REVISTA DE CIENCIAS SOCIALES Y HUMANAS XXI
NIVERSITAS

https://doi.org/10.17163/uni.n41.2024.03

Impact of artificial intelligence on fashion: analysis of digital influencers in international fashion weeks

Impacto de la inteligencia artificial en la moda: Análisis de influencers digitales en las fashion weeks internacionales

Paula Fajardo Rodríguez-Borlado
Universidad de Sevilla, Spain
paulafajardorb@gmail.com
https://orcid.org/0009-0005-5960-6546

Concha Pérez-Curiel
Universidad de Sevilla, Spain
cperez1@us.es
https://orcid.org/0000-0002-1888-0451

Received on: 03/07/2024 **Revised on:** 25/07/2024 **Accepted on:** 10/08/2024 **Published on:** 01/09/2024

Suggested citation: Fajardo Rodríguez-Borlado, P. and Pérez-Curiel, C. (2024). Impact of artificial intelligence on fashion: analysis of digital influencers in international fashion weeks. *Universitas XXI, 41,* pp. 73-97. https://doi.org/10.17163/uni.n41.2024.03

Abstract

The phenomenon of digital influencers has transformed the way brands communicate with their audience via social networks. In a society that is governed by immediacy, companies have taken the lead in considering Instagram as the platform on which to advertise their products. In this scenario, influencers become a key tool and a business market for advertising. In parallel, Artificial Intelligence has given rise to a world of avatars, a non-human profile that develop capabilities with unknown effects on audiences and that focus the attention on fashion brands. The objective of this research is to understand how digital influencers communicate on Instagram and the impact on luxury brands. A dual-focus content analysis methodology (quantitative/qualitative) and SPSS statistical tool are applied. The first results show the level of frequency of digital influencers in the advertising campaigns of fashion brands, the presence of luxury brands in their conversations and a positive interaction with users, despite being profiles that cannot reproduce the emotions of human language, we have been able to obtain some results which support that, although the avatars generated by artificial intelligence (AI) have the necessary characteristics to play a relevant role in brand advertising on social networks, it cannot be said that are involved in the "influencer" profession in at least not in the near future. In the future, it may be equivalent to the work done by humans.

Keywords

Influencer, artificial intelligence, company, Instagram, social networks, digital influencers, brands, metaverse.

Resumen

El fenómeno de los *influencers* digitales ha transformado la manera en que las marcas se comunican con su audiencia vía redes sociales. En una sociedad que se rige por la inmediatez, las empresas han tomado la delantera al considerar Instagram como la plataforma donde publicitar sus productos. En este escenario, los influencers se convierten en una herramienta clave y un mercado de negocio para la publicidad. En paralelo, la inteligencia artificial ha dado lugar a un mundo de avatares, un perfil no humano, que desarrollan capacidades con efectos desconocidos sobre los públicos y que centran la atención de las marcas de moda. El objetivo de esta investigación es conocer cómo se comunican en Instagram los influencer digitales y el impacto en las marcas de lujo. Se aplica una metodología de análisis de contenido de doble enfoque (cuantitativo/cualitativo) y herramienta estadística SPSS. Los primeros resultados muestran el nivel de frecuencia de los influencers digitales en las campañas publicitarias de las marcas de moda, la presencia de las marcas de lujo en sus conversaciones y una interacción positiva con los usuarios. A pesar de ser perfiles que no pueden reproducir las emociones del lenguaje humano, hemos podido obtener algunos resultados los cuales avalan que, si bien los avatares generados por inteligencia artificial (IA) tienen las características necesarias para desempeñar un papel relevante en la publicidad de las marcas en las redes sociales, no se puede decir que estén involucrados en la profesión de "influencer" al menos no en un futuro próximo. En el futuro, podrían llegar a realizar un trabajo equivalente al de los humanos.

Palabras clave

Influencer, inteligencia artificial, empresa, Instagram, redes sociales, influencers digitales, marcas, metaverso.

Introduction

The Network is still a consequence of the current reality in the sector: oversupply and more accessible, coupled with a scenario with huge volumes of information. This requires a different approach to the customer; personalized services must be offered where even the consumer can collaborate in the creation phase, dissemination and through collaborative tools such as Web 2.0 (Del Olmo and Gascón, 2014).

RAE defines the term influencer as "an anglicism used in reference to a person with the ability to influence others, mainly through social networks. As an alternative in Spanish, the use of "influyente" is recommended (Real Academia Española, Diccionario de la lengua española, 23rd ed., [version 23.7 online]). Since the beginning, luxury firms have characterized by their exclusivity, however, they are the ones that have brought high-end fashion to our daily life, making us believe that anyone can buy it. Not only is this the main problem of this type of advertising and collaboration, but the impossibility of these companies to control the image that content creators give about their products. For this reason, companies have decided to do without them in order to control the image they project of their products to the maximum.

Nowadays, many productive segments, including fashion, seek the participation of these users to communicate messages about their brand or product with the aim of increasing visibility, transmitting a certain image or improving online prestige. The increase in brand awareness and *engagement* with customers is a direct consequence of the use of *social media.* Companies dedicated to fashion, without disregarding traditional formats, activate and reinforce an alliance with the protagonists of digital platforms while recognizing the need to offer a response and a credible image that captures the trust of the user and potential client (Pérez Curiel and Luque Ortiz, 2018).

Fashion on social networks. The influencer effect

The Network is still a consequence of the current reality in the sector: oversupply and more access, coupled with a scenario with huge volumes of information. This requires a different approach to the customer; personalized services must be offered where even the consumer can collaborate in the creation phase, dissemination and through collaborative tools such as Web 2.0 (Del Olmo and Gascón, 2014).

Previous research (Vinader Segura *et al.,* 2019; Segarra-Saavedra and Hidalgo-Marí, 2018; Sadaba and San Miguel, 2016*)* highlight the role of the *influencer* as a protagonist of the communication actions of fashion and luxury brands. However, due to his/her condition with respect to the organization with which he/she collaborates, the influencer reaches a decision-making capacity that exceeds the control of the brand itself, sometimes generating a conflict of interest (Sanz-Marcos *et al.,* 2019).

However, it is important to correctly choose the influencer who will represent a company, since their values must be aligned. Otherwise, it could become a problem and convey a brand image that is not the desired one. Moreover, after nearly a decade in which advertising has gained traction on social media, companies are facing a new dilemma.

To do this, we will address two main concepts: macro and micro influencer. In the first case, it refers to those Instagram users with more than 50,000 followers, while the second is limited to those who do not exceed that mark and from 10,000 followers. We consider it important to reflect this data with some examples.

Macro influencers and microinfluencers from brand perception

Previous research (Vinader Segura *et al.,* 2019; Segarra-Saavedra and Hidalgo-Marí, 2018; Sadaba and San Miguel, 2016) highlights the role of the *influencer* as a protagonist of the communication actions of fashion and luxury brands. However, due to its external status with respect to the organization with which he/she collaborates, the *influencer* reaches a decision-making capacity that exceeds the control of the brand itself, sometimes generating a conflict of interest (Sanz-Marcos *et al.,* 2019). Some examples that represent the aforementioned characteristics at the national level are Dulceida, María Pombo or Rocío Osorno.

Another problem is that the more people follow the influencer, the less target audience they get and the latter is what brands need. For that reason, the entity's marketing managers are looking for the voice of influencers with a smaller but much more focused audience every day. This second type of influencers are called micro influencers and unlike macro influencers (Dulceida

and María Pombo), they get greater *feedback* from the public because it is smaller, and the influencer is able to know what the needs and tastes of their consumers are. On these arguments arises the denial about the influence, popularity or the number of followers as guarantors of the success of communication on networks. According to the study titled "Instagram marketing: does influencer size matter?" as the number of followers of an *influencer* increases, the engagement rate (*likes* and comments) of that *influencer* decreases (Markely, 2017). In this frame of reference, there are thousands of examples but we decided to mention Aitana Soriano, Lucia de Luis or Alba Pernau.

Artificial intelligence in fashion. The avatar world

The influence of these figures and the advance of AI have favored the birth of virtual influencers, who also have a human appearance, and who are used for commercial purposes. The cost savings of these human-looking influencers versus *celebrities* is a reality. Thus, influencers created through AI or digital avatars designed digitally through a computer with the aim of resembling a human are born. They are digital characters created through various technologies offered by AI, such as 3D graphics, simulation and animation software (Allal-Chérif *et al.,* 2024).

Therefore, virtual influencers of human appearance are figures created through computers that share both a human physical and social narratives of people to connect with their followers (Liu and Lee, 2024). This content is produced by marketing specialists or communication agencies (Gerlich, 2023) who strive to create human-looking figures with which users can feel identified.

The key to equating Artificial Intelligence with human intelligence is to invoke the process of anthropomorphism, which is based on the process of attributing human characteristics or behaviors to non-human systems or entities, such as robots or computer programs. This may involve the inclusion of emotions, intentions, or cognitive abilities similar to those of humans, even when systems lack real emotions. The level of anthropomorphism as a key element to establish a successful relationship between virtual and human influencers has been corroborated through research that maps the brain activity of the consumer, demonstrating that they apply the same social norms of relationship with machines as with *humans, so a high level of*

anthropomorphism will favor the success of communication between both (Sands *et al.,* 2022).

When considering the relevance of Instagram as an advertising platform for brands and the influence of human-looking virtual influencers on the opinions of their followers, it is understandable that brands choose to collaborate with this type of influencers on Instagram to promote their products or services.

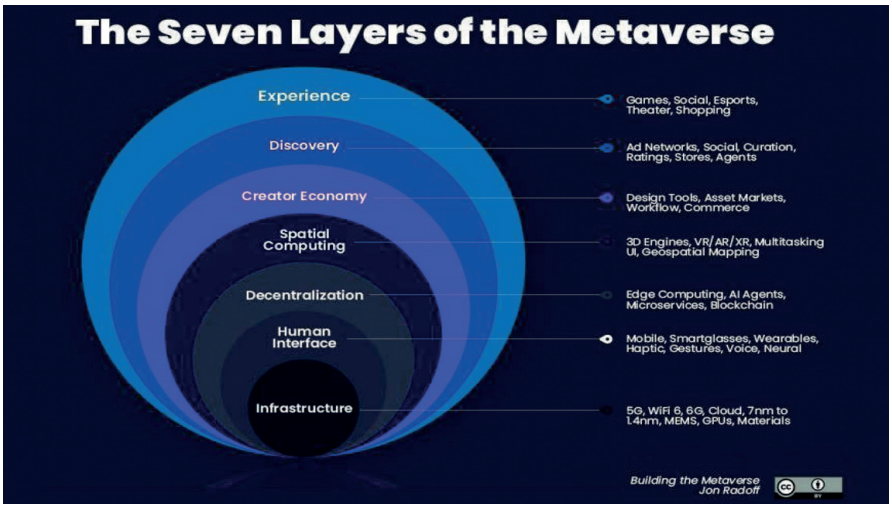
Influencers and metaverse

The term metaverse first appeared in 1992 in Neal Stephenson's science fiction novel *Snow Crash*, in which his characters become avatars and work in a virtual reality (Kelly, 2018; Kim, 2021; Kye *et al.,* 2021; Lee and Kim, 2022). The metaverse is composed of the prefix "meta-" (beyond) and "-verse" (universe) (Dionysius *et al.,* 2013; Kye *et al.,* 2021). Firstly, we cannot speak of a metaverse as a single space, but of multiple metaverses. So that even a single universe can be constituted with different metaverses (Abeles, 2007; Papagiannidis *et al.,* 2008; Smart *et al.,* 2007).

Since Neal Stephenson configured the metaverse from the perspective of immersive and 3D worlds, his conception has evolved over time by virtue of a more complex and expansive notion in the form of an interconnected network of virtual worlds (Dionisio *et al.,* 2013) that is characterized by being infinite, self-sustaining, interoperable, decentralized, persistent and in real time (Khan *et al.,* 2022). The metaverse consists of three elements: hardware, software, and content (Park and Kim, 2022). In short, technology and narrative. The advent of Web 3.0 opens the door to the more advanced version of metaverse (Smart *et al.,* 2007; Au, 2005).

Today, overcoming the technological limitations around immersion, 3D or interactivity leads to the launch of the metaverse in its social and commercial facet and in the form of leisure platforms well known for young people and with great business possibilities (Epic Games, Decentraland, Roblox...) (Ning *et al.,* 2021; Rospigliosi, 2022).

Image 1
The seven layers of the metaverse



Note. Jon Radoff (2021), *Building the metaverse*. From Medium.

It does not seem far-fetched then to believe that its application is intended exclusively for entertainment and leisure, despite the great possibilities it has for commercial, educational or social development (Au, 2005). Such is the current potential of the metaverse that companies like Meta (formerly Facebook) are modifying their business model, focusing on hardware and software to make their metaverse, Horizon World and Horizon Workroom, accessible to the general public at a low cost and applicable to the professional world (Kraus *et al.,* 2022).

The private and commercial sphere also makes combined use of the possibilities of the network under the idea of metaverse. This is the case of Meta and the Oculus Quest 2 (VR), which allows an avatar to represent us in a virtual world in which to interact with third parties (Kim and Lee, 2022).

Artificial intelligence carries out certain tasks that are usually related to human activities since they have to do with using logical reasoning, learning or creativity. While it is true, all these capabilities that artificial intelligence can offer allow an optimization in the processes of the metaverse, in fact,

this tandem of tools is already being used today even in fashion companies (Suárez, 2022).

In this way, the application of artificial intelligence to the metaverse will be fundamental, starting with the creation of more realistic and autonomous virtual avatars that even learn from their environment and adapt to virtual interactions. It will also be useful to achieve more realistic virtual spaces from the visualization of data or real life or invented images by generative artificial intelligence (Granieri, 2023).

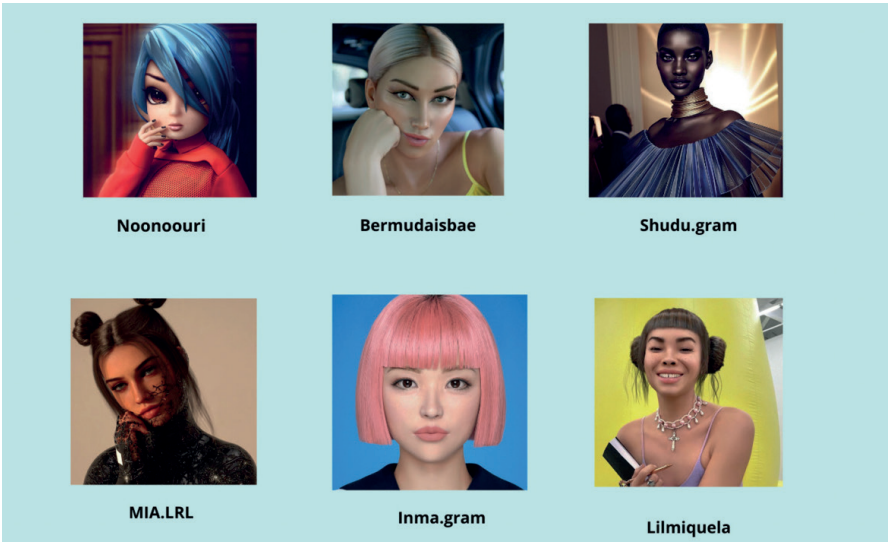
Methodology

In a scenario of profound changes in the roles of influence and the ways of communicating of fashion brands on social networks, the following research questions are raised:

> *PI.1*. What topics and communication strategies do AI-generated influencers use in fashion brand advertising campaigns?
>
> *PI.2* How has the use of artificial intelligence transformed the advertising strategies of fashion companies on social networks, and what role do AI avatars play in this process?

In this study, a methodology of comparative content analysis is applied, with a quantitative-qualitative cut (Silverman, 2016; Krippendorff, 2004). The proposed approach is based on the need to combine qualitative and quantitative methods to obtain a comprehensive and rigorous understanding of the interaction between digital influencers and the fashion industry.

The ranking process requires a substantial sample of messages (posts) from Lil Miquela (@lilmiquela), Noonoouri (@noonoouri), Immagram (@immagram), Shudugram (@shudugram), Bermudaisbae (@bermudaisbae) and Mia.lrl (@mia) Instagram accounts. These influencers were selected after a screening process in which the number of followers was taken into account as the main factor, since not all of them had to have a high number, but we had to obtain a varied set of audiences. Therefore, the avatar with the most followers (Lil Miquela) has a total of 2.5 million followers and the one with the least (Bermudaisbae) has 224,000 followers.



It analyzes, first, the function carried out by the previous digital influencers, the theme of their posts and the relationship with users reflected in the number and variety of comments. These two indicators allow us to visualize the scope of the avatars studied, as well as the function they acquire in reference to fashion and communication.

Likewise, the methodology aims to advance in the analysis of the ability of these subjects to influence their community and the companies that use these artificial intelligence tools in their advertising campaigns.

Following this line, we draw a methodology of quantitative and qualitative content analysis in a temporal space divided into three years, corresponding to the *Fashion Weeks* carried out on the same dates in the cities of New York, Milan, London and Paris. This study justifies its selection because they are key dates for elaborating content of luxury brands, which rely on international influencers in order to bring a brand closer, perhaps inaccessible to most of the population. In the same way, companies trust digital influencers to spread their products. In a way, brands are betting on advertising campaigns without tendency to errors of human influencers. Therefore, and considering the aforementioned periods, we find four specific dates detailed below:

- January 14, 2022 to February 22, 2022
- January 23, 2023 to February 27, 2023
- September 5, 2023 to October 5, 2023
- January 7, 2024 to March 7, 2024

In the field of human sciences, measurement has different characteristics in other disciplines. Thus, the design and construction of measuring instruments is a complex task. As López-Roldán and Fachelli (2015, p. 6) point out, measurement is to move from theoretical concepts to empirical indicators, so a correspondence must be given between concepts that allude to a reality and measurement in a reality, between the language of concepts and the language of numbers. When assigning a numeric character or a symbol to that characteristic to be measured, measurement scales are usually used. The usual classification of measurement scales distinguishes four types, depending on whether they are used for qualitative or categorical measurements, or for quantitative or continuous measurements.

At present, it is difficult to talk about statistical processes of quantitative data analysis without referring to computer science applied to research. These computing resources are often based on software packages that are intended to assist the researcher in the data analysis phase. At the moment one of the most perfect and complete packages is the SPSS. This is a package of programs to carry out statistical analysis of the data. It is a very powerful statistical application, with several versions since its origin in the seventies (Vilà Baños, 2006).

In this way, the measurement has to do with assigning alphanumeric values to a characteristic or property observable in a given phenomenon through some indicators (Reguant and Martínez-Olmo, 2014). As well and applied to the above analysis, we attach the table of variables used in this study as an illustration and better understanding.

The measurement tool or indicator sheet applied to Instagram incorporates the following main data:

Table 1
Indicators and coding

Tab Number	
Influencer	Noonoouri Lil Miquela Inma.gram Shudu.gram MAR.IA MIA.LRL Bermudaisbae
Date of publication	
Link to the publication	

QUANTITATIVE INDICATORS

Number of followers	
Number of likes	
Number of comments	
Number of shares (if real)	

QUALITATIVE INDICATORS

Gender	Male Female
Age	Childhood (1 to 11 years) Adolescence (12-19 years) Youth (20-25 years) Adulthood (26 to 59 years) Aging (over 60 years)
Content Type	Organic Advertising
Is it advertising?	Yes No
Sexualized or creative content?	Creative Sexualized

Type of comments	Positive Negative Neutral Spam Other
Personal Content	No Yes
Promotional Content	No Yes
Brand Product	No Yes
Tone of publication	Positive Negative Neutral Advertising
Recognition of AI	No Yes The Haunting Valley
Profession	Actor or actress Director Other professionals in the film sector Model Influencer Singer Companions Other
Race	Caucasian (white) Black Asian Other
Sizing	Skinny (small size) Standard (medium size) Plus size (plus size)

Results and discussion

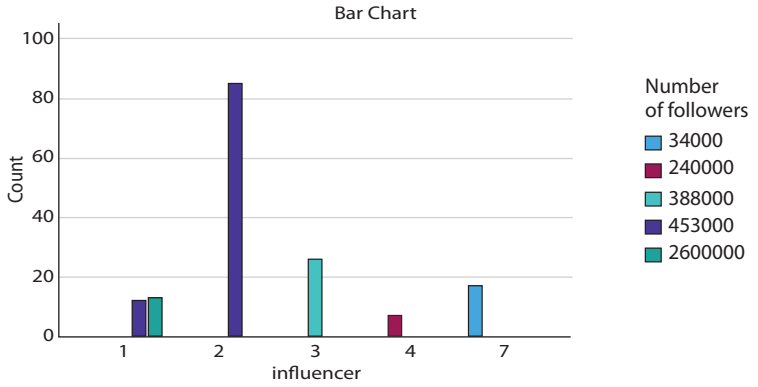
The application of the variables sheet through the SPSS statistical program (version 28) leads to the following results:

Figure 1
Number of followers

Influencer * Number of followers Crosstabulation

Count

		Number of followers					
		34000	240000	388000	453000	2600000	Total
Influencer	1	0	0	0	12	13	25
	2	0	0	0	85	0	85
	3	0	0	26	0	0	26
	4	0	7	0	0	0	7
	7	17	0	0	0	0	17
Total		17	7	26	97	13	160



Note. Own elaboration through SPSS.

Although these characters are avatars created with artificial intelligence, they have amassed a large number of followers on Instagram. Lil Miquela, the most followed person in the sample, has a total of 2.6 million followers, the most among those analyzed in this study. Next is Noonoouri with 453,000 followers. Imma.gram has 388,000 followers, while Shudu.gram has 240,000 followers. Finally, Mia.lrl has the smallest community with only 34,000 followers. This graphical representation of the community of all digital influencers has decided to be reflected in the results of this research to contextualize and serve as a guide about the influence that these avatars can have, since these are the main data in which a company is fixed when making a paid collaboration and/or advertising. Influencers are able to create large communities of followers by their lifestyle or their way of creating content, but it

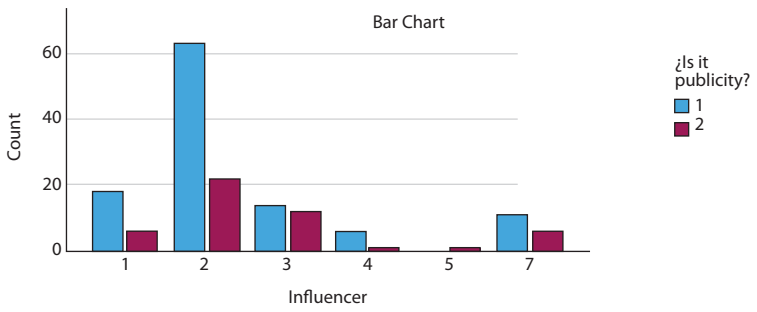
is the brands that ultimately help them to reach a larger target audience and therefore, make what begins as a hobby, a profitable business. In this table, we show how these characteristics are equally present in the avatars studied.

Figure 2
Advertising

Influencer *¿Is it publicity?

Crosstabulation

Count		¿Is it publicity?		
		1	2	Total
Influencer	1	18	6	24
	2	63	22	85
	3	14	12	26
	4	6	1	7
	5	0	1	1
	7	11	6	17
Total		112	48	160



Note. Own elaboration through SPSS.

Next, we analyzed the number of advertising publications from various brands and companies that work with AI-generated avatars, similar to how they work with human influencers. It was noted that Noonoouri (the second most popular influencer) posted the most advertising content on her Instagram profile, making a total of 63 posts for product promotion and only 22 for personal content in eight months. She is closely followed by Lil Miquela (the number one influencer) with 18 advertising posts but only six personal content posts. Imma.gram (the third-ranked influencer) strikes a balance between both types of con-

tent, with 14 promotional posts and 12 personal posts. Mia.lrl (number 7 in the influence ranking) has 11 commercial publications and seven personal content publications. In the Shudu.gram profile (influencer number 4), in the selected sample, there are six advertising publications versus a single personal publication.

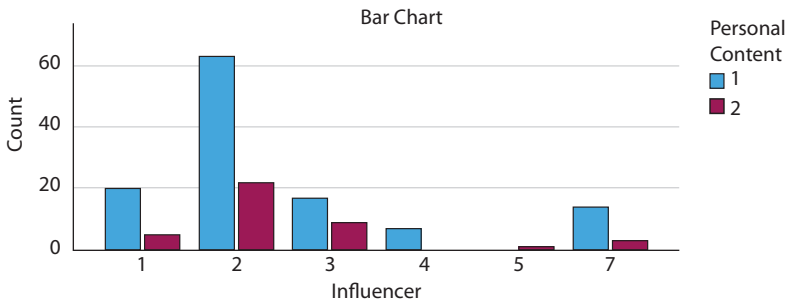
Figure 3

Organic non-advertising content

Influencer * Personal content

Crosstabulation

Count		Personal content		
		1	2	Total
Influencer	1	20	5	25
	2	63	22	85
	3	17	9	26
	4	7	0	7
	5	0	1	1
	7	14	3	17
Total		121	40	161



Note. Own elaboration through SPSS.

Finally, at the end of the ranking is Bermudaisbae (fifth in terms of impact), the only space that has not received promotional publications and only one publication of her own. When drawing conclusions regarding the research studied, companies and influencers collaborate in advertising campaigns through briefings, strict rules on what the campaign should be like and how they will disseminate the products sent. This is not only important in the face of a specific campaign but also has a greater significance in the

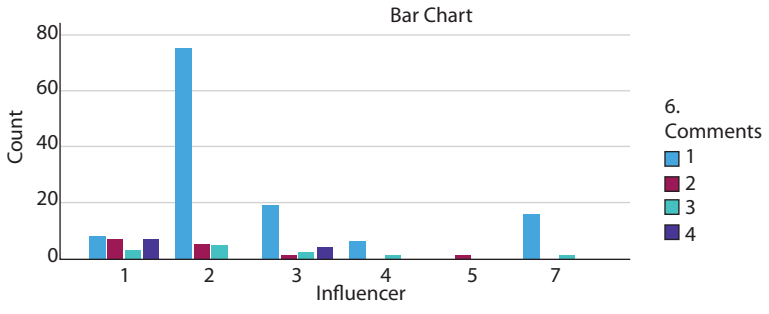
image that the company obtains after the collaboration. In the table, we see how paid collaborations are much more significant in number than the advertising content in avatar profiles. This is due to two reasons: firstly, it is much more complicated to create from scratch a life to a virtual entity that does not really exist; secondly, a strict briefing is much easier to comply with by a virtual influencer, since it is created from graphs and these are mathematical and accurate.

Figure 4
Comments

Influencer * 6. Comments
Crosstabulation

Count

		6. Comments				
		1	2	3	4	Total
Influencer	1	8	7	3	7	25
	2	75	5	5	0	85
	3	19	1	2	4	26
	4	6	0	1	0	7
	5	0	1	0	0	1
	7	16	0	7	0	17
Total		124	14	12	11	161



Note. Own elaboration through SPSS.

Like human influencers, AI-powered avatars, while not real, will combine their promotional volume with more personalized posts to establish a fictional life around the character. It is worth noting that Shudu.gram (influencer number 4) appears in the table as the only issue of study that presents only organic content. She was followed by Noonoouri (the second ranked influen-

cer) with 63 organic publications, compared to 22 advertising publications, for a total of 85 analyzed publications. Lil Miquela (the number one influencer) showed 20 personal argument posts from a set of 25 studies. Imma.gram (influencer number 3), Shudu.gram (influencer number 4) and Mia.lrl (influencer number 7) have fewer than 20 organic publications, 17, 7 and 14 respectively. However, the fact that a publication is classified as organic does not exclude the possibility that it contains hidden advertising, since in this study only brands are considered that are not mentioned or indicated in the photos or videos.

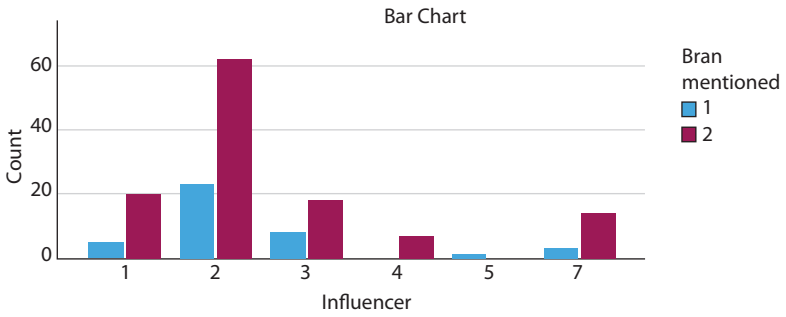
It would be interesting to know exactly the public's *feedback* in the specific case of communication through avatars created by artificial intelligence. Since artificial intelligence has no emotions, it is considered very difficult to imitate the naturalness of influencers. In most of the cases investigated, there were mainly positive comments, with fewer negative comments generated by bots. Noonoouri (influencer number 2) stands out as the one who received the most positive comments, with 75 posts receiving positive comments out of a total of 85 posts analyzed. Lil Miquela (influencer number 1) has a balanced record of comments received, with the same number of positive comments (8), negative comments (7) and bot comments (7). Although the number of comments considered for the other avatars is small due to the number of posts, positive comments predominate. This includes Shudu.gram (influencer number 4) with 6 total positive comments out of 7, Imma.gram (influencer number 3) with 19 total positive comments out of 26, and Mia.lrl (influencer number 7). It contains 16 positive comments out of 17 in total. It is interesting to note, in this case, the low number of comments generated by bots, since they are not human beings, but avatars created by artificial intelligence and, therefore, the Instagram algorithm would lead those posts to the most similar to them, i.e., to accounts of other robots. However, even *celebrities* appear among the comments of some of the avatars studied by emoticons or nearby words.

Figure 5
Number of times a comment is mentioned

Influencer * Bran mentioned
Crosstabulation

Count

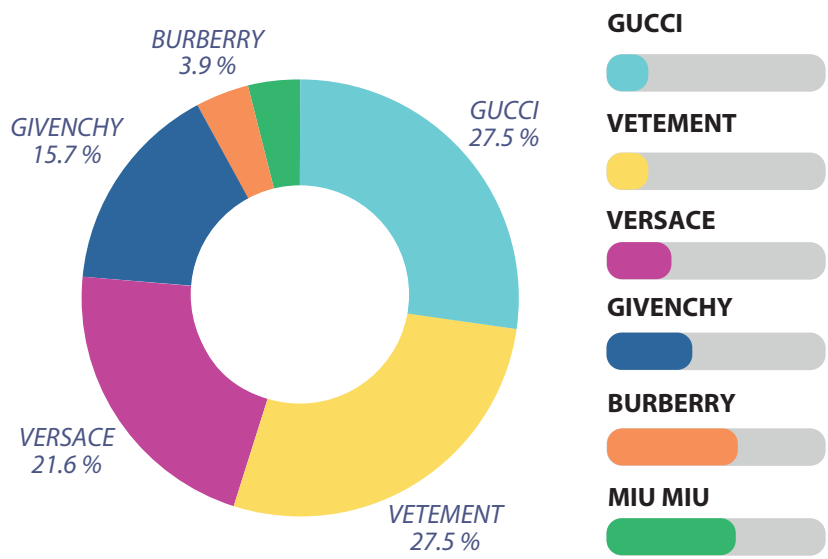
		Bran mentioned		
		1	2	Total
Influencer	1	5	20	25
	2	23	62	85
	3	8	18	26
	4	0	7	7
	5	1	0	1
	7	3	14	17
Total		40	121	161



Note. Own elaboration through SPSS.

As part of our advertising research, we specifically analyze how often advertised brands are mentioned, as the absence of this information could indicate the presence of hidden advertising. Noonoouri (influencer number 2) is undoubtedly the person who collects the most advertising content and, therefore, the one who mentions the brand the most in the publications, with a total of 62 mentions among the 85 publications studied. In the remaining cases, the number of publications mentioning the brand remains high, but lower compared to Noonouri. For example, Lil Miquela (influencer number 1) was mentioned 20 times in 25 analyzed advertising publications, while Imma.gram (influencer number 3) was mentioned 18 times in 26 analyzed advertising publications. Finally, Mia.lrl (influencer number 7) has 14 mentions from 17 analyzed publications and Shudu.gram (influencer number 4) has seven mentions from seven analyzed publications.

Figure 6
Brands appearing/advertising



Note. Own elaboration through SPSS.

From a total sample of 162 Instagram posts across six different influencer accounts, we found that a variety of brands use these avatars to promote their products. This is because all that digital content creators need is a good design, so they can easily adapt it to the specific needs of a brand or product. Not only are certain companies adopting this new type of influencer, but also important luxury fashion brands are joining this innovative method of advertising. Some of the most prominent brands include Gucci and Vetements, which have appeared in 14 different publications. Versace and Givenchy are mentioned in 11 and 8 cases respectively. Finally, Burberry and Miu Miu were underrepresented in the overall sample, with two releases each.

Conclusions

The results of this research derive from the analysis of other studies based on fashion communication on social networks or the role of influencers on Instagram (Pérez Curiel and Sanz Marcos, 2019). Knowing the application of strategic plans of fashion brands or the consumption criteria of young audiences are a preliminary step to delve into the new communication model of fashion companies based on Artificial Intelligence. Based on the above ideas, the formulas of the metaverse (Crespo Pereira *et al.,* 2023), the formation of avatars and their role in the virtual space serve as a guide to define the main characteristics of these internet entities and classify them within the world of communication and fashion.

Influencers (Vinader Segura *et al.,* 2019*)* provide authenticity and emotional connection that are the most difficult aspects to recreate with AI-created avatars (Allal-Chérif *et al.,* 2024). This ability to generate empathy and build human connections is a valuable asset in advertising *(Pérez Curiel and Luque Ortiz, 2018), as consumers tend to trust the recommendations of those with whom they have a genuine connection (Sanz-Marcos et al.,* 2019).

In this line, the studies of Crespo Pereira *et al*. (2023), which can be related to this research, delve into the origin of the metaverse as a tool intended to give life to artificial intelligence and, consequently, to the avatar. It is interesting to note that other works have dealt with the relationship between the physical properties of avatars and the effects on their behavior and that of third parties (Murray, 2020). The user is key to the future of the metaverse, as he/she is an active subject in this space (Park and Kim, 2022). Parallel to metaverse applications, the contents should give formulas for interacting with the user (Tayal *et al.,* 2022).

From this literature, we advance in the perception of users and their relationship with avatars on Instagram. As the analysis of comments indicates, this new type of content creators occupies a protagonist space, which is reflected in the positive messages in their publications, without excluding those coming from bots and fake accounts.

Public acceptance of AI avatars is also a key factor. Although technology advances, society's perception of these avatars as influencers can vary. Therefore, and solving the PI.1, it was concluded that the influencers generated by artificial intelligence in the advertising campaigns of fashion brands usually use topics related to innovation, technology, sustainability and cus-

tomization. Its communication strategy focuses on creating engaging visual content, interacting with its audience through personalized reviews and promoting products organically.

One aspect that makes the difference is the fact of the creativity and adaptability of real influencers. While AI avatars can be programmed to adapt and generate engaging content, the capacity for spontaneity and improvisation remains a human strength that AI must still fully master, as they are unable to generate content at all hours of the day unless they are pre-programmed, which would entail constant graphical work.

Despite all the drawbacks and responding to IP.2, one potential advantage of AI avatars is the reduction of costs typically generated by these practices, and greater efficiency in these communications. Avatars can be used to continuously produce content without the physical and personal limitations of human influencers. For brands, this can translate into cheaper and more consistent advertising campaigns. Artificial intelligence can more accurately target audiences, personalize advertising messages, and optimize marketing campaigns in real time. AI avatars play an important role in this process and provide a virtual representation of the brand to interact with users in a personalized way and have a greater and more direct impact on the audience.

To conclude, despite the fact that the avatars generated by artificial intelligence (AI) have the necessary characteristics to play a relevant role in brand advertising on social networks, it could not be said that their participation in the profession of "influencer" can be equated to the work done by human beings, at least in the near future. Characteristics such as authenticity, creativity and, above all, the ability to generate connections through natural and everyday emotions, are aspects that AI avatars do not yet dominate due to their limitations. However, it is likely that in the future a hybrid model will be developed in which AI avatars and human influencers coexist and collaborate, taking advantage of each other's strengths to create more effective and diverse advertising campaigns.

In addition, it highlights the collaboration between humans and artificial intelligence, promoting a hybrid approach that brings to the maximum the benefits for the parties involved in the process. In a way, this collaboration comes with challenges, such as the need to carefully manage public perception and the consistency of messages. Beyond these points, it is also relevant to reflect on the combination of creativity and human spontaneity with the precision and working capacity of AI.

However, during the investigation process, some limitation has been identified that has marked a turning point in the work. The inability to study the profile of @MAR.IA due to its disappearance and inactivity on the social network. The disappearance of a non-tangible avatar is an event that manifests an inherent problem of collaboration with these digital entities. This fact can be caused by the ephemeral nature of the avatars and the various decisions made by their creator.

In addition, digital influencers rely heavily on the platforms on which they operate. Any changes in the policies of these platforms, such as content restrictions or algorithm updates, can significantly affect their visibility and, therefore, their impact on the fashion market. The disappearance of profiles also leads to a loss of important data for longitudinal analysis. The inconsistency in the availability of information and the inability to access prior content limits the ability to continuously and closely monitor the impact of these influencers on fashion. Perception of authenticity is crucial in influencer marketing, and can be compromised when the audience is aware that they are interacting with an artificial entity.

In short, the combination of real influencers and artificial intelligence avatars in advertising signals the beginning of a new stage in the world of digital marketing. Although there are challenges within this collaboration, such as managing public perception and message coherence, it is evident the potential to develop more effective, varied and personalized advertising campaigns. Combining the authenticity and creativity of humans with efficiency and technological precision not only improves costs and market segmentation, but also changes the way brands interact with their audiences. Finally, it can be said that the key to success is to achieve a healthy balance between both worlds, in which feedback generates a joint complementation, with a final goal aimed at innovation and creativity.

References

Abeles, T. P. (2007). Education unbound. *On The Horizon, 15*(4), 199-203. https://doi.org/10.1108/10748120710836219

Allal-Chérif, O., Puertas, R. and Carracedo, P. (2024). Intelligent influencer marketing: how AI-powered virtual influencers outperform human influencers. *Tech-*

nological Forecasting & Social Change/Technological Forecasting And Social Change, 200, 123113. https://doi.org/10.1016/j.techfore.2023.123113

Au, W. J. (2005). Taking new world notes: an embedded journalist's rough guide to reporting from inside the Internet's next evolution. First Monday. https://doi.org/10.5210/fm.v0i0.1562

Chu, C. and Yamamoto, K. (2019). *Followers don't matter, but these numbers do: determining factors that affect conversion rates of influencer marketing campaigns.* https://bit.ly/4dKvJyp

Crespo-Pereira, V., Sánchez-Amboage, E. and Membiela-Pollán, M. (2023). Retos del metaverso: una revisión sistemática de la bibliografía desde las Ciencias Sociales, el Marketing y la Comunicación. *Profesional de la información, 32*(1), e320102. https://doi.org/10.3145/epi.2023.ene.02

Curiel, C. P. and Ortiz, S. L. (2018). El marketing de influencia en moda. Estudio del nuevo modelo de consumo en Instagram de los millennials universitarios. *AdComunica,* 255-281. https://doi.org/10.6035/2174-0992.2018.15.13

Del Mar, G. P. M. (2023, 1 junio). Metaverso en el marketing de moda de lujo: La transformación digital de la experiencia del consumidor. Universidad Católica San Antonio de Murcia. http://hdl.handle.net/10952/7629

del Olmo, J. L. and Fondevila Gascón, J. F. (2015). *Marketing digital en la moda* https://bit.ly/46ldRaW

Dionisio, J. D. N., Burns, W. G., III y Gilbert, R. (2013). 3D Virtual worlds and the metaverse. *ACM Computing Surveys, 45*(3), 1-38. https://doi.org/10.1145/2480741.2480751

Gerlich, M. (2023). The power of virtual influencers: Impact on consumer behaviour and attitudes in the age of AI. *Administrative Sciences, 13*(8), 178. https://doi.org/10.3390/admsci13080178

Granieri, M. (5 de marzo de 2023). ¿Qué es la inteligencia artificial generativa? OBS Business School. https://bit.ly/3M6bxLx

Kelly, N. N. M. (2018). "Works like Magic": Metaphor, Meaning, and the GUI in Snow Crash *Science-fiction Studies, 45*(1), 69. https://doi.org/10.5621/sciefictstud.45.1.0069

Krippendorff, K. (2004). *Content analysis: an introduction to its methodology*. SAG

Han, N., Kim, E., Park, Y. and Jo, S. (2021). Educational applications of metaverse: possibilities and limitations. *Journal of educational evaluation for health professions, 18*(32). https://doi.org/10.3352/jeehp.2021.18.32

La Inteligencia Artificial y el Metaverso. (2023, 5 abril). OBS Business School. https://bit.ly/3Sp1ZyQ

Liu, F. and Lee, Y. (2024). Virtually responsible? Attribution of responsibility toward human vs. virtual influencers and the mediating role of mind perception. *Journal of Retailing and Consumer Services, 77*, 103685. https://doi.org/10.1016/j.jretconser.2023.103685

López-Roldan, P. and Fachelli, S. (2015). Metodología de la investigación social cuantitativa. Dipòsit Digital de Documents de la UAB. https://bit.ly/3WGUzbR

Ning, H., Wang, H., Lin, Y., Wang, W., Dhelim, S., Farha, F., Ding, J. and Daneshmand, M. (2021). A survey on metaverse: the State-of-the-art, technologies, applications, and challenges. arXiv preprint arXiv:2111.09673, 1-32. https://doi.org/10.48550/arXiv.2203.02662

Murray, J. H. (2020). Virtual/reality: how to tell the difference. *Journal of visual culture, 19*(1), 11-27. https://doi.org/10.1177/1470412920906253

Papagiannidis, S., Bourlakis, M. and Li, F. (2008). Making real money in virtual worlds: Mmorpgs and emerging business opportunities, challenges and ethical implications in metaverses. *Technological forecasting and social-change, 75*(5), 610-622. https://doi.org/10.1016/j.techfore.2007.04.007

Park, S. M. and Kim, Y. G. (2022). A metaverse: Taxonomy, components, applications, and open challenges. *IEEE access, 10,* 4209-4251. https://bit.ly/3Wk8cNW

Real Academia Española: Diccionario de la lengua española, 23.ª ed., [versión 23.7 en línea]. https://dle.rae.es

Reguant Álvarez, M. and Martínez Olmo, F. (2014, 1 octubre). *Operacionalización de conceptos/variables.* https://bit.ly/3Ssm07U

Rospigliosi, P. A. (2022). Metaverse or Simulacra? Roblox, Minecraft, Meta and the turn to virtual reality for education, socialisation and work. *Interactive Learning Environments, 30*(1), 1-3. https://doi.org/10.1080/10494820.2022.2022899

Sadaba, T. and SanMiguel, P. (s. f.). Fashion blog's engagement in the customer decision making process. *Advances In Logistics, Operations, And Management Science Book Series*, 211-230. https://doi.org/10.4018/978-1-5225-0110-7.ch009

Sands, S., Campbell, C. L., Plangger, K. and Ferraro, C. (2022). Unreal influence: leveraging AI in influencer marketing. *European Journal of Marketing, 56*(6), 1721-1747. https://doi.org/10.1108/ejm-12-2019-0949

Sanz-Marcos, P., Jiménez-Marín, G. and Elías-Zambrano, R. (2019). The influencer's power in strategic brand decisions: Consequences for Spanish advertising agencies. *AdComunica*, 63-86. https://doi.org/10.6035/2174-0992.2019.18.5

Segarra-Saavedra, J. e Hidalgo-Marí, T. (2018). Influencers, moda femenina e Instagram: el poder de prescripción en la era 2.0. *Revista Mediterránea de Comunicación, 9*(1), 313-325. https://doi.org/10.14198/MEDCOM2018.9.1.17

Silverman, D. (2016). Introducing qualitative research. *Qualitative research, 3*(3), 14-25. https://bit.ly/4fesOQh

Suárez, I. D. (2022, 12 agosto). ¿Qué papel juega la Inteligencia Artificial en el Metaverso? *Metaverso247*. https://bit.ly/3LGvx7j

Tayal, S. Rajagopal, K. and Mahajan, V. (2022). Virtual reality based metaverse of gamification. En Proceedings, 6th *International Conference on Computing Methodologies and Communication, ICCMC* 2022, 1597-1604. https://doi.org/10.1109/ICCMC53470.2022.9753727

Vilà Baños, R. (2006). *¿Cómo hacer un análisis cuantitativo de datos de tipo descriptivo con el paquete estadístico SPSS?* Universitat de Barcelona Institut de Ciències de L'Educació Secció de Recerca. https://bit.ly/3YkQRH7

Vinader Segura, R., Vicente Fernández, P. and Gallego Trijueque, S. (2019, 31 enero). La comunicación de moda en YouTube: análisis del género haul en el caso de Dulceida. *Revista Prisma Social,* (24), 77-98. https://bit.ly/46oOR2x