

Generative AI for Visual Advertising: Impacts on Creativity, Brand Consistency, and Consumer Response

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Abstract

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This article examines the impacts of generative artificial intelligence on visual advertising, with a specific focus on creativity, brand consistency, and consumer response. Using a systematic review of peer-reviewed studies published between 2018 and 2022, the study consolidates fragmented evidence on the use of generative models in formats such as display advertising, social media content, online video, and synthetic or CGI influencers. The results indicate that generative AI primarily augments rather than replaces human creativity, is particularly effective for large-scale variation, performance optimization, and rapid testing, and can encode brand guidelines to deliver visually consistent identities across channels and segments. At the same time, the review highlights risks of creative homogenization, brand safety incidents, and intensified consumer concerns about authenticity, transparency, and manipulation when AI-generated visuals are used without clear disclosure or ethical safeguards. The article discusses these dynamics through creativity, branding, and consumer psychology perspectives, and concludes with a research agenda that prioritizes longitudinal, comparative, and field-based studies on AI-human creative collaboration in real campaigns.

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1. Introduction

Generative artificial intelligence (AI) is rapidly reshaping the production of visual content in marketing, enabling brands and agencies to generate images and videos that are increasingly indistinguishable from human-created material. Building on the broader diffusion of AI across the marketing function, firms are moving from using AI primarily for targeting and analytics toward deploying it directly in creative development and execution (Kietzmann et al., 2018; Davenport et al., 2020). In visual advertising, this shift raises foundational questions about how algorithmic image generation affects creative processes, supports or undermines brand consistency, and reshapes consumer responses to persuasive messages.

Generative models such as generative adversarial networks (GANs) and their successors, such as StyleGAN, have demonstrated the capacity to synthesize high-resolution, photorealistic images and manipulate fine-grained stylistic attributes in a controllable way (Karras et al., 2019). These advances underpin a new wave of “creative AI” tools that can produce alternative layouts, adapt visuals to micro-segments, or simulate entirely synthetic spokespeople and brand worlds (Vakratsas & Wang, 2020). Advertising scholars have begun to conceptualize how such systems transform creative work, reframing advertising creativity as a computational search process that can be systematically aided by AI rather than an exclusively human capability (Vakratsas & Wang, 2020; Ameen et al., 2022).

At the same time, generative AI introduces complex tensions around creativity and brand consistency. On one hand, AI can expand the creative space, enabling rapid iteration, data-driven optimization, and large-scale personalization of

visual executions (Kietzmann et al., 2018; Kumar et al., 2019). On the other hand, scholars caution that automation may bias outputs toward historically successful patterns, potentially homogenizing visual styles and eroding distinctiveness, while also shifting creative control away from human experts (Ameen et al., 2022). For brand managers, generative tools promise programmable adherence to visual identity systems, yet also create new risks of off-brand, inappropriate, or ethically problematic imagery that may be disseminated at scale.

Consumer response is an equally critical, but still under-explored, dimension. Research on deepfakes and AI-generated ads suggests that synthetic media can simultaneously enhance relevance and immersion while triggering concerns about authenticity, deception, and loss of control (Campbell et al., 2021). Conceptual work on AI in advertising and engagement marketing indicates that algorithmically curated content may alter how consumers evaluate brands, attribute agency, and form trust, particularly when AI is perceived as a social actor or branded persona (Karimova & Shirkhanbeik, 2019; Kumar et al., 2019). However, empirical evidence on how consumers perceive and respond specifically to AI-generated visual advertising, in comparison with human-created executions, remains fragmented and nascent.

This article addresses these gaps by conducting a systematic literature review of peer-reviewed studies published between 2018 and 2022 at the intersection of generative AI, visual advertising, and consumer behavior. Following established systematic review procedures exemplified in recent AI and creativity syntheses (Ameen et al., 2022), we map how generative techniques are being applied to visual advertising, synthesize current knowledge on their impacts on creative processes and

brand consistency, and integrate emerging evidence on consumer responses to AI-generated visuals. The review contributes by organizing a dispersed body of work into a coherent framework, identifying theoretical and managerial tensions that generative AI introduces into visual advertising, and outlining a research agenda to guide future empirical studies on creativity, branding, and consumer response in AI-mediated advertising environments.

2. Literature Review

Existing work on AI in advertising has largely focused on how algorithmic systems support or reshape creative processes. Conceptual and empirical studies on AI assisted advertising creativity describe creativity as an optimization or search process that can be formalized and augmented through machine learning (Vakratsas & Wang, 2020; Ameen et al., 2022). Recent work on programmatic creative illustrates how algorithmic systems can assemble and optimize multiple ad executions in real time based on predefined constraints and performance signals, thereby assisting human designers rather than replacing them (Bakpayev et al., 2022). In parallel, meta-analytic evidence on traditional advertising creativity shows that originality and meaningfulness systematically enhance attention, memory, and brand attitudes, although effects are contingent on context and executional factors (Rosengren et al., 2020). Together, this body of work suggests that generative AI extends a longer trajectory in which computational tools participate in creative work and raises the question of whether AI generated visuals produce similar creativity effects as human generated executions.

A second stream of literature examines automation from the perspective of brand generated content and branding control. Research on AI in marketing and advertising documents the growing role of data driven systems across the consumer journey, including automated content generation and dynamic creative optimization (Kietzmann et al., 2018; Kumar et al., 2019; Davenport et al., 2020). Van Noort et al. (2020) propose the automated brand generated content model, in which brand and consumer data are transformed into messages that are created and delivered with varying levels of automation. Their framework highlights how algorithmic content systems can be tuned toward short term and long-term brand goals, while also introducing new concerns about transparency, control, and brand safety. These perspectives imply that generative AI for visual advertising sits at the intersection of creative experimentation and brand governance, potentially improving consistency through rule-based templates yet also increasing the risk of off brand or norm violating imagery.

The third relevant strand centers on consumer responses to AI driven and synthetic advertising stimuli. Studies on deepfakes and AI generated ads indicate that synthetic media can heighten engagement and perceived relevance, but also generate concerns about authenticity, deception, and the erosion of human agency in persuasion episodes (Campbell et al., 2021). Work on AI as a branded social actor further suggests that anthropomorphized AI entities can shape trust and personality attributions, which in turn influence brand evaluations (Karimova & Shirkhanbeik, 2019; Kumar et al., 2019). However, existing evidence typically aggregates different modalities and focuses on disclosure, ethics, or persuasion knowledge, rather than

isolating the specific visual properties of generative imagery. Overall, the literature indicates substantial conceptual interest in AI mediated creativity, brand automation, and consumer trust, but systematic empirical research that directly compares AI generated visual advertising to human generated creative work and examines its implications for creativity, brand consistency, and consumer response remains limited.

3. Methods

The study adopts a systematic literature review design to synthesize existing knowledge on generative AI for visual advertising, with specific attention to creativity, brand consistency, and consumer response. We first defined the review scope by focusing on generative AI techniques applied to visual advertising formats such as display ads, social media visuals, video creatives, and synthetic brand imagery. We then constructed a search strategy that combined keywords related to AI and generative models (“generative AI”, “GAN”, “deepfake”, “synthetic media”), visual advertising (“visual advertising”, “digital advertising”, “online ads”, “programmatic creative”), and outcomes of interest (“creativity”, “brand consistency”, “brand safety”, “consumer response”, “trust”, “engagement”). Searches were conducted in major academic databases that index marketing, management, communication, and computer science research, including Scopus, Web of Science, and ScienceDirect, complemented by targeted searches in Google Scholar to identify additional relevant peer reviewed work.

The time window was restricted to publications between 2018 and 2022, aligning with the period during which state of the art generative models became widely available. We limited the sample to peer reviewed journal articles and full conference papers in English that addressed at least one of the three focal themes and included a clear application or conceptualization of generative AI in visual advertising. Editorials, non-scholarly commentary, technical papers without marketing or consumer focus, and non-visual applications were excluded. Titles, abstracts, and full texts were screened in two stages, and the final set of articles was coded using a structured template that captured study context, methodological approach, type of generative technique, advertising format, and key findings related to creativity, brand consistency, and consumer response.

4. Results and Discussion

The studies identified in the 2018-2022 window indicate that research on generative AI in visual advertising is still emerging and fragmented across marketing, communication, and computer science outlets. Much of the marketing literature continues to frame AI primarily as an enabler of enhanced targeting, personalization, and content optimization, with generative models positioned as a new capability within a broader computational advertising ecosystem rather than as fully autonomous creative agents (Kietzmann et al., 2018; Davenport et al., 2020; Helberger et al., 2020). Within this ecosystem, generative adversarial networks and related architectures are recognized as key technologies for producing synthetic or manipulated visuals, including deepfakes, that can be integrated into advertising

executions (Karras et al., 2019; Campbell et al., 2021). Empirical work that directly compares AI-generated visuals with human-created ads remains limited and tends to be concentrated in areas such as programmatic creative, deepfake-based formats, and synthetic or CGI influencers (Ahn et al., 2022; Bakpayev et al., 2022; Campbell et al., 2022). Overall, the literature portrays generative AI as both a driver of creative opportunity and a source of new strategic, ethical, and governance risks.

4.1 Human-AI Creative Collaboration: How Generative Models Shape Advertising Creativity and Effectiveness

Regarding creativity, the evidence supports the view that generative AI currently functions mainly as an augmentation of human creative labor. Conceptual work on AI and advertising creativity argues that creative development can be understood as a search process in which algorithms can generate and evaluate large numbers of visual variants, explore different stylistic directions, and align executions with performance criteria (Vakratsas & Wang, 2020; Ameen et al., 2022). Generative models such as StyleGAN are highlighted as particularly useful for fine-grained manipulation of visual attributes, enabling rapid experimentation with composition, lighting, and style (Karras et al., 2019). At the same time, meta-analytic evidence on advertising creativity shows that creative effectiveness depends on combining divergence with meaningful relevance to the brand and audience (Rosengren et al., 2020). These findings are consistent with broader AI-in-service theory, which suggests that AI is especially effective at taking over mechanical and analytical tasks, while intuitive and empathetic work remains predominantly human and is harder to automate (Huang & Rust, 2018).

Empirical evidence in programmatic creative further suggests that AI-generated executions can perform comparably to human creatives for functional or informational messages, but that human direction remains crucial for emotion-driven, narrative-based campaigns (Bakpayev et al., 2022). Research on influencer authenticity reinforces this pattern, indicating that audiences respond most favorably when creators appear intrinsically motivated and in control of their content, conditions that are difficult to reproduce with fully automated visual production (Kapitan et al., 2022). Taken together, the reviewed work implies that generative AI is particularly well suited to high-volume, analytically driven tasks that benefit from variation and rapid testing, such as multivariate visual experimentation, automated adaptation, and localization, while its role in story-rich brand narrative development is more complementary (Ameen et al., 2022; Bakpayev et al., 2022).

4.2 Governance, Brand Consistency, and Consumer Trust: How Synthetic Visuals Influence Authenticity Perceptions and Brand Outcomes

Brand consistency and governance emerge as a second central theme. Computational advertising research describes how data, algorithms, and platform infrastructures are tightly coupled in systems that generate, select, and deliver creative assets in near real time (Helberger et al., 2020). In this context, generative models offer powerful tools for encoding brand identity guidelines into templates, style constraints, or automated workflows so that large numbers of ad variants remain visually coherent. Work on automated brand-generated content shows how marketers can tune such systems toward short-term performance metrics or long-term brand goals, but also highlights the difficulty of auditing automated decisions

and the potential for bias or harmful content to scale quickly if guardrails fail (Davenport et al., 2020; Van Noort et al., 2020). At the same time, advertising creativity research warns that excessive reliance on optimized and templated visuals can lead to homogenization and weaken the distinctiveness that underpins long-term brand equity (Rosengren et al., 2020; Ameen et al., 2022).

A closely related theme concerns consumer responses to AI-generated and synthetic visual content. Deepfake-focused frameworks argue that highly realistic synthetic media can increase engagement and creative possibilities, for example by enabling impossible scenarios or novel endorsements, yet simultaneously raise concerns about deception, authenticity, and control (Campbell et al., 2021; Campbell et al., 2022). Studies on CGI influencers complement this view. Ahn et al. (2022) show that perceived anthropomorphism and social presence of a CGI influencer can enhance brand outcomes, suggesting that audiences may respond positively to synthetic endorsers when these figures feel socially present and human-like. However, work on influencer authenticity indicates that consumers place substantial weight on perceived intrinsic motivation and creative control, and that endorsements are more effective when influencers are seen as genuine content creators rather than purely commercial promoters (Kapitan et al., 2022). These patterns align with broader research on AI in engagement marketing, which suggests that AI-mediated content can shape trust, perceived agency, and brand evaluations depending on how the technology is framed and integrated into the customer journey (Karimova & Shir Khanbeik, 2019; Kumar et al., 2019).

Overall, the literature suggests that the impact of generative AI on visual advertising is contingent on governance design and the fit between task requirements, category norms, and oversight arrangements. At the brand level, AI can reinforce consistency and reduce executional errors, but may also compress visual diversity if optimization routines converge on narrow performance patterns (Ameen et al., 2022; Rosengren et al., 2020). From the consumer perspective, deepfakes, CGI influencers, and influencer authenticity research collectively point to a fragile equilibrium in which the novelty and efficiency of AI-generated visuals coexist with heightened sensitivity to authenticity, transparency, and manipulation (Ahn et al., 2022; Campbell et al., 2022; Kapitan et al., 2022). This indicates a need for future research that moves beyond technology demonstrations to test, in realistic campaign settings, how different configurations of human oversight and governance guardrails shape both behavioral outcomes and experiential variables such as trust, enjoyment, and perceived authenticity.

5. Conclusion

This review shows that generative AI is beginning to reshape visual advertising, but in ways that are more complementary than substitutive to human creativity. Across the literature, generative models expand the space of feasible ideas, enable rapid iteration, and support performance-driven optimization of visual executions. At the same time, the most effective campaigns still depend on human insight to align visuals with cultural context, brand meaning, and emotional nuance. In line with broader AI-in-service theory, generative AI currently appears strongest

in mechanical and analytical aspects of creative work, while intuitive and empathetic elements remain largely human driven.

For brand management, the findings suggest a dual role for generative AI as a tool for both discipline and disruption. On one side, encoding brand guidelines into generative workflows can improve visual consistency, reduce errors, and scale content production across platforms and segments. On the other side, overreliance on algorithmically optimized templates risks convergence toward homogeneous styles that weaken distinctiveness and long-term brand equity. Effective governance therefore requires explicit design of human-in-the-loop processes, clear guardrails for brand safety, and periodic human led interventions that reintroduce originality and strategic variation into AI-shaped brand worlds.

From the consumer perspective, the literature points to a fragile balance between enhanced engagement and heightened concern. Synthetic visuals, deepfakes, and CGI or AI-generated influencers can attract attention and stimulate interest, but they also amplify sensitivity to authenticity, transparency, and perceived manipulation. The overall conclusion is that generative AI for visual advertising is most promising when positioned as a creative collaborator rather than a hidden manipulator, with brands foregrounding transparency, ethical use, and human oversight. Future research should move beyond conceptual discussions and lab demonstrations toward longitudinal, field-based studies that examine how different configurations of human and machine creativity affect not only performance metrics, but also trust, enjoyment, and the long-term relationships between consumers and brands.

At the same time, the conclusions of this review must be interpreted in light of several limitations in the underlying studies. Most available work focuses on conceptual models, small-scale experiments, or narrow use cases, often with convenience samples and short-term exposure to AI-generated content. There is limited cross-cultural evidence, little insight into long-term brand outcomes, and relatively few studies that examine real campaigns in naturalistic settings. These constraints may bias results toward early adopters, technology-savvy consumers, and short-term performance metrics, which means that the true effects on creativity, brand consistency, and consumer response could differ in broader populations and over longer horizons. Recognizing these shortcomings is important, because it invites readers to consider how sampling, context, and research design may have influenced the reported findings and highlights the need for more rigorous, longitudinal, and field-based research in this domain.

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