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Effect of disclosing AI-generated content on prosocial advertising evaluation

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ABSTRACT

With advancements in generative artificial intelligence (AI) technology, there is a growing concern about its ethical implications, transparency, and consumer reactions to AI-generated content. Building on the persuasion knowledge model and algorithm aversion literature, this study explores the effects of AI disclosure in prosocial advertising on consumer attitudes and donation intentions. The findings of Study 1 indicate that the initial disclosure of AI-generated content leads to unfavourable attitudes towards ads, with perceived ad credibility serving as a mediating factor. In Study 2, participants who perceived AI as more human-like rather than machine-like tended to experience a diminished negative impact of AI disclosure. Study 3 also highlights the crucial role of perceived ad credibility in influencing donation intentions following the disclosure of AI-generated content. The theoretical and practical implications of our findings for social marketers and nonprofit organizations are discussed further.

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AI-generated content; disclosure language; perceived AI human-likeness; ad credibility; prosocial advertising

Introduction

The incorporation of artificial intelligence (AI) technology into advertising campaigns has become a prevalent strategy for enhancing fundraising efforts within nonprofit organizations (Baek et al. 2022). As an illustration, 'Feeding America,' the largest domestic hunger relief and food rescue charity in the United States, leveraged AI's capabilities to create an advertising campaign challenging public misconceptions about individuals facing hunger (Paton 2019). With ongoing advancements in generative AI technologies such as ChatGPT, DALL·E 3, and Midjourney (Baek 2023; Baek and Kim 2023), AI-generated advertising is poised to become an increasingly adopted communication strategy, primarily directed at raising awareness and fundraising (Arango, Singaraju, and Niininen 2023). As the imperative to establish transparent AI

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practices in advertising becomes increasingly apparent (Campbell et al. 2022), there remains a gap in understanding how AI disclaimers impact consumer responses to ads. However, the psychological mechanisms by which consumers respond to the disclosure of AI-generated content in prosocial advertising remain unclear.

Given the capabilities and potential applications of AI-generated content, the role of human-likeness in the perception and acceptance of AI agents has garnered increasing scholarly interest. Generally defined as the attribution of human-like traits and behavioural characteristics to nonhuman entities (Epley, Waytz, and Cacioppo 2007), anthropomorphism in the context of AI manifests in various forms, such as smiling, showing emotions, displaying movements and gestures, and being perceived as human-like or machine-like (Adam, Wessel, and Benlian 2021; Baek et al. 2022; Salles, Evers, and Farisco 2020; Wagner and Schramm-Klein 2019; Yang et al. 2022). Despite its significance and growing interest, much remains to be investigated due to the limited and fragmented literature on anthropomorphism (Li and Suh 2022). For instance, research highlights the positive effects of anthropomorphism, including increased trust (Waytz et al. 2014), perceived enjoyment (Moussawi et al. 2021), likeability, and acceptance (Aggarwal and McGill 2007). Conversely, other studies suggest drawbacks of human-likeness in AI, where high degrees of anthropomorphism have been associated with embarrassment (Bartneck et al. 2010), disappointment (Slater and Steed 2002), and a sense of threat to human identity (Lu, Cai, and Gursoy 2019). Given the inconsistent findings regarding the influence of anthropomorphism on consumer perception and AI adoption, further investigation is crucial. Although AI-enabled technologies were created by humans, their inner mechanisms remain inherently difficult for people to comprehend (Salles, Evers, and Farisco 2020).

Building on the persuasion knowledge model (Friestad and Wright 1994), algorithm aversion, and anthropomorphism literature (Dietvorst, Simmons, and Massey 2015), this study investigates consumers' reactions to disclaimers in AI-generated advertising and assesses whether their perception of AI human-likeness moderates the impact of AI disclosure on ad evaluation and donation intention. The study also provides empirical evidence of the downstream effects of disclosing AI-generated content in the field of charitable giving. Charitable giving is a multi-billion-dollar industry that significantly influences individuals' lives (Sargeant and Woodliffe 2007), often leading to the implementation of prosocial advertising campaigns.

The findings have significant theoretical and practical implications. While prior studies have examined how disclosure language impacts advertising evaluation across diverse domains, such as online sponsored content (Wojdynski and Evans 2016) and influencer marketing (Evans et al. 2017; Lee and Kim 2020), limited attention has been directed towards the effects of disclosing AI-generated ad content. Our study addresses this gap by examining how AI disclosure influences consumer perceptions of credibility, attitudes towards ads, and donation intentions.

Furthermore, our research expands the existing literature on the influence of AI-generated charitable giving ads on empathy and emotion perception (Arango, Singaraju, and Niininen 2023) by introducing a novel pathway—perceived credibility—through which AI disclosure may negatively impact consumer attitudes towards ads and donation intentions. Additionally, our research helps resolve conflicting predictions in prior literature, indicating that perceived authenticity or brand attitudes are not

necessarily diminished when AI is disclosed (Kirkby, Baumgarth, and Henseler 2023). This reconciliation highlights the importance of considering individual differences, particularly in the perception of AI human-likeness (Giroux et al. 2022). Furthermore, our findings extend the literature on human-machine interaction by demonstrating the enduring impact of AI's perceived humanness in the society (Arora et al. 2021; Westerman et al. 2020). Recognizing the key role of disclosing AI-generated content, our findings provide valuable insights for nonprofit organizations and social marketers regarding the significance of AI transparency in fundraising ad campaigns.

Literature review

Consumer responses to AI-generated advertising

AI technology has emerged as an integral component of the advertising industry, exerting extensive influence and harbouring significant future potential. AI enhances various advertising functions such as ad optimization, automated ad generation, and personalization (Shi and Wang 2023).

AI is expected to contribute to the overall effectiveness and efficiency of advertising efforts through its advanced capabilities in targeting precision and customization, thereby resulting in higher ROI for advertisers (Ford et al. 2023). Global market revenues from AI-powered marketing are projected to reach approximately $36 billion by 2024 (Statista 2024). Häglund and Björklund (2024) have suggested that AI plays an important role in optimizing advertising placement through various machine learning techniques such as reinforcement learning, data clustering, and sentiment analysis. AI can also enhance advertising effectiveness by matching consumer personality traits with congruent ad messages using algorithms and contextual data (Shumanov, Cooper, and Ewing 2022).

AI, including generative adversarial networks (GANs), enables the modification and creation of visual content that features individuals in advertising materials (Toews 2020). The use of generative AI to create advertising content has rapidly expanded. For example, Coca-Cola's 'Create Real Magic' campaign allows consumers to create their own Coca-Cola-inspired art using generative AI capabilities of DALL·E 2 and GPT-4 (Fong 2023). This campaign clearly demonstrates the creative potential of generative AI technologies to interact with consumers uniquely.

From personalized ads to fully AI-generated 'deepfake' video ads, this technology holds the promise of enhancing ad persuasiveness (Campbell et al. 2022). However, the ongoing debate revolves around whether advertisers should disclose their use of generative AI to craft advertising content. Some argue that AI disclosure should be mandatory to maintain transparency, while others caution that unnecessary disclosures could inadvertently reduce advertising effectiveness.

The rise of generative AI technology capable of producing synthetic content has introduced new ethical questions to the advertising industry (Campbell et al. 2022). Synthetic content, including deepfake videos, computer-generated graphics, and AI-written news articles, refers to digital media content created or modified using AI and machine learning algorithms (Campbell et al. 2021; Arango, Singaraju, and Niininen 2023). As synthetic content increases, public policy discussions have gained

prominence. This issue became more prominent recently when US Representative Ritchie Torres (NY-15) introduced legislation requiring mandatory disclosures for all AI-generated content (Gans 2023). The proposed bill seeks to ensure transparency by mandating the disclosure of AI-generated content. While US legislators push for regulatory initiatives, private sector initiatives are also emerging. For instance, TikTok and Instagram have introduced new labelling features to disclose AI-generated content, contributing to greater AI transparency (Sato 2023).

Despite the growing interest in consumer responses to AI-generated content, the empirical findings in the literature have been mixed. Some studies have highlighted the negative effects of AI disclosure on advertising. The use of deepfake technologies and AI-generated advertisements has sparked ethical concerns, primarily related to the potential for deception and misleading consumers (Kietzmann, Mills, and Plangger 2021). Campbell et al. (2022) provided a conceptual analysis suggesting that disclosing AI-generated content may lead to a decline in the persuasive power and perceived credibility of advertisements. They also called for regulatory frameworks to address legal issues such as copyright infringement and advertising authenticity. In the context of prosocial advertising, Arango, Singaraju, and Niininen (2023) examined how consumers respond to AI-generated charitable giving ads. Their findings indicated that awareness of charitable AI-generated content negatively influenced donation intentions, suggesting that this effect was mediated by reduced empathy, anticipatory guilt, and emotional perception.

However, other studies have suggested that AI disclosures do not always have negative effects and may even be beneficial in certain contexts. Kirkby, Baumgarth, and Henseler (2023) documented that disclosed AI-generated texts had no adverse effect on perceived brand voice authenticity or brand attitude compared to human-written texts. This is because consumers do not perceive AI-generated content as less authentic in functional contexts. Similarly, Kim, Giroux, and Lee (2021) observed that consumers exhibited more favourable responses towards a company when AI-generated content was presented in a precise format. These findings suggest that the negative impact of AI disclosures can be mitigated when AI-generated content sources are transparent and reasonably presented.

Further studies have revealed nuanced effects of AI-generated advertising and identified potential moderators. For example, Bakpayev et al. (2020) found that consumers responded positively to cognition-oriented ads, regardless of whether they were created by AI or humans but exhibited lower evaluations of AI-generated emotion-oriented ads, highlighting the need for human involvement in programmatic ad creation. Wu and Wen (2021) found that consumers' perceptions of objectivity in ad creation increased trust in machines but negatively affected the perceived eeriness of AI advertising. Wu et al. (2022) analyzed Twitter posts, showing that users expressed satisfaction with AI-powered marketing tools, but were dissatisfied with AI's role in social media campaigns.

Collectively, these mixed findings emphasize the complex nature of consumer responses to AI-generated content and AI disclosure in advertising. While some studies have indicated potentially negative effects, others have suggested neutral or even positive consequences under certain conditions. To better understand these varied responses to human–AI interaction, our study examined the impact of AI disclosure through the conceptual lens of the persuasion knowledge model and algorithmic aversion.

Persuasion knowledge model and ad disclosure

According to the persuasion knowledge model (Friestad and Wright 1994), consumers tend to develop unknown 'personal knowledge.' The basic idea of this model is that an increased level of knowledge reduces susceptibility to persuasive messages, thereby enhancing the ability to resist (commercial) persuasion attempts. The knowledge of persuasion attempts encompasses three main structures: persuasion, agent, and topic knowledge. First, persuasive knowledge encompasses information about various marketing tactics and how consumers cope with these efforts to influence their decisions (Isaac and Grayson 2016; Kim, Kim, and Marshall 2016). Second, agent knowledge refers to consumers' beliefs about the traits, competencies, and motives of a persuasive agents, such as advertisers and spokespersons (Ham et al. 2015). It includes information about the agent's credibility, expertise, trustworthiness, and motivation. Third, topic knowledge represents consumers' prior knowledge and beliefs about manipulative motives (Campbell and Kirmani 2000). Collectively, these three types of knowledge play crucial roles in shaping consumer responses to persuasive messages and strategies.

Previous studies have demonstrated that activating persuasive knowledge is likely to lead consumers to evaluate an agent (e.g. advertisers or salespeople) less favourably (Friestad and Wright 1994). For example, accessing persuasion knowledge generally entails scepticism towards advertising claims (Kirmani and Zhu 2007), increases consumers' cognitive defences (Russell 2002), and leads them to question the credibility of the advertising claims (Xu and Wyer 2010). However, when a persuasion tactic is perceived as more credible, accessing persuasion knowledge can increase perceptions of ad credibility and boost favourable ad evaluations (Isaac and Grayson 2016). Persuasion knowledge can be influenced by perceived ad credibility, which involves consumers' subjective judgement of a message or source as trustworthy, credible, or reliable (Friestad and Wright 1994). Credible sources (e.g. brands) are more likely to be accepted, whereas those lacking credibility are more likely to be rejected or disregarded (Erdem and Swait 2004).

Ad disclosures are intended to make consumers aware of persuasive advertising tactics so that they can make informed decisions (Wright et al. 2005), which can influence subsequent ad effectiveness. This is based on the notion that consumers generally express negative sentiments towards synthetic creation in advertising, especially if they perceive them as deceptive (Campbell et al. 2021). Prior research found that ad disclosures negatively affect credibility and purchase intentions (Amazeen and Muddiman 2018; Darke and Ritchie 2007). Disclosure often highlights manipulative persuasive knowledge and damaging perceptions of authenticity (Beckert et al. 2021).

The persuasion knowledge model is relevant for studying the potential effects of AI disclosure. This model emphasizes the role of consumers' agent knowledge and perceptions of agents' intentions in determining AI acceptance or aversion (Watson, Valsesia, and Segal 2024). Closely connected to the persuasion knowledge model is the concept of algorithmic aversion, which is defined as the tendency to distrust information provided by algorithms (Dietvorst, Simmons, and Massey 2015). The relationship between algorithmic aversion and persuasive knowledge becomes apparent when considering how consumer awareness of AI-generated content activates

persuasive knowledge. This activation often results in increased ad scepticism (possibly an outcome of decreased ad credibility; Isaac and Grayson 2016) and negative evaluations of algorithm-driven ads (Voorveld, Meppelink, and Boerman 2023). Consumers tend to exhibit algorithm aversion due to a lack of transparency and understanding of how AI algorithms work (Mahmud et al. 2022). Given that AI is perceived as a persuasive agent, it can potentially evoke algorithm aversion because consumers may become more sceptical of AI-generated content (Longoni and Cian 2022). Importantly, consumer recognition of AI as an ad creation source can simultaneously trigger persuasive knowledge and inherent distrust of algorithmic systems, potentially fostering negative reactions to AI-generated advertising.

Although AI is often perceived as objective and accurate (Wu and Wen 2021), consumers tend to view AI agents differently from human agents. Lee and Ham (2023) found that consumers' agent knowledge of AI (compared to that of humans) has a detrimental influence on brand attitude and purchase intention. This effect is sequentially mediated by source credibility and perceived persuasion effectiveness. Lim and Schmälzle (2024) demonstrated that disclosing a message as AI-generated resulted in a bias against the content. Similarly, Song et al. (2024) investigated the effects of disclosing ad creator types and ad appeal on destination visit intentions. Their findings indicate that when advertisements use rational (versus emotional) appeals, they are more persuasive in increasing visit intentions if the ads are disclosed as created by AI (compared to human).

Based on theoretical reasoning and extant literature on the impact of AI disclosure language, we anticipate that the disclosure of AI-generated content will adversely affect attitudes towards prosocial advertising, primarily by diminishing perceived ad credibility. Thus, we propose the following hypotheses:

H1: *Participants exposed to AI disclosure language exhibit a less favorable attitude toward ads and donation intention than those exposed to nondisclosure language.*

H2: *Perceived ad credibility mediates the impact of AI disclosure language on attitude toward ads and donation intention.*

Moderating role of perception of AI human-likeness

We propose that the perceived human-likeness of AI moderates the impact of AI disclosure on prosocial advertising responses. In this study, the perception of AI human-likeness is defined as an individuals' subjective judgement of the extent to which AI resembles humans (Giroux et al. 2022). The theory of anthropomorphism (Epley, Waytz, and Cacioppo 2007) postulates the cognitive and motivational mechanisms underlying the inclination to attribute human-like qualities to nonhuman entities.

In the context of human–machine interaction, prior literature has shown that AI designed with greater human resemblance facilitates social bonding and elicits more positive consumer behaviours (Araujo 2018; Willemse and Van Erp 2019). For example, Kim, Kang, and Bae (2022) found that anthropomorphic AI interfaces induced favourable attachments and purchase intentions. Anthropomorphic AI is also perceived as more credible, trustworthy, and deserving of favourable attitudes (Airenti 2015; Chen

and Park 2021; Hu, Lu, and Gong 2021). This effect arises because humanized AI is believed to be better at treating people individually and understanding their unique preferences (Borau et al. 2021).

The positive effects of anthropomorphism are most pronounced when AI closely resembles humans (Gray and Wegner 2012; Fraune et al. 2020). Thus, although AI disclosure may negatively affect AI-generated advertising persuasion, these negative effects should be attenuated for participants who perceive AI as more human. This prediction aligns with findings that increased perceptions of an AI agent's human-likeness can enhance donations and psychological closeness to charitable appeals (Baek et al. 2022). Recent research has also shown that perceptions of AI's human-likeness can influence ethical behaviour. For instance, Giroux et al. (2022) explored how individual differences in AI perception impact consumers' moral intentions within the context of AI checkout agents. Their findings revealed that perceiving AI as more human-like positively influenced moral intentions. Based on anthropomorphism theory and these findings, we hypothesize that the effects of AI disclosure on prosocial ad responses will significantly depend on whether consumers view AI as more human-like or machine-like. Thus, the following hypothesis is proposed:

H3: *Perception of AI in terms of human-likeness will moderate the impact of AI disclosure language on attitude toward ads and donation intention. Specifically, participants who perceive AI as a machine will exhibit less favorable attitude toward ads and donation intention when exposed to AI disclosure language compared to those exposed to human disclosure language. In contrast, the negative impact of AI disclosure language on attitude toward ads and donation intention will be attenuated for participants who perceive AI as more human-like.*

Study 1

Study 1 aimed to provide empirical evidence to test our hypotheses. Based on our theoretical framework, we anticipated that perceived ad credibility and attitude would be lower when AI disclosure was present compared to when it was absent.

Participants and procedure

We recruited 226 US participants (M_age = 39.68, SD = 14.15; 50.4% female) from the Cloud Research Connect online panel in exchange for nominal compensation. Participants were randomly assigned to one of two experimental conditions (AI disclosure language: present vs. absent) using a between-subjects design. The first author used the AI-generated image creator DALL·E 3 to craft the image of the donation recipient featured in the stimulus advertisement.

Participants in the AI disclosure condition viewed an online ad message with a clear mention that it was generated by AI, while those in the non-AI disclosure condition saw the ad message without any disclaimer, as detailed in Appendix A. Next, they rated ad credibility using a semantic differential scale (1 = not at all credible/trustworthy, 7 = very credible/very trustworthy, Cronbach's α =.94; Isaac and Grayson 2016) and attitude towards the ad (1 = bad/negative/unfavourable, 7 = good/positive/

favourable, Cronbach's α =.96; Ham et al. 2022). Finally, participants answered demographic questions.

Results

We observed a substantial impact of AI disclosure exposure on perceived ad credibility ($F(1, 224) = 7.81$, $p < .01$, $\eta_p^2 = .03$). A one-way analysis of variance (ANOVA) revealed that participants exposed to AI disclosure ($M = 3.56$, SD = 1.69) reported lower levels of perceived ad credibility than those in the non-AI disclosure condition ($M = 4.19$, SD = 1.67). Furthermore, the influence of AI disclosure exposure on attitude towards the ad was also statistically significant ($F(1, 224) = 36.72$, $p < .05$, $\eta_p^2 = .03$). Specifically, a one-way ANOVA revealed that participants in the AI disclosure condition ($M = 3.33$, SD = 1.57) expressed less favourable attitudes than those in the non-AI disclosure condition ($M = 3.85$, SD = 1.66).

Mediation analysis

Mediation analysis was performed using Model #4 of Hayes (2017) macro with 5,000 bootstrapping samples. As illustrated in Figure 1, exposure to AI disclosure exhibited a statistically significant indirect effect through perceived ad credibility, as indicated by the bias-corrected 95% confidence interval (CI) that did not encompass zero (a*b = −0.51, SE = .18, 95% CI = [-0.88 to −0.15]). This finding confirms the mediating role of perceived ad credibility in the underlying mechanism by which AI disclosure exposure affects advertising attitudes.

Discussion

The findings of Study 1 provide initial support for the notion that exposure to AI disclosure is likely to result in decreased levels of perceived ad credibility and less favourable attitudes towards ads. We further demonstrated that the influence of AI disclosure on attitudes towards ads was mediated by perceived ad credibility. However,

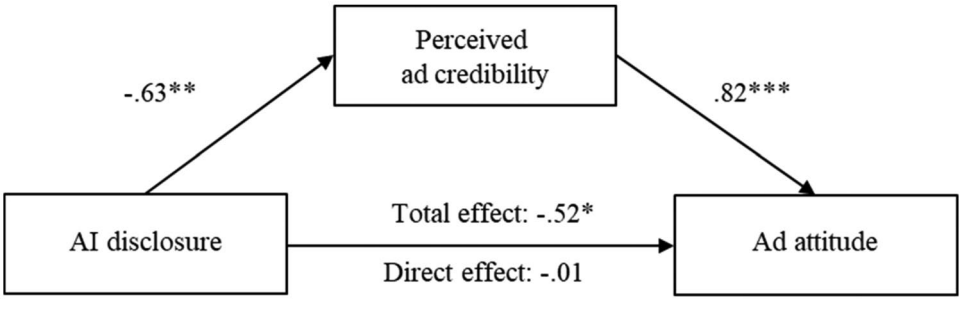

Figure 1. Mediation model for Study 1.
Note: The indirect effect of perceived ad credibility is significant (95% CI = -.88 to -.15); Path coefficients are unstandardized betas; *$p < .05$, **$p < .01$, ***$p < .001$.

perceptions of disclaimers in AI-generated ads may vary among individuals. Human perception of AI not only fosters greater acceptance of human-like robots and AI devices (Pelau et al. 2021) but also evokes a sense of creepiness towards AI technologies (Baek and Kim 2023). Study 2 examined whether individual variations in individual perceptions of AI influence the extent to which AI disclosure affects perceived ad credibility and attitudes.

Study 2

Study 2 aimed to provide evidence for the moderating role of AI perception to support our core theorizing regarding the perceived credibility of messages. Based on our theoretical approach of 'mediation by moderation' (Spencer, Zanna, and Fong 2005), we hypothesized that AI disclosure would have a more negative impact on perceived ad credibility and attitudes towards ads for individuals who view AI as a machine rather than as human. To test this, we measured AI perception using the scale developed by Giroux et al. (2022) and examined the effect of AI disclosure wording by comparing disclaimers related to AI and humans.

Participants and procedure

We recruited 360 US participants (M_age = 42.64, SD = 13.09; 51.7% female) from the Amazon MTurk online panel in exchange for nominal compensation. We used a 2 (AI disclosure language: present vs. absent) × 2 (AI perception: high vs. low) between-subjects design. Similar to Study 1, the image in the stimulus ad was created using the AI-generated image creator DALL·E 3.

The procedure was similar to that of Study 1, with a few key differences. First, participants were exposed to a World Wide Fund for Nature (WWF) donation ad campaign that manipulated the AI disclosure language. Specifically, participants in the AI disclosure condition viewed the ad message with a clear mention that it was generated by AI (i.e. 'Generated by artificial intelligence'), while those in the non-AI disclosure condition saw the ad with a message indicating it was generated by a human (i.e. 'Generated by a professional wildlife photographer'), as detailed in Appendix B. Next, participants rated ad credibility (Cronbach's α =.96) and attitude towards the ad (Cronbach's α =.96) using the same scale as Study 1. Participants then rated their perception of AI's human-likeness on a 101-point scale (0 = very similar to a machine, 100 = very similar to a human) adopted from Giroux et al. (2022). Finally, they provided their demographic information.

Results

We conducted a moderation analysis using Model 1 of Hayes (2017)'s macro with 5,000 bootstraps for both attitude and perceived ad credibility (i.e. IV = AI disclosure language: present [1] vs. absent [0], moderator = AI perception as a 101-point scale, and DV = attitude or perceived ad credibility).

First, we found a significant interaction effect between AI disclosure language and AI perception on perceived ad credibility (B = .014, SE=.006, p = .009, 95% CI = [.004, .025]). Specifically, when AI perception was more machine-like (i.e. -1SD), perceived ad

credibility was significantly lower in the AI disclosure condition compared to the human disclosure condition ($M_{\_AI}$ = 4.24 vs. $M_{\_human}$ = 5.62, Δ = 1.36, p <.001). In contrast, when AI perception was more human-like (i.e. +1SD), perceived ad credibility was still lower in the AI disclosure condition compared to the human disclosure condition, but the difference was significantly smaller ($M_{\_AI}$ = 5.22 vs. $M_{\_human}$ = 5.82, Δ = .60, p =.004).

Second, we found a significant interaction effect between AI disclosure and attitude towards the ad (B = .014, SE=.006, p = .006, 95% CI = [.004, to .023]). Specifically, when AI perception was more machine-like (i.e. -1SD), attitude towards the ad was much lower in the AI disclosure condition compared to the human disclosure condition ($M_{\_AI}$ = 4.48 vs. $M_{\_human}$ = 5.74, Δ = 1.26, p <.001). In contrast, when AI perception was more human-like (i.e. +1SD), attitude towards the ad was still lower in the AI disclosure condition compared to the human disclosure condition, but the difference was significantly smaller ($M_{\_AI}$ = 5.45 vs. $M_{\_human}$ = 5.99, Δ = .54, p =.004), as shown in Figure 2.

Finally, we conducted a mediated moderation analysis using Model #7 of Hayes (2017) macro with 5,000 bootstraps (i.e. IV = AI disclosure language: present [1] vs. absent [0], moderator = AI perception as a 101-point scale, mediator = perceived ad credibility, and DV = attitude towards the ad). The overall mediated moderation was significant (index = .011, 95% CI = [.003, .019]). Specifically, the mediation of perceived ad credibility was highly significant (indirect effect = −1.049, SE = .185, 95% CI = [-1.411, −0.686]) when AI perception was more machine-like (-1SD). However, the mediation was weakly significant (indirect effect = −0.460, SE = .138, 95% CI = [-0.739, −0.191]) when the AI perception was more human-like (i.e. +1SD).

Discussion

The findings from Study 2 provide evidence of the moderating role of AI perception, indicating that both perceived ad credibility and attitude towards the ad were much lower in the AI disclosure condition compared to the human disclosure condition when people perceived AI as more machine-like.

Study 3

Although we demonstrated empirical evidence of the effect of AI disclosure on perceived ad credibility and attitudes towards ads, the persuasive effects were tested in a hypothetical situation. Study 3 aimed to provide evidence of the impact of AI disclosure on monetary donation behaviour.

Participants and procedure

We recruited 180 US participants ($M_{\_age}$ = 42.00, SD = 12.33; 46.7% female) from the Amazon MTurk online panel in exchange for nominal compensation. Participants were randomly assigned to one of two experimental conditions (AI disclosure language: present vs. absent) using a between-subjects design.

The procedure and stimuli were similar to those used in Study 2, with a few key differences. First, the manipulation of AI disclosure was the same as in Study 2. Subsequently, participants rated the ad's credibility (Cronbach's α =.95). They were

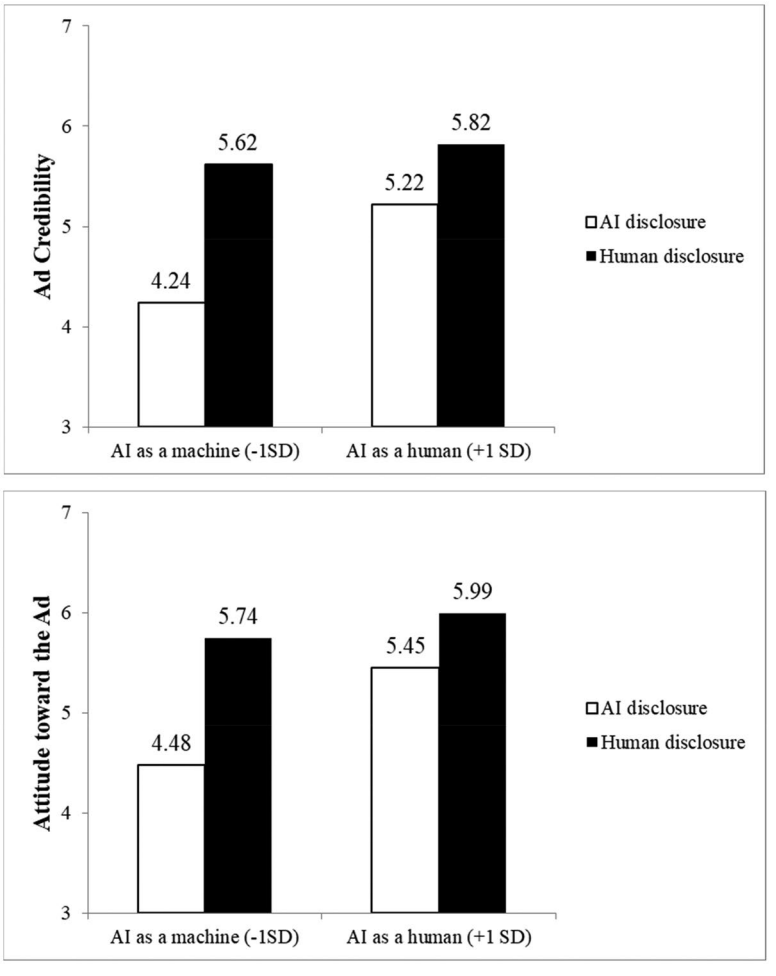

Figure 2. Results of Study 2.

then informed the following: 'We will select a few survey participants to receive a $2 bonus after this study. If you are selected, you may choose to donate your bonus to this organization. How much would you like to donate from your bonus to this program? (If you are selected, we will contribute the amount you specify to this organization, and you will receive the remaining money.)' After that, participants indicated their donation amount from $0 to $2 on the sliding scale adopted from Lin and Reich (2018). Finally, they provided their demographic information. After the study, we randomly selected 36 participants to receive the bonus money, the sum of which was donated to the WWF.

Results

We observed a significant impact of AI disclosure on perceived ad credibility ($F(1, 178) = 22.12$, $p < .001$, $\eta_p^2 = .11$). As shown in Figure 3, participants exposed to AI disclosure ($M = 4.59$, SD = 1.47) reported lower levels of perceived ad credibility than

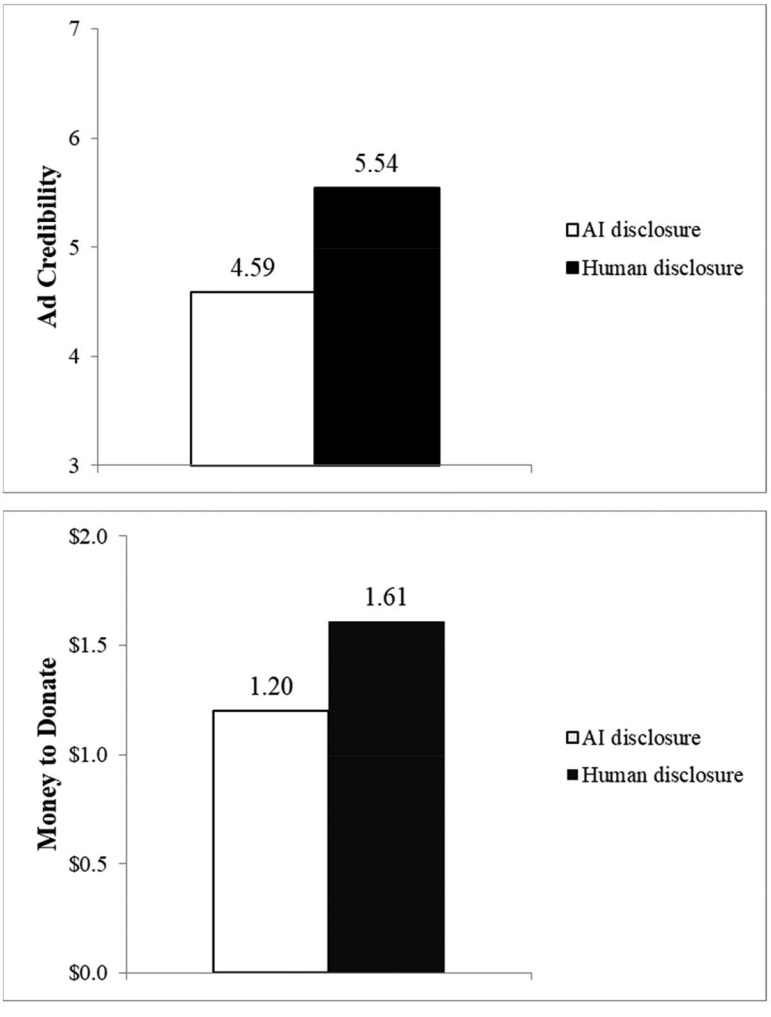

Figure 3. Results of Study 3.

those exposed to human disclosure ($M = 5.54$, SD = 1.23). More importantly, the influence of AI disclosure on donation amount was also significant ($F(1, 178) = 4.04$, $p = .046$, $\eta_p^2 = .02$). Specifically, participants exposed to AI disclosure (M = $1.20, SD = 1.32) reported lower donation amounts compared to those in the human disclosure condition (M = $1.61, SD = 1.35).

Mediation analysis

Mediation analysis was performed using Model 4 of Hayes's (2017) macro with 5,000 bootstraps (IV = AI disclosure language: present [1] vs. absent [0]. The indirect effect of perceived ad credibility on the impact of AI disclosure on donation amount was significant (a*b = −0.41, SE = .10, 95% CI = [-0.625 to −0.227]), while the direct effect became insignificant (c′ = .01, SE = .19, 95% CI = [-0.366 to .386]). This result confirms the mediating role of perceived ad credibility in the mechanism through which AI disclosure influences donation behaviour.

Discussion

The findings from Study 3 reveal the consequences of AI disclosure language's impact on monetary donation intentions. Additionally, we present evidence that perceived ad credibility serves as a key mediating factor influencing donation intention.

General discussion

With the proliferation of generative AI capabilities, essential questions have arisen about the impact of disclosing AI content in advertising. Our study investigated the impact of AI disclosure on consumer responses to charitable giving ads. Incorporating insights from the persuasion knowledge model (Friestad and Wright 1994) and advertising disclosure literature (Weismueller et al. 2020; Wojdynski and Evans 2016; Wojdynski et al. 2017), we propose that AI disclosure negatively influences perceptions of ad credibility, attitudes, and donation intentions. However, our findings indicate that these adverse effects are mitigated among individuals who perceive AI as more human-like, drawing from anthropomorphism research.

Theoretical implications

Our study contributes significantly to the literature on consumer responses to AI. First, we expand on the extant literature on synthetic advertising. While Arango, Singaraju, and Niininen (2023) demonstrated the roles of empathy and anticipatory guilt in determining the impact of AI-generated charitable giving ads, our findings reveal a cognitive process that highlights perceived ad credibility as a key factor explaining the negative effects AI disclosure can have on attitudes towards ads and donation intentions. The significance of credibility in this context is underscored by the escalating challenges consumers face when searching for information, owing to the dynamic and ever-evolving nature of the internet, the convergence of diverse media formats, and the abundance of available information (Flanagin and Metzger 2000).

Furthermore, our study suggests that AI disclosure may initially lead to negative attitudes in the donation context, with perceived ad credibility significantly impacting donation intentions. These results are consistent with Arango, Singaraju, and Niininen (2023), who found that consumers displayed less empathetic responses to AI-generated charitable advertising, leading to reduced donation intentions. However, recent studies exploring the impact of AI-generated synthetic content found no significant difference in perceived authenticity compared to human-created content (Kirkby, Baumgarth, and Henseler 2023). Additionally, some studies have indicated that consumers exhibit more positive attitudes towards AI-generated content when it is delivered with precision (Kim, Giroux, and Lee 2021). This investigation underscores the intricate and multifaceted dynamics of consumer reactions to AI disclosures.

Second, we observed a significant moderating effect of AI human-likeness perception in Study 2. The adverse impact of AI disclosure was mitigated when individuals perceived AI as more human-like rather than as a machine or robot. This finding aligns with existing literature demonstrating the favourable effects of

anthropomorphism in human–robot interaction studies (Yogeeswaran et al. 2016; Złotowski et al. 2015). Anthropomorphism often leads to the attribution of human-like qualities to AI (Baek et al. 2022). Building on the concept of AI as a moral agent (Salles, Evers, and Farisco 2020), this study contributes to the existing literature (Chen and Park 2021; Fraune et al. 2020; Li and Suh 2022; Yang et al. 2022) by demonstrating that anthropomorphic perceptions of AI can mitigate negative reactions to AI disclosure in prosocial advertising, thereby extending our understanding of AI perception in charitable giving attitudes and behaviours.

Finally, to the best of our knowledge, this study marks the integrated adoption of the persuasion knowledge model and algorithm aversion literature in the context of AI-generated ad disclosure. Our findings emphasize that when consumers activate their persuasive knowledge, it often leads to heightened cognitive defences and scepticism about ad credibility (Russell 2002; Xu and Wyer 2010). In other words, the impact of persuasive tactics on consumer evaluation depends on the credibility of such tactics, particularly in the adoption and disclosure of AI-generated ads. Moreover, our results indicate that persuasion knowledge can yield varied effects, either amplifying or diminishing ad credibility, and ultimately influencing overall evaluations and donation intentions.

Practical implications

This study analyzed consumer responses to disclaimers in prosocial AI-generated advertising, specifically investigating whether the perceived human-likeness of AI moderates the impact of AI disclosure on ad evaluation and donation intention. Our findings offer valuable insights for nonprofit organizations, aiding them to refine their communication strategies.

While utilizing AI for creating effective charitable giving ads can save significant costs and time due to its productivity, the misuse of AI-generated content can have adverse effects, potentially undermining the original objectives of charitable organizations (Arango, Singaraju, and Niininen 2023). Therefore, nonprofit organizations should adopt a cautious approach, ensuring alignment with prevailing public opinion and attitudes towards AI in charitable advertising. Marketers can stay attuned to evolving sentiments and societal expectations by continuously monitoring public opinions towards synthetic content creation.

In addition, our findings can benefit nonprofit organizations' communication strategies. Social marketers aiming to boost donations should strategically incorporate AI disclosures into their advertising initiatives. Specifically, comprehending consumers' nuanced reactions to AI disclosure enables organizations to customize their messaging and visual content to maximize impact. For instance, charitable entities can differentiate between marketing strategies tailored for individuals who perceive AI as more machine-like versus those who perceive it as more human-like. This differentiation facilitates more precise and effective communication.

Furthermore, this study emphasizes the importance of strategic transparency when adopting AI-generated content. Acknowledging the potential challenges highlighted by this study, charities should consider credibility as a means of mitigating negative perceptions associated with AI disclosure (Kirkby, Baumgarth, and Henseler 2023). By

transparently demonstrating ethical considerations, responsible use of AI, and positive outcomes related to synthetic content in donation ads, organizations can build credibility and trust.

Our research also has managerial implications for the advertising industry, particularly in addressing the challenges posed by AI-generated content and disclosure requirements. To balance the need for disclosure while maintaining ad effectiveness, advertisers should engage in industry-wide efforts to educate consumers about AI in advertising. AI literacy education, which focuses on the role, capabilities, and risks of AI in advertising, should complement AI-generated ad disclaimers to enhance transparency (Herbst-Brady 2024).

In addition to educational initiatives, advertisers must tackle the challenge of maintaining AI-generated ad efficacy, while complying with potential regulatory requirements for AI disclaimers. A promising approach is to develop creative strategies that incorporate AI disclaimers into ad themes or narratives. By designing ads that naturally incorporate AI elements into storytelling, advertisers can reduce the perception of disclaimers as intrusive. Recent research has shown that using AI to personalize ad content can help mitigate the negative perceptions associated with AI disclaimers, leading to increased consumer engagement and purchase intentions (Wang and Qiu 2024). Importantly, we do not recommend selectively including AI disclaimers, because this would likely violate ethical standards and regulatory requirements. Instead, advertisers should focus on changing consumer perceptions of generative AI through ongoing transparency and educational initiatives. Rather than selectively including disclaimers based on individual perceptions of AI human-likeness, which would be impractical and potentially unethical, advertisers should strive to foster a more balanced public view of generative AI's role in advertising, irrespective of whether individuals perceive AI as more human-like or machine-like.

Limitations and future research directions

This study has some limitations that open up possibilities for future research. First, we relied on online panel samples sourced from Cloud Research and Amazon MTurk, which may not fully capture the broad range of consumers aligned with the primary audience for fundraising campaigns. To enhance the generalizability of the findings, future research should implement a field experiment aimed at mitigating potential biases in participant selection linked to demographic profiles. Second, this study focused exclusively on AI-generated images. As charity campaigns commonly adopt various media formats, future studies should consider incorporating different forms of media, including written, audio, and video materials.

Another limitation is that we did not directly compare the effect of AI disclosure in charitable giving contexts with that in other commercial advertising settings. Future research could address this by conducting comparative studies to examine the effects of AI disclosure effects between prosocial and commercial advertising contexts. Such studies could be useful to isolate whether consumers' attitudinal and behavioural responses are influenced more by mere exposure to AI disclaimers or by the perceived incongruence between AI-generated content and prosocial causes.

In addition, while we demonstrated the moderating role of AI human-likeness in Study 2 and conducted a separate mediation analysis in Study 3, future studies could benefit from manipulating the portrayal of AI's human-likeness in ads while also measuring perceptions of AI human-likeness and the key mediator of advertising credibility. Furthermore, human–AI interactions differ significantly from traditional social exchanges (Kim et al. 2023). Future studies should incorporate various covariates, such as socioeconomic status, technology adoption skills, and attitudes. Finally, our study recruited participants exclusively from the US, potentially limiting the broader applicability of our findings to a global context. Therefore, future studies should consider using cross-cultural samples.

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Data availability statement

The data that support the findings of this research are available from the corresponding author upon reasonable request.

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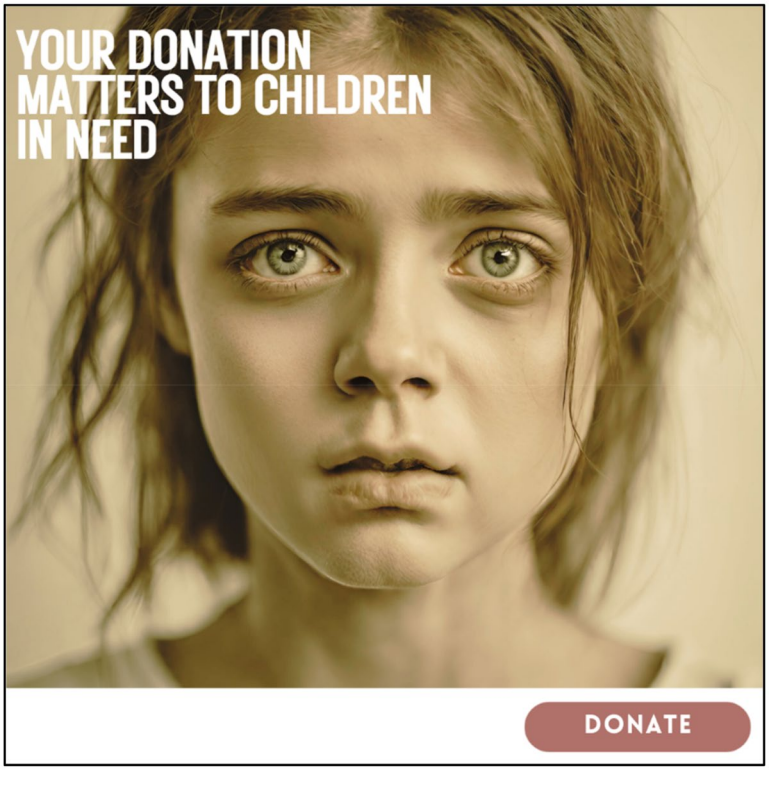
Appendix A

AI disclosure condition (Study 1)

Non-AI disclosure condition (Study 1)



Appendix B

AI disclosure condition (Studies 2 and 3)

Human disclosure condition (Studies 2 and 3)