condition the public's perception of their importance; on the other hand, those issues that do not receive coverage tend not to be considered relevant. In this way, the media agenda tends to transfer to the public agenda, which reinforces the need for rigorous communication (Ardèvol-Abreu et al., 2020; Muñiz, 2020).

Framing theory, for its part, explains how reality is constructed and presented through interpretive frames that contribute to shaping the analysis of news events (Bartolomé Castro, 2009; Chong & Druckman, 2007). It focuses on the selection processes and emphasis through which the media highlight certain dimensions of a topic, thus promoting specific interpretations. Consequently, public perception is conditioned toward certain ways of understanding reality. In the political sphere, for example, framing can intensify polarization by offering specific ideological perspectives (Lindgren et al., 2022). Within the framework of this study, framing is operationalized as the selection and predominance of certain thematic approaches in news coverage. Based on this definition, the analytical categories allow us to identify the frames through which the metaverse is represented in the analyzed media. Thus, the system of categories employed constitutes the operational translation of these theoretical approaches into empirical analysis.

In the current media ecosystem, characterized by access to information through multiple channels beyond traditional media (print, radio, or television), these theories acquire renewed relevance, insofar as the dynamics of ideological affinity on social networks tend to overrepresent certain framing perspectives and amplify their influence in the digital environment (Aruguete, 2020).

Based on this theoretical framework, the empirical analysis aims to identify the main thematic approaches in media coverage of the metaverse, thus allowing for the operationalization of information selection and framing processes.

2. OBJECTIVES

The main objective of this research is to analyze the media coverage of the metaverse offered by the main Spanish general-interest newspapers, based on the news published in their online editions. The secondary objectives are:

- To define the frequency of news publication in each outlet.

- To compare the publications among the three media outlets analyzed.

- To determine the topics covered in the news reports about the metaverse.

In relation to the above objectives, the following research questions are formulated:

RQ1. What are the predominant topics in news reports about the metaverse, and how are they addressed by each of the media outlets studied?

RQ2. What thematic approaches predominate in the media's portrayal of the metaverse?

RQ3. How frequently do the main Spanish general-interest newspapers publish news related to the metaverse in their online editions?

3. METHODOLOGY

This research is based on a quantitative content analysis, the objective of which is to examine the media coverage of the metaverse in the main Spanish general-interest newspapers. Starting from the classic definition of content analysis as a scientific technique that articulates systematic observation, data production and refinement, and subsequent interpretation (Andréu, 2000), an analytical approach is adopted that examines the news articles based on ad hoc defined variables. These variables are grounded in previous research on the media coverage of social issues (Durán & Fernández-Beltrán, 2020) and on the analysis of specific terms (Salas-Blanco & Estanyol-Casals, 2022).

The corpus of analysis consists of the news articles published in the digital editions of El País, El Mundo, and ABC. The study period spans from October 28, 2021, coinciding with Facebook's official adoption of the name Meta as part of its strategic commitment to developing the metaverse—conceived as a new step in the evolution of communications where the physical and digital worlds are integrated through virtual and augmented reality technologies—to October 28, 2024, the third anniversary of this announcement. This timeframe aligns with methodological recommendations for establishing clear temporal boundaries in newspaper studies (Rojas Soriano, 2013). The newspapers selected were the three most widely read in Spain according to the second wave of the 2025 EGM survey. This criterion was adopted structurally, considering the established position of these media outlets within the Spanish news ecosystem, regardless of any circumstantial variations during the analyzed period. The news articles analyzed were those that included the term "metaverse" in their title or subtitle. The sample was retrieved from the digital archives of each of the analyzed media outlets and their internal search engines, using the search term "metaverse" within the defined time period, thus ensuring exhaustiveness and traceability. Specifically, for El País and ABC, results were obtained from https://elpais.com/noticias/metaverso/ and https://www.abc.es/noticias/metaverso/, respectively; while for El Mundo, an

advanced search was conducted using the keyword and a time limit within the newspaper's own website search engine. The identification and selection of the articles was carried out through an iterative review process, in which the results were examined progressively, without independently recording the initial volume of retrieved results. During this phase, the articles were refined as they were analyzed, systematically applying the established inclusion criteria: the presence of the term "metaverse" in the title or subtitle and the strictly informative nature of the article. The joint manual review of each piece was carried out by the two signatories to verify its suitability to the established research criteria, discarding duplicate or republished content, redundant pieces, and texts that were not strictly informative, such as opinion pieces and interpretive genres, as recommended by studies focused on the journalistic treatment of complex phenomena (Gutiérrez-San-Miguel et al., 2010; Humanes, 2012). This procedure was applied uniformly across the three media outlets analyzed, ensuring consistency in the corpus construction. Based on this criterion, the final sample consisted of 220 units of analysis. The unit of analysis is defined as the individual news item identified as an item in the digital archives of the analyzed newspapers. Coding was applied to the entire content of each news item—title, subtitle, lead, and body text—to determine its predominant thematic focus, operationalized through the defined system of categories. The operational definition of each category was applied uniformly throughout the entire coding process, in order to ensure consistency in the classification of the units of analysis.

The coding phase was constructed from a system of categories developed specifically for this purpose, as noted, to adapt it to the analysis of the term "metaverse." These categories can be seen in Table 1. This classification system allows for an operational approach to the processes of selection and information framing described in the theoretical framework.

Table 1
Categories of analysis.

Category	Description	Topics
Technology and development of the metaverse	News that explains, describes, or analyzes technical aspects, technological advances, or developments related to the metaverse.	VR/AR infrastructure, blockchain, hardware, platforms, interoperability, technological innovation
Economy, companies, and business models	News focused on the economic impact, investment, or monetization of the metaverse, and on industry and businesses.	Investments, mergers, digital economy, NFTs, employment, business models, projects.
Society, culture, and social uses	Reports addressing social, cultural, or leisure uses of the metaverse.	Education, leisure, entertainment, concerts, video games, digital identity, social interaction.
Politics, governance, and regulation	Content dealing with government or institutional	Regulation, data protection, digital

	intervention in relation to the metaverse.	rights, regulatory frameworks, international organizations.
Ethics, security, and risks	News that warns of, mentions, or explains risks, controversies, or ethical dilemmas.	Privacy, digital divide, cyberbullying, digital crime, psychological risks, disinformation.
Marketing, advertising, and brand strategies	Content related to campaigns, brand actions, or advertising strategies in the metaverse.	Digital branding, corporate events, digital fashion, immersive brand experiences.
Art, heritage, and digital creativity	Cultural and artistic coverage linked to the metaverse and digital creation.	NFT art, exhibitions, virtual museums, creator economy, digital heritage.
Education, science, and technology outreach	News describing educational or scientific uses of the metaverse.	Educational simulations, research, professional training, technology outreach.
Social perception, opinion, and public debate	Reports that gather public opinion, perception studies, or public debates about the metaverse.	Surveys, public opinion, reviews, expert debates, metaverse viability.

Source: Elaborated by the authors.

The coding process was carried out following a predefined protocol, which included a complete reading of each unit and the assignment of a single thematic category based on the predominant approach. In cases of ambiguity, priority was given to content with greater textual development, especially considering the headline, the lead, and the thematic density of the body of the article, thus ensuring consistency in the classification.

To calculate the frequency of news publication, data was collected over annual periods. The number of news items published by each outlet was counted between October 28, 2021, and October 28, 2022; between October 29, 2022, and October 28, 2023; and between October 29, 2023, and October 28, 2024.

The materials were coded by the two authors after an inter-coder reliability test was applied to a random subsample of 20% (n=44) of the total corpus. For this purpose, Krippendorff's alpha coefficient was used, a rigorous standard in content analysis due to its ability to adapt to various levels of measurement. The reliability assessment focused on the study's main variable—the thematic categorization of the news items—defined as a nominal-level variable with mutually exclusive categories, strictly applying the operational criteria defined in the coding protocol. The coefficient was calculated from the independent coding of a subsample by both coders, generating a data matrix with the assignments made. This matrix was then entered into the ReCal software (Freelon, 2013), where the agreements and discrepancies were compared, considering the observed agreement and the agreement expected by chance. A value

of α = 0.91 was obtained, guaranteeing the consistency and reliability of the results (Igartua-Perosanz, 2006).

Table 2 presents a summary of the information related to the inter-coder reliability test.

Table 2

Inter-coder reliability assessment

Element	Description
Variable analyzed	Thematic categorization of news
Level of measurement	Nominal
Number of coders	2
Subsample treatment	20 % (n = 44)
Procedure	Independent coding and assignment comparison
Coefficient	Krippendorff's alpha
Software	ReCal (Freelon, 2013)
Result	α = 0,91

Source: Elaborated by the authors.

4. RESULTS

The results are presented according to the study's main variable—the predominant thematic focus—which is analyzed using the defined analytical categories.

Thus, the analysis of the 81 news articles published by El País reveals a thematic distribution structured into nine categories, understood as a common and homogeneous analytical system that groups different thematic dimensions for comparative purposes. Across the entire period studied, Society, Culture, and Social Uses stands out with 20 news articles (24.7%), followed by Technology and Development of the Metaverse (16; 19.8%) and Economy, Companies, and Business Models (15; 18.5%). Next are Politics, Governance, and Regulation (9; 11.1%), Education, Science, and Technological Dissemination (7; 8.6%), Marketing, Advertising, and Brand Strategies (5; 6.2%), Art, Heritage, and Digital Creativity (5; 6.2%), and Social Perception, Opinion, and Public Debate (4; 4.9%). While Ethics, Security, and Risks has a negligible presence, with only 1 news item (1.2%).

From a temporal perspective, the results suggest a clear concentration in the first period analyzed. Between October 28, 2021, and October 28, 2022, 61 news items were recorded, predominantly in the categories of Economy, Companies, and Business Models (13), Society, Culture, and Social Uses (12), and Technology and Metaverse Development (11). The remaining categories have a lower incidence: Politics, Governance, and Regulation (6), Marketing, Advertising, and Brand Strategies (5), Art, Heritage, and Digital Creativity (5), Education, Science, and Technological Dissemination (4), and Social Perception, Opinion, and Public Debate (3). The single item corresponding to Ethics, Security, and Risks is also concentrated in this period.

In the period October 29, 2022, to October 28, 2023, 19 news items were recorded. Within this range, the most prevalent categories were Society, Culture, and Social Uses (7) and Technology and Metaverse Development (5), followed by Politics, Governance, and Regulation (3), Education, Science, and Technology Dissemination (2), Economics, Business, and Business Models (1), and Social Perception, Opinion, and Public Debate (1). No units were identified in Art, Marketing, or Ethics, Security, and Risk.

In the period from October 29, 2023, to October 28, 2024, only one article was recorded, corresponding to Education, Science, and Technological Dissemination.

The *El Mundo* corpus consists of 80 news items in which the word "metaverse" appears in the title or subtitle. Across the entire analyzed period, the most prevalent category is Economy, Companies, and Business Models, with 29 articles (36.3%), followed by Society, Culture, and Social Uses, with 21 (26.3%). The remaining categories have a lower incidence: Marketing, Advertising, and Brand Strategies (9; 11.3%), Technology and Metaverse Development (7; 8.8%), Ethics, Security, and Risks (6; 7.5%), Education, Science, and Technological Dissemination (4; 5%), Art, Heritage, and Digital Creativity (3; 3.8%), and Social Perception, Opinion, and Public Debate (1; 1.3%). Furthermore, it is observed that no news related to the metaverse has been published within the Politics, Governance, and Regulation category in this newspaper.

The distribution per period reveals differences in the intensity of coverage. During Period 1 (October 28, 2021–October 28, 2022), 49 news items were recorded, with a clear predominance of Economy, Companies, and Business Models, totaling 22 items, followed by Society, Culture, and Social Uses (9), Marketing, Advertising, and Brand Strategies (7), Technology and Metaverse Development (6), Ethics, Security, and Risks (3), Art, Heritage, and Digital Creativity (1), and Social Perception, Opinion, and Public Debate (1). This period accounts for the majority of the coverage intensity.

In Period 2 (October 29, 2022–October 28, 2023), 27 news items were recorded, predominantly in the categories of Society, Culture, and Social Uses (10) and Economy, Business, and Business Models (7), followed by Education, Science, and Technological Dissemination (3) and Ethics, Security, and Risks (3). The remaining categories had a lower incidence: Marketing, Advertising, and Brand Strategies (2), Technology and Metaverse Development (1), and Art, Heritage, and Digital Creativity (1). During this period, a reduction in the intensity of coverage was observed, although thematic diversity was maintained.

In Period 3 (October 29, 2023–October 28, 2024), coverage was minimal, with 4 news items, mainly concentrated in the categories of Society, Culture, and Social Uses (2), Education, Science, and Technological Dissemination (1), and Art, Heritage, and Digital Creativity (1).

The *ABC* newspaper recorded 59 news items, with a clear predominance of Economy, Business, and Business Models, with 15 articles (25.4%), followed by Marketing, Advertising, and Brand Strategies, with 13 (22%), and Technology and

Metaverse Development, with 9 (15.3%). The remaining categories showed less frequency: Art, Heritage, and Digital Creativity (6; 10.2%), Society, Culture, and Social Uses (6; 10.2%), Social Perception, Opinion, and Public Debate (4; 6.8%), and Education, Science, and Technological Dissemination (3; 5.1%); while Ethics, Security, and Risks showed a reduced presence with 3 articles (5.1%). As in *El Mundo* newspaper, no news items related to the Politics, Governance, and Regulation category linked to the metaverse were found in *ABC*.

From a temporal perspective, coverage is concentrated in the first period. Between October 28, 2021, and October 28, 2022, 27 news items were recorded, dominated by Economy, Companies, and Business Models (14), and Technology and Metaverse Development (7). The remaining categories had a lower incidence: Marketing, Advertising, and Brand Strategies (3), Education, Science, and Technological Dissemination (2), Society, Culture, and Social Uses (1), and Art, Heritage, and Digital Creativity (1). No news items were recorded in either the Social Perception or Ethics, Security, and Risks categories during the analyzed period.

During Period 2 (October 29, 2022–October 28, 2023), greater thematic diversification was observed, with 23 news items distributed among Marketing, Advertising, and Brand Strategies (6), Art, Heritage, and Digital Creativity (5), Technology and Metaverse Development (3), Social Perception, Opinion, and Public Debate (3), Society, Culture, and Social Uses (2), and Ethics, Security, and Risks (2). Economics, Business, and Business Models, and Education, Science, and Technological Dissemination each had a marginal presence (1 item each).

Finally, in Period 3 (October 29, 2023–October 28, 2024), 9 news items were recorded, predominantly in Marketing, Advertising, and Brand Strategies (4) and Society, Culture, and Social Uses (3). However, Social Perception, Opinion, and Public Debate, and Ethics, Security, and Risks each had a lower incidence, with one item each. No news items were identified in Economics, Business, and Business Models. Technology and development of the metaverse; Art, heritage, and Digital Creativity; and Education, Science, and Technological Dissemination.

Table 3 shows a summary of the thematic distribution of news in each newspaper.

Table 3

Thematic Breakdown of News Stories in Each Newspaper

Category	***El País*** **(n=81)**	***El Mundo*** **(n=80)**	***ABC*** **(n=59)**
Metaverse Technology and Development	16	7	9
Economy, Business, and Business Models	15	29	15
Society, Culture, and Social Uses	20	21	6
Politics, Governance, and Regulation	9	0	0
Ethics, Security, and Risks	1	6	3
Marketing, Advertising, and Branding Strategies	5	9	13
Art, Heritage, and Digital Creativity	5	3	6
Education, Science, and Technology	7	4	3

Dissemination			
Social Perception, Public Opinion, and Public Debate	4	1	4

Source: Elaborated by the authors.

The frequency of publication (see table 4) shows a general decrease in the number of news items that include the word "metaverse" in the title throughout the three periods analyzed, although this trend shows variations in its intensity depending on the medium.

Table 4

Frequency of Publication

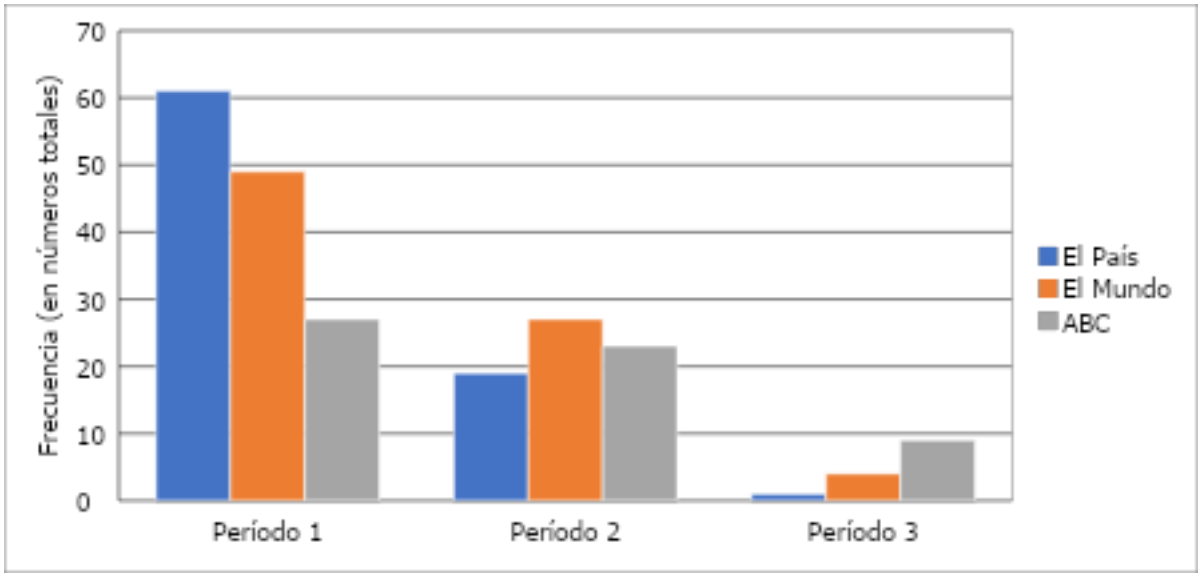
Newspaper	Number of news items		
	Period 1 Oct. 28, 2021–Oct. 28, 2022	Period 2 Oct. 29, 2022–Oct. 28, 2023	Period 3 Oct. 29, 2023–Oct. 28, 2024
El País	61	19	1
El Mundo	49	27	4
ABC	27	23	9

Source: Elaborated by the authors.

As Figure 1 shows, El País experienced the most significant decline, dropping from 61 news items in the first period to 1 in the third. El Mundo also saw a significant reduction in its coverage, falling from 49 to 4 news items. In contrast, ABC maintained a relatively stable trend, with less variation, although it also registered a decrease from 27 to 9 published news items.

Figure 1

Annual Comparison of Publication Frequency



Source: Elaborated by the authors.

5. CONCLUSIONS AND DISCUSSION

In relation to the overall objective of the study, which is to analyze the media coverage of the metaverse provided by the main Spanish general-interest newspapers based on news published in their online editions, the results offer insights into how its media representation has been shaped between October 2021 and October 2024, based on the predominant thematic approaches identified in the analyzed news items. Generally speaking, the analysis points to an intensification of coverage following the media's initial emergence of the phenomenon, followed by a gradual decline in media attention in subsequent years. This could be interpreted as an indication of a cyclical dynamic in media attention to emerging technologies. This media behavior, characterized by an initial peak in visibility followed by a rapid decline, aligns with patterns described in the literature on the coverage of technological innovations, suggesting that the metaverse could be part of an information ecosystem in which novelty acts as a relevant factor in modulating its visibility (King & Prasetyo, 2023; Woo et al., 2022).

Regarding the first research question, which focused on identifying the predominant themes in news about the metaverse and how they are addressed by each of the media outlets studied, the data suggest that the three newspapers analyzed structure their coverage around a set of relatively overlapping thematic categories, albeit with differing emphases. While *El País* tends to present an approach more closely linked to social, cultural, and technological uses, *El Mundo* shows greater attention to the economic and business dimension, and *ABC* is more oriented toward marketing, brand strategies, and the digital economy. This thematic distribution may reflect the editorial line of each media outlet and contribute to shaping diverse interpretations of the nature, usefulness, and potential impact of the metaverse. In this sense, and following Laurens-Arredondo's (2024) argument, the phenomenon tends to be represented as a hybrid space encompassing technological innovation, social experimentation, and economic expectations, with limited attention paid to its ethical, regulatory, or risk implications. These dimensions show a marginal presence in the three media outlets, without any significant addressing of issues such as the potential digital divide associated with these technologies (Alonso-López & Sidorenko-Bautista, 2025). This trend is supported by previous studies that suggest innovation can be considered a central element in media practice, especially in the use of technologies like the metaverse in processes aimed at optimizing content production (Cañedo et al., 2024; García-Avilés et al., 2023).

The second research question, which thematic approaches predominate in the media's construction of the metaverse, allows for an analysis of the media's role in shaping its public perception. The results suggest that this discursive construction is articulated through the predominant thematic approaches identified in each unit of analysis, which point to instrumental and prospective narratives focused on the promise of new business models, the transformation of cultural practices, and technological potential. In this sense, following Zuckerberg's announcement of the company's name change to Meta and within a context of intensified media coverage,

an increase in the volume of news published in the three newspapers analyzed is observed. This increase coincides with the strategic reorientation of large technology corporations and a surge in the global debate surrounding the metaverse. However, as the intensity of coverage decreases, the discourse tends to adopt a more cautious tone and focus on specific events, which could be interpreted as an indication that initial media attention was influenced by media agenda dynamics and an international context favorable to the dissemination of technological expectations. This evolution aligns with previous work describing a transition from initial frameworks of enthusiasm toward more moderate, fragmented, and dependent forms of coverage (Kim & Kim, 2023; Cacciatore et al., 2012).

Regarding the third research question about the frequency with which the main Spanish general-interest newspapers publish news related to the metaverse in their online editions, the results show a downward pattern in coverage, although with varying intensities depending on the publication. *El País* and *El Mundo* register a sharp decline after the first year, going from 61 and 49 news items, respectively, to negligible volumes in the third period. *ABC*, on the other hand, maintains a more balanced distribution, although it also registers a sustained reduction. This behavior suggests that media attention to the metaverse was concentrated primarily in its initial phase of greatest visibility, in a context marked by its emergence as a topic on the public agenda and by an increase in the circulation of discourses on virtual reality, immersive environments, and the digital economy. Subsequently, the consolidation of the phenomenon did not translate into an equivalent continuity in journalistic coverage, which could be related to the absence of tangible developments, a possible business slowdown surrounding this technology, or the emergence of other issues that may have displaced the metaverse from the media spotlight.

Taken together, the findings suggest the existence of three dynamics in the media's representation of the metaverse. First, a thematic fragmentation is observed, tending to privilege economic, social, and technological approaches, with more limited attention to ethical, regulatory, and risk perspectives. Second, a possible cycle of initial overexposure is identified, which, after a period of high expectations, gives way to more dispersed and discontinuous coverage. Third, a certain hybridization between commercial, technological, and cultural dimensions is evident, contributing to a comprehensive view of the phenomenon, although it seems to be oriented primarily toward business and market interests, rather than a balanced treatment of its social implications. These dynamics can be interpreted in light of agenda-setting theory, insofar as the media, by prioritizing certain topics, contribute to the public's perception of the economic or technological approaches to the metaverse as more relevant, relegating other dimensions. Complementarily, the presentation of these topics reflects framing processes. Frameworks that emphasize innovation, business opportunities, or cultural impact can steer public interpretation toward a more optimistic or market-centric view; while the limited presence of frameworks focused on responsibility, regulation, or risk could restrict their critical problematization of the metaverse, which aligns with research such as that of Deng and Matthes (2023). In this sense, the predominance of certain thematic approaches identified in the coding

can be understood as an indication of the frameworks through which the metaverse is represented in media coverage.

The study presents several limitations that should be considered in the interpretation of the results and which, at the same time, open up potentially relevant avenues for future research. The analysis is limited to three Spanish general-interest newspapers, selected because they are the three most widely read in Spain according to the 2025 EGM (General Media Study), although their editorial orientation may not reflect the diversity of the Spanish media ecosystem. In this regard, other media outlets, including national, regional, and digital-native ones, could offer interpretive frameworks for the metaverse, especially those with more technological or specialized profiles, or those aimed at younger audiences. Expanding the sample could allow for testing the stability of observed trends or identifying potential variations in discursive models depending on the type of media, its audience, or its thematic orientation. Furthermore, the research is based on a quantitative-qualitative content analysis focused on news items whose titles or subtitles explicitly include the word "metaverse." While this criterion helps ensure the corpus's relevance, it may also limit the detection of content related to immersive technologies, virtual environments, or specific applications that do not directly use this term. It should also be noted that the sample construction procedure, based on an iterative review process, means that a disaggregated record of the initial volume of retrieved results or the exact number of exclusions at each stage is not maintained. This circumstance limits the strict replicability of the selection process, although the inclusion and exclusion criteria were applied systematically and homogeneously in the three media analyzed.

Looking ahead to future research, it would be worthwhile to conduct studies based on surveys, interviews, or focus groups to examine the relationship between media discourse and public perception, as well as the interaction between news consumption and levels of digital literacy. Likewise, the multimodal analysis of news could be explored in greater depth, incorporating not only text but also images, videos, infographics, and interactive resources that accompany the information in digital environments. This would allow for an understanding of how narratives about the metaverse are visually constructed and which iconographic elements reinforce or nuance journalistic discourses.

Although this study provides a solid overview of coverage of the metaverse in the Spanish general-interest press, the complexity of the phenomenon calls for continued exploration of its evolution through interdisciplinary approaches that integrate media analysis, technological research, cultural studies, and digital literacy strategies.

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Authors' Contributions

Conceptualization: Alonso-López, Nadia, and Forteza-Martínez, Aurora. **Methodology**: Alonso-López, Nadia, and Forteza-Martínez, Aurora. **Software**: Alonso-López, Nadia, and Forteza-Martínez, Aurora. **Validation**: Alonso-López, Nadia, and Forteza-Martínez, Aurora. **Formal Analysis**: Alonso-López, Nadia, and Forteza-Martínez, Aurora. **Data Curation**: Alonso-López, Nadia, and Forteza-Martínez, Aurora. **Drafting-Preparation of the Original Draft**: Alonso-López, Nadia, and Forteza-Martínez, Aurora. **Drafting-Review and Editing**: Alonso-López, Nadia, and Forteza-Martínez, Aurora. **Visualization**: Alonso-López, Nadia, and Forteza-Martínez, Aurora. **Supervision**: Alonso-López, Nadia. **Project Management**: Alonso-López, Nadia**. All Authors Have Read and Approved the Published Version of the Manuscript**: Alonso-López, Nadia, and Forteza-Martínez, Aurora.

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AUTHORS

Nadia Alonso López
Polytechnic University of Valencia.
Tenured Professor at the Polytechnic University of Valencia. Doctorate in Communication, Master's Degree in Audiovisual Production Management, and Master's Degree in Marketing and Digital Communication. She is a member of the ArtiCom research group and a collaborator with the INNOCAST group. Her research focuses on emerging digital narratives, platforms, and social media. Member of ECREA, AE-IC, and SEP. Recipient of the Award for Teaching Excellence for Junior Faculty, presented by the Social Council of the Polytechnic University of Valencia.
naallo1@har.upv.es
H Index: 13
Orcid ID: https://orcid.org/0000-0002-5220-2232
Google Scholar: https://scholar.google.es/citations?hl=es&user=77kOgs8AAAAJ
ResearchGate: https://www.researchgate.net/profile/Nadia-Alonso-Lopez
Scopus: https://www.scopus.com/authid/detail.uri?authorId=57219878450
Academia.edu: https://upv-es.academia.edu/NadiaAlonsoL%C3%B3pez

Aurora Forteza Martínez
International University of La Rioja.
Doctorate in Communication with an international specialization from the University of Huelva. Faculty member in the School of Education and Humanities at the International University of La Rioja. Member of the PROCOMM research group. Member of the Technical Editorial Board of the journal Index.Comunicación. Her research focuses on social media, artificial intelligence, television series, transmedia narratives, and educommunication aimed at adolescents and young adults.
aurora.forteza@unir.net
H Index: 8
Orcid ID: https://orcid.org/0000-0001-9680-5927
Google Scholar: https://scholar.google.es/citations?hl=es&user=uKLLAEMAAAAJ
ResearchGate: https://www.researchgate.net/profile/Aurora-Forteza-Martinez
Scopus: https://www.scopus.com/authid/detail.uri?authorId=59465977000
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