

DEEPAKE TECHNOLOGY IN DIGITAL MARKETING: PERCEPTIONS, RISKS, AND ETHICAL CONCERNS FOR GENERATION Z

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Abstract

The swift development of artificial intelligence has enabled the use of deepfake technology in digital marketing, thereby providing opportunities for better personalization and creative engagement in marketing strategies. However, concerns regarding trust, authenticity, and ethical transparency continue to be a significant issue, especially for Generation Z consumers.

This study seeks to understand Generation Z consumers' perception of deepfake technology in the context of marketing, with a focus on the role of trust, authenticity, and disclosure. A quantitative research approach was used, where a survey was conducted with 100 participants.

Significantly, the results of this study reveal that trust emerges as a significant factor in determining purchase intention, thereby suggesting that trust plays a significant role in shaping Generation Z consumers' perception of deepfake technology in marketing. Conversely, authenticity does not emerge as a significant factor in shaping Generation Z consumers' behaviour, thereby suggesting that authenticity does not directly affect Generation Z consumers' behaviour in the context of deepfake technology in marketing. Disclosure, on the other hand, emerges as a significant factor, though with a weak coefficient, thereby suggesting that though transparency in the context of deepfake technology in marketing is important, it does not directly affect Generation Z consumers' behaviour.

Significantly, this study contributes to the growing literature on artificial intelligence in marketing by suggesting that trust emerges as a significant factor in shaping Generation Z consumers' behaviour, thereby suggesting that authenticity does not directly affect Generation Z consumers' behaviour in the context of deepfake technology in marketing.

INTRODUCTION

The rapid evolution of artificial intelligence (AI) has led to the development of one of the most disruptive innovations in digital communication: deepfake technology. Deepfake media produced by generative adversarial networks (GANs) and other forms of deep learning algorithms have shown tremendous potential to mimic human forms of communication in various forms of media, such as audio, video, and images (1; 2; 3). This innovation has tremendous potential for marketers to personalize their campaigns and be more efficient and creative (4; 3). Marketers can leverage AI-generated influencers and celebrities to communicate with consumers.

Despite these opportunities for marketers, there is a complex array of challenges related to ethical, legal, and societal concerns. The potential of deepfake media to communicate with consumers and be emotionally appealing creates several challenges related to authenticity and manipulation (6; 7). Marketers and consumers may find it increasingly difficult to distinguish between authentic and fake media (6). This is a challenge for marketers and consumers in general. However, this challenge is particularly pertinent for Gen Z consumers. Gen Z consumers are the first digital natives. Born between the mid-1990s and early 2010s, Gen Z consumers have

high digital literacy and tend to be active on social media platforms (5). Gen Z consumers have high expectations for authenticity in digital communication (5). Gen Z consumers have been exposed to digital media and communication their entire lives. This constant exposure to digital media and communication may affect their perception of authenticity and manipulation (7).

Despite the increased popularity of deepfake marketing, there is a lack of empirical studies regarding how Generation Z responds to this form of marketing. However, existing studies have shown that, on the one hand, deepfake marketing has the potential for increased creativity, but on the other, there is a possibility for a loss of trust, privacy, and negative impacts on a firm's reputation. One of the main gaps in the existing body of knowledge is how psychological factors, such as trust, perceived authenticity, and transparency, contribute to consumer behaviour in this new marketing paradigm. While authenticity has conventionally been considered a key factor in consumer behaviour, its straight impact on consumer behaviour in the perspective of deepfake marketing is blurred. Trust, however, could be a primary factor, as Generation Z is increasingly likely to assess not only the authenticity of the marketing material but also the trustworthiness of the source.

Another area which is not yet clear is the ways in which disclosure and transparency can help alleviate consumer skepticism and build trust. Although previous research has shown the positive influence of disclosure on consumer behaviour, the impact is still exceptionally low. This is an area which needs further empirical research; this study aims to address this knowledge gap by exploring the ways in which Generation Z is aware of and perceives deepfake advertisements, specifically focusing on the ways in which trust, authenticity, and disclosure can be factors for purchase intention. The objectives of this study are as follows:

1. Examine the ways in which Generation Z is aware of and perceives deepfake advertisements.
2. Examine the ways in which trust, authenticity, and disclosure can be factors for purchase intention.

3. Examine how transparency could contribute to consumer behaviour in the context of AI-generated marketing materials.

4. Provide strategic and ethical recommendations for the use of deepfake marketing. Based on the problem formulation approach, the present study puts forward the following hypotheses:

1. **H1:** Perceived authenticity of deepfake marketing content is anticipated to have a significant influence on purchase intention among Generation Z consumers.

2. **H2:** Consumer trust is anticipated to have a significant influence on purchase intention in the context of deepfake marketing.

3. **H3:** Disclosure of AI-generated content is anticipated to have a positive influence on consumer perceptions, particularly with respect to enhancing trust and purchase intention.

This study contributes to the existing body of literature on the topic by providing empirical evidence on the perception of Generation Z consumers regarding deepfake advertisements, particularly focusing on trust, authenticity, and purchase intention. This study also contributes to the existing body of literature by providing a broader perspective on the importance of trust compared to other factors. This study also contributes to the existing body of literature by providing marketers and policymakers a broader perspective on the importance of transparency and ethical considerations related to the use of deepfake advertisements. This study also contributes to the existing body of literature by providing a broader perspective on the importance of trust compared to other factors related to the use of digital marketing technologies.

II. Literature Review

Deepfakes—audio-visual media created through machine learning algorithms such as GANs and diffusion models—have evolved from a marginal technical interest to a mainstream cultural and business phenomenon. The highly realistic nature of such media creates a duality of opportunities and threats. In the context of marketing research, the focus is increasingly on Generation Z, as their formative years have been characterized by widespread exposure to such media. The following section presents a synthesis of findings from 37 relevant

studies, grouped thematically into (1) perceptions and trust, (2) ethical issues and regulation, (3) marketing uses and risks, (4) detection, literacy, and interventions, and (5) the technical landscape of deepfakes.

A. Perceptions and Trust

The scholarly consensus is unanimous regarding the highly context-dependent nature of perceptions of deepfakes. The early studies show that synthetic influencers and avatars are perceived as entertaining and innovative, capable of generating novelty and curiosity (12; 13; 14). However, the same factors lead to perceptions of suspiciousness, as the audience is concerned about the authenticity of the message source and the reasons behind its creation (15; 16; 17). The studies show that the role of disclosure is moderating, as it alleviates feelings of betrayal but does not eliminate perceptions of credibility (18; 19; 20).

Regarding Generation Z, research on this particular generation presents a contradictory picture. On the one hand, these audiences show high levels of baseline digital literacy and a willingness to consume AI-driven content (14; 21). On the other, these audiences also show increased levels of suspicion about deception, especially in comparison with other generations, possibly because of constant exposure to social media (22; 23). The formation of trust, in turn, seems to depend on previous brand reputation, suggesting that the very same deep fake technique could be interpreted differently in the context of Instagram influencer marketing and corporate branding (24; 25). Although trust and authenticity are generally considered two of the most important determinants of how consumers evaluate AI-generated content, recent research suggests that these two concepts might not be equivalent, especially in the context of consumer behaviour. Thus, authenticity might affect the way a consumer evaluates the realism of the content, while trust might be related to the content's credibility and intentions, which in turn might be related to behavioural outcomes. This suggests that a consumer might find a certain content inauthentic without this impacting their behavioural intentions towards the content, while a lack of trust might affect their buying behaviour and brand loyalty.

B. Ethical Concerns and Regulation

The ethical implications of synthetic media in marketing are a fast-evolving research area, with scholars pointing out concerns related to consent, identity appropriation, and morality in the context of replicating individuals' likenesses without permission (26; 27; 28). Regulatory concerns are also highlighted by other scholars, who draw attention to the fact that existing intellectual property, privacy, and advertising legislation are not adequately prepared to address the challenges posed by deep fake (29; 30).

However, the normative literature emphasizes transparency and accountability as the bare minimum for responsible use. The emphasis on watermark standards and provenance tracking also points towards a growing awareness that technical solutions need to be coupled with appropriate governance structures (31; 32; 33). Consumer-facing research also supports these concerns, as they reveal that ethical breaches not only affect individuals in deepfakes, but also affect consumer perception of brands linked with synthetic ad campaigns (12; 14; 34).

C. Marketing Applications and Risks

There are different views on the marketing applications of deepfakes, ranging from excitement to concern. A number of studies point to the potential cost savings and the creative freedom that deepfakes can offer, where marketers can produce highly personalized advertising at scale without the need for real people or production studios (18; 35; 36). Another area of deepfake marketing that has seen some success is the use of virtual influencers and AI spokespersons, particularly among younger consumers who are looking for something new and interesting (37; 38; 39).

However, the risks of alienating the consumer are significant, as research has pointed out that the use of deepfakes without disclosure has been seen as manipulative, resulting in damage to the brand and brand loyalty (13; 16; 40). Another area of research has pointed out that the younger generation, Gen Z, sees authenticity as one of the most important aspects of the brand, and any form of manipulation would be seen as damaging (41; 42). Even if the deepfake is disclosed, the general sentiment among consumers is that the use of deepfakes may be unsettling, as they

may question the motivations behind replacing real people with deepfakes (15; 19; 20).

Some researchers have pointed out that deepfakes may be tolerated by the consumer if the marketer uses deepfakes for playful, experimental, and artistic campaigns, as this would be seen as creative (25; 17). However, this may not be the case in sensitive marketing campaigns, such as health marketing and political campaigns (43; 44). The overall sentiment of the literature is that the success of deepfakes in marketing depends on the context, the disclosure of the deepfake, and the relationship between the marketer and the consumer.

This distinction also serves to underscore another important aspect: that while authenticity may play a part in shaping consumer attitudes, it may not necessarily translate to actual change in behaviour. By contrast, trust is revealed to play a more crucial role in shaping consumer response, with perceptions of deception or manipulation being a key factor in determining the success or otherwise of a marketing campaign. This also serves to underscore the notion that it is trust rather than authenticity that serves as the conduit for the marketing implications of deepfake marketing.

D. Detection, Literacy, and Interventions

While marketing opportunities are one side of the equation, detection and literacy form a crucial part of the counter-response to the challenges posed by deepfakes. With respect to detection, a range of technical solutions have been proposed for detecting manipulated media, including the use of deep learning classifiers, forensic analysis of image artifacts, and watermarking protocols (45; 31; 39). However, the viability of these detection methods has also been threatened by the evolving nature of deepfake generation methods, creating what some scholars have termed an 'arms race' between detection methods and synthesis (32; 33).

By contrast, literacy interventions focus on the end user, with scholars revealing that members of Gen Z show a positive response to disclosure labels, media literacy prompts, and education campaigns that encourage users to question the authenticity of a piece of media (15; 14; 37). However, the effect is relatively small and temporary, with some scholars revealing that the intervention may have negative implications

for sustainability (30; 29). Scholars have also emphasized that for literacy interventions to have a positive effect, a combination of technical provenance systems with human factors design considerations that take into account human limitations in attention and cognitive ability is crucial (22; 38).

E. Technical Landscape of Deepfakes

Lastly, a brief overview of the technical landscape with respect to deepfakes is also crucial in understanding the marketing implications that may arise in the future. With respect to the technical landscape, scholars have revealed that recent advances in GANs, diffusion models, and multimodal models have led to a significant enhancement in the quality of the output that these models are capable of producing, with realistic audio-video synthesis and interactive avatars being some of the key areas where these models have been applied (44; 40; 28).

Research outside of marketing also points to the rapidity of quality improvement and cost reduction, suggesting that barriers to entry will continue to fall (45; 43). This also points to the importance of interdisciplinary research that seeks to bring together the research of computer science, business, and communication to address the unintended consequences of deepfakes and to build in checks to the deployment of these technologies (36; 46; 21).

Overall, the literature points to the importance of trust as a more significant construct than authenticity in terms of consumer behaviour, particularly in relation to the use of emerging and potentially deceptive technologies such as deepfakes.

F. Cross-cutting Limitations and Research Gaps

While the literature on deepfakes has expanded significantly, there remains a need for more empirical research on the relative importance of trust, authenticity, and disclosure on consumer behaviour. For example, it is also unclear whether authenticity has a direct impact on behavioural outcomes, whether trust is the underlying driver of behavioural outcomes, and the extent to which disclosure has a direct impact on trust.

Despite the rapid growth of the literature on deepfakes, there are also some methodological limitations that are common to the literature, including the relatively small convenience samples that are often used, the relatively homogeneous

samples that are often drawn upon, and the relatively high percentage of samples drawn from the West (18; 14; 15). There are also some issues with validity, including the relatively limited longitudinal research that has been conducted, the relatively limited number of field-based studies, and the relatively emerging nature of the scales that are being developed to measure trust, authenticity, and literacy (47; 48).

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III. Methodology

The research method of this study is quantitative research, specifically the use of surveys to examine the perceptions of Gen Z regarding deepfake marketing. The reason for this research method is that it allows the researcher to measure the key constructs of the research, namely awareness, trust, perceived authenticity, and purchase intention, among the target population (5; 1). The survey method is also widely used as a research method in digital marketing

research, particularly in studying the behaviour of Gen Z regarding digital marketing (3; 23).

A. Sample and Data Collection

The target population of this research was Gen Z, who were born between the years 1995 and 2010 (10; 11). The data collection was conducted online, as this was considered most suitable to the Gen Z target population, who are digital natives and are most likely to be active online (10; 11). The researcher collected 100 samples of data, which were considered sufficient to answer the research questions. The online data collection method was considered most suitable to the Gen Z target population, who are digital natives and are most likely to be active online (10; 11).

B. Measures

Trust was measured through items that measured credibility and skepticism towards deepfake marketing content (15, 34). Perceived authenticity was measured through items that measured the extent to which respondents could differentiate between real and fake content, as well as respondents' preference for real brand messages (36, 16). Purchase intention was measured through items that measured respondents' engagement and loyalty towards the brand (41, 42).

Disclosure was measured through items that measured respondents' perceptions of transparency and trust towards brands that disclose the use of deepfake marketing technology. Awareness of deepfake marketing was measured through items that measured respondents' knowledge and familiarity with the term (8, 9).

Due to the variability in internal consistency for some of the constructs, individual items and composite constructs were used selectively for the purpose of the analysis.

C. Data Analysis

Data analysis was conducted through multiple regression analysis, which was used to assess the relationships between trust, perceived authenticity, disclosure, and purchase intention. Regression analysis was considered appropriate for assessing the direct effects of independent variables on respondents' behaviour.

Prior to data analysis, the data was cleaned and standardized, which included converting categorical

data into numerical data and addressing missing values. Composite constructs were used for some of the constructs, while individual items were used for constructs that did not have a high level of internal consistency.

Regression diagnostics were conducted to ensure that the model was valid, which included testing for normality, autocorrelation, and model significance.

IV. Results

A. Demographic Profile

There was a total of one hundred valid participants. The majority were between 18 and 27 years old, confirming the sample's focus on the Gen Z segment. In addition, the sample had a balanced proportion of both genders, but slightly more females were included. The majority were urban residents from Karachi, Pakistan.

This demographic profile is consistent with previous research targeting a sample from the Gen Z segment for the digital marketing and AI adoption scenarios.

B. Awareness and Exposure

There was a high level of awareness among the sample concerning the existence and use of deepfake technology. More than 70% were aware of the existence of deepfake content. Moreover, 68% reported having been exposed to the use of deepfake

content for marketing and advertising purposes. However, only 45% were confident about their ability to understand the creation and use of this content by marketers.

These findings indicate a disconnect between the two variables. This disconnect implies that the Gen Z segment may evaluate the use of deepfake content more based on their perception than their technical knowledge.

C. Descriptive Statistics

Descriptive statistics for the sample's Likert-scale-based responses were computed. The sample was moderately skeptical about the use of deepfake marketing content. The sample agreed that the use of deepfake technology makes it more difficult to trust marketing content (M = 3.26). In addition, the sample agreed that the use of this technology decreases consumer engagement with brands (M = 3.27). Moreover, the sample was also skeptical about consumer loyalty (M = 3.56).

However, the sample had a higher level of agreement for the items related to transparency. In this regard, the sample indicated a higher level of trust for brands using deepfake technology (M = 3.61). In addition, the sample supported the use of transparent communication more (M = 3.72). Mean responses are presented in Table 1.

Table 1: Mean Responses to Key Items

Item	Mean
Difficulty trusting deepfake marketing	3.26
Reduced engagement due to deepfakes	3.27
Negative impact on brand loyalty	3.56
Trust with disclosure	3.61
Transparency increases support	3.72
Ethical guidelines improve comfort	3.48

D. Regression Analysis

To assess the impact of trust, perceived authenticity, and disclosure on purchase intention, a multiple regression analysis was conducted.

The overall model was statistically significant (F = 6.165, p < 0.001), and 16.2% of the variance was explained by the model (R² = 0.162). Results are presented in Table 2 and Figure 1.

Table 2: Regression Results

Variable	Coefficient (β)	Std. Error	t-value	p-value
Constant	1.601	0.500	3.202	0.002
Trust	0.247	0.076	3.267	0.002
Authenticity	0.109	0.093	1.171	0.245
Disclosure	0.174	0.103	1.696	0.093

E. Hypothesis Testing

Based on the regression analysis, the proposed hypotheses were evaluated as follows and presented in Table 3:

H1: Perceived authenticity influences purchase intention

The results indicate that perceived authenticity does not have a statistically significant effect on purchase intention ($\beta = 0.109, p = 0.245$).

H2: Trust influences purchase intention

Trust was found to have a positive and statistically significant effect on purchase intention ($\beta = 0.247, p < 0.01$).

H3: Disclosure influences consumer perceptions and purchase intention

Disclosure demonstrated a positive but marginally significant effect on purchase intention ($\beta = 0.174, p = 0.093$).

Table 3: Hypothesis Testing Summary

Hypothesis	Relationship Tested	Result
H1	Authenticity \rightarrow Purchase Intention	Not Supported
H2	Trust \rightarrow Purchase Intention	Supported
H3	Disclosure \rightarrow Purchase Intention	Partially Supported

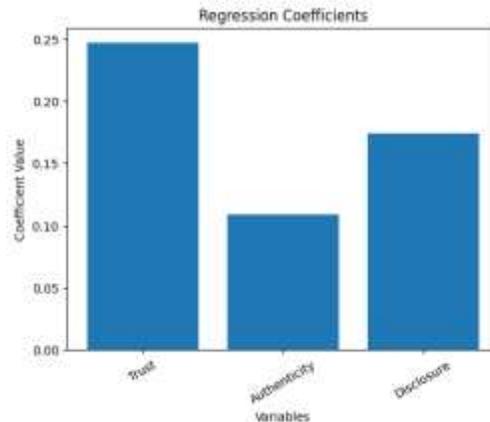


Figure 1: Regression coefficients showing the relative influence of trust, authenticity, and disclosure on purchase intention.

V. Discussion

The findings of the study have significant implications for understanding Generation Z's perceptions of deepfake marketing campaigns, especially when it comes to their attitudes toward trust, authenticity, and transparency.

The findings of the study regarding trust being the most significant factor for purchase intention validate the significance of trust for consumer decision-making processes in a digital environment. Previous research

has stressed that trust is a crucial factor for consumer decision-making processes in a digital environment, which is characterized by technological uncertainty and manipulation.

Additionally, the findings of the study regarding perceived authenticity not having a statistically significant effect on purchase intention contradict conventional assumptions in marketing literature regarding the significance of authenticity for consumer decision-making processes.

Furthermore, the findings of the study regarding disclosure having a positive effect on purchase intention validate the significance of transparency for consumer decision-making processes; however, it was also revealed that this effect was lower than trust. This finding suggests that, unlike trust, disclosure should not be regarded as a standalone approach for addressing the problem of deepfake marketing, but it should be regarded as a complementary approach for building trust with consumers.

Collectively, these results reveal the importance of the distinction between perception and behaviour, where, although authenticity and disclosure are crucial factors in the way in which deepfake marketing is perceived, trust is the key driver of whether this influences behaviour and purchasing intention. This, in turn, reinforces the idea that trust is the key driver of the impact of deepfake marketing on the consumer. In terms of the contribution to theory, the research sheds light on the relationship between the role of authenticity and trust in AI-driven marketing, where the research reveals that, although the role of authenticity has been considered to be a direct predictor of consumer behaviour, trust is the key driver, particularly in relation to the role of emerging and potentially deceptive technologies.

In terms of the practical implications of the research, the research reveals that, although deepfake marketing is innovative and attention-grabbing, trust is the key driver of the way in which deepfake marketing can be effective, where the role of transparency and disclosure should be implemented as part of a wider strategy rather than as the sole means of creating effective deepfake marketing campaign.

VI. Conclusion

The aim of this study was to explore the perspectives of Gen Z on the marketing strategies used in deepfake marketing and their impact on consumer behaviour. From the study, it was evident that trust was the main factor affecting consumer behaviour in relation to deepfake marketing. This is because consumers would be willing to interact with a given brand if they found the content trustworthy and non-deceptive. This indicates the importance of trust as a main factor affecting consumer behaviour.

On the other hand, there was no significant impact of authenticity on consumer behaviour. This indicates

that consumers may be able to recognize artificial content and still behave in a particular manner. This indicates that authenticity is not a main factor affecting consumer behaviour. This is contrary to the common notion of authenticity being a main factor affecting consumer behaviour.

Finally, there was a positive impact of disclosure on consumer behaviour. This indicates that although disclosure may not be a main factor affecting consumer behaviour, it may be a contributing factor to consumer behaviour.

A. Implications

From a theoretical point of view, this research adds to the body of knowledge by demonstrating the more dominant role played by trust compared to authenticity in consumer response to deepfake marketing. From a practical point of view, this research demonstrates the more dominant role played by trust compared to authenticity in consumer response to deepfake marketing. Transparency and ethical communication should form part of a marketer's trust-building strategy.

B. Limitations and Future Research

This research is not without a number of limitations as the sample size was limited. Future research should be done on a larger sample size. Future research should also use more rigorous methodology, such as experiments. Future research should also improve a number of the scales for the constructs trust, authenticity, and disclosure. Future research should be done from a cross-cultural point of view. This would provide more insights on the changes in consumer response to deepfake marketing over time.

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