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Visual hierarchy of mining in the digital press: A comparative analysis of journalistic photographs

Jerarquización visual de la minería en la prensa digital: un análisis comparativo de las fotografías periodísticas

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Abstract

This study aims to analyze the visual hierarchy of journalistic photographs about mining in the Peruvian digital press during the periods January-June 2024 and January-June 2025. To this end, the publications of the digital newspapers *La República* and *Perú 21* were comparatively examined to identify patterns of visual prominence and editorial differences in their news coverage. Methodologically, a quantitative approach at a descriptive-comparative level and a longitudinal, non-experimental design were employed. The technique used was content analysis, applied to a sample of 526 journalistic photographs. The main variable was visual hierarchy, operationalized according to image size in three categories: less than 1/4 (low visual hierarchy), more than 1/4 (medium visual hierarchy), and more than 1/2 (high visual hierarchy) of the visual space. The results show a sustained predominance of images with low hierarchical status in both media outlets and periods, indicating a limited visual centrality of the mining theme. Differences were also identified between media outlets, notably an increase in larger images in *La República* (in 2025) compared to a slight reduction in *Perú 21*. Overall, the findings reveal limited visual prominence of mining in the Peruvian digital press.

Keywords: photography, press, mining.

Resumen

El presente estudio tiene como objetivo analizar la jerarquización visual de las fotografías periodísticas sobre minería en la prensa digital peruana durante los periodos enero-junio de 2024 y enero-junio de 2025. Para ello se examinaron comparativamente las publicaciones de los diarios digitales *La República* y *Perú 21*, con el propósito de identificar patrones de prominencia visual y diferencias editoriales en el tratamiento informativo. Metodológicamente, se empleó un enfoque cuantitativo de nivel descriptivo comparativo y diseño no experimental longitudinal. La técnica utilizada fue el análisis de contenido, aplicado a una muestra de 526 fotografías de carácter periodístico, la variable principal fue la jerarquía visual operacionalizada según el tamaño de la imagen en tres categorías: menos de 1/4 (jerarquía visual baja), más de 1/4 (jerarquía visual media) y más de 1/2 (jerarquía visual

alta) del espacio visual. Los resultados evidencian una predominancia sostenida de imágenes de baja jerarquización en ambos medios y periodos, lo que indica una limitada centralidad visual del tema minero. Asimismo, se identificaron diferencias entre medios, destacando un incremento de imágenes de mayor tamaño en *La República* (en 2025) frente a una ligera reducción en *Perú 21*, en términos generales, los hallazgos revelan una limitada prominencia visual de la minería en la prensa digital peruana.

Palabras clave: fotografía, prensa, minería.

Introduction

Within today's media ecosystem, marked by digital convergence and intensifying competition for audience attention, the visual dimension has assumed a central role in shaping the public agenda. Digital journalism no longer conveys information through text alone; it also establishes symbolic hierarchies through graphic elements such as image size, placement, and salience. In this context, the press photograph operates as a strategic device for conferring visibility. As López and Humanes (2016) have argued, images are fundamental to the construction of journalistic meaning, serving not merely as illustrations but as complementary components that, through both denotative and connotative layers, guide public interpretation.

Images, accordingly, are no longer peripheral additions but rather integral to dynamics of circulation within interconnected media ecologies. Flusser (1990) observed that photographs have become ubiquitous in everyday life, underscoring their centrality to contemporary communication. Within this framework, the networked life of photographic images implies that they are not only produced and consumed but also circulated, shared, and reinterpreted across multiple platforms, acquiring new meanings according to their visibility and context of diffusion (Martínez-Luna, 2022). Moreover, as an expressive resource, photography expands its communicative reach in digital environments, where social media function as spaces that amplify circulation and extend visibility (Varela-Rodríguez & Vicente-Mariño, 2022). The press, now operating across both traditional and digital formats, operates within this dynamic, deploying visual strategies designed to foreground content in information-saturated settings.

From the perspective of agenda-setting theory, the media do not determine what people should think, but they do exert considerable influence over what people think about (McCombs & Shaw, 1972). As the theory evolved into its second level, incorporating the analysis of attributes and frames, it became clear that the mere presence of a topic on the media agenda matters less than how that topic is presented (McCombs, 2004). In the digital environment, visual prominence, expressed through the hierarchical placement of journalistic photographs, emerges as a key attribute shaping perceptions of issue importance. Media visibility is not neutral, then, but rather the outcome of editorial decisions that assign greater or lesser relevance to specific elements within the informational space.

Complementing this view, framing theory posits that media select certain aspects of reality and make them more salient within the communicative discourse. Entman (2006) notes that interpretive frames are embedded not only in news texts but also in journalists' cognitive schemas, audience predispositions, and the cultural contexts in which communication occurs. Although the bulk of framing research has concentrated on textual discourse (Yucra-Mamani et al., 2024), the visual dimension performs an equally structuring role in the construction of meaning. Images do not merely document events; they guide the reading of occurrences, heighten the emotional weight of information, and contribute to the formation of social representations (Rodriguez & Dimitrova, 2011). Within this framework, the size of a photograph and its placement on the screen function as editorial decisions that operate as implicit interpretive frames.

In the Peruvian case, media coverage of mining activity represents a recurring topic on the news agenda (Ramos & Requejo, 2006). Mining occupies a strategic position within the country's economic and political structure, owing to its substantial contribution to exports, investment, and economic growth (Ministerio de Energía y Minas [MINEM], 2026). According to the MINEM's 2024 Mining Yearbook, Peru ranks among the world's leading mineral producers:

> Peru maintained its position as the world's second-largest producer of zinc, silver, and molybdenum, third in copper production, fourth in tin and lead, tenth in gold, and twelfth in iron ore. Within Latin America, it stood out as the leading producer of zinc, lead, tin, and molybdenum, and ranked second in gold, copper, silver, molybdenum, and iron production (MINEM, 2024).

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These figures reflect the mining sector's strategic importance to the national economy. At the same time, mining activity remains a persistent source of socio-environmental conflicts, territorial disputes, and regulatory debates.

Over recent decades, the sector has drawn sustained attention from diverse social actors due to the environmental and social impacts associated with its operations, particularly regarding intensive water use and effects on local territories (Robles, 2022). Consequently, mining constitutes a complex issue that weaves together economic, environmental, and political dimensions, a complexity that is mirrored in its media treatment.

Despite the sector's significance on the national news agenda, media coverage of mining has been studied predominantly through approaches centered on textual discourse or thematic content analysis. By contrast, studies examining the visual dimension of such coverage, particularly within the digital press, remain scarce. This gap is noteworthy given that the design of digital platforms reconfigures informational hierarchies through visual interface architecture and the arrangement of graphic elements.

On digital news platforms, visual hierarchy is constructed through the proportion of screen space occupied by graphic elements and their relationship to other components of the informational design. These decisions are not merely aesthetic but respond to editorial logics and the attention-economy dynamics characteristic of digital environments (Chadwick, 2017). Consequently, analyzing the relative size of photographs enables researchers to identify levels of symbolic prominence accorded to particular events, and, in this case, to mining-related information.

Against this backdrop, the present study aims to analyze the visual hierarchy of journalistic photographs covering mining in Peru's digital press during the January–June 2024 and January–June 2025 periods. To this end, publications from the nationally circulating digital dailies *La República* and *Perú 21* were examined comparatively, with the goal of identifying patterns of visual prominence and potential editorial differences in the treatment of mining news. In doing so, the study provides empirical evidence on the visual construction of the mining agenda in Peru's digital environment and contributes to communication research by incorporating graphic hierarchy as a meaningful indicator of media visibility.

Methodology

This research adopts a quantitative approach with a descriptive-comparative scope, oriented toward identifying levels of visual hierarchy in journalistic photographs about mining in the Peruvian digital press. The technique employed was visual content analysis, a method widely used in communication research to examine the structure and arrangement of visual elements in media products (Rose, 2016).

The design is non-experimental and comparative-longitudinal, as it analyzes visual hierarchy across two distinct time periods: January to June 2024 and January to June 2025. This design enables comparison of possible variations in the visual treatment of mining between the two moments.

The unit of analysis consisted of journalistic photographs associated with mining-related news published on the digital editions of *La República* and *Perú 21* during the study periods. Each photograph was analyzed as an autonomous visual element within the digital news structure, regardless of whether it formed part of compositions or sequences. The analysis focused exclusively on its relative size within the journalistic page, an indicator used to determine its level of visual hierarchy.

The sample comprised a total of 526 visual units published across the aforementioned digital outlets: 173 corresponding to the 2024 period and 353 to 2025. In terms of distribution by outlet, *La República* accounted for 87 photographs in 2024 and 189 in 2025, for a total of 276; *Perú 21* presented 86 photographs in 2024 and 164 in 2025, for a total of 250, as shown in Table 1. Only photographic visual units were included; other visual resources were excluded.

Table 1

Distribution of mining-related photographs by outlet and period (January–June 2024 and 2025)

Digital outlet	2024 (n)	2025 (n)	Total (n)
La República	87	189	276
Perú 21	86	164	250
Total	**173**	**353**	**526**

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Source. Authors' own elaboration

To classify and construct the dataset, a systematic manual coding process was implemented by the researchers, who are familiar with the field of study. Analytical criteria were applied to identify and categorize each unit with precision, ensuring the quality and relevance of the information collected. This procedure facilitated the identification of nuances and contexts, guaranteeing that the dataset faithfully represents the complexity of the phenomenon under analysis (Torres-Cruz et al., 2025).

Finally, visual hierarchy was operationalized based on the proportion of space occupied by the photograph relative to the initially visible area of the digital article. Three categories were established: less than 1/4 (low visual hierarchy), more than 1/4 (medium visual hierarchy), and more than 1/2 (high visual hierarchy). This classification allowed for the identification of the level of prominence assigned to mining events within the digital visual environment.

Results

This section presents the findings derived from the content analysis applied to photographs published in the digital outlets *La República* and *Perú 21* during the January–June 2024 and 2025 periods. The results are organized according to the variable of visual hierarchy, operationalized through image size.

Table 2

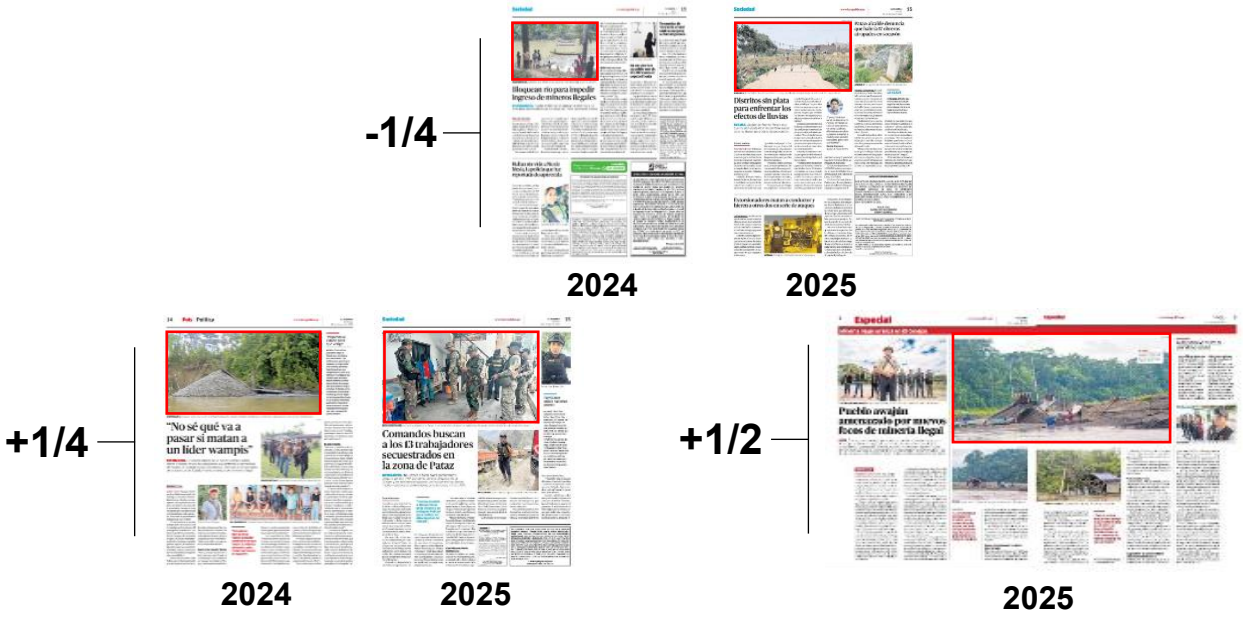
Visual hierarchy by image size and period for the digital outlet La República

Image size	2024 (n)	2024 (%)	2025 (n)	2025 (%)
Less than 1/4	73	83.91	145	76.72
More than 1/4	14	16.09	28	14.81
More than 1/2	0	0.00	16	8.47
Total	**87**	**100**	**189**	**100**

Source. Authors' own elaboration

Figure 1

Representation of visual hierarchy of photographs by size in La República during 2024 and 2025



Source. Authors' own elaboration

As shown in Table 2, in *La República* during 2024, smaller images (less than 1/4) predominated, accounting for 83.91% (n=73), followed by medium-sized images (more than 1/4) at 16.09% (n=14). No high-hierarchy images (more than 1/2) were recorded in this period. In 2025, smaller images continued to constitute the majority at 76.72% (n=145), though a slight decrease relative to the previous period was observed. Medium-sized images reached 14.81% (n=28), while large photographs (more than 1/2) accounted for 8.47% (n=16), a category entirely absent in 2024. By way of illustration, Figure 1 corroborates these results, showing that isolated cases of photographs with greater visual space appeared in 2025.

From an agenda-setting perspective, the absence of large images in 2024 suggests a low visual prioritization of mining on this outlet's media agenda. The incorporation of larger images in 2025 would indicate an increase in the visual relevance assigned to the topic, given that size functions as a resource for prominence in the construction of the journalistic agenda.

Table 3

Visual hierarchy by image size and period for the digital outlet Perú 21

Image size	2024 (n)	2024 (%)	2025 (n)	2025 (%)
Less than 1/4	65	75.58	134	81.71
More than 1/4	15	17.44	22	13.41
More than 1/2	6	6.98	8	4.88
Total	**86**	**100**	**164**	**100**

Source. Authors' own elaboration

Figure 2

Representation of visual hierarchy of photographs by size in Perú 21 during 2024 and 2025



Source. Authors' own elaboration

The results in Table 3 indicate that in *Perú 21* during 2024, smaller images (less than 1/4) constituted 75.58% (n=65), followed by medium-sized images (more than 1/4) at 17.44% (n=15) and larger images (more than 1/2) at 6.98% (n=6). In 2025, smaller images increased to 81.71% (n=134), while medium-sized images decreased to 13.41% (n=22) and larger images also declined, reaching 4.88% (n=8). Figure 2 reinforces these findings.

The sustained presence of high-hierarchy images across both periods suggests a consistent though limited inclusion of mining at higher visibility levels. However, the reduction observed in 2025 could be interpreted as a relative decrease in its visual prominence.

Table 4

Comparison of visual hierarchy by outlet and period

Digital outlet	Period	Less than 1/4	More than 1/4	More than 1/2
La República	2024	73	14	0
	2025	145	28	16
Perú 21	2024	65	15	6
	2025	134	22	8

Source. Authors' own elaboration

Table 4 presents the comparative distribution of image sizes by outlet and period. In both outlets and across both periods, smaller images (less than 1/4) predominated. Nevertheless, differences emerged in the presence of high-hierarchy images (more than 1/2). *La República* recorded no large images in 2024, whereas in 2025 it incorporated 16 units in this category. *Perú 21*, by contrast, featured high-hierarchy images in both periods, although with a slight proportional decrease in 2025 (from 6 to 8 units).

The differences between outlets point to distinct editorial strategies in constructing visual relevance. From an agenda-setting standpoint, this suggests variations in thematic prioritization across media. From a framing perspective, the differential use of image size may influence how audiences perceive the importance of the issue, shaping distinct levels of visibility and narrative emphasis.

Table 5

Overall distribution of mining-related photographs by period

Period	Image size	n	%
2024	Less than 1/4	138	79.77
	More than 1/4	29	16.76
	More than 1/2	6	3.47
2025	Less than 1/4	279	79.04
	More than 1/4	50	14.16
	More than 1/2	24	6.80

Source. Authors' own elaboration

At the aggregate level (Table 5), in 2024, 79.77% (n=138) of images were smaller than 1/4, 16.76% (n=29) were medium-sized, and 3.47% (n=6) were larger than 1/2. In 2025, the distribution remained similar, with 79.04% (n=279) small images, 14.16% (n=50) medium-sized, and an increase in larger images to 6.80% (n=24).

The stability in the predominance of smaller images suggests a consistent pattern of visual subordination for mining content across both periods. Nonetheless, the increase in larger images in 2025 might be interpreted as a modest repositioning of the issue on the visual agenda.

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Table 6
Proportion of high-hierarchy images by outlet and period

Digital outlet	2024 (%)	2025 (%)	Variation (pp)
La República	0.00	8.47	+8.47
Perú 21	6.98	4.88	-2.10

Source. Authors' own elaboration

As shown in Table 6, the proportion of images with high visual hierarchy (greater than 1/2) displayed divergent behaviors across outlets. *La República* moved from 0.00% in 2024 to 8.47% in 2025. In contrast, *Perú 21* experienced a decrease from 6.98% to 4.88% over the same periods.

These results reinforce the idea of a differentiated evolution in the visual hierarchy of mining coverage. The increase in *La República* suggests greater incorporation of the issue at high-visibility levels, whereas the decline in *Perú 21* indicates a reduction in its visual emphasis. In terms of agenda construction, this shows that media relevance varies not only over time but also according to each outlet's editorial policies.

Discussion

The study's findings reveal a sustained predominance of low-visual-hierarchy images in mining coverage across the digital outlets analyzed, indicating limited centrality of the issue on the visual media agenda. This result aligns with the tenets of agenda-setting theory, which holds that media influence not only which topics are deemed relevant but also the degree of importance assigned to them through prominence-enhancing resources such as size, placement, and frequency (McCombs & Shaw, 1972). In this vein, research has demonstrated that visual elements do not merely accompany information but actively participate in constructing the media agenda, shaping public perceptions of relevance (Coleman & Banning, 2006). Thus, the limited presence of large journalistic photographs suggests a weak activation of visual salience mechanisms.

The findings also acquire significance from a framing perspective. The prevailing use of smaller images may contribute to a less prominent representation of mining, diminishing its capacity to generate impact on public perception. As Entman (2006) observed, media not only select topics but also define how they should be interpreted, emphasizing certain aspects while downplaying others. In this case, image size operates as a mechanism of emphasis or attenuation within the visual frame, conditioning the level of visibility assigned to the issue.

Furthermore, the findings contrast with the visual strategies deployed by the mining sector itself. Companies employ audiovisual resources to project a positive image, highlighting infrastructure, technology, and human capital while incorporating values such as sustainability and innovation into their narratives (Godoy-Martín, 2024). The low visual hierarchy observed in media outlets thus points to a dissonance between corporate communication and media agenda-setting, suggesting that the press does not necessarily reproduce or amplify these institutional discourses.

The limited visual prominence of mining also stands in contrast to its structural importance within the country, particularly since prior studies have documented a high correlation between mining investment and social conflict, alongside a weak relationship with human development (Arizaca-Avalos, 2017). In this context, the constrained visual salience suggests a disconnect between the social significance of the issue and its media treatment. Nevertheless, from a historical perspective, mining has been configured as a specialized knowledge domain tied to scientific and technical communities, which may explain its media treatment as a technical rather than a broadly public-interest topic (Valencia-Martínez et al., 2022). Along these lines, the low visual prominence may reflect its positioning as relevant but not necessarily high-priority content for mass audiences, possibly responding to event-driven rather than sustained coverage (Yucra, 2016).

Conclusions

The visual hierarchy of mining-related photographs is predominantly low across the outlets analyzed. Both in 2024 and 2025, smaller images prevailed, revealing a consistent pattern of limited visual prominence. This trend confirms that, despite its relevance and presence in news coverage, mining is not visually prioritized as a central issue within the digital content structure.

Clear editorial differences in visual hierarchy exist between the analyzed outlets. While *La República* increased its share of high-hierarchy images in 2025, *Perú 21* reduced its proportion over the same period. This pattern indicates that the visual relevance of the issue is not homogeneous but rather responds to distinct editorial decisions in the construction of the media agenda.

An initial shift in visual prominence patterns was observed between periods, though without altering the dominant tendency. Although 2025 registered an overall increase in larger images, this change did not modify the predominance of low visual hierarchy. Thus, patterns of visual prominence remained relatively stable, with isolated variations suggesting only a limited reconfiguration in the visibility of mining in Peru's digital press.

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