ERASMUS UNIVERSITY ROTTERDAM ERASMUS SCHOOL OF ECONOMICS Bachelor Thesis Economics & Business Specialization: Marketing

### The effect of perceived authenticity on consumers' willingness to buy AI-generated products

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#### ABSTRACT

This paper dives into the relationship between perceived authenticity and consumer willingness to buy AIgenerated products, while also distinguishing between high and low-involvement products. The topic is especially relevant, as existing literature has proven that perceived authenticity influences consumer trust, which then can have a positive effect on willingness to buy. The study proved that consumers often struggle to distinguish between human-created and AI-generated content, and that perceived authenticity significantly influences their purchasing decisions. Key findings also suggest that while AI-generated ads generally generate a higher intention to buy, transparency about AI involvement often reduces consumer willingness to buy significantly. This trend is consistent among both regular and non-regular users of Generative AI. Additionally, consumer willingness to buy is higher for high-involvement products but decreases significantly when AI involvement is disclosed, indicating greater skepticism for these products. The study recommends for marketers to focus on enhancing perceived authenticity of AI-generated content, as this factor was proven to have significant positive influence over consumer willingness to buy.

Keywords: Artificial Intelligence · Generative Artificial Intelligence · Authenticity · Willingness to buy

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#### 1. Introduction

Generative AI has become increasingly well-known over the recent years, with its innovative applications revolutionizing various industries. The term *Generative AI* refers to a nuanced technology which by computing is able to autonomously generate new content, such as text, images or audio based on a provided prompt (Hartmann and Zschech, 2023). It has altered the realm of marketing, where it is being incorporated into advertising's four pillars: Targeting, Personalization, Content Creation and Ad Optimization (Campbell et al., 2022). In advertising and content creation specifically, facilitating Generative AI makes room for enhancing creative quality and ad impact (Gao, Wang, Xie, Hu, 2023). One of the most vital reasons for Generative AI's great efficiency is the ability to use advanced machine learning techniques, interpret the data gathered and create output with little human interaction needed. Generative AI makes use of Natural Language Processing (NLP) to a great extent. This technique makes it possible to utilize data concerning consumer behavior and preferences (Tunca et al., 2023). This, in turn, enables content creators to produce highly personalized ads in multiple formats, for instance videos, images or written text. The prompt technology quickly processes text inputs provided by humans, which are then mined through NLP and translated into custom visuals. Such technology replaces content creators' visual work, while producing the output in real-time, based on the creator's instructions, but also consumer data and preferences. This level of speed and personalization not only enhances consumer engagement, but also provides a more immersive experience (Jovanovic and Campbell, 2022).

As technological advancements and Internet usage continually impact consumer behavior, it is essential for marketers to understand how people make decisions based on the resources they have in order to effectively cater to their preferences and needs (Nair, 2009). Nowadays, consumers are more inclined to interact with a company's website and online communities rather than visit traditional, brick and mortar stores (Koufaris, 2002). However, despite great online consumer presence and even greater technological advancements to accommodate it, there are still limitations to nuanced technologies such as AI. According to Kshetri and Piscarac (2023), Artificial Intelligence has the capability to produce content and process data, yet it was believed that some human features, such as creativity and critical thinking prove to be irreplaceable. And as Kshetri and Piscarac (2023) state, professions such as copywriters and designers cannot be substituted. However, as Generative AI continues to advance towards producing increasingly realistic and human-like outputs, the claims that humans are irreplaceable is being challenged. Therefore, even though some studies prove that due to the hyperrealism used in Generative AI, this technology can replace humans, some authors claim otherwise (Kshetri and Piscarac, 2023). Since hyperrealism is proven to influence humans greatly, Generative AI's authenticity and its impact remain a topic for further research.

Social media is one of the mass media channels where Generative AI meets the human-created work daily. In a study performed by Sands et al. (2022), the authors examine Instagram users' attitude towards generative AI. The work touches on the topic of consumer preferences between human influencers and AI-generated influencers. This study found that while social media users trusted human influencers more, they favored AI-generated influencers for their uniqueness. While influencers are a part of the social media advertising spectrum, the literature would benefit from more insight into the difference in consumer preferences for real-life and AI-generated products advertised in social media ads, which Sands et al. (2022) stated in the future research recommendations. Recent studies also mention factors that influence consumers to perceive AI-generated content differently than human-created content, such as personalization and customization (Divya and Mirza, 2024), aesthetics, quality of the image, and visual complexity (Hartmann et al., 2024). Moreover, the factor of authenticity (Campagna et al., 2023; Leung et al., 2022) for social media brands proves to be vital. As the authors state, it is crucial to be perceived as authentic so that strong brand identity and stable relationships with followers can be built and fostered. According to research within the product design realm, consumers tend to find AIgenerated imagery more appealing than human-created visuals (Burnap et al., 2023; Zhang et al., 2022). As Hartmann et al. (2023) states, the best AI models have the ability to outperform human-created marketing visuals in terms of realism. According to the study, some synthetic images are perceived as more realistic than 'real', human-created images. This is a particularly important observation, as it was proven that realistic product images contribute to increasing consumers' mental simulation of product consumption or usage (Kim et al., 2019), which in turn can translate into purchase intention (Ceylan et al., 2024; Hartmann et al., 2021). Though Generative AI is now perfectly capable of creating highquality, realistic visuals (Haase, 2023), images generated by AI tools such as DALL-E 2 can contain flaws that reveal their artificial creation origin (Ramesh et alch., 2022).

Moreover, recent findings show that AI-generated online ads can compete with professional humancreated photography, achieving an up to 50% higher click-through rate than human-created images (Hartmann et al., 2023). This only adds to the increasing relevance of exploring authenticity in the context of AI-generated content. To systematically address this research gap between perceived authenticity and willingness to buy, the following research question emerges:

# "How does the perceived authenticity of AI-generated product ads influence consumers' willingness to buy?"

The aim of the paper is to provide a comprehensive answer to the above stated central research question, based on both prior scientific literature and primary research. While doing so, this paper provides both social and scientific relevance. The social relevance lies in how Generative AI continues to impact

consumer behavior and preferences (Jovanovic and Campbell, 2022), particularly in the context of social media advertising (Campbell et al., 2022). As AI-Generated content is becoming more popular, it is crucial to understand its effects on consumer trust, engagement and purchasing decisions (Ceylan et al., 2024; Hartmann et al., 2021). This research addresses societal shifts, such as the implementation of AI in online engagement, and the increasing interaction between consumers and digital content. Moreover, this study contributes to marketers' understanding of the relationship between perceived authenticity of AI-generated ads and its influence on consumers' willingness to buy, which adds to the existing knowledge of the role of technology in society. The paper also highlights the importance of authenticity in building brand identity and trust, as well as of fostering strong relationships with consumers.

As for the scientific relevance, this paper adds to the field of marketing and consumer behavior by providing empirical evidence on the impact of AI-generated content. It does so by addressing a gap in the existing literature concerning authenticity of AI-generated ads and their effect on consumer willingness to buy. By creating and testing hypotheses, this study provides direction for further research and development in AI, which contributes to a deeper scientific understanding of the human-AI relationship. Therefore, this research not only improves our understanding of Gen-AI's capabilities and limitations but also explores the connection between technological advancements and human creativity included in digital content creation.

This paper will start with a thorough examination of existing literature, laying the groundwork for the hypotheses. According to the information gathered from the literature, hypotheses will be developed and then examined through primary research in the following sections. After the literature review, the upcoming section will present methodology, which will outline the preparation for primary research, the reasoning behind sample sizes, and a thorough description of the statistical methods used. Afterward, the findings will be revealed, which will include statistical evaluations and explanations. Lastly, the conclusion will combine the results from the literature review and the primary research to provide a comprehensive answer to the main research question.

#### 2. Theoretical Framework

#### 2.1 Authenticity in AI-Generated Visuals

Since artificial intelligence (AI) transformed and overtook the way consumers browse through the Internet, the idea of authenticity has gained popularity (Gkikas and Theodoridis, 2022). The Cambridge Dictionary defines authenticity as 'the attribute of a work being real or truthful.' However, in the context of Generative AI, authenticity refers to producing information that seems real, believable, and human-made (Galanter, 2019). Customers are now routinely exposed to content that, although extremely realistic, is not truly real (Sun et al., 2024). However, the overwhelming presence of GenAI's content in

consumers' every-day lives is not the only reason for the significance of authenticity in AI. As Church (2024) claims, authenticity in digital content marketing has gained significant popularity, since consumers are more likely to trust and engage with content they perceive as being genuine.

Although generative AI technologies, like DALL-E 3 or Midjourney, have progressed to produce extremely realistic images, concerns whether or not these AI-Generated pictures can be regarded as real have risen (Wagner and Blewer, 2019). Research indicates that the existence of human-like defects, transparency regarding the content's origin, and overall image quality and realism all impact the authenticity of AI-generated content (Epstein et al., 2023).

Because of their hyper-realistic features and customisation, AI-generated ads can achieve higher engagement rates (Israfilzade and Sadili, 2024). However, when authenticity is the primary concern, consumers frequently show a preference for visual work produced by humans. The tendency stems from the idea that content produced by humans is more relatable and authentic, which increases trust (Bellaiche et al., 2023). Moreover, research by Sands et al. (2022) indicates that while AI-generated influencers on social media are appreciated for their uniqueness and innovation, human influencers are generally trusted more due to their perceived authenticity. However, as AI technology continues to improve and become even more realistic, the gap between the perceived authenticity of AI-generated and human-created content may narrow (Sands et al., 2022).

#### 2.1.1 Hyperrealism in AI-Generated Visuals

Hyperrealism has taken Generative-AI's realness to another level and this trend has grown extremely rapidly (Hao, 2021). Hyperrealism refers to a visual emphasis of extreme detail, focus and the usage of rich colors which all combined create an illusion of reality (Javan and Mostaghni, 2024). The exact implications of hyper-realism are yet to be determined, but first steps in literature have been made. A study performed by Miller et al. (2023) focused on distinguishing real human faces from AI-generated faces. In their work, Miller et al. prove that AI-generated faces were identified as more "human" than the human ones.

However, even hyperrealism has its limitations. Hallucinations are defined by IBM as "a generative AI output that is nonsensical or altogether inaccurate—but, all too often, seems entirely plausible." These flaws or hallucinations in AI-generated photos indicate that they are not human-created (Siontis et al. 2024) and can lead to the consumer becoming skeptical and reduce their trust due to the decreased perceived authenticity. Hallucinations in majority are caused by the inaccuracy or lack of detail of the prompt provided (Thorne, 2024). Such distortions are the major barrier and threat to full exploitation of generative AI technology.

Studies done on perceived authenticity in GenAI and hyperrealism suggest that consumers value realness, credibility and the human touch (Galanter, 2019) in digital marketing. But nowadays, the images become so real, that when asked to recognize human-created portraits from AI-Generated images, respondents face major difficulties (Miller et al. 2023). To test whether the same conclusions as Miller et al. (2023) reached for human faces apply to products as well, the first hypothesis is:

H1: Consumers face major difficulties when distinguishing human-created and AI-Generated product advertisements.

#### 2.2 Willingness to buy AI-Generated Products

Customers' purchasing decisions regarding AI-influenced products are significantly influenced by their perceptions of AI (Marti et al., 2024). The significance of perceived authenticity lies in its ability to influence the attitudes and actions of customers toward this product. Trust in relation to technology and automation can be defined as the ability to bestow an assumption of reliability and predictability which is built up over time, while using such technology or automation (Thorne, 2024). In GenAI, that assumption of reliability and predictability is understood as the extent to which the output meets the needs of the user and the technology's transparency. In case of content creation, the user's needs are for GenAI to create output as close to real (human-created) content as possible.

Authentic products are frequently associated with higher perceived value and brand trust, both of which can encourage positive consumer behavior (Nunes et al., 2021). Content being genuine and real triggers emotional responses which then lead consumers to feel a stronger connection with the brand (Morhart et al., 2015). Authenticity in digital content marketing is also crucial due to its reaction on consumers' willingness to buy and engage (Church, 2024). Such reaction occurs because consumers that perceive the content as genuine show increased trust, which then leads to a greater willingness to pay a premium for the product and increased loyalty (de Kerviler et al., 2021; Newman & Bloom, 2012). Moreover, perceived authenticity mitigates the skepticism often associated with AI-generated content by creating a perception of transparency and ethicality (Van Esch et al., 2020). While authenticity, along with other factors as drivers for consumer perception of Generative AI are mentioned, the literature studied does not cover the relationship between authenticity, AI-generated product ads, and willingness to buy. However, since the perceived authenticity increases consumer trust and increased consumer trust positively affects willingness to buy, the following hypothesis was formed:

H2: The perceived authenticity of AI-generated product ads positively influences consumers' willingness to buy.

#### 2.2.1 Acceptance and trust in GenAI

Consumer acceptance of AI technology is greatly influenced by familiarity with this technology (Kelly et al., 2023). Frequent use and exposure to AI-enhanced products decrease perceived risks and foster trust, making these technologies less intimidating and more approachable for users. Empirical research support the notion that familiarity with AI not only improves its perceived value and ease of use, but also creates a more favorable attitude toward its adoption (Horowitz et al., 2023). Also, practical AI experiences can help mitigate customer concerns and increase their comfort and confidence in these technologies (Wanner et al., 2022).

According to Kučinskas (2024), AI involvement hints regularly led to negative feedback and reduced willingness to pay and purchase, especially when it related to credibility and authenticity. Customers expressed hesitation towards AI-produced content, most likely due to concerns about the novelty of AI in creative production and how it would affect reliability as well as quality (Kučinskas, 2024). Due to the observed negative bias towards AI-Generated content, the following hypothesis was formed:

### H3: Consumer knowledge of creation source decreases their willingness to buy AI-Generated products.

However, users who are accustomed to the AI technology have distinct attitudes towards GenAI, than those that do not use GenAI frequently (Choung et al. 2023). According to Choung et al. (2023), consumer who are frequent users of Generative AI showcase a higher trust in AI and are more likely to engage with the technology in the future. Moreover, as trust is dynamic (Thorne, 2024), it adapts and increases based on the user's experience with the system. Meaning, that the more experienced with Generative AI the user is, the more trust they place in this technology. As heightened trust can be directly linked to increased willingness to pay (de Kerviler et al., 2021), the following hypothesis was created:

H4: GenAI's regular users' willingness to buy does not change after being shown cues of Artificial Intelligence's input into the ad.

#### 2.2.2 High involvement and low involvement products

Products are often divided into high and low involvement types based on how they are perceived by consumers (Dahlén et al., 2000). For high involvement products, consumers seek more information, are more active and need to be strongly convinced before making the purchase. Low involvement products, however, are the choice for consumers that are passive and do not need to search for further information in order to make the purchase (Dahlén et al., 2000).

Perceived Financial Risk is significant in consumer decision-making as it captures the potential negative financial effects of a purchase. This form of risk is particularly prevalent in situations involving expensive items or new product categories, when the financial stakes and possibility for regret are significant. For example, consumers may be concerned about the authenticity of a luxury item or the dependability of a new technological device, which could result in severe financial loss if the product fails to match expectations (Aldousari et al., 2017).

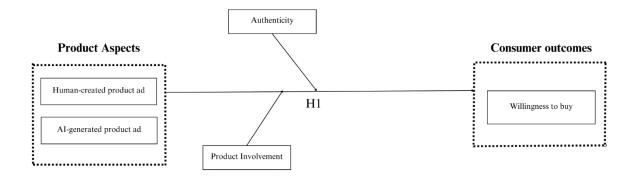
As high involvement products require more financial contribution, they thus require more careful consideration from potential customers. For such products, consumers tend to evaluate the product more carefully, they also need more information about both the products and the brand. Consumers also tend compare product attributes to its alternatives (Dahlén et al., 2000). Such vigorous inspections could lead to consumers spotting the occasional hallucinations and reality distortions, hence decreasing their trust and therefore, their willingness to buy. Thus, the following claim was formed:

# *H5:* Consumers' willingness to buy differs between high and low involvement products generated by *AI*.

The central research question is oriented around the implications of perceived authenticity on consumers' willingness to buy for AI-Generated products. The hypotheses created serve as steps in answering the central research question and add more dimensions. Hence, the following conceptual model has been created:

#### Figure 1

Conceptual Model



To summarize this chapter, a list containing all hypotheses supported by existing literature was created:

H1: Consumers face major difficulties when distinguishing human-created and AI-Generated product advertisements.

H2: The perceived authenticity of AI-generated product ads positively influences consumers' willingness to buy.

H3: Consumer knowledge of creation source decreases their willingness to buy AI-Generated products.

*H4: GenAI's regular users' willingness to buy does not change after being shown cues of Artificial Intelligence's input into the ad.* 

*H5:* Consumers' willingness to buy differs between high and low involvement products generated by *AI*.

#### 3. Research Methodology

For this primary research, quantitative research will be used, with data gathered by conducting a survey. According to the APA Dictionary of Psychology, quantitative research is "a method of research that relies on measuring variables using a numerical system, analyzing these measurements using any of a variety of statistical models, and reporting relationships and associations among the studied variables." This method was chosen in order to test the hypotheses formed.

Since the paper is an extension of the research done by Sands et al. (2022), it will follow the methodology employed by the inspirational study, so as to guarantee the same approach. The survey will be distributed to a sample of 450 respondents. This number is chosen to ensure sufficient statistical power and reliability in the results. Based on the methodology of Sands et al. (2022), who collected data from 455 respondents, a similar sample size is deemed appropriate to achieve comparable levels of confidence in the findings. In their study, after accounting for exclusions due to failed attention checks and prior knowledge of the influencer, the final sample size was 325.

Furthermore, a sample of this size will allow for meaningful segmentation and comparison across different demographic groups, enhancing the generalizability of the results. To avoid confirmation bias, the study will compare consumers' willingness to buy for the same set of products before and after the respondents learn whether the ad was created by a human or by generative AI. By using the same products in both comparisons, it is ensured that factors like visual appeal and background remain consistent. To provide a structure, the survey will be divided into three sections as following:

#### 1. Demographics

This, first, section will contain information about the respondents, such as their age, their previous experience with GenAI and their frequency of using GenAI.

#### 2. Perceived authenticity

The second section will aim to test the degree to which respondents can correctly identify the humancreated visuals. The questions will present a set of two social media ads, one containing a human-created image and the other one containing an AI-Generated image. The respondents will not know which one is which, but they will be asked to choose which one, according to them, is more authentic.

#### 3. Willingness to buy based on perceived authenticity

This third section of the survey will focus on consumer willingness to buy based on perceived authenticity. The respondents will be presented with the same image sets as in the previous section, however this time they will be asked to choose which product they would be more willing to buy based on their perceived authenticity.

#### 4. Willingness to buy after knowing the creation source

In this last section, the respondents will be presented with the same visuals as before, however this time shuffled in presenting order and with the creation source listed below. Meaning, that under each ad, there will be a disclaimer noting which visual is AI-Generated and which one is human-created. The comparison between this section and the previous one, guarantees a clear indicator as to whether consumers' willingness to buy the same products decreases after discovering that their ads were created by AI.

The study will use a within-subject experiment technique to identify differences in consumers' attitudes before and after they learn whether an ad was created by AI or by a human. In total, there will be 10 pairs of ads chosen to avoid respondent fatigue. Following the methodology of Sands et al. (2022), the ads will be sourced from social media, particularly Instagram, due to its extensive use for product advertising. Product advertisements will be selected at random from brands offering both high and low involvement products, ensuring a comprehensive analysis of consumer behavior across different levels of product engagement. A Toyota car, Rolex watch, Gucci perfume, Prada bag and a fountain pen were used as high involvement products. Soap, ice cream, makeup, coffee and headphones were used as low involvement products. By including both types, the study aims to capture a broader spectrum of consumer preferences and reactions to AI versus human-generated ads, as discussed in previous research on human discernment and preference changes with AI-generated content.

To create product ads, an AI tool called Midjourney Inc. will be used, that can be accessed via Discord and produce images that can be saved and then applied to advertisements on social media. In order to achieve an image that is as close to the original advertisement as possible, the study will first use Midjourney's "recognize" option, which analyses the image given and writes down a prompt based on the features recognized. This prompt will then be used to ask Midjourney to create images. This study will only focus on Midjourney's output, however there are many more generative AI tools, for example DALL-E 3, Fy!, Adobe Firefly. A direction for future research would be analyzing any differences between willingness to buy based on perceived authenticity, across multiple generative AI tools.

To construct and distribute the survey, Qualtrics was employed. During the data cleaning process, 24 incomplete responses were identified and removed, which were unfinished and hence unsuitable for the analysis. This step decreased the overall number of responses from 226 to 202. Stata was used to prepare and clean the data. This involved importing the raw data, verifying it for mistakes or inconsistencies, and implementing any necessary adjustments.

Conducting statistical tests for each hypothesis is critical to systematically address the central research question, as these tests allow for a thorough examination of the differences in perceived authenticity and willingness to buy between AI-generated and human-created options, providing empirical evidence to support or reject each hypotheses leading to the central question. The following tests were performed for each of the hypotheses created:

## H1: Consumers face major difficulties when distinguishing human-created and AI-Generated product advertisements.

For the first hypothesis, a binary variable was generated to measure each image's perceived authenticity. This variable was assigned a value of one if the respondent identified which image was generated by humans and zero otherwise. Meaning, that responses which incorrectly assumed that the AI-generated image was more authentic (real) received a score of 0.

A proportions test was performed in Stata to assess whether respondents could identify the humancreated image more accurately than a random guess. This test determined whether the mean of the responses deviated significantly from 0.5, indicating that the probability of correctly identifying the human-created image was not just chance (i.e., not a 50/50 chance).

The proportions test provides a systematic means of evaluating the hypothesis by comparing the observed proportion of correct identifications to the null hypothesis at a 50% chance level. This

statistical approach was used to determine if respondents could reliably distinguish between AIgenerated and human-created images.

# H2: The perceived authenticity of AI-generated product ads positively influences consumers' willingness to buy.

The second hypothesis relied on the original variables of perceived authenticity and willingness to buy for each product. In this instance, the created binary variable was not used because it would have limited the hypothesis to "for individuals who identified the human-created image correctly, perceived authenticity positively influenced their willingness to buy." Instead, the purpose was to see if respondents' perceived authenticity influenced their intention to buy, regardless of whether they preferred the AI-generated or human-created image.

To investigate the effect of perceived authenticity on willingness to buy, a logistic regression analysis was performed on each product separately. The logistic regression assessed how perceived authenticity influenced the likelihood of respondents' willingness to buy, indicating whether respondents consistently linked their perception of authenticity to their purchasing decisions across different products. This technique allowed for a more comprehensive understanding of the relationship between perceived authenticity and willingness to buy, regardless of whether the image was made by AI or by humans.

#### H3: Consumer knowledge of creation source decreases their willingness to buy AI-Generated products.

The third hypothesis aimed to determine whether respondents who first stated a willingness to buy the AI-generated product switched their preference to the human-created product after learning about the creation source. First, a binary variable for willingness to buy was created based on which images were created by GenAI and which ones by humans. Meaning, that the binary variable took on a value of 1 if the respondent preferred the AI-Generated image and 0 if human-created visual was preferred. Similarly, a binary variable was created for the second willingness to buy question (after learning the creation source). Such preparation was needed because the output was simply 1 or 2, depending on which option the respondent chose. However, there was no information in those variables on whether the option was a visual generated by AI or not.

Then, for each product, a paired t-test was performed to determine whether there was a significant difference in willingness to buy after learning about the creation source. The difference between the responses to the two questions was calculated, with a difference of 0 indicating no change in consumer preference. A negative outcome would suggest a decrease in willingness to buy after learning that the product was AI-generated.

The paired t-test was used to assess the mean differences in respondents' willingness to buy before and after learning about the fact that it was Generative AI which created the image. This would indicate differences in consumer behavior based on perceived authenticity of AI-generated versus human-created products.

# H4: GenAI's regular users' willingness to buy does not change after being shown cues of Artificial Intelligence's input into the ad.

For the fourth hypothesis, dummy variables were generated based on respondents' answers to the question related to their AI usage. The answers included "yes," "no," and "don't know/not sure." The analysis focused solely on "yes" responses. Dummy variables were constructed for each of the response options, with a value of 1 indicating that the responder selected the stated option and 0 otherwise. In this case, the dummy variable for the "yes" response was utilized to identify respondents who indicated using AI.

A paired t-test was used to investigate whether there was a significant difference in willingness to buy before and after gaining knowledge that the image was AI-generated. A mean difference of 0 would suggest that the answers did not differ, indicating that there was no change in respondents' willingness to buy.

#### H5: Consumers' willingness to buy differs between high and low involvement products generated by AI.

The fifth hypothesis aimed to determine whether consumers' willingness to buy differed between AIgenerated high and low engagement products. To do this, two new variables were formed by adding the replies for high and low involvement products, respectively. High involvement products included a car, a watch, a bag, a pen, and perfume. Low-involvement included soap, makeup, headphones, coffee, and ice cream.

A t-test was used to evaluate the willingness to buy high involvement products compared to low involvement products. This analysis was carried out twice: once for the initial willingness to buy replies (before learning about the product's creation source) and again, for the second willingness to buy question.

#### 4. Research Outcome

This section will focus on the results of the analysis performed, to address each hypothesis separately. Before diving into the hypotheses testing, it is important to provide an overview of the respondents' sociodemographic background. Such data will offer more insights into the characteristics of the sample population and provide more context for interpreting the study's findings.

The following table presents ages of respondents (grouped into several intervals), gender, and usage of GenAI. For a complete break-down, see Appendix 1.

#### Table 1

Sample characteristics	n	%
Age group		
18-24	122	60.39
25-29	40	19.80
30- 40	29	14.36
41-50	3	1.49
51+	8	3.96
Gender		
Female	118	58.42
Male	84	41.58
Have Used GenAI Before?		
No	98	46.04
Yes	93	48.51
Don't know / Not sure	11	5.45
Total	202	100

Out of the respondents who chose "Yes" in the question asking whether they have used GenAI before or not, a frequency distribution was made which is addressed in Table 2.

#### Table 2

GenAI Frequency Usage Distribution

Sample characteristics	n	%
Frequency of using Generative AI		
Very often	11	11.83
Often	22	23.66
Sometimes	29	31.18
Rarely	19	20.43
Very rarely	12	12.90
Total	93	100

As the demographic data suggests, most respondents were under 30. The mean age was 26.12 years. Moreover, more than half respondents were females, with none choosing the "Non-binary/Third Gender" option provided. Almost half of the respondents confirmed using Generative AI, with approximately 5.5% who were not sure. Out of the 93 respondents who responded to have used GenAI, 31.18% admitted to using it sometimes, with fewer respondents using it either often or rarely, and even less who admitted to use it very often or very rarely. Results and conclusions per each hypothesis are listed below.

# H1: Consumers face major difficulties when distinguishing human-created and AI-Generated product advertisements.

The sample data suggests that approximately 58.91% of respondents correctly identified the humancreated images of cars, which indicates a higher than chance (50%) rate and a high significance level suggests that the output is statistically significant. This product was the highest recognized one.

The percentage of identifying human-created images correctly is higher than chance for car and perfume only, however only for car the outcome was statistically significant. On the other hand, for products such as soap, ice cream, watch, bag and headphones, the identification percentage was considerably lower, with bag and headphones reaching approximately 18%. Since for these products the identification rate was lower than chance at various - but statistically significant - levels, it is possible to conclude that for those instances the first hypothesis holds true. For makeup, perfume and coffee the output was not statistically significant at the conventional levels, hence it is impossible to conclude whether respondents correctly identified these AI-Generated products or if their guesses were merely a 50/50 chance.

Concluding, respondents faced major difficulties when distinguishing human-created and AI-Generated product advertisements for soap, ice cream, watch, bag and headphones ( $0.01 \le \text{p-value} \le 0.1$ ), which proved the first hypothesis to be true. For cars however, *H1* was rejected, since according to Table 3, almost 59% (p-value  $\le 0.01$ ) of respondents identified the human-created car correctly.

#### Table 3

Respondents who have identified the human-created images correctly

Sample characteristics	n	%	
Correctly identified human-created images			
Car	119	58.91***	
Soap	88	43.56*	
Ice cream	85	42.08**	
Watch	84	41.58**	
Makeup	96	47.52	
Perfume	109	53.96	
Bag	35	17.33***	
Coffee	101	50	
Headphones	38	18.81***	
Pen	91	45.05	
Total	202	100	
<i>lote.</i> Significance levels are reported	as stars. With * implying	p-value $\leq 0.1$ ;	

*Note.* Significance levels are reported as stars. With \* implying p-value  $\leq 0.1$ ; \*\* implying p-value  $\leq 0.05$ ; \*\*\* implying p-value  $\leq 0.01$ .

### H2: The perceived authenticity of AI-generated product ads positively influences consumers' willingness to buy.

According to Table 3, for almost all products, the respondents who perceived the human-created ones as more authentic also chose the same products as the ones they would be more willing to buy. The only exception being makeup, where the coefficient was not significant at any conventional levels. Since logistic regression's coefficients cannot be interpreted directly, the degree of increased willingness to buy cannot be directly identified. Therefore, the *Odds* and *Probability* columns were added. Values in these column were calculated using Stata's *di* exp() command, and by inserting the formula for the odds-based probability:

$$p = \frac{Odds}{1 + Odds}$$

The only product for which the coefficient is not significant is makeup. For headphones, the intercept obtained was extremely low, which was rounded down to 0. It is also not statistically significant, as its

p-value was 1.000. Such intercept and high p-value suggest that the model's fit does not rely on the intercept, and its contribution to the model is negligible.

The coefficients for all products except for makeup were highly significant, with the p-value  $\leq 0.01$ . Meaning, that for every product except makeup, perceived authenticity increased willingness to buy. The observed probability of buying when perceived as authentic proved to be the highest for ice cream and bag, with approximately 0.870 and 0.858 increased probability of purchasing the product that the respondent deemed more authentic.

Such results provide enough statistical evidence to support the second hypothesis for all products except for makeup, where the coefficient was insignificant. Hence, the perceived authenticity of AI-generated product ads does, indeed, positively influence consumers' willingness to buy.

#### Table 4

	Willingness to Buy a Product Perceived as More Authentic							
Product	Coefficient	Intercept	Odds	Probability				
Car	1.483***	-2.630***	4.405	0.815				
Soap	1.477***	-1.583***	4.380	0.814				
Ice cream	1.900***	-1.712***	6.688	0.870				
Watch	1.435***	-0.802***	4.190	0.807				
Makeup	0.893	-1.686***	2.442	0.709				
Perfume	1.347***	-0.749***	3.844	0.794				
Bag	1.795***	-2.048***	6.019	0.858				
Coffee	1.177***	-0.958***	3.244	0.764				
Headphones	1.305***	0	3.686	0.787				
Pen	1.393***	-1.270***	4.028	0.801				

Logistic Regression Analysis of the Effect of AI Perception on Willingness to Buy.

*Note.* Significance levels are reported as stars. With \* implying p-value  $\leq 0.1$ ; \*\* implying p-value  $\leq 0.05$ ; \*\*\* implying p-value  $\leq 0.01$ . Odds represent the odds of buying a product displayed on a human-created ad after correctly identifying its authenticity.

### H3: Consumer knowledge of creation source decreases their willingness to buy AI-Generated products.

As presented in Table 5, the results vary per product. The trend is decreasing for the following products: car, soap, ice cream, watch, makeup, bag, headphones and coffee. Meaning, that after consumers are told which product is generated by AI, they switch their preference to the human-created one. This can be observed, as the mean before (mean of the first willingness to buy questions) is greater than the mean after (mean of the second willingness to buy questions – after consumers are told which product is AI-

Generated). For every product mentioned the mean difference is highly significant, with p-value  $\leq 0.01$ , however for coffee and headphones the output is significant at the p-value  $\leq 0.05$  level, which still implies statistical reliability. Hence, the null hypothesis of there being no difference in willingness to buy is rejected.

Interestingly, for both coffee and pen the willingness to buy after being informed which product is AI-Generated increases. This suggests a reversed trend, as for both products the results are statistically significant, also rejecting the null hypothesis that there is no difference in the means.

Concluding, the paired t-test results confirm that consumer knowledge of creation source decreases their willingness to buy AI-Generated products (car, soap, ice cream, watch, makeup, perfume, bag and headphones). However, for coffee and pen, the hypothesis is rejected, since the willingness to buy increases after knowing the creation source.

#### Table 5

T-test Analysis For the Decrease in Willingness to Buy After Gaining Knowledge of the Creation Source.

	Willingness to Buy After Knowing the Product is AI-Generated							
Product	Mean_Before	Mean_After	Mean Difference					
Car	0.861	0.678	-0.183***					
Soap	0.658	0.406	-0.253***					
Ice cream	0.619	0.465	-0.154***					
Watch	0.490	0.356	-0.134***					
Makeup	0.762	0.599	-0.163***					
Perfume	0.530	0.446	-0.084**					
Bag	0.619	0.456	-0.163***					
Coffee	0.416	0.550	0.134***					
Headphones	0.267	0.198	-0.069**					
Pen	0.609	0.391	0.218***					
<i>Note</i> Significance levels	are reported as stars	With * implying	p-value < 0.1					

*Note.* Significance levels are reported as stars. With \* implying p-value  $\leq 0.1$ ; \*\* implying p-value  $\leq 0.05$ ; \*\*\* implying p-value  $\leq 0.01$ .

### *H4: GenAI's regular users' willingness to buy does not change after being shown cues of Artificial Intelligence's input into the ad.*

Table 6, comparing to Table 5, covers only respondents that admitted to using Generative AI in the past, with various frequency. A total of 93 respondents chose to have been using GenAI in the past, which is

also the sample size of the paired t-test in Table 6. In Table 5, the sample size was 202 - the study's whole population.

The outcomes from the paired t-test in Table 6 suggest that for some products the decreasing trend also holds true for GenAI users, since the mean before knowing the creation source was greater than the mean after showing AI cues. Specifically, for car, soap, ice cream, watch and bag, where the p-values were statistically significant. In case of makeup and headphones, the result's p-value was not significant at any conventional level, deeming this outcome statistically irrelevant. For coffee and pen, the trend was increasing with a high statistical significance, at p-value  $\leq 0.01$ . Hence, for all products except for makeup and headphones, the null hypothesis of no difference in willingness to buy can be rejected.

Therefore, the hypothesis that GenAI's regular users' willingness to buy does not change after being shown cues of Artificial Intelligence's input into the ad is rejected for every product except for makeup and headphones due to insufficient statistical significance. Such conclusion is equivalent to saying that GenAI's regular users' willingness to buy also changes after being shown cues of AI's input into the ad, same as for non-GenAI's users. The degree of the change of willingness to buy may differ between the two samples, however the general conclusion for majority of products remains unchanged.

#### Table 6

	Willingness to Buy After Knowing the Product is AI-Generated (Have Used AI)							
Product	Mean_Before	Mean_After	Mean Difference					
Car	0.882	0.710	-0.172***					
Soap	0.677	0.387	-0.290***					
Ice cream	0.560	0.452	-0.108**					
Watch	0.473	0.344	-0.129***					
Makeup	0.774	0.699	-0.075					
Perfume	0.495	0.484	-0.011***					
Bag	0.602	0.462	-0.140**					
Coffee	0.416	0.550	0.134***					
Headphones	0.290	0.269	0.021					
Pen	0.634	0.484	0.150***					
lote. Significance	levels are reported as sta	ars. With * implying	p-value $\leq 0.1;$					

T-test Analysis For the Decrease in Willingness to Buy After Gaining Knowledge of the Creation Source for Generative AI Users.

*Note.* Significance levels are reported as stars. With \* implying p-value  $\leq 0.05$ ; \*\*\* implying p-value  $\leq 0.01$ .

*H5:* Consumers' willingness to buy differs between high and low involvement products generated by *AI*.

The t-test analysis in Table 7 shows the mean of willingness to buy high-involvement AI-Generated products, the mean of willingness to buy low-involvement AI-Generated products, and the difference in these two means. Willingness To Buy 1 refers to the survey's section, in which respondents did not know yet which ad out of the pair was generated by AI. Willingness To Buy 2 refers to the last survey section – where the respondents were shown cues of AI creation.

According to Table 7, the mean differences for both willingness to buy1 and willingness to buy2 are statistically significant at the 5% significance level. Therefore, the null hypothesis that there is no difference in willingness to buy for high and low involvement AI-Generated products can be rejected. The results also suggest that the mean willingness to buy high involvement AI-Generated products is higher than the one for low involvement AI-Generated products, in both cases.

However, the mean willingness to buy for high and low involvement products was considerably lower after knowing the image creation source. For high involvement products, a decrease in mean by 0.157 was observed, while for low involvement products, the decrease reached 0.154.

Hence, it can be concluded that consumers' willingness to buy does differ between high and low involvement products generated by AI. For both instances – first, when respondents did not yet know which image was AI-Generated and second, after they knew – the observed willingness to buy was higher for high involvement products.

#### Table 7

T-test Analysis For the Difference in Willingness to Buy for High and Low Involvement Products Generated by AI.

			l	Mean_High	1	Mean_Low		Mean	Difference	
W	illingness To Bu	ıy 1		0.622			0.5	78	0.	044**
W	Willingness To Buy 2		0.465			0.424 0.041*		041**		
Note.	Significance	levels	are	reported	as	stars.	With *	implying	p-value	$\leq$ 0.1;

\*\* implying p-value  $\leq 0.05$ ; \*\*\* implying p-value  $\leq 0.01$ .

#### 5. Conclusions and Recommendations

Generative AI is really changing marketing by enhancing targeting, personalization, content creation, and ad optimization (Campbell et al., 2022). It leverages advanced machine learning and natural

language processing to create personalized ads with minimal human input, which boosts both creative quality and ad impact (Gao, Wang, Xie, Hu, 2023; Tunca et al., 2023). This technology allows for a quick creation of custom visuals, which helps engage consumers more effectively (Jovanovic and Campbell, 2022).

However, the literature does not always present AI in such good lighting. The debate whether AI is truly as effective is ongoing, as despite these rapid advancements, AI still struggles with human-like creativity and critical thinking (Kshetri et al. 2023), which means some professions, like graphic designers, painters or writers, remain irreplaceable. But, as AI continues to improve, the impossibility of human replacement is continuously being questioned, especially when it comes to the perceived authenticity of digital content (Gkikas and Theodoridis, 2022).

Studies show that AI-generated ads generally have higher click-through rates than those made by humans, highlighting the importance of authenticity (Hartmann et al., 2023). However, there are still ongoing debates about whether AI-generated images can be truly authentic, with transparency and image quality being key points of contention (Epstein et al., 2023). So even though AI-generated ads often get high engagement because of their hyper-realistic features, consumers still tend to prefer visuals created by humans for their perceived authenticity and relatability (Bellaiche et al., 2023). When it comes to influencers, while AI-generated ones are appreciated for their uniqueness, human influencers generally earn more trust (Sands et al., 2022).

As AI technology keeps getting better every day, the gap in authenticity between AI-generated and human-created content might get even smaller. Hyperrealism has really pushed the realism of AI-generated content to new heights (Hao, 2021). Some studies even show that AI-generated faces can sometimes look more human than actual human faces (Miller et al., 2023). But AI is not (yet) perfect. Studies show that it can occasionally produce "hallucinations"—outputs that make no sense—which can quickly undermine perceived authenticity and consumer trust (Siontis et al., 2024; Thorne, 2024).

Consumer purchasing decisions are greatly influenced by their perceptions of AI-integrated products (Marti et al., 2024). Authentic AI-generated content can boost perceived value and brand trust, leading to positive behaviors like a willingness to pay a premium and increased loyalty (Newman & Bloom, 2012). Additionally, consumer acceptance of AI technology is influenced by how familiar they are with it, which lowers perceived risks and builds trust (Horowitz et al., 2023; Kelly et al., 2023; Wanner et al., 2022). However, there's also evidence that AI involvement can lead to negative feedback and reduced willingness to buy, especially when it comes to credibility and authenticity (Kučinskas, 2024), showing some mixed findings in the literature.

Authenticity isn't the only factor affecting how consumers perceive and respond to GenAI. Familiarity with the technology and the type of product being advertised also play significant roles. Frequent users of Generative AI tend to show higher trust and willingness to engage with AI technology (Choung et al., 2023; Thorne, 2024). When it comes to high-involvement products, consumers require more careful consideration and information, which leads to more scrutiny of AI-generated content (Dahlén et al., 2000; Aldousari et al., 2017).

This paper has provided statistical evidence to better understand the relationship between perceived authenticity and other factors that might influence consumer willingness to buy AI-generated products. The next section compares existing literature with the primary research, broken down by the hypotheses tested.

### H1: Consumers face major difficulties when distinguishing human-created and AI-Generated product advertisements.

The results of the primary research showed that respondents did, indeed, face significant difficulties when distinguishing human-created from AI-generated product advertisements. Such outcome held true for items such as soap, ice cream, watch, bag, and headphones. However, for cars, the hypothesis was rejected because a higher-than-chance percentage of respondents correctly identified the human-created image. These findings go in line with the results obtained by Miller et al. (2023) where the authors discussed how challenging it is for respondents to differentiate content containing AI-generated inputs from "real", human photos.

# H2: The perceived authenticity of AI-generated product ads positively influences consumers' willingness to buy.

The study found that perceived authenticity of AI-generated product ads significantly increased respondents' willingness to buy the AI-generated products for all products except for makeup. For majority of products, the probability and odds obtained from the analysis indicated a positive correlation between perceived authenticity and willingness to buy. Meaning, that for majority of the products, respondents were more willing to buy the product they found more authentic. This result is consistent with the supporting literature, where Galanter (2019) and Church (2024) highlighted the importance perceived authenticity plays in increasing consumer trust and engagement.

H3: Consumer knowledge of creation source decreases their willingness to buy AI-Generated products.

The results of the analysis proved that consumer willingness to buy decreased significantly after knowing the product was AI-generated for most product, except for coffee and pen, where willingness

to buy increased. Hence, the hypothesis was proven to be true for majority of the findings, but challenged for ads containing coffee and pen. This finding in majority aligns with the literature claiming that transparency regarding AI's role can lead to scepticism and, therefore, decrease consumer trust (Thorne, 2024). However, the increased willingness to buy for coffee and pen could indicate product-specific factors or consumer familiarity which reduces perceived risks, as discussed by Horowitz et al. (2023) and Kelly et al. (2023).

# *H4: GenAI's regular users' willingness to buy does not change after being shown cues of Artificial Intelligence's input into the ad.*

Respondents who answered to have been using GenAI regularly showed a significant decrease in willingness to buy after knowing the product was AI-generated for all products, except for makeup and headphones, where the change was not statistically significant. Therefore, the hypothesis and the existing literature (Choung et al., 2023) supporting the claim that GenAI's regular users showcase the same willingness to buy before and after knowing the product was made by AI was rejected.

#### H5: Consumers' willingness to buy differs between high and low involvement products generated by AI.

The study found that willingness to buy was higher for high-involvement AI-generated products than for low-involvement ones, both before and after revealing the AI involvement in the creation of the ads. However, the overall willingness to buy decreased after disclosure. This finding aligns with Dahlén et al. (2000) and Aldousari et al. (2017), who indicated that high-involvement products require more careful consideration, which then could lead to easier detection of AI-generated flaws, which proved to offset consumers . The decrease in willingness to buy after disclosure further supports the notion that transparency impacts consumer trust negatively, especially for products requiring higher involvement (Kučinskas, 2024).

The outcomes obtained from the research conducted and the theoretical background highlight the importance of authenticity in consumers' willingness to buy. The paper has shown that while consumers face major difficulties when distinguishing between human-created and AI-generated content, they are more willing to buy the product they perceive as more authentic. Meaning, that regardless of whether they can spot which one was actually produced by AI, they were more willing to buy the one they *believed* was the real one. However, after being shown cues of AI input, the observed willingness to buy decreased significantly, implying hostility and lack of trust in the generative technology. Interestingly, this trend is consistent between non-users and regular users of GenAI, with both of these consumers groups showcasing a decrease in willingness to buy. To observe the behavior from a broader perspective, the products were grouped into high and low involvement. The observed willingness to buy was initially

higher for high involvement products, however decreased by a greater degree after being shown cues of AI. Therefore, perceived authenticity is crucial for consumer willingness to purchase AI-generated products. Consumers are more willing to buy products when they are unaware of AI involvement, but their willingness to buy significantly decreases once being shown cues of AI. These findings provide a clear and explicit answer to the central research question: *How does the perceived authenticity of AI-generated product ads influence consumers' willingness to buy?* 

Based on this paper's finding, several recommendations to marketers leveraging generative AI can be made. Firstly – it is advisable to focus on authenticity. As it was shown that consumers' willingness to buy is directly, and positively, correlated with perceived authenticity, increasing this factor can benefit the producers. Moreover, since the study found that consumers had significant issues distinguishing human-created from AI-generated content, marketers may use this to their advantage. Using Generative AI therefore produces output that seems authentic but uses less resources, such as time, human creativity, etc. However, with extensive use of generative AI with the purpose of replacing human work, multiple ethical issues arise. Hence, increasing transparency about using generative AI is advised. The last recommendation this paper makes is extensive use of segmentation strategy. Marketers should consider tailoring advertising strategies based on the products' involvement levels, recognizing that high involvement products may require different techniques than low involvement products do. Mainly, the focus on mitigating showcasing AI cues, which proved to decrease the willingness to buy AI-generated high involvement products greatly.

This paper has broaden the scope of leveraging AI-generated content in online advertising and serves as a base for future researchers to continue exploring the topic. The literature would benefit from exploring consumer perceptions further. There are also a few recommendations for future research. This paper has mostly studied the influence of perceived authenticity on willingness to buy, however there are potentially more factors – for example age or education level, associated with generative AI consumers that contribute to both perceived authenticity and consumer's willingness to buy. Moreover, as generative AI technology is an incredibly rapidly evolving one, longitudinal studies would further help researchers understand and track changes in consumer attitudes and behaviors over time. Lastly, this paper used Midjourney as the generative AI tool used for content creation, but testing whether consumer preferences change depending on the tool used would help companies make a more informed decision as to which one they should use to fit their marketing needs the most.

As any research, this paper also encountered limitations. A population of 202 respondents was used due to the time constraint, however a larger population could provide different results which would further deepen the knowledge on this paper's nuanced topic. Additionally, the study focused primarily on

consumer perception in a controlled setting – a survey. This may not fully capture real-world behaviors and market dynamics, especially in the fast-paced world of social media.

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Sample characteristics	n	%
Age		
18	8	3.96
19	13	6.44
20	7	3.47
21	12	5.94
22	22	10.89
23	37	18.32
24	23	11.39
25	17	8.42
26	10	4.95
27	8	3.96
28	1	0.5
29	4	1.98
30	4	1.98
31	2	0.99
32	6	2.97
35	3	1.49
36	8	3.96
37	2	0.99
39	2	0.99
40	2	0.99
42	1	0.5
48	2	0.99
52	2	0.99
53	4	1.98
55	2	0.99
Total	202	100

### APPENDIX A [Age Demographics]

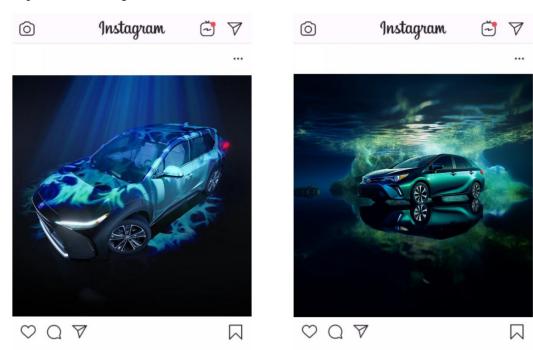
### APPENDIX B [Survey Questions]

#### Section 1 - demographics

- 1. What is your age?
- 2. What is your gender?
  - a. Female
  - b. Male
  - c. Other
- 3. Have you ever used generative AI?
  - a. Yes
  - b. No
- 4. (Show only if yes) How often do you use generative AI?
  - a. Very rarely
  - b. Rarely
  - c. Sometimes
  - d. Often
  - e. Very often

#### *Section 2 – perceiving authenticity*

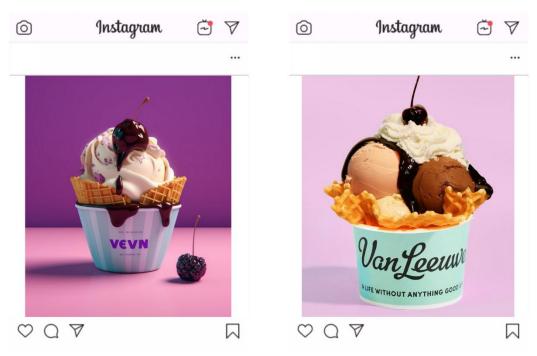
1. Which one of the following two products displayed on social media ads below do you perceive as being more authentic?



2. Which one of the following two products displayed on social media ads below do you perceive as being more authentic?



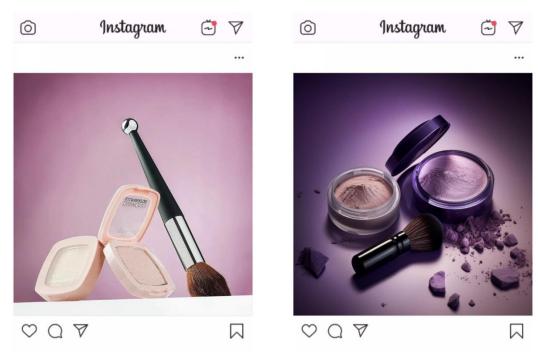
3. Which one of the following two products displayed on social media ads below do you perceive as being more authentic?



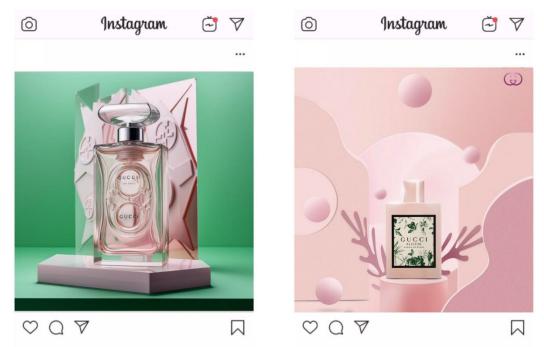
4. Which one of the following two products displayed on social media ads below do you perceive as being more authentic?



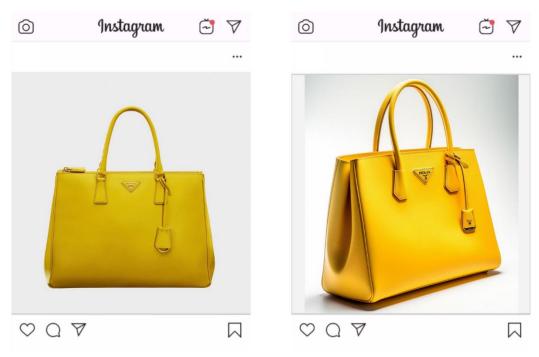
5. Which one of the following two products displayed on social media ads below do you perceive as being more authentic?



6. Which one of the following two products displayed on social media ads below do you perceive as being more authentic?



7. Which one of the following two products displayed on social media ads below do you perceive as being more authentic?



8. Which one of the following two products displayed on social media ads below do you perceive as being more authentic?



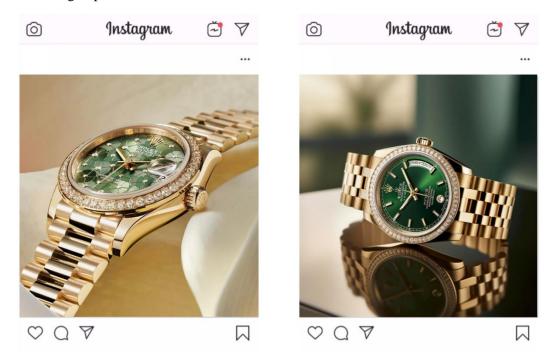
9. Which one of the following two products displayed on social media ads below do you perceive as being more authentic?

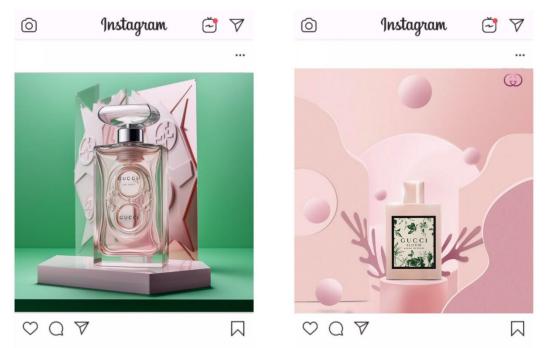


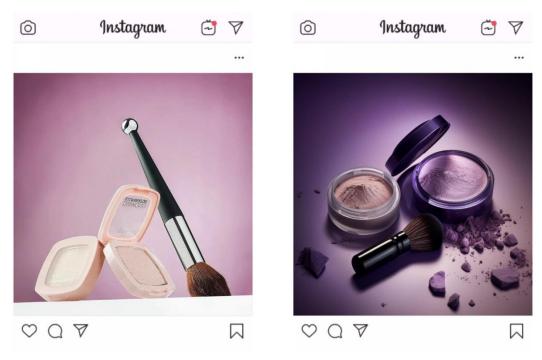
10. Which one of the following two products displayed on social media ads below do you perceive as being more authentic?

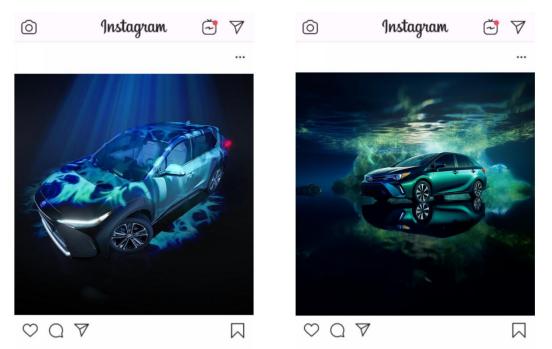


Section 3 – willingness to buy without knowing which product ad is AI-generated and which ad is human-created









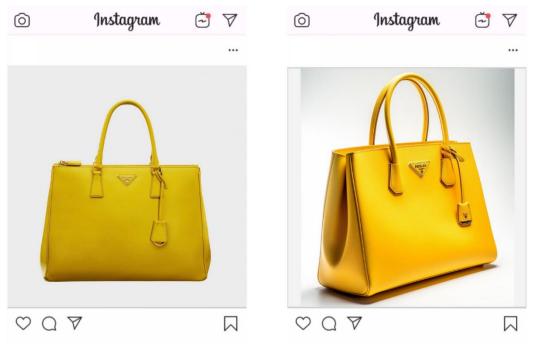




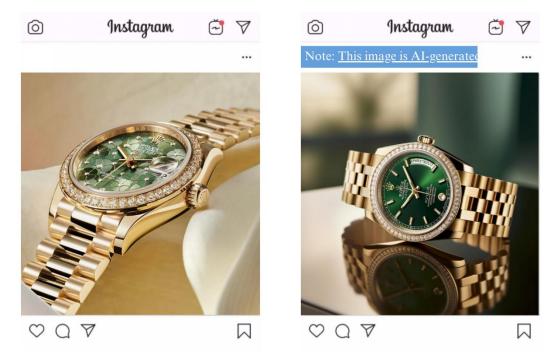


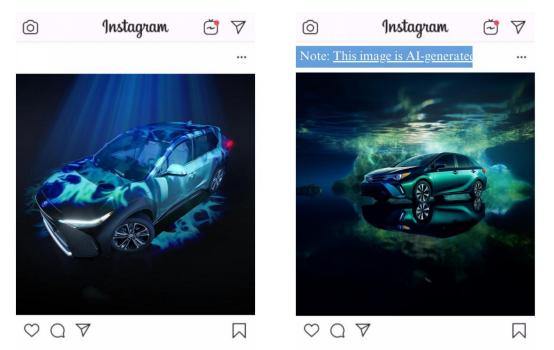






Section 4 – Willingness to buy while knowing which product ad is AI-generated and which one is human-created

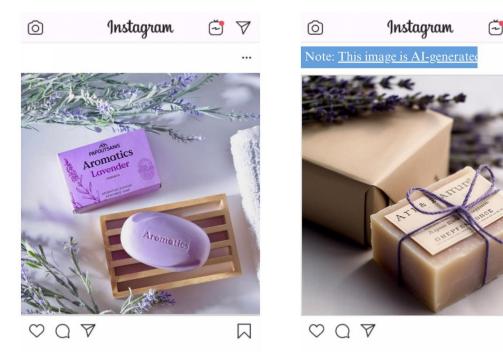








5. Based on the following two social media ads, which one of the two products would you be more willing to purchase? *Note: see the description to see which ad is AI-generated.* 



V

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