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Marielle Perri Molina

Design and new technologies. Analysis of the use of artificial intelligence in the photography of fashion brand websites. Case study: 2024-2025



DESIGN AND NEW TECHNOLOGIES

ANALYSIS OF THE USE OF ARTIFICIAL INTELLIGENCE IN THE PHOTOGRAPHY OF FASHION BRAND WEBSITES. CASE STUDY: 2024-2025

Marielle Perri Molina^(*)

Abstract. The integration of Artificial Intelligence (AI) in this field has revolutionized creative and productive processes, allowing the generation of digital images, advanced editing and optimization of advertising campaigns without the need for traditional physical processes. The main objective of this study is to analyze how AI has optimized visual creation in fashion, improving process efficiency and reducing costs, without compromising creativity and brand identity. In addition, it explores the use of emerging technologies such as Generative Adversarial Networks (GANs), DALL-E and MidJourney, which have enabled the creation of hyper-realistic images, as well as the emergence of digital models and virtual environments for fashion shows and advertising campaigns. A qualitative analysis was used, examining different market segments: luxury fashion, fast fashion, and sustainable fashion. The use of AI in supply chain optimization, trend prediction, and user experience personalization was also analyzed. The results show that brands committed to sustainability and digital innovation are those that most integrate artificial intelligence into their visual processes. This is reflected in the adoption of digital avatars, virtual fitting rooms, and the reduction of environmental impacts through the minimization of physical production. The conclusions highlight that AI has already established itself as a virtual tool as it facilitates creative processes in fashion. Despite the ethical and creative challenges, it poses, its use continues to grow, driving a more technological and sustainable fashion model that radically transforms the sector and poses a future where the digital and the physical come together.

Keywords: Artificial intelligence, fashion photography, digital fashion, sustainability, digital models, virtual fashion shows, Generative Adversarial Networks (GANs).

Resumen. La integración de la Inteligencia Artificial (IA) en este campo ha revolucionado los procesos creativos y productivos, permitiendo la generación de imágenes digitales, la edición avanzada y la optimización de campañas publicitarias sin necesidad de procesos físicos tradicionales. El objetivo principal de este estudio es analizar cómo la IA ha optimizado la creación visual en moda, mejorando la eficiencia de los procesos y reduciendo costes, sin comprometer la creatividad ni la identidad de marca. Además, explora el uso de tecnologías emergentes como las Redes Generativas Antagónicas (GAN), DALL-E y MidJourney, que han permitido la creación de imágenes hiperrealistas, así como la aparición de modelos digitales y entornos virtuales para desfiles de moda y campañas publicitarias. Se utilizó un análisis cualitativo que examinó diferentes segmentos del mercado: moda de lujo, moda rápida y moda sostenible. También se analizó el uso de la IA en la optimización de la cadena de suministro, la predicción de tendencias y la personalización de la experiencia de usuario. Los resultados muestran que las marcas comprometidas con la sostenibilidad y la innovación digital son las que más integran la inteligencia artificial en sus procesos visuales. Esto se refleja en la adopción de avatares digitales, probadores virtuales y la reducción del impacto ambiental mediante la minimización de la producción física. Las conclusiones destacan que la IA ya se ha consolidado como una herramienta virtual que facilita los procesos creativos en la moda. A pesar de los desafíos éticos y creativos que plantea, su uso continúa creciendo, impulsando un modelo de moda más tecnológico y sostenible que transforma radicalmente el sector y plantea un futuro donde lo digital y lo físico se fusionan.

Palabras clave: Inteligencia artificial, fotografía de moda, moda digital, sostenibilidad, modelos digitales, desfiles virtuales, Redes Generativas Antagónicas (GAN).

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1. INTRODUCTION. OBJECTIVES AND HYPOTHESES

The integration of Artificial Intelligence (AI) in the fashion industry is reshaping how visual content is produced, especially in fashion photography. This technological shift offers brands and designers new ways to optimize production costs, reduce environmental impact, and engage digitally active consumers (Blaazer, 2024). AI tools allow for virtual fashion shows, AI-generated models, and digital photo shoots, which increase efficiency and accessibility in the creative process (Vogue Business, 2024; The Fabricant, 2023).

However, these innovations also raise critical questions about the preservation of human creativity and artisanal identity in fashion (El Confidencial, 2023). As the industry moves toward hybrid models that merge physical and digital elements, designers must find a balance between automation and artistic authenticity (González, 2025; Universitas, 2024). This research explores how AI can be implemented in fashion photography to enhance efficiency while maintaining the brand's creative identity.

1.1 OBJECTIVES

- **Objective 1:** To determine the target audience of fashion brands that use Artificial Intelligence.
- **Objective 2:** To examine the relationship between AI use and sustainable practices in fashion.
- **Objective 3:** To analyze the role of AI in optimizing the visual production process in fashion campaigns.
- **Objective 4:** To explore how AI contributes to reducing costs and environmental impact in the fashion industry.

1.2 HYPOTHESES

- **H.1.** Artificial intelligence is generally applied to brands targeting digitally active audiences.
- **H.2.** The use of artificial intelligence is not common in brands targeting older adults exclusively.
- **H.3.** Brands with a sustainable focus are, in many cases, those that most frequently use artificial intelligence to optimize their processes.

- **H.4.** The use of AI is not primarily limited to women's brands.
- **H.5.** The active implementation of artificial intelligence is not exclusive to Korean brands.

Figure 1

AI Collection "Deep".



Note. By The Fabricant, 2017.

2. METHODOLOGY

This research was conducted using a generally quantitative approach, which is based on the collection and analysis of numerical data in order to generalize results from representative samples (Creswell & Creswell, 2018). In this research, the quantitative approach is justified by analyzing the proportion of brands that do or do not use artificial intelligence, allowing for an objective and measurable view of the current situation in the fashion industry.

- **Difficulties encountered:** Time constraints in brand analysis due to data availability.
- **Adjustments made:** Reduction of the initial sample and selection of brands with clearly documented use of AI, which allowed us to maintain the quality and relevance of the analysis.

INFORMATION ANALYSIS MATRIX

- Country
- Brand
- Does it use AI?
- What do you use AI for? Analyzing customer data / smart mirrors / website chatbots / augmented reality for virtual try-ons / social media analytics to analyze trends?
- Is it a feminine, mixed or masculine brand?
- Is it a brand aimed at older adults?
- What audience do you have: upper, middle or lower class?
- Is it a sustainable brand?

3. RESULTS

Figure 2

Brands using AI.

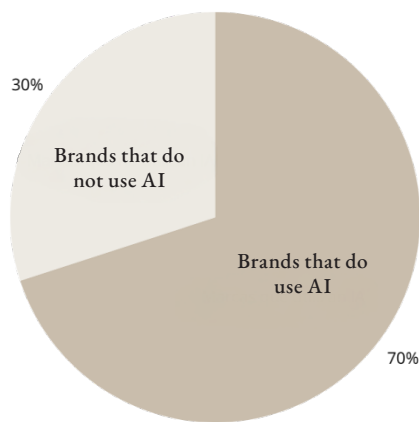


Figure 4

Brands targeting women that use AI.

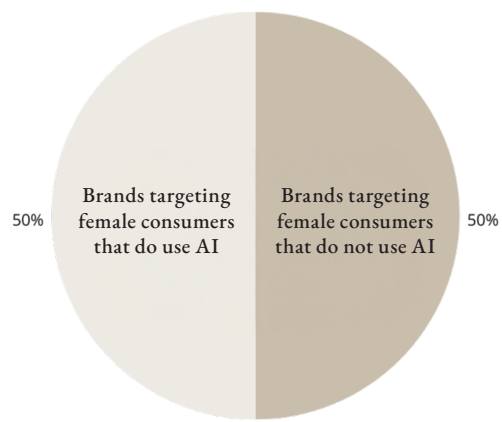


Figure 3

AI used by fashion brands.

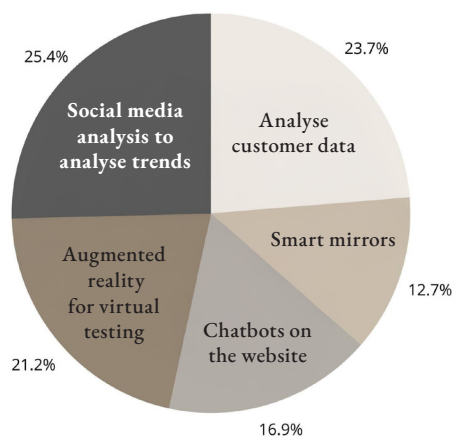


Figure 5

Brands targeting older adults that use AI.

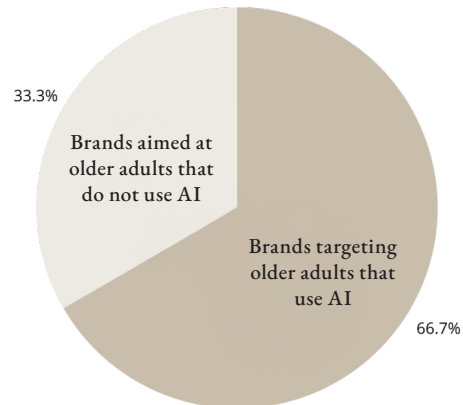


Figure 6

Brands according to their audience.

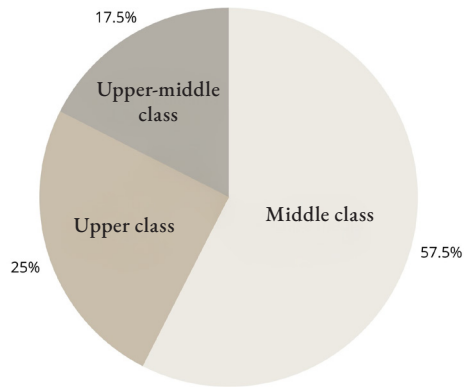


Figure 7

Sustainable brands in the analysis.

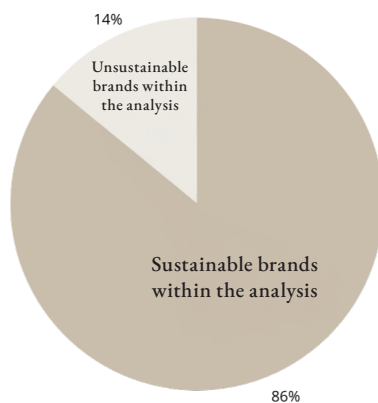
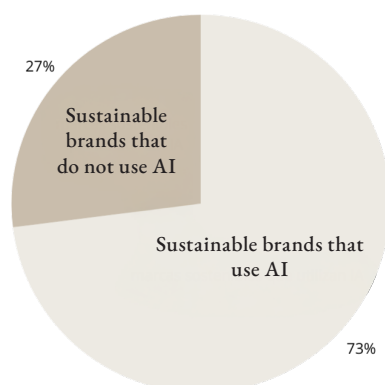


Figure 8

Sustainable brands using AI



4. CONCLUSIONS

- **H.1. Confirmed.** Artificial intelligence is generally applied to brands targeting digitally active audiences. Research shows that the brands that implement AI the most are those that work with younger audiences accustomed to the online environment, such as social media users, fast-fashion consumers, or digital experience customers. These brands use AI to create personalized visual content, streamline campaigns, and improve engagement on virtual platforms.
- **H.2. Partially confirmed.** The use of artificial intelligence is not common in brands targeting older adults exclusively. While some luxury brands with intergenerational audiences have begun to adopt digital technologies, in general, brands focused on an older audience have not yet significantly integrated AI, possibly due to their audience's preferences or a lack of technological investment.
- **H.3. Confirmed.** Brands with a sustainable focus are, in many cases, those that most frequently use artificial intelligence to optimize their processes. They use AI to reduce the use of physical resources (models, transportation, samples) and lessen the environmental impact of their campaigns. AI allows for the creation of digital images and runway shows without the need for traditional production, supporting a more conscious fashion model.
- **H.4. Not confirmed.** The use of AI is not primarily limited to women's brands. Research shows that both women's and mixed-gender and men's brands are adopting AI-based tools. The adoption criterion appears to be more closely linked to the brand's technological positioning and digital strategy than to the gender of the target audience.
- **H.5. Not confirmed.** The active implementation of artificial intelligence is not exclusive to Korean brands. Although South Korea has a strong technological presence in the sector, other regions such as Europe, the United States, and China also show a high level of adoption. Global brands such as Gucci, Nike, and Burberry use AI for similar or even more advanced purposes.

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