

RESEARCH PROPOSAL

Title of proposal: The Impact of AI in Advertisements on the Consumer

Keywords: Artificial Intelligence, AI-Generated, Consumer Perception

1. Research Question.

Does the use of AI-Generated artwork in advertising have a significant effect on the consumer's reaction to the advertisement or product?

2. Hypothesis.

The inclusion of artificially generated media in an advertisement will have a negative correlation with the consumer's perception of the advertised product as well as ability to recall said product. Additionally, the *known* inclusion of AI-generated media in an advertisement will further amplify these attitudes.

Independent Variable:

- Type of advertisement: if the advertisement includes AI-generated artwork or not (traditional media/AI-generated artwork)

Moderator:

- Knowledge of AI: whether the shown advertisements disclose the use of AI-generated artwork

Dependent variable:

- Opinion of advertisement: The consumer's impression of the shown advertisement
- Recall of advertisement: The consumer's ability to remember features of the advertisement
- Opinion of product: The consumer's impression of the advertised product
- Recall of product: The consumer's ability to remember the advertised product

Proposed Effect:

- Advertisements that feature AI-generated media will have different impression/recall ratings than traditional advertisements. AI-generated media that disclose the use of AI will have an additional impact.

3. Research Background.

In the past couple years, AI-generated content has not only become prevalent, but readily accessible. Some use it as a study tool, some as a toy, but due to its recency, we have yet to see the full extent of its commercial use. In the future, using AI-generated media could replace the need for legitimate artists or stock photo usage. Costs could be cut immensely, from budgeting for yearly salaries & licensing to only the acquisition cost of the latest AI package.

Economically, this could be done easily, but how does the public perception of AI art affect advertising? Rather unsurprisingly, studies have shown that the public perception of AI art is largely negative—its use seen as an alternative that trivializes human creativity.¹ Another concern impacting the perception of AI is its potentially disastrous effect on the American workforce and economy. On the internet today, many are wary of AI art being secretly utilized already.²

Due to just how new this technology is, little to no studies have yet been made (or, at least, made publicly available) covering consumer-perception attitudes over AI. A study such as this would provide insight on whether the seemingly negative stigma of AI translates to advertising and advertised products, and if the transition from traditional art/media to artificial art should be made based on consumer reaction.

4. Method.

Experimental Design

The independent variables used in the study will be the type of advertisement shown to the subject (whether it will include traditional artwork or AI-generated artwork), as well as a disclosure of whether the artwork is artificially generated acting as a moderator. This will create the following outcomes:

- No AI artwork – no AI disclosure
- AI artwork – no AI disclosure
- No AI artwork – disclosed as not AI
- AI artwork – disclosed as AI

Measures

IV: Type of Advertisement Shown – Traditional Art or Artificial Art

Mod: Disclosure of Artificial Imagery – Disclosed or Not Disclosed

DV: Opinion of Advertisement – Scale 1-10 of consumer attitude towards ad
Recall of Advertisement – consumer ability to recall features of ad
Opinion of Product – Scale 1-10 of consumer attitude towards product
Recall of Product – consumer ability to recall features/brand of product

Procedures

A sample of ~30 subjects should be taken to conduct this study. While small in scale, this will provide a reasonable number of responses to see a general trend in consumer reaction. This study can be done over online forms featuring digital advertising, as most of today's advertisements are online. The form will consist of the following:

- A set of 6 advertisements – 3 including artificially generated images and 3 including traditional media

¹ Millet, K., Buehler, F., Du, G., & Kokkoris, M. D. (2023). Defending humankind: Anthropocentric bias in the appreciation of AI Art. *Computers in Human Behavior*, 143. <https://doi.org/10.1016/j.chb.2023.107707>

² Weatherbed, J. (2023, October 9). *Disney's Loki faces backlash over alleged use of Generative AI*. The Verge. <https://www.theverge.com/2023/10/9/23909529/disney-marvel-loki-generative-ai-poster-backlash-season-2>

- A response section – a response measuring whether respondent can recall features/brand of each advertisement & product. Additionally, quantitative 1-10 scales measuring attitude towards each advertisement & product will be given.
- Another set of 6 advertisements – 3 including artificially generated images *disclosed as AI-generated* and 3 including traditional media *disclosed as having no AI*
- A response section – identical to the previous response stage

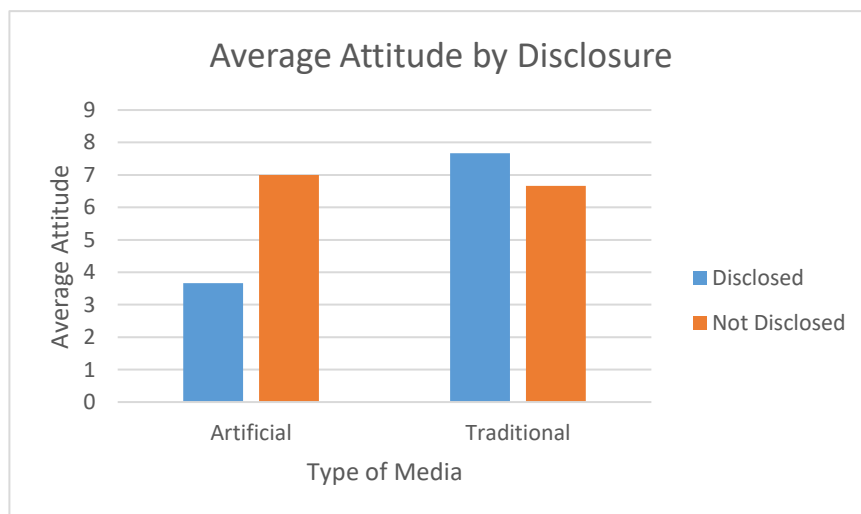
Following these stages and responses, enough data will be gathered to see how each consumer viewed each advertisement and product. After every respondent's reaction is measured, a general trend can be constructed from the data.

5. Expected results.

It is expected that consumer ability to recall shown advertisements and products will be similar among both advertisement groups (traditional and AI-generated). Likewise, consumer opinion on such advertisements and products will be comparable. This is because consumers likely would not be able to tell a significant difference between the origins of shown media in the advertisements themselves.

In the moderated subset with disclaimers, the results are expected to be different. As mentioned in the background, consumer opinion of AI-generated art is largely negative. This leads to the assumption that consumer attitudes towards disclosed AI-generated art will be significantly lower than of both disclosed traditional art and nondisclosed AI-generated art. Results of respondents' recall are expected to follow a similar pattern, as respondents may “shrug off” and ignore AI-generated art, possibly viewing it as lazy or inferior to traditional art.

A possible graphical representation would be as follows:



6. Implications/Discussion.

A result that shows any correlation with artificially generated media *without* disclosure signifies that the consumer can identify AI-generated artwork without additional help. If this correlation is negative, then respondents can identify AI and are actively biased against its use. A positive correlation signifies that consumers actually prefer AI-generated art when not disclosed. If there is no correlation, then respondents cannot tell the difference between AI-generated art and traditional art—meaning that AI can be used with impunity.

If a correlation exists only in disclosed tests, then respondents can only tell the difference between media when disclosed. In such case, advertisers who use AI should not disclose its use in order to avoid any consumer bias.

Possible limitations on this study include sample size, geographic location, ages of respondents, and brands/products shown in the advertisements. The geographic location of the respondents as well as their ages could meaningfully impact results in a biased manner. For example, younger respondents might have more favorable attitudes towards AI-generated content than an older respondent, and a respondent in the American South or Midwest may be biased against AI in contrast to a respondent from Silicon Valley. Respondents may hold certain biases against the types of brands or products shown in the advertisements as well. To alleviate these limitations, a large nationwide study that stratifies age would be ideal, as well as using imaginary products/brands in the advertisements to avoid preexisting biases.

Opportunities for future research studies include the use of AI-generated videos in advertising, AI-generated product descriptions, or possibly respondent-personalized AI-generated advertisements.