

realize:

AI Ads That Work: How AI Creative Stacks Up Against Humans

Findings from a Large-Scale Performance
Advertising Study Led by Columbia University

What We Learned About AI Creative

AI-generated advertising creatives can perform on par with, and in some cases outperform, human-made ads in real-world advertising environments.

This report summarizes findings from one of the largest live studies of generative AI in advertising to date. The study was conducted by researchers from **Columbia University, Harvard University, the Technical University of Munich, and Carnegie Mellon University**, in collaboration with Taboola's in-house creative agency, [Creative Shop](#), using data from [Realize](#), Taboola's performance marketing platform.

While many advertisers fear that AI-generated creative will lack quality or hurt performance, this research shows those fears are largely unfounded.

The findings demonstrate that **AI-generated ads can achieve comparable click-through rates (CTR) without sacrificing conversion quality**, particularly when creatives align with established human-centered best practices.

Key Findings

- **AI-generated ads perform on par with human-made ads** across hundreds of thousands of live campaigns.
- **AI-generated ads can outperform human ads** when they avoid obvious visual cues associated with artificiality.
- **Perception matters more than origin:** ads that look AI-generated underperform, regardless of who actually created them.
- **Human faces are the strongest driver of engagement,** making ads feel more authentic and trustworthy.
- **AI improves CTR without harming conversions**, disproving concerns around low-quality or curiosity-driven clicks.

Studying AI-Generated Ads at Real-World Scale

Rather than relying on surveys or controlled lab experiments, the researchers analyzed live ad performance data to see how AI-generated and human-made ads perform in real market conditions. That's why they turned to Taboola: the depth and quality of Realize's real-world performance data is so robust that it is ideal for use by leading universities for independent, large-scale academic research.

The dataset included:

Over
300,000
ads

More than
500M
impressions

Approximately
3M
clicks

Ads spanned multiple industries, including personal finance, food and drink, and education. To ensure fair comparison, researchers used a "sibling ads" methodology, comparing matched pairs of AI-generated and human-made ads created by the same advertiser, for the same campaign, on the same day, with identical objectives and landing pages. This approach isolated the impact of creative generation method while controlling for all other performance variables.

AI-generated ads were created using [GenAI Ad Maker](#), a free tool within the Realize platform that enables advertisers to generate creatives using AI alongside traditional, human-made content.

AI Ads Perform on Par With (and Sometimes Better Than) Human Ads

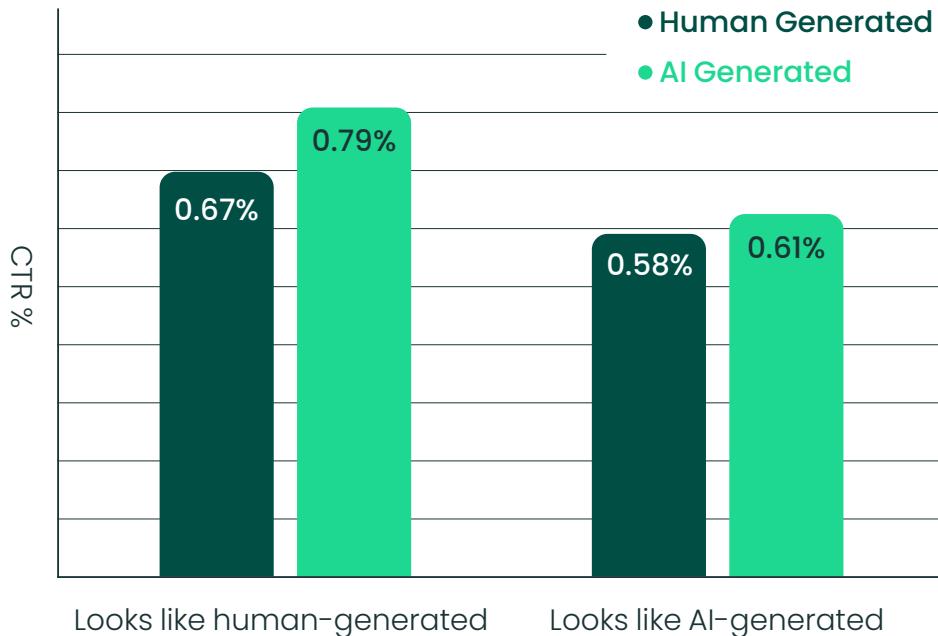
Across the full dataset, AI-generated ads performed comparably to human-made ads in terms of click-through rate.

Average CTR results:

Human-generated ads:
~0.65% CTR

AI-generated ads:
~0.76% CTR

How consumers respond to AI-generated ads



When applying the strictest controls, comparing sibling ads within the same campaigns and timeframes, AI-generated and human-made ads showed statistically equivalent performance.

These findings indicate that AI-generated creatives can deliver efficiency and speed without compromising effectiveness in live advertising environments.

CTA Rates % • Human Generated • AI Generated



Unsold Gazebos Are Selling Almost For Nothing!



Unsold Gazebos Are Selling Almost For Nothing!



New Small Electric Car For Seniors – The Price May Surprise You



New Small Electric Car For Seniors – The Price May Surprise You

Performance Depends on Perception

Beyond raw performance metrics, the researchers examined whether consumer perception of ad origin influenced outcomes.

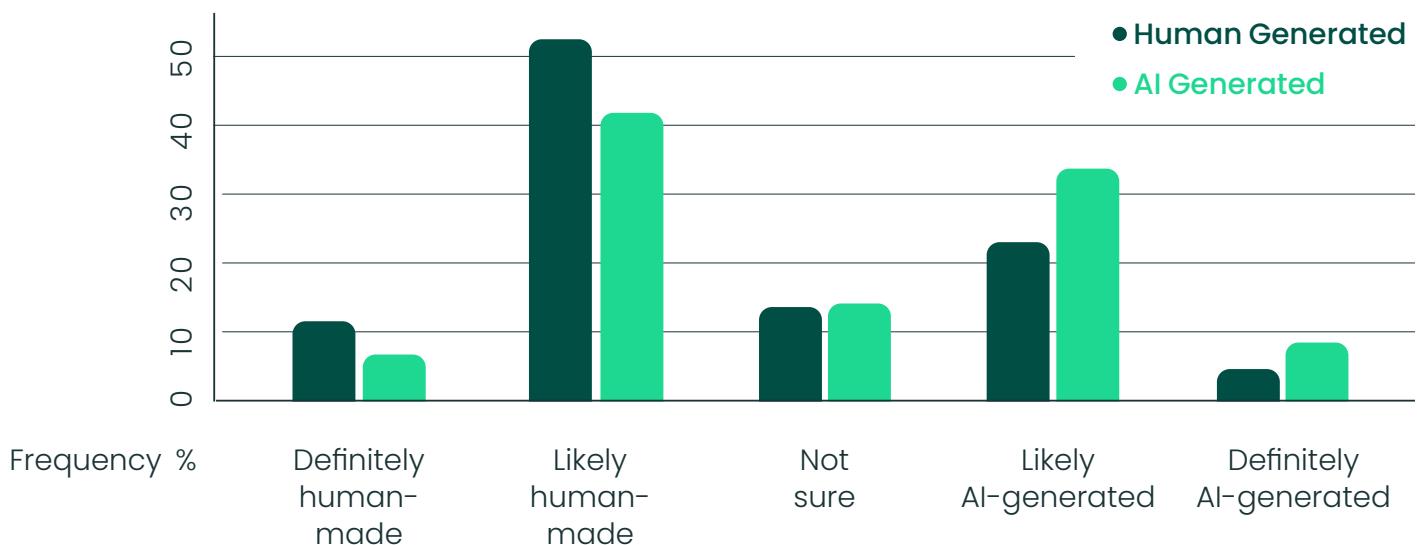
In a separate perception study, participants were asked to judge whether ads appeared to be AI-generated or human-made.

The results showed:

Nearly half of AI-generated ads were perceived as human-made

Consumers frequently struggled to accurately identify whether an ad was created by AI or a human

This perception factor proved to be a critical driver of performance.



AI Ads Perform Best When They Don't Look Like AI

When ad performance was segmented by perceived artificiality, a clear trend emerged:

AI-generated ads perceived as human-made achieved the highest CTR of all groups

These ads significantly outperformed both AI-generated ads perceived as AI-made and human-made ads

Conversely, ads perceived as AI-generated were penalized by users, even when those ads were actually created by humans. This indicates that perceived artificiality, rather than actual origin, has the greatest impact on engagement.

These findings align closely with real-world observations from Taboola's Creative Shop, which consistently finds that ads appearing overly artificial underperform, while creatives that feel natural and relatable drive stronger engagement.

What Makes an Ad “Look Like AI”?

To better understand the drivers of perceived artificiality, researchers analyzed visual features and trained machine-learning models to predict whether ads would be perceived as AI-generated.

Common signals associated with AI perception included:

Highly stylized or
overly polished visuals

Heavy color
saturation

Strong
symmetry

One of the strongest indicators of “human-ness,” however, was the presence of large, clear human faces. **Human faces were the single most influential factor** in making ads feel human-made and in driving higher engagement.

Notably, ads created with GenAI Ad Maker were more likely to include prominent human faces than human-made ads. This reflects the tool’s design, which incorporates long-standing Creative Shop best practices, including the use of authentic human imagery to build trust and emotional connection.



Context Still Matters Across Industries

The study identified meaningful variation in AI-generated ad performance across industries.

Strong performance was observed in:

Personal finance | Food and drink

Other categories, such as education, showed more muted results. This demonstrates that while AI-generated creative is powerful, industry context still matters, and advertisers can use AI strategically to maximize impact in their sector.

AI Improves CTR Without Hurting Conversions

A key concern addressed by the research was whether AI-generated ads might increase low-quality or "curiosity" clicks.

The data showed no evidence of reduced downstream conversion performance. AI-generated creatives increased or maintained CTR without negatively impacting conversion rates, indicating that advertisers did not have to trade quality for scale. In other words, **fears that AI-driven ads will underperform or drive irrelevant traffic are not supported by real-world evidence.**

What Advertisers Can Learn From This

This research highlights several clear takeaways for advertisers:

AI-generated ads can match human-made ad performance at scale

AI-generated ads can outperform human ads when they avoid obvious AI cues

Perceived artificiality matters more than whether an ad is actually AI-generated

Generative AI offers advertisers speed, efficiency, and scale without forcing a performance trade-off. Success depends on using AI thoughtfully and aligning creative output with proven human-centered best practices, such as prioritizing authentic imagery and human faces.

Conclusion

Generative AI is rapidly reshaping how advertising creative is produced. This study demonstrates that AI-generated ads can deliver strong performance in real-world conditions and, when executed correctly, can even exceed traditional creative benchmarks. By focusing on authenticity and established creative principles, advertisers can leverage AI to raise the bar without sacrificing results.