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VISUAL PERCEPTION IN SOCIAL NETWORKS OF REAL AND AI-SYNTHESIZED PHOTOGRAPHS

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KEYWORDS

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Technology

ABSTRACT

This descriptive and cross-sectional study examines the visual perception of real and AI-generated photographs on Facebook, focusing on the highland context of Puno, Peru. Data were collected from 215 participants through a survey administered via Google Forms, and images were evaluated by 24 experts using a technical sheet from January to February 2024. The findings indicate positive public reactions, a preference for authentic images, and an ability to identify distortions in those generated by AI. Experts identified favourable technical aspects of the synthesised images. These findings indicate a complex interplay between photographic authenticity and AI technology in visual perception.

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1. Introduction

The contemporary world is characterised by a high degree of interconnectedness. Social networks, with their remarkable ability to connect people across geographic, temporal and cultural boundaries, have transformed the development of society (Sanz et al., 2018). In recent times, we have witnessed their growing use in diverse social environments (Cabero-Almenara & A., 2018). (Cabero-Almenara & Arancibia, 2019) It is evident that users are accessing network-connected devices at increasingly younger ages (Pérez, 2018), thus shaping their relationship with technology from the earliest stages of life development. The presence of platforms such as Facebook, Instagram, Linkedin or WhatsApp draws a new profile in the way of understanding social practice in the digital environment (Marín-Díaz & Cabero-Almenara, 2019). According to data from Statista (2023), Facebook leads the list in terms of the number of users worldwide, with 2,960 million. This figure is also replicated in Peru, where this social network is positioned as the predominant platform with 84% penetration among the population. According to the Lima Retail Agency (2024), Peruvian users account for approximately 29 million accounts, making it not only the social network with the most users, but also one that is experiencing a surge in popularity. These networks have played a significant role in the evolution of social interactions (Flores et al., 2017) and as a large-scale communication tool (Claro et al., 2023). The instantaneous dissemination of messages to large audiences (Claro et al., 2023) allows for the effective transmission of ideas, news and a variety of content.

In the digital domain, the significance of visual content has grown considerably (Brigas et al., 2023). The prevalence and dissemination of photographic images on the web is now a pervasive phenomenon (Martínez-Luna, 2022). The pervasiveness of photographs in various forms, including albums, magazines, books, shop windows, posters, packaging, wrapping paper, boxes, and postcards (Flusser, 1990), suggests that they play a pivotal role in cultural perception, representation, and communication. This is particularly evident in the context of an increasingly digitalized world, where the advent of digital technology has led to significant shifts in the way society creates, consumes, and shares visual representations.

Given that the internet is the current space where multiple cultural dynamics are generated and observed (Azamar, 2021), the role of social networks in the dissemination of narratives linked to cultural traditions is highlighted (Aguirre, 2023). Thus, through these platforms, people, not necessarily photographers, share cultural expressions that are unique and specific to a given context. In this context, as Cunha (2022) notes, professional photographers no longer have exclusive access to the photographic language, as it is now accessible to anyone. This expansion has accelerated the democratisation of photography (Flusser, 1990; Martinez-Luna, 2022). The phenomenon of the mass circulation of networked images recognises them as simultaneously singular and multiple. (Martínez-Luna, 2022) On the one hand, each image can be unique. On the other hand, it implies a multiplicity of connections and perceptions. This duality creates a singular dynamic that fuses individuality and diversity in the visual landscape.

Photography has the capacity to naturalise society (Alvarado & Jiménez-Marín, 2022). Since its invention, it has been linked to memory and the longing to capture time (Pérez & Prada, 2022). In the present era, it not only serves as a tool for remembering, but has also evolved as a means of artistic expression, visual communication and social documentation, thereby marking its dynamic and multifaceted role in contemporary culture. The transition from the nineteenth century, when photography was not yet widely used, to its end, with a massive proliferation of cameras, was further accelerated by the additional catalysts of the digital age in 1986 and the emergence of mobile photography in 2000, which boosted its popularity (Almeida & Fernandes, 2016, cited by Cunha, 2022). Today, photography occupies a central place of continuous growth, seeking higher quality, more megapixels, incorporation of new effects and new innovative possibilities. (Mykytka, 2022). The embrace of modern technology provides opportunities for the advancement of photography.

The placement of a photograph in the public sphere of social networks has the consequence of establishing digital image and electronic mobility, as well as networked interconnectivity (Martínez-Luna, 2022). In the network society, it is impossible to go a day without seeing a photograph (Mykytka, 2022). (Mykytka, 2022) which generates reactions and emotions (Pérez & Prada, 2022). Digital technology is an integral part of our everyday lives and an indispensable tool (Albar, 2024). Artificial intelligence (AI) is used and we use it on many more occasions than we are aware of (Urban, 2015).

Artificial intelligence (AI) is a rapidly developing field (Sabzalieva & Valentini, 2023). Its incorporation into artistic practices is altering the nature of the creative process. Throughout history, technological devices, from the camera obscura to graphic editing software, have been agents that conditioned cultural creation (Rodriguez-Ortega, 2020). The evolution of AIs to generate images demonstrates their significant advances, as evidenced by the following examples: Dall.e2, Midjourney, Stable Diffusion, Deep IA, and Craiyon (Albar, 2024). These can perform a variety of tasks, whether simple or more technical (Sabzalieva & Valentini, 2023). This is also the case for synthesised images.

It is important to note that the unique quality of photography lies in its capacity to capture a specific, unrepeatable moment in reality. This quality is not found in other forms of visual representation, such as painting or sculpture, which attempt to capture a generalised, idealised version of reality. Photography also embodies a specific way of seeing, which can be described as visual perception. (Uribe et al., 2022) In this context, six photographs reflecting reality and representing the cultural context of Puno (Peru) were subjected to synthesis through the AI Dall-E, resulting in the generation of synthesised images disseminated through the social network Facebook. The objective of this dissemination was to analyse the visual perception of real photographs synthesised through AI on social networks.

2. Methodology

In light of the above, it is evident that further studies are required on this subject. To this end, a descriptive research study was conducted utilising a non-experimental cross-sectional design. Six authentic photographs were disseminated through the social network Facebook, and the same number of photographs were synthesised using ChatGPT and DALL-E. This enabled the researchers to ascertain the visual perception of the photographs by users of the social network. Furthermore, the synthesised images were subjected to expert evaluation using a technical file during the months of January and February 2024.

2.1. Participants

The researchers disseminated the real and AI-synthesised photographs via their Facebook accounts, resulting in 215 favourable reactions from the users of the social network (likes and loves). The same number of people participated in the study, including men and women from different areas of study and frequency of use of social networks, as shown in Table 1. Additionally, 24 experts participated in the evaluation process, including photographers, university teachers of photography courses, graduates, and graduates in Social Communication Sciences. Their role was to assess the technical aspects of each photograph and image.

Table 1. Description of study participants

Variables		f	%	Total
Sex	Man	102	47%	215
	Woman	113	53%	
Areas of study	Engineering	44	22%	
	Social	154	77%	
	Biomedical	2	1%	
Frequency of use of social networks	2 hours	45	21%	
	4 hours	85	39%	
	6 hours	66	31%	
	More than 8 hours	19	9%	

Source: Own elaboration, 2024.

2.2. Techniques and Instruments

To collect the information from the volunteer participants, the survey technique was used and its instrument was the questionnaire hosted on Google Forms, with structured and unstructured questions,

this tool was activated during the months of January and February 2024. This form included the images under study, whose motif represents the context of the high plateau of Puno (Peru), which is specified:

- Photo 1. Woman descending from the floating islands of the Uros (Puno), in daily activity. Author: Walker Aragón.
- Photo 2. Mother and child from the island of Taquile, district of Amantaní (Puno), during daily activity. Author: Walker Aragón.
- Photo 3. Child from the island of Taquile, district of Amantaní (Puno), during daily activity. Author: Walker Aragón.
- Photo 4. Female descendant and inhabitant of the floating islands of the Uros (Puno), during daily activity. Author: Walker Aragón.
- Photo 5. Inhabitants of the floating islands of the Uros (Puno), during daily activity. Author: Walker Aragón.
- Photo 6. Devotion of an old woman to Saints Peter and Paul in the community of Ichu (Puno). Author: Mariana Tovar.

The real photographs and the images synthesised using artificial intelligence are shown in Table 2.

Table 2. Real and synthesised photographs with *Dall-E* AI

	Real photographs	**AI synthesised images**
Photograph 1		
Photograph 2		
Photograph 3		
Photograph 4		

	Real photographs	AI synthesised images
Photograph 5		
Photograph 6		

Source: Own elaboration, 2024.

The technical evaluation sheet for photographs and images synthesised with AI was also designed and validated by expert judgement with four evaluators; after weighting "very good" with an average score of 74. 1 and having accepted the recommendations for its use, the instrument retains the 7 evaluation items: visual composition, lighting, focus, colour, exposure, visual narrative and impact; of the 23 initial questions, 21 were finally retained (2 were eliminated and 3 were modified), the instrument was applied on a Likert scale, the final version is shown in Table 3; it should be noted that the technical evaluation form was completed by 24 experts, each of whom evaluated 6 real photographs and 6 synthesised with AI, quantifying a total of 288 photographs/images.

Table 3. Items and questions of the technical assessment sheet for AI-synthesised photographs and images

Items	Questions
Visual composition	1. How is the photograph/image visually organised?
	2. How do you evaluate the use of the rule of thirds?
	3. What is your perception of the use of guidelines?
	4. How do you rate the framing?
	5. What is your assessment of visual balance?
Lighting	6. What is your appreciation of the quality of lighting in the photograph/image?
	7. Does shadow identification enhance visual depth?
	8. Does the lighting allow colour temperature to be identified?
Approach	9. How do you evaluate the approach to photography/imaging?
	10. How do you assess depth of field?
	11. How would you rate the sharpness of the photograph/image?
Colour	12. How do you rate the colour saturation?
	13. How do you rate the colour temperature in the photograph/image?
	14. What is your assessment of the brightness of the photograph/image?
	15. How do you rate the colour tone in the photograph/image?
Exhibition	16. How do you rate the exposure of the photograph/image?
Visual storytelling	17. How do you rate the visual narrative of the photograph/image?
	18. What is your perception of the visual context in the photograph/image?
	19. How do you assess the message of the photograph/image?
Impact	20. How do you rate the emotional content?
	21. Does the image capture attention in a visually striking way?

Source: Own elaboration, 2024.

2.3. Study Context

This study situates the intersection of visual communication and artificial intelligence (AI), particularly in the realm of social media, where the perception and evaluation of images play a crucial role in user interaction and behaviour. Given the increasing prevalence of AI-synthesised images in various media, it is imperative to explore how these are perceived in comparison to traditional photographs, especially on widespread platforms such as Facebook. The research takes place in the context of an increasingly digitalised society, where images are not only a means of communication and expression, but also a tool for influencing and constructing reality. In this environment, the distinction between the real and the artificial becomes blurred, prompting an in-depth analysis of the implications of this ambiguity for visual perception. This study therefore addresses not only the technical question of AI's ability to generate realistic images, but also the emotional and cognitive reception and reaction of users to them. The highlands of Puno, Peru, were chosen as the thematic context for the images because of their rich cultural and scenic expression, providing an ideal setting for assessing the authenticity and visual impact of both real and synthesised photographs. This choice is not arbitrary, but reflects an interest in understanding how the cultural complexity and aesthetics of a place of deep meaning and tradition are translated through the lens of AI, and how this translation is received by a global audience on social media.

The altiplano of Puno is situated between 3,810 and 3,900 m.a.s.l. in the circumlacustrine area, in the southeast of Peru. This department is home to the highest navigable lake in the world: the Titicaca. (Provincial Municipality of Puno, 2023). The photographs in the thematic context, as previously mentioned, accurately reflect this reality, as is the case with the floating islands of the Uros, Taquile Island and the community of Ichu. The first of these is an artificial island built from an aquatic plant called totora, located within the Titicaca Nature Reserve. Its activities are related to fishing, hunting, egg gathering and tourism. (Gómez-Arteta & Escobar-Mamani, 2022). Taquile Island, also located in Lake Titicaca, was designated as Intangible Cultural Heritage of Humanity. This population, descended from the Pucará, Colla and Inca cultures, has dedicated its time over generations to textile art (Promperú, 2020). (Promperú, 2020) It is also one of the most important tourist destinations in the region. Finally, the community of Ichu stands out with its traditional celebration in honour of San Pedro and San Pablo, which gathers crowds every June 29. The community is dedicated to agricultural work and was the inventor of the ojota de jebe, the sandal made with the remains of car and truck tyres. (Andina, 2022) This is evidence of the diversity and cultural richness of this part of the world.

3. Objectives

3.1. General Objective

The objective is to analyse the visual perception of real and synthetic photographs on social networks using artificial intelligence.

3.2. Specific Objectives

To ascertain the visual perception of real and synthesised photographs on the social network Facebook using artificial intelligence.

To determine the identification capability of synthesised photographs using artificial intelligence.

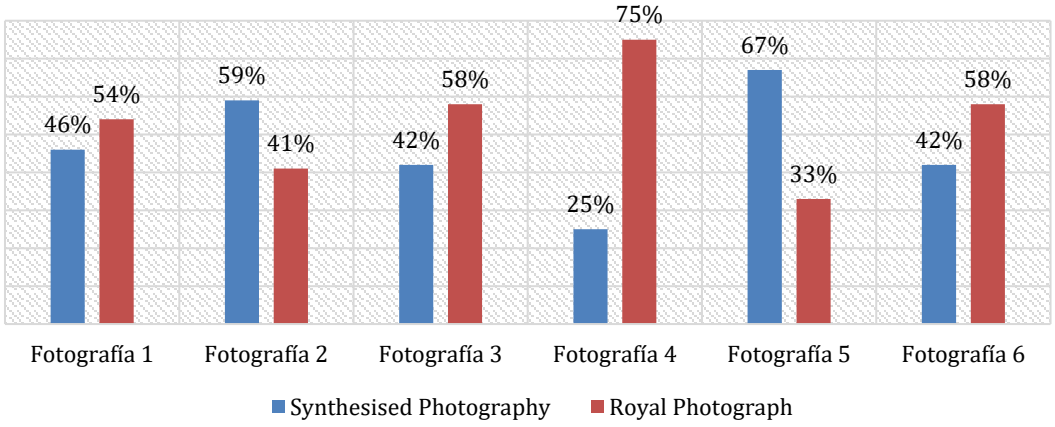
To explore emotional responses to real and AI-synthesised photographs.

To obtain expert assessment of real and AI-synthesised photographs by means of a technical sheet validated by expert judgement.

4. Results and Discussion

The findings of the research, presented in figures and tables, are accompanied by a discussion of the respective results.

Figure 1. Preference of real photographs vs. AI-synthesised images



Source: Own elaboration, 2024.

Figure 2. Actual photograph preferred by the public.

Note: Woman from the floating islands of the Uros (Puno), author: Walker Aragón, 2019.

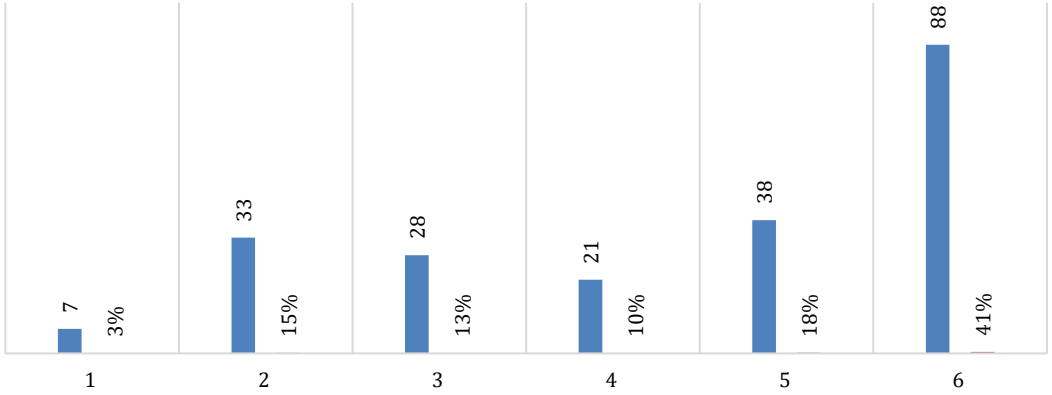
Figure 1 illustrates the varying preferences for synthesised and real photographs. For photograph 1, the majority (54%) prefer the real version, while photograph 2 has a higher percentage of preference (59%) for the synthesised version. For photograph 3, 58% show a preference for the real version, while photograph 4 stands out with a clear preference (75%) for the real version. Photo 5 reflects a majority preference (67%) for the synthesised version, while photo 6 shows a 58% preference for the real version. These results indicate a complex dynamic in visual perception, where the preference between the synthesised and the real varies according to the specific image. In general terms, this translates into a preference for authentic photographs. This highlights the congruence between the visual content of photographs and the external environment, reinforcing the idea that images serve as an effective means to convey authentic visual information and experiences consistent with reality. (Flusser, 1990).

Figure 2 shows the preferred portrait at a comparative level. This photograph depicts the face of a woman from the floating islands of the Uros in Lake Titicaca (Puno), engaged in daily activities. Her multicoloured clothing reflects the Andean culture, while her cheerful and natural face exemplifies the essence of the indigenous woman in the Uros community.

From the findings presented here, further studies could investigate the reasons behind specific preferences, the impact of visual elements on perception, and how these tendencies may vary in different socio-cultural contexts.

It is also worth noting that the expert evaluation differs from these results, as shown in Figure 8, where the synthesised photographs are rated higher.

Figure 3. Perception of more attractive photography to the public



Source: Own elaboration, 2024.

Figure 4. Photography more attractive to the public

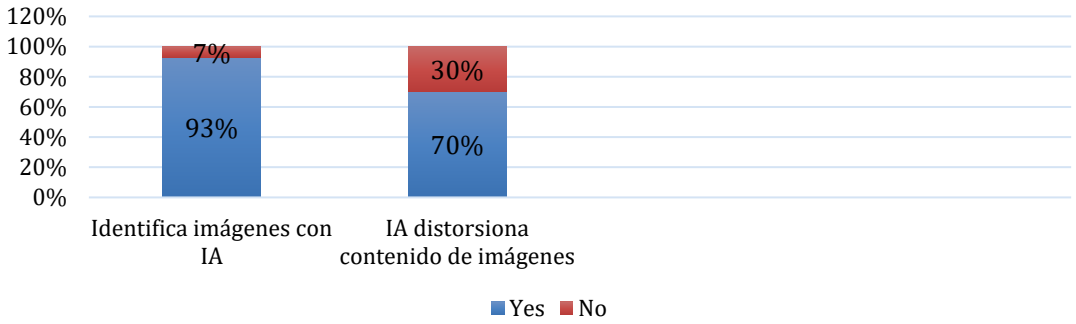
Note: Fervour of an old woman in devotion to San Pedro and San Pablo (Puno), author: Mariana Tovar, 2022.

Figure 3 presents the results of a survey on public perceptions of the most attractive photographs. The findings indicate that photograph 6 is the most attractive, with a remarkable 41% of respondents selecting it as their favourite. Figure 4 illustrates the most preferred real photograph, which depicts the fervour of an old woman in devotion to St. Peter and St. Paul in the community of Ichu (Puno). This photograph is displayed at the San Pedro sanctuary on June 29th, when parishioners gather to celebrate. The San Pedro sanctuary demonstrates that cultural richness imbued with symbolism is found in all populations of the Peruvian highlands and is expressed in their unique forms of religiosity and faith (Yucra et al., 2022).

This assessment indicates that the nature of the activity depicted may influence preference, in addition to the specific cultural context of Puno, its local values and beliefs. Consequently, photographs do not consist of denotative symbol sets, as with numbers, but are composed of connotative symbols, implying that images are prone to interpretation. This reinforces the notion that images can have multiple layers of meaning. Furthermore, it is important to consider cultural practices that privilege images, which are powerful tools for forging connections, sharing experiences and promoting mutual understanding in an increasingly interconnected world.

For this reason, many photographs related to religiosity can be found on social networks, especially in a country where the majority of the population follows the Catholic faith, which, according to IPSOS, represents around 75% of the total (Torres, 2018). On the other hand, with these data, which are consistent with the results in Figure 1, there is a consensus on the preference for authentic photographs, as they show an approach to reality (Pérez & Prada, 2022), which is valued by the participants in the study.

Figure 5. Perceptions of image identification and distortion with AI

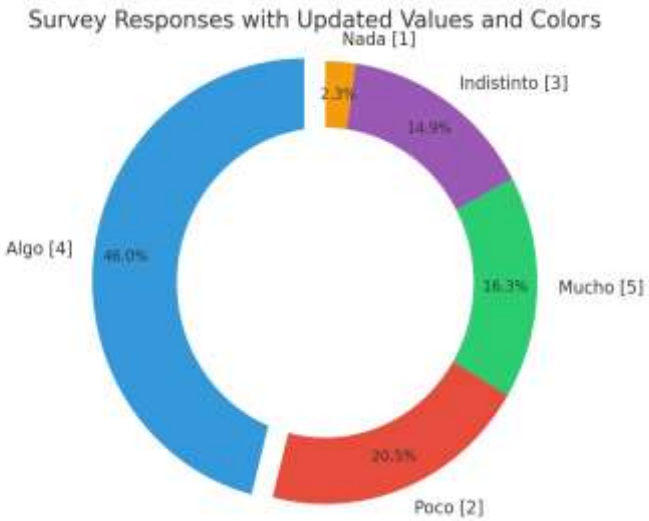


Source: Own elaboration, 2024.

The results demonstrate a high ability to identify AI-generated images, with a remarkable 93% of participants indicating that they can recognise these images. Furthermore, the perception of distortion in the content of AI-generated images is significant, with 70% of respondents stating that AI distorts the content. This divergence is related to the complexity of Dall-E AI-generated images and the subjective interpretation of what is considered distortion. Distortion can be defined as any visual imperfections or errors in the representation of the generated image, including alterations, modifications, deformations, or enhancements. These findings underscore the necessity for a more profound comprehension of the manner in which individual perceptions and interpretations of visual content may diverge. They also provide an opportunity for discourse on the potential impact of perceived distortion on the acceptance and trustworthiness of AI-generated images in disparate contexts.

The synthesised images respond to a virtual reality. Gubern (1996) previously cautioned that a computational system that produces synthetic environments in real time creates an illusory reality, as it is a perception of reality without objective support. The study highlights the deceptive and artificial nature of virtual reality, demonstrating its capacity to create synthetic worlds, synthesised images, and other such phenomena. It is evident that the virtual environment is rife with deficiencies. (Torres-Cruz & Yucra-Mamani, 2022).

Figure 6. Perception scale on whether the AI-generated images represent the reality of the Puno highlands.



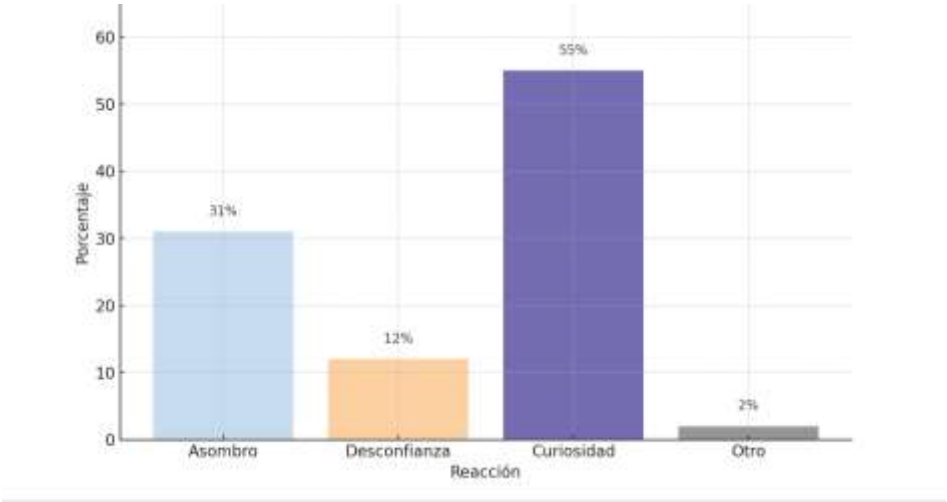
Source: Own elaboration, 2024.

The results of the self-perception scale on the degree to which images generated with artificial intelligence reflect the reality of the Puno highlands demonstrate a considerable degree of diversity in responses. Most participants, 46%, indicated that these images represent "some" reality, while 16.3% perceived them as "a lot." Conversely, 20.5% considered that the images represent " A minority of

respondents, 14.9%, perceived the images as "indistinct," while a similarly small percentage, 2.3%, indicated that the images did not represent the reality of the altiplano context at all. This evidence demonstrates a general perception that the synthesised images do not represent reality, which is corroborated by the previous results. Most participants in the study identified the images created with AI and the distortions they generate, reinforcing their doubts about the photographic image in its relationship with algorithms capable of producing surprising metamorphoses (Pérez & Prada, 2022). (Pérez & Prada, 2022) reflects the growing complexity of visual perception in the contemporary era.

The photographs used in the study represent the context of the reality of the Puno highlands, and the study population is directly or indirectly familiar with this reality. As a result, the study identifies aspects that the synthesised images show but do not represent the reality itself. This represents a gap that technology has not yet developed with accuracy, while at the same time presenting an opportunity to improve the synthesised replicas with AI.

Figure 7. Emotional perception of AI-generated imagery



Source: Own elaboration, 2024.

Figure 7 illustrates the emotional perception of images generated by the Dall-E AI. It is evident that the photographs elicit a range of emotions (Pérez & Prada, 2022). The highest number of emotional responses, 55%, are associated with curiosity, reflecting an active interest and openness to explore and understand more about the AI-generated images. This finding highlights the role of curiosity as an important factor in the emotional response to this emerging technology. Similarly, the fact that 31% of participants expressed awe shows that AI-generated images have the power to impress and amaze a considerable part of the public. The presence of mistrust with 12% of responses indicates a cautious or reserved perception towards the authenticity and reliability of these images. These results highlight the complexity of emotional responses to AI-generated images.

Table 4. Categories of opinions on AI-generated imagery

Categories	Subcategories
Against	Concern about distortion of reality
	Not comparable to the "human eye
In favour	Adaptation to technology
	Quality improvement, use of filters
	Creative possibilities
	Interest and fascination
	Cultural documentation
Neutral	Responsible use
	Respect for copyright
	Curiosity and wonder
	Entertainment

Source: Own elaboration, 2024.

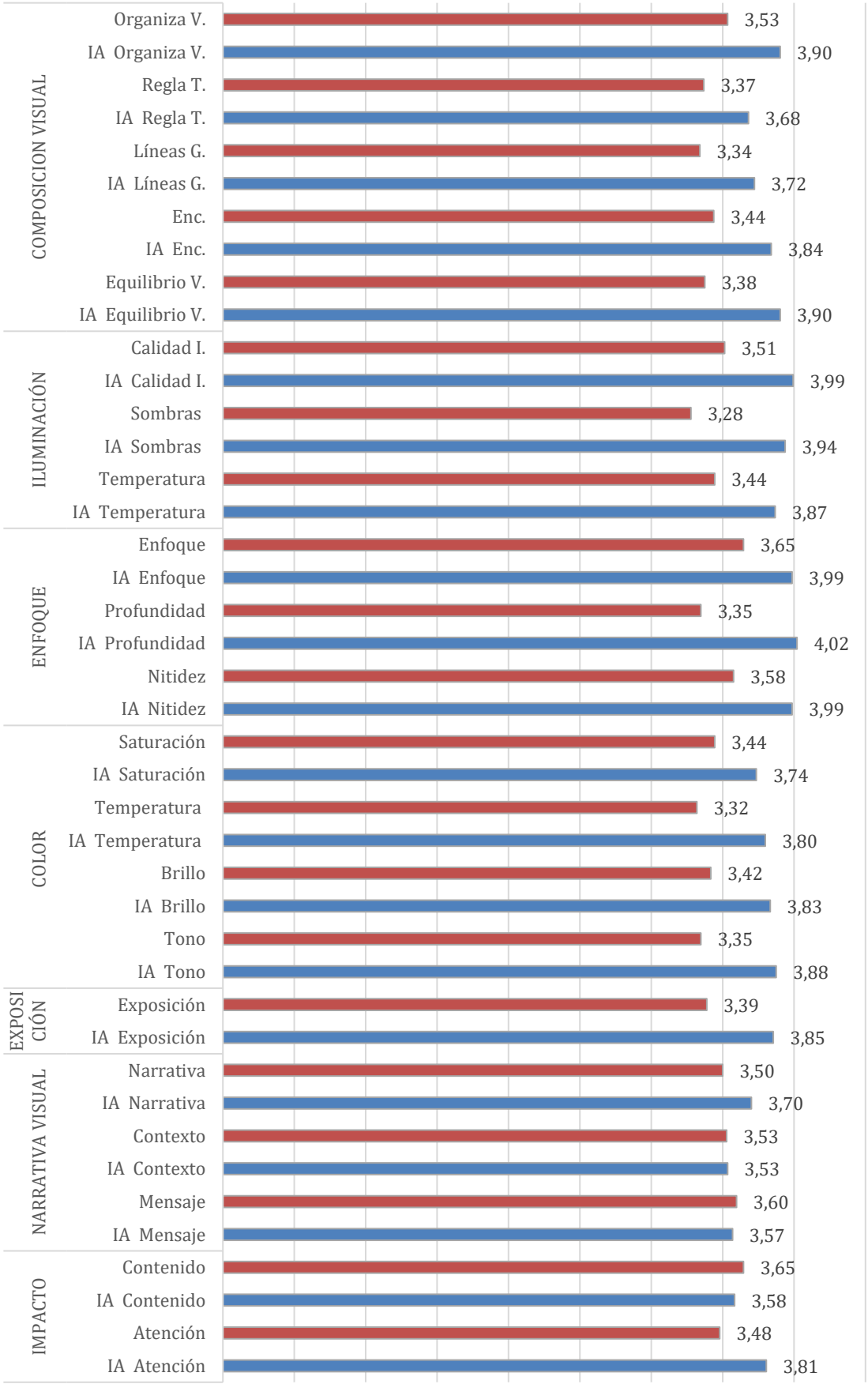
Table 4 reflects the diverse opinions of the public expressed on the Facebook social network. These responses represent a range of attitudes, points of view and cultural frameworks, which is why we have categorised them into three groups: against, in favour and neutral; each with subcategories based on the qualitative responses. The "against" category encompasses subcategories such as concern for distortion of reality and lack of comparability with the "human eye." Regarding the first subcategory, some individuals express concern about how AI-generated images could distort reality. For instance, they may be distorted and fail to reflect the scene accurately. The essence of Puno is distorted in AI-generated images, which raises concerns about the faithful representation and the essence of the context. This suggests a caution towards the manipulation of visual truth. It is therefore necessary to reduce the risks of malicious use of AI-generated images. (González-Arias & López-García, 2023)

The second subcategory yielded responses such as "AI-generated images do not compare to photography because photography shows a natural and real side", and "AI-generated images do not compare to the ability of the human eye", which argue that AI-generated images fail to match human perception, eventually referring to the lack of authenticity or emotional connection.

Regarding the category of opinions in favour of AI-generated images, five subcategories were identified: adaptation to technology, improvement of quality and use of filters, creative possibilities, interest and fascination, and cultural documentation. This group of opinions demonstrates a positive stance towards adaptation to new technologies. In this context, the convergence between technology and photography has evolved in recent years as an experimental field where automated systems, algorithms, virtual reality and other innovations coexist (López-García & Vizcaya, 2009). (López-García & Vizoso, 2021) Some responses express a favourable appreciation for the improvement of visual quality and the use of filters, with versions such as "I think it's good, it even gives more enhancement or life to images that do not have much visual quality, and this favours the reconstruction of images". The creative possibilities that artificial intelligence can offer are also mentioned, and there is also a group of responses that express interest and fascination towards synthesised images. "It is truly remarkable to visualise images generated with AI." Similarly, it is suggested that artificial intelligence would be a valuable tool for documenting and preserving the cultural heritage of the Puno altiplano.

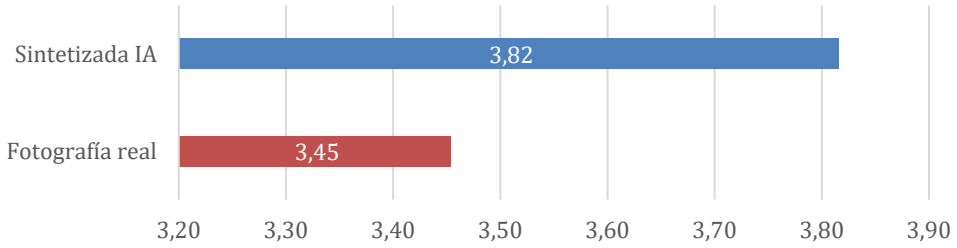
With regard to the group of responses categorised as "neutral" opinions, four subcategories stand out: responsible use, respect for copyright, curiosity and wonder, and entertainment. Some respondents have expressed a willingness to use AI-generated images responsibly, while others have highlighted the importance of respecting copyright. For instance, one respondent stated, "I don't think it is wrong, but you have to admit that they should be used in a controlled way and give credit to the author." Another respondent emphasized the need to respect copyright and intellectual property, stating, "how copyright and intellectual property are respected." While some respondents express curiosity and wonder, it is not always clear whether this is a pro or anti stance. This is made explicit by the statement "concern and curiosity about the future". Similarly, the mention of entertainment does not clearly reveal a position for or against "this looking for images also generates entertainment". This initial categorisation allows us to organise the opinions expressed by the study population, highlight general trends and predominant attitudes towards AI-synthesised images, and underline the need to explore these issues further in other studies and diverse contexts.

Figure 8. Technical expert assessment by items and questions



Source: Own elaboration, 2024.

Figure 9. Overall average of expert assessments



Source: Own elaboration, 2024.

Figure 8 presents the results of the technical evaluation of photographs and AI-synthesised images by the 24 experts, considering the seven items and 21 evaluation questions presented in Table 3. This extensive data set represents the evaluation of a total of 144 real photographs and a similar number of the Dall-E AI-synthesised replicas. The overall average of the evaluation is presented here.

The synthesised images were rated more favourably than the real images by the specialists in terms of visual composition, particularly visual organisation and balance. The average evaluation for the AI-generated images was 3.90, while the real images received 3.53 and 3.38, respectively. Similarly, the quality of the AI-generated lighting and shadows is rated the highest, with an average of 3.99 and 3.94, respectively, compared to the real photographs, which receive an average of 3.51 and 3.28, respectively. This indicates a slight preference for lighting in the synthesised images. The technical aspect of focus with AI through depth of field has the highest score, with 4.02, while the real photographs have a score of 3.35. This indicates that focus is considered a strength in this area. In terms of colour and exposure, the two types of images differ, with the synthetic images being technically better presented. In terms of visual storytelling, the differences are narrower, with a tie in the rating in some questions. In the impact item, the emotional content of the real photographs was rated higher than that of the synthesised images, with a rating of 3.65 compared to 3.58. This indicates that respondents value the authenticity of the real photographs, suggesting that the difference in the impact rating may be related to the capacity of the real photographs to transmit emotional content more effectively than those generated by AI. The results indicate that the real photographs are more effective at transmitting emotional content than those generated by AI. Conversely, with respect to the question "Does the image capture attention in a visually striking way?", the results indicate that AI-generated images possess distinctive characteristics that make them stand out, and that experts perceive these images to have visually striking qualities that effectively attract attention.

As Figure 9 illustrates, the AI-generated images received higher scores from the specialists (3.82) than the actual photographs (3.45). It is important to note that these scores reflect not only subjective preferences but also objective considerations of visual composition, lighting, focus, colour, exposure, visual storytelling and impact. Although a general overview is presented, the evaluations of each photograph are unique and vary according to the importance assigned to each aspect of the visual assessment.

5. Conclusions

The complexity in the interaction between real photographs and images synthesised through Dall-E artificial intelligence in public visual perception highlights the need for a balanced approach in the creation and dissemination of images in social networks. While there is a preference for authenticity, there is also recognition of AI capabilities. Authentic images can resonate emotionally and connect with reality, while AI-synthesised images are valued for their innovation and technical goodness.

The study reveals a widespread preference for real photographs among users of the Facebook social network. However, AI-synthesised images generate interest, and visual authenticity plays a significant role in positive audience perception. This is relevant for content generation purposes.

The results indicate a remarkable ability on the part of the participants to identify AI-generated images. This finding indicates a level of awareness among the public of the existence of image synthesis

technologies. Similarly, the study highlights the ability to identify distortions in AI-generated images, which reveals a perceptual competence. This ability of the audience suggests a more informed participation in the consumption of visual content in digital environments.

The emotional responses of the public stand out for a pre-eminence of curiosity and astonishment. This highlights the need to encourage critical and reflective positions on these technologies. Additionally, there was a diverse range of unstructured responses, categorised as in favour, against and neutral, with respect to the first category: adaptation to technology, improvement of the quality and use of filters, creative possibilities, interest and fascination, and cultural documentation. With regard to opposing positions, he emphasised concerns about the distortion of reality and the fact that it is not comparable to the human eye. The neutral position emphasises the responsible use of technology, respect for copyright, entertainment, curiosity and wonder.

The expert evaluation reveals a favourable technical appreciation of the synthesised images, highlighting positive aspects in terms of technical quality. This result indicates that, from the specialists' point of view, the AI-generated images are well received. However, this initial version of the 7-item, 21-question content-valid technical evaluation sheet for AI-generated images can be enhanced for future studies.

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References

Agencia Lima Retail. (2024). *Limaretail*. Redes Sociales Más Usadas En El Perú 2024. https://limaretail.com/redes-sociales/estadisticas-redes-sociales/

Aguirre, G. (2023). Creencias y redes sociales: la reinvención de lo popular en las narrativas digitales. *Autoctonía, Revista de Ciencias Sociales e Historia*, *7*(2), 687–726. https://doi.org/10.23854/autoc.v7i2.328

Albar, P. J. (2024). Artificial Intelligence for image generation in art: how does it impact on the future of Fine Art students? *Encuentros, Revista de Ciencias Humanas, Teoría Social y Pensamiento Crítico*, *20*, 145–164. https://doi.org/10.5281/zenodo.10052355

Alvarado, M. del M. R., & Jiménez-Marín, G. (2022). Documentary Photography and the Internet in Migration Processes: Channels to and from Andalusia, Spain. *Discursos Fotográficos*, *19*(32), 103–129. https://doi.org/10.5433/1984-7939.2022v19n32p103

Álvarez, J. (2023). *Si no estás en RRSS, estás en na*. Ipsos. https://www.ipsos.com/es-pe/si-no-estas-en-rrss-estas-en-na

Andina. (2022). Puno: con gran fervor población de Ichu celebró la fiesta en honor a San Pedro y San Pablo. *Agencia Peruana de Noticias*. https://andina.pe/agencia/noticia-puno-gran-fervor-poblacion-ichu-celebro-fiesta-honor-a-san-pedro-y-san-pablo-899446.aspx

Azamar, Á. (2021). "Devotio" Lindsay: prácticas devocionales y cultura visual en Internet en el siglo XXI. *Eikón Imago*, *10*, 283–296. https://doi.org/10.5209/eiko.74152

Brigas, J., Gonçalves, F., & Gonçalves, J. (2023). Social media communication management in the media sector. *Revista Venezolana de Gerencia*, *28*(10), 1264–1279. https://doi.org/10.52080/rvgluz.28.e10.24

Cabero-Almenara, J., & Arancibia, M. L. (2019). Percepciones de estudiantes universitarios chilenos sobre uso de redes sociales y trabajo colaborativo (Perceptions of Chilean university students about the use of social networks and collaborative work). *RIED. Revista Iberoamericana de Educación a Distancia*, *22*(2), 35–55. https://doi.org/10.5944/ried.22.2.22847

Claro, C., Ferruz, S. A., & Catenacchi, J. I. (2023). Redes sociales y tercer sector: análisis del uso de Facebook e Instagram en 50 ONG de España y Chile. *Revista Latina de Comunicación Social*, *82*, 1–21. https://doi.org/10.4185/rlcs-2024-2197

Cunha, S. S. (2022). [Recensão a] Agustín Lacruz, M. C., & Torregrosa Carmona, J.-F. (2019). Formas de mirar: usos informativos y documentales de la fotografia (1.ª ed.). *Boletim Do Arquivo Da Universidade de Coimbra*, *35*(1), 199–208. https://doi.org/10.14195/2182-7974_35_1_8

Flores, G. A., Chancusig Chisag, J. C., Cadena Moreano, J. A., Guaypatín Pico, O. A., & Montaluisa Pulloquinga, R. H. (2017). La influencia de las redes sociales en los estudiantes universitarios. *Boletín Virtual*, *6*(4), 56–65.

Flusser, V. (1990). *Hacia una filosofía de la fotografía* (Trillas (ed.)). https://monoskop.org/images/8/8d/Flusser_Vilem_Hacia_una_filosofia_de_la_fotografia.pdf

Gómez-Arteta, I., & Escobar-Mamani, F. (2022). Saber Ambiental del pueblo Uros del Lago Titicaca, Puno (Perú). *HALAC– Historia Ambiental, Latinoamericana y Caribeña*, *12*(1), 270–297. https://doi.org/10.32991/2237-2717.2022v12i1.p270-297

González-Arias, C., & López-García, X. (2023). ChatGPT: Stream of opinion in five newspapers in the first 100 days since its launch. *Profesional de La Información*, *32*(5), 1–15. https://doi.org/10.3145/epi.2023.sep.24

Gubern, R. (1996). *Del bisonte a la realidad virtual* (Anagrama (ed.)).

López-García, X., & Vizoso, Á. (2021). High-tech journalism: a sign of the digital era of the third millennium. *Profesional de La Informacion*, *30*(3), 1–12. https://doi.org/10.3145/epi.2021.may.01

Marín-Díaz, V., & Cabero-Almenara, J. (2019). Las redes sociales en educación: desde la innovación a la investigación educativa. *RIED. Revista Iberoamericana de Educación a Distancia*, *22*(2), 25–33. https://doi.org/http://dx.doi.org/10.5944/ried.22.2.24248

Martínez-Luna, S. (2022). Images in circulation. An approach to digital visual culture from the crisis of the specificity of the photographic medium. *Kepes*, *19*(26), 317–348. https://doi.org/10.17151/kepes.2022.19.26.10

Municipalidad Provincial de Puno. (2023). *Puno renace*. Geografía. https://portal.munipuno.gob.pe/es/Geografía

Mykytka, I. (2022). Acronyms and neighboring categories in the language of photography. *Ibérica*, *44*, 369–

390. https://doi.org/10.17398/2340-2784.44.369
Olaya, D. V. (2019). Las imágenes de las víctimas del conflicto armado en la revista Semana: políticas, significados culturales y visibilización. *Palabra Clave*, *23*(1), 1–30. https://doi.org/10.5294/pacla.2020.23.1.6
Pérez, J., & Prada, W. (2022). Apuntes sobre fotografía y memoria a partir de la relectura de Ante el dolor de los demás de Susan Sontag. *Fotocinema. Revista Científica de Cine y Fotografía*, *25*, 103–125. https://doi.org/10.24310/fotocinema.2022.vi25.14482
Pérez, A. (2018). Uso de smartphones y redes sociales en alumnos/as de educación primaria. *Prisma Social: Revista de Investigación Social*, *20*, 76–91.
Promperú. (2020). *Descubre el arte textil de Taquile, Patrimonio Inmaterial de la Humanidad*. https://www.peru.travel/es/masperu/descubre-el-arte-textil-de-taquile-patrimonio-inmaterial-de-la-humanidad
Rodriguez-Ortega, N. (2020). Inteligencia Artificial y campo del arte. *Paradigma*, 32–51. https://hdl.handle.net/10630/19525
Sabzalieva, E., & Valentini, A. (2023). ChatGPT e inteligencia artificial en la educación superior: Guía de inicio rápido. In *UNESCO*. https://unesdoc.unesco.org/ark:/48223/pf0000385146_spa
Sanz, E., Alonso, R. A., Sáenz, M., Ponce de León, A., & Valdemoros, M. Á. (2018). Ocio, redes sociales y estudiantes españoles. *Educacion XX1*, *21*(2), 59–78. https://doi.org/10.5944/educXX1.19538
Statista. (2023). *Panorama mundial de las redes sociales*. https://es.statista.com/estudio/32777/panorama-mundial-de-las-redes-sociales-dossier-statista/
Torres-Cruz, F., & Yucra-Mamani, Y. J. (2022). Técnicas de inteligencia artificial en la valoración de la enseñanza virtual por estudiantes de nivel universitario. *Human Review*, *11*, 1–11. https://doi.org/10.37467/revhuman.v11.3853
Torres, A. (2018). *Ipsos*. El Futuro de La Iglesia. https://www.ipsos.com/es-pe/el-futuro-de-la-iglesia
Urban, T. (2015). La Revolución de la IA: El camino a la Súper Inteligencia. In *Lampadia*. https://www.lampadia.com/assets/uploads_documentos/21519-la-revolucion-de-la-ia.pdf
Uribe, S., Bermúdez, P., & Ángel, A. (2020). Reinterpretación del pasado fotográfico de la Misión Josefina con la Asociación de Mujeres Parteras Kichwas del Alto Napo (AMUPAKIN). *Revista de Estudios Sociales*, *43*(72), 70–85. https://doi.org/10.7440/res72.2020.06
Yucra, Y. J., Aragón, W. E., & Palomino, D. C. (2022). Discurso fílmico y dimensión sociocultural en la película Wiñaypacha. *Visual Review*, *9*, 2–31. https://doi.org/10.37467/revvisual.v9.3702