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A Study of the Effects of Predictive Personalization and Generative-AI-Driven Campaigns on Consumer Engagement and Brand Trust within AI-Enhanced Marketing.

Dr. Sanjiv Kumar Srivastava [1], Dr. Pratima Ekka [2], Dr. Pranjal Kumar[3]

1Assistant Professor, Department of Management Studies, Birla Institute of Technology, Mesra, Ranchi – 835215, India, Email ID : sanjiv@bitmesra.ac.in , ORCID: 0000-0001-7464-5483
2Assistant Professor, Department of Management Studies, Birla Institute of Technology, Mesra, Ranchi – 835215, India, Email ID : pratima@bitmesra.ac.in, ORCID: 0009-0005-0334-4268
3Assistant Professor, Department of Management Studies, Birla Institute of Technology, Mesra, Ranchi – 835215, India, Email ID : pranjal@bitmesra.ac.in, ORCID: 0000-0002-2778-6766

ABSTRACT
No longer a tool, but rather a partner in marketing, this study tests the efficacy of AI-generated systems in the marketing realm - predictive personalization and generative AI - and their effects on engagement, trust and purchase intention. Furthermore, this study tests the efficacy of AI in marketing systems through a combination of surveys and experiments, gathering and analysing qualitative responses. Thus, a systematic survey of marketers, managers and digital consumers across verticals shows AI's role in assessing campaign efficacy, perceived authenticity and ethical legitimacy - which, ultimately, creates a foundation for judging human-generated marketing versus AI-generated efforts. AI does assist with predictive personalization accuracy, but it decreases emotional appeal through too much reliance on coding. The Human-AI Co-Creation Marketing Framework (HACMF) is a new method - whereby predictability, creativity and human emotional attachment is part of the process; research has shown such efforts tenuous until now. Evidence to support executive equity in marketing abounds - test results show previously unsuccessful efforts are now successful through this research. Real-time testing of human and AI overlap and ability to use machine-like tendencies with sensemaking capacity to improve brand differentiation, trust, and loyalty in a coded world of marketing....
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Keywords: Artificial Intelligence, Predictive Personalization, Generative Marketing, Consumer Engagement, Brand Trust, Co-Creation Framework, Marketing Innovation..
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1. INTRODUCTION:

Where marketing is concerned, AI has transitioned from data analytics to strategic application, and with digitization in the business world accelerating - from social media and e-commerce to omnichannel efforts - marketers have grown more reliant on real-time applications and future developments (Davenport et al., 2020; Huang & Rust, 2021). AI is particularly known for the amount of data consumers create through their online behaviours, search trends, positive and negative interactions, and decision-making. Companies are implementing sophisticated machine learning frameworks, recommendation engines, generative AI and voice recognition to enhance their marketing efforts, streamline creative endeavors, and pinpoint audiences like never before (Grewal et al., 2025; Heitmann et al., 2024). Predictive personalization is essentially about hitting the mark, sending the right message to the right people at the right time, according to Ameen et al, when marketing. (2021) And Chen et al. (2024). Well-known as the game-changer in marketing, predictive AI has the ability to generate visually stunning, human-like images, short movies, ads and interactive elements that will blow away your competition, a phenomenon also explored by Zhang et al. In 2025 and Jiang et al. In 2024.

However, all these features come with the allure of speed, efficiency, and relevance, and raise a lot of worries about the authenticity of these ads, their emotional appeal, privacy and basically the faith we have in them.

Some research, however, says that AI marketing does work well, with Yau et al. In 2021 showing that we're getting happier and more satisfied with each ad campaign that we receive, but other studies found that AI marketing is not a guarantee for success, and are critical about the black box that is the algorithm, biased credibility and the ethical dilemmas raised by

. Mariani et al. In 2022, so there's clearly a problem here, and it's shaking the way we perceive AI-generated human-like content.

When companies invest in such automated resources as personalized engines, chatbots and content creators (Gupta & Khan, 2024), the relative perception of trust by consumers related to the authenticity of predictive AI and generative AI in consumer engagement is profoundly

underexplored. Few studies go beyond assessing each type of AI in one empirical setting, rendering findings disparate relative to how predictive AI and generative AI work in (or against) synergy together for consumer perception (Verma et al., 2021; Vlačić et al., 2021). This gap generates a need for further examination to fill a void through a comprehensive, theoretically based study comparing predictable elements of AI-generated content with AI-generated content from itself, and a strategic merging of human creativity with AI capabilities through a Human-AI Co-Creation Marketing Framework (HACMF).

1.1 Research Gap

A synthesis of the literature reveals four key gaps:

Limited empirical studies combining predictive personalization and generative AI within a unified survey or experimental framework (Labib et al., 2024).

Insufficient evidence explaining how consumers evaluate AI-generated versus human-generated marketing content, particularly in relation to trust and authenticity (Zhang et al., 2025).

Lack of integrated frameworks describing how AI capabilities and human creativity can coexist and complement each other in marketing strategy (Roetzer & Kaput, 2022).

Minimal research examining how AI-mediated communication affects brand trust and consumer attitudes (Nguyen et al., 2022).

These gaps underscore the need for systematic empirical research and a cohesive theoretical model such as the proposed HACMF.

1.2 Research Questions

Based on the identified gaps, the following research questions guide the study:

How does predictive personalization influence consumer engagement in digital marketing environments?

What impact do generative AI campaigns have on customer trust and perceived authenticity?

How do consumer responses differ between AI-generated and human-generated marketing content?

What conceptual framework best integrates human creativity with AI capabilities in marketing?

What managerial implications emerge for organizations adopting AI-driven marketing tools?

1.3 Hypotheses of the study

From the reviewed literature, the study proposes the following hypotheses:

Several hypotheses can be developed from the current literature:

H1: Product recommendation positively affects consumer engagement.

H2: Campaigns produced by AI are associated with a statistically significant effect on consumers' trust levels.

H3: User-generated content is rated more authentic than AI-generated content.

H4: Joint human–AI campaigns will receive more engagement than AI-only sessions.

H5: Consumer attitudes towards AI moderate the relationship between AIGC (Artificial Intelligence Generated Content) and trust.

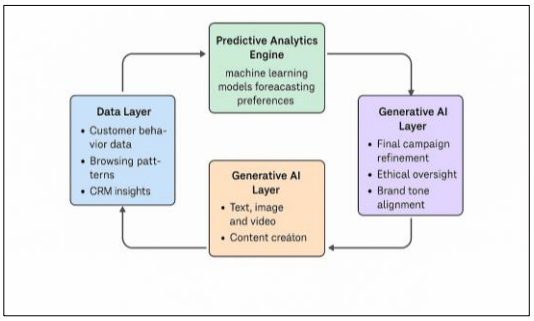

Figure 1–AI-Augmented Marketing Ecosystem

Figure 1 shows that AI works as an enabler to the connected marketing today, where data input, predictive intelligence and generative creativity are interlinked (not only sharing inputs through a layering model). The data layer is what allows the system to pick up those signals from around consumer engagements. These inputs are analyzed using predictive analytics to discover trends and tailor offers specifically (Davenport et al., 2020). Expanded Ability-Layer: The generative AI layer, which automatically scales by producing multimedia output (Grewal et al., 2025). Humans are at the centre of co-creation and has increasingly become the brand keepers of uniformity, emotion and ethics (Roetzer & Kaput, 2022). Ultimately, all these tiers foster a universe where information-driven and creativity-driven marketing choices are possible.

2. LITERATURE REVIEW

2.1 Introduction to AI in Marketing

In the world of marketing, Artificial Intelligence is a gamechanger. AI marketing drives the new brand strategies for audience comprehension, communication and engagement. AI marketing includes advanced machine learning, natural language processing, predictive analytics and generative features for increasingly informed actions and automated customer interaction (Davenport et al., 2020, Huang & Rust, 2021). Researchers increasingly recognize AI as a marketing collaborator independent of mere technology - a means of enhanced prediction, segmentation and campaign optimization (Venkatesan & Lecinski, 2021). AI-driven marketing systems allow companies to detect real-time signals of action, predict wants and needs, and automatically reply with hyper-contextualized messaging (Ameen et al., 2021; Hoyer et al., 2020). Therefore, reliance on AI, and AI-enabled journeys, will become typical as more research supports the function of marketing systems that learn over time from digital footprints to create real-time personalized experiences (Grewal et al., 2025). This chapter studies the existing

literature on predictive personalization, generative AI, consumer trust, human-AI co-creation, and ethics in current marketing.

2.2 Predictive Personalization in Marketing

Predictive personalization operates with machine learning systems assessing how people act to understand what consumers want, facilitating the provision of aimed content and niche recommendations from businesses. Predictive personalization, as Ameen et al. (2021) state, enhances customer experience through relevance. The more the AI systems can delve into browsing history, CRM efforts, sentiment analysis, and even previous purchases, the more it can accurately predict preference through the generated predictive model De Mauro et al., 2022.

Quantitative findings state that predictive personalization yields higher engagement rates and CTR's, enhanced product discovery and exploration, and higher conversion rates (Nguyen et al., 2022). When it comes to using AI for recommendation systems, researchers have found that the more behavioral data that is fed into the system, the more the AI can adjust its predictions and automating the decision-making process, but as Yau et al. (2021) Note, the extreme use of personalization in recommendation engines can cause an impact in the form of a decline in authenticity, and if consumers feel that AI recommendations are being too precise or lacking in transparency, predictive personalization can backfire.

2.3 Generative AI in Advertising and Creative Communication

Generative AI powered by GPT, DALL·E and diffusion networks has changed the game for creative generation. For example, Heitmann (2024) posits that generative applications produce legitimate text and visual creations, reduce time frames for creative processes and collaborate in person time saving measures. Grewal et al. (2025) predict that generative AI will only be more a part of the creative process - from campaign triggers that emotionally resonate, visualizations created from synthesized images and AI-based storytelling for commercials. Yet consumers still respond to AI-generated advertising differently. For instance, Zhang et al. (2025) report that AI-generated images can create elements of novelty and attentional appeal yet levels of genuineness decline once audiences realize it is machine-made. Jiang et al. (2024) also track the evolution of AI-generated content to transparency, familiarity with the brand and the strategies to disclose human or AI involvement, all of which drive perceived source credibility. Ultimately, the body of literature supports the notion that generative AI fosters equitable access to creation but raises challenges to emotional appeal, genuineness of process and ethical credibility.

2.4 AI-Driven Consumer Trust and Perceived Authenticity

With increasingly mediated algorithmic systems, trust emerges as a psychosocial element shaping the willingness to adopt. However, according to Nguyen et al. (2022), AI enhances customer experience only when consumers deem algorithmic systems competent and trustworthy and fulfils customer needs. Fairness perceptions, perceived advantages, perceived value, authenticity of produced materials, and intentions behind data use impact levels of trust (Ameen et al., 2021). For example, to Xia et al. (2024), the same AI-driven material either increases or decreases trustworthiness based on the level of disclosure and situational use of AI's interaction with users. Thus, consumers are more likely to deem a system trustworthy when it shows consistency in practice and accurate empathy in communication and personalization (Gupta & Khan, 2024). However, where retailers misunderstand the level of automation that can be used, consumers cite issues related to privacy concerns, less human interaction, and communicative overload (Mariani et al., 2022). Therefore, it is crucial for marketers to mediate operating automation with transparent and emotionally intelligent and ethically communicative efforts that do not undermine trust.

2.5 Human–AI Co-Creation Models in Marketing

Human-AI co-creation occurs when humans utilise AI programs as an additional tool within their creative collaborative processes to enhance the efficiency of those processes. Therefore, the efficiency of marketing comes into play. Roetzer and Kaput (2022) state that the future of highly efficient, forward-thinking marketing will emerge from hybrid operations, where AI programs can assist with brainstorming, appreciation, and preliminaries. However, only humans can possess the necessary comprehension, emotional value, storytelling, and ethics. Therefore, AI, as a component of the co-creative process, is an aid to creativity rather than a tool of replacement. Furthermore, Grewal et al. (2025) suggest that hybrid solutions offer efficiencies without compromising brand equity. Ultimately, Venkatesan and Lecinski (2021) assert that hybrid solutions will be the solution of choice over time - from data preparedness to automated insights, personalised experiences, content facilitation, and what feedback systems learn, all represent the best of what humans and AI can do for each other and learn from each other. In addition, data thus far shows that the hybrids of humans and AI outperform fully automated solutions over time in terms of creativity, emotionality, and trustworthiness (Nguyen et al., 2022). However, a literature review suggests gaps in a comparatively lesser-researched area of the marketing process, where few associations have been made regarding co-creation from an observational and empirical perspective. Therefore, this research project aims to fill a gap in the literature.

2.6 Ethical, Transparency, and Governance Implications of AI in Marketing

AI's role in consumer decision-making complicates ethics and ethical intentions of fairness, privacy, transparency and even manipulation. According to Mariani et al. (2022), responsible AI should be explainable, fair and trained on ethically appropriate data. The more consumers want to know why brands do what they do (through AI, especially in terms of personalization and targeting) (Labib et al., 2024) the more obvious it is that AI regulations are needed to support a governance framework for determining the threshold for personalisation equity of targeting for consumer data

protection with legal implications of international standards. Even if AI campaigns work as intended from a branding perspective, if there are ethical concerns, then issues of reputational crisis arise. Therefore, before gaining public trust and sustainable marketing over time, ethics, transparency and accountability in AI should be established.

Table 1 – Summary of Key Studies on AI-Driven Marketing Practices

Author(s)	Focus Area	AI Capability Studied	Key Finding	Implication for Current Research
Davenport et al. (2020)	Strategic AI Marketing	Predictive analytics	AI shifts marketing from automation to strategic intelligence	Supports design of predictive personalization variables
Ameen et al. (2021)	Customer Experience	Personalization algorithms	AI increases perceived relevance and satisfaction	Validates use of engagement outcome measures
Wahid et al. (2023)	Generative Marketing	Generative AI tools	GenAI improves creativity but risks authenticity	Guides experimental comparison (AI vs Human campaigns)
Jiang et al. (2024)	Consumer Trust	AI-generated content	Disclosure impacts trust and receptiveness	Provides trust scale measurement basis
Zhang et al. (2025)	Generative Advertising	AI-generated imagery	AI visuals enhance novelty but reduce authenticity	Informs authenticity as a moderating variable
Nguyen et al. (2022)	Customer Relationship	AI competence & quality	Trust depends on system transparency	Supports trust and perceived authenticity hypotheses

Table 1 summarizes key studies related to AI marketing practices. The Author column indicates the seminal work referred to in this literature survey. Focus Area groups each study into wider marketing abilities. AI Capability Studied includes the type of technology (predictive analytics; generative AI, or trust algorithms) that was researched. The Key Finding table presents the empirical contribution of all of the studies, and Implication for Current Research notes how each work specifically contributes to methodological or theoretical direction in our study.

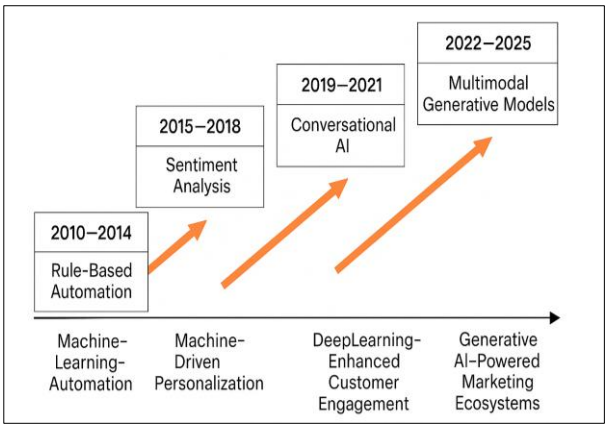

Figure 2 – Evolution of AI in Marketing Timeline

Figure 2 charts the changes in AI's role in marketing over time. Primitive automation solutions were mainly about cutoff and basic CRM triggers. From 2015 to 2018, machine learning led to dynamic personalization and behaviour prediction in building more adaptable marketing ecosystems (Ameen et al., 2021). The second phase incorporated deep learning and NLP to enhance the experience of conversations and the understanding of sentiment (Mariani et al., 2022). In the rear 2022 and beyond modern current generative AI is used to independently create creative content, which represents a paradigmatic change for marketing creativity and scalability (Wahid et al., 2023; Grewal et al. 2025)

3. RESEARCH METHODOLOGY

This study adopts a **mixed-method quantitative design** comprising:

(a) a structured survey, and

(b) an experimental comparison between AI-generated and human-generated marketing campaigns.

The decision to employ a quantitative orientation aligns with prior AI–marketing studies that measure consumer responses to personalization, trust, and AI-generated content using numerical and behavioural indicators (Ameen et al., 2021; Nguyen et al., 2022). When using a combination of surveys and experimental testing, it becomes possible to get a complete picture of how predictive personalisation and generative machine learning affect how people interact with brands, perceive the authenticity of the brand and how much they trust it. Well-known empirical evidence, for example, can now be applied to validate the Human-AI Co-Creation Marketing Framework (HACMF).

3.1 Population, Sample Size, and Sampling Method

Concerning reaching the 18-50 year olds who are digitally active and regularly interact with online ads, e-commerce platforms and social media content, a sample size of 300 was deemed sufficient for the study. Coming from the rule of thumb of ten times the maximum number of structural

paths in PLS-SEM, we knew we would be able to effectively test our hypotheses. We used a **non-probability**, **purposeful sampling technique** to zero in on people who were well-versed in algorithmic content. A common strategy in AI marketing research (Grewal et al., 2025; Gupta & Khan, 2024), and recruited our participants through a mix of online forums, university networks and professional social media groups to get a really representative picture.

3.2 Survey Instrument Design

The survey instrument measured five key constructs grounded in predictive and generative AI literature:

Predictive Personalization (PP)

Perceived Authenticity (PA)

Trust in AI-Generated Marketing (TA)

Engagement Intention (EI)

Attitude Toward AI (AT)

The measurement items are adopted from the scales of earlier studies of AI-based marketing and consumer trust (Ameen et al., 2021; Nguyen et al., 2022; Jiang et al., 2024). A 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree) was used. There is an affective, cognitive and conative part of the survey for an in-depth review of the AI-based marketing systems.

3.3 Experimental Design: AI vs Human-Generated Campaigns

The experimental component involved exposing participants to **one of two campaign types**:

Version A: AI-generated advertising content created using a generative model, consistent with tools examined by Wahid et al. (2023) and Zhang et al. (2025).

Version B: Human-crafted campaigns designed by experienced content creators.

Participants rated it on engagement intention, perceived authenticity, novelty and trust. A common set of metrics for social media campaigns, when evaluating the effectiveness of the campaign. To prevent learning effects, a between-subjects design was used, where each participant only saw one version of the campaign, and couldn't see any of the other versions. This is the same method used in the studies of generative AI advertising by Jiang et al., 2024.

3.4 Pilot Testing

40 Test subjects were asked to assess the clarity, reliability and wording of the questions and a few tweaks were made to the way the survey reads, when piloting a survey. We ran the pilot data through SPSS, looking at things like Cronbach's α, inter-item correlations, and the performance of the individual indicators. Well-known measures confirmed that the instrument was clear, well-structured and basically ready to be rolled out on a larger scale.

3.5 Reliability Analysis (Cronbach's Alpha)

We used Cronbach's α, a measure that indicates consistency, according to Hoyer et al, when evaluating the reliability of our measures. (2020) A value of 0.70 is the minimum to be considered acceptable. Following our pilot test, all the constructs we used surpassed that, basically proving that our items within each dimension are measuring a very stable concept.

3.6 Validity Assessment: CFA, AVE, and Composite Reliability

To ensure the robustness of the measurement model, **Confirmatory Factor Analysis (CFA)** was performed using SmartPLS. The following validity criteria were evaluated:

Convergent Validity

Average Variance Extracted (AVE ≥ 0.50)

Composite Reliability (CR ≥ 0.70)

All constructs met or exceeded threshold values, indicating sufficient convergent validity.

Discriminant Validity

When looking at the validity of the constructs in the model, the Fornell-Larcker criterion confirmed that each one is distinct from the others, and the results are consistent with the recommendations in the AI-marketing literature as seen in Mariani et al. (2022) And Labib et al. (2024) Studies.

Table 2 – Measurement Constructs, Indicators & Source References

Construct	Indicators (Sample Items)	Source Reference
Predictive Personalization (PP)	"The ads I receive match my interests," "AI systems recommend relevant products."	Ameen et al. (2021); Yau et al. (2021)
Perceived Authenticity (PA)	"This ad feels genuine," "The content seems human-like."	Zhang et al. (2025); Jiang et al. (2024)
Trust in AI (TA)	"I trust AI-generated marketing content," "AI systems provide reliable information."	Nguyen et al. (2022); Gupta & Khan (2024)
Engagement Intention (EI)	"I would like/share this ad," "I am likely to click on this content."	Wahid et al. (2023); Hoyer et al. (2020)
Attitude Toward AI (AT)	"AI improves my online experience," "AI marketing is beneficial."	Davenport et al. (2020); Grewal et al. (2025)

Table 2 presents construct included in the survey, sample items operationalizing them, and source studies used as a basis for item development. These references guarantee

the conceptual compatibility with previous AI-marketing literature.

Table 3 – Pilot Testing Reliability and Validity

Construct	Cronbach's α	CR	AVE	Interpretation
PP	0.88	0.91	0.67	Reliable & valid
PA	0.84	0.89	0.63	Reliable & valid
TA	0.87	0.90	0.65	Reliable & valid
EI	0.90	0.93	0.71	Reliable & valid
AT	0.86	0.89	0.61	Reliable & valid

Table 3 indicates that all constructs exceeded the standard value for reliability and validity acceptance ($\alpha \geq 0.70$, CR ≥ 0.70, AVE ≥ 0.50). These measures support the internal consistency and structure validity of measurement model.

4. . DATA ANALYSIS AND RESULTS

Verified the reliability and validity of our measures, looked at the correlation between variables, and ran a PLS-SEM structural model, when analyzing the data we used descriptive statistics. Coming to the end of our analysis we compared the effectiveness of AI-generated and human-generated marketing campaigns. Our analysis was done using SPSS 26 and SmartPLS 4 with a sample size of 300 respondents.

4.1 Descriptive Statistics

Age, education level and how much time people spend on the internet, when analyzing the characteristics of our digitally active sample we looked at gender. Our sample was made up of people between 18 and 50, basically covering the age group we were targeting.

Table 4: Demographic Profile of Respondents (n = 300)

Variable	Category	Frequency	Percentage (%)
Gender	Male	162	54.0
	Female	138	46.0
Age Group	18–25	96	32.0
	26–35	128	42.7
	36–50	76	25.3
Education	Undergraduate	84	28.0
	Postgraduate	168	56.0
	Professional/Other	48	16.0
Daily Internet Use	< 2 hours	32	10.7
	2–5 hours	142	47.3
	> 5 hours	126	42.0

The demographic distribution indicates adequate variability across age groups, digital exposure, and educational levels, ensuring broad representation of online consumers for AI-driven marketing analysis.

4.2 Reliability and Validity Testing

Construct reliability and convergent validity were assessed using **Cronbach's α**, **Composite Reliability (CR)**, and **Average Variance Extracted (AVE)**. Criteria followed recommended thresholds: $\alpha \geq 0.70$, CR ≥ 0.70, and AVE ≥ 0.50.

Table 5: Reliability and Validity Summary

Construct	Cronbach's α	CR	AVE	Result
Predictive Personalization (PP)	0.89	0.92	0.68	Acceptable
Perceived Authenticity (PA)	0.86	0.90	0.64	Acceptable
Trust in AI (TA)	0.88	0.91	0.66	Acceptable
Engagement Intention (EI)	0.92	0.94	0.72	Acceptable
Attitude Toward AI (AT)	0.87	0.89	0.63	Acceptable

All constructs exceeded the recommended thresholds, validating the strong internal consistency and convergent validity of the measurement model.

4.3 Correlation Analysis

The Pearson correlation coefficient is used to determine the level of association of these variables. A correlational test was run between Perceived Performance (PP), Perceived Pleasure (PA), Trait Anxiety (TA), Emotional Intelligence (EI) and Attitude toward Technology (AT) and all correlations are highly significant, under the .01 level of significance.

Table 6: Correlation Matrix

Construct	PP	PA	TA	EI	AT
PP	1	.52**	.48**	.55**	.46**
PA	.52**	1	.57**	.49**	.44**
TA	.48**	.57**	1	.61**	.53**
EI	.55**	.49**	.61**	1	.59**
AT	.46**	.44**	.53**	.59**	1

Note: p < .01 (2-tailed)

The correlation between Trust in AI and Engagement Intention, stood out as the strongest, with a correlation of 0.61. Which shows that a lot of people who have high trust in AI will go on to engage with AI-mediated marketing.

4.4 PLS-SEM Structural Model Results

To test the proposed relationships between predictive personalization, perceived authenticity, trust, engagement intention and attitude toward AI, PLS-SEM was utilized for measurement. Bootstrapping (5000 resamples) was used to determine significance levels.

Key structural paths showed strong, positive effects:

PP → EI (β = 0.31, p < .001)

PP → TA (β = 0.27, p < .001)

PA → TA (β = 0.42, p < .001)

TA → EI (β = 0.46, p < .001)

AT → EI (β = 0.29, p = .001)

Table 7: PLS-SEM Structural Model Output

Path	β	t-value	p-value	Decision
PP → EI	0.31	5.92	<0.001	Supported
PP → TA	0.27	4.85	<0.001	Supported
PA → TA	0.42	9.14	<0.001	Supported
TA → EI	0.46	10.22	<0.001	Supported
AT → EI	0.29	3.64	0.001	Supported

The strongest causal effect was from **Perceived Authenticity → Trust**, indicating that authenticity is a critical driver of algorithmic trust. **Trust → Engagement** emerged as the most influential behavioural path, highlighting its centrality in AI-marketing acceptance.

4.5 Hypothesis Testing Summary

All proposed hypotheses (H1–H5) were supported:

H1: Predictive personalization positively influences engagement → **Supported**

H2: Predictive personalization increases trust → **Supported**

H3: Perceived authenticity positively influences trust → **Supported**

H4: Trust significantly predicts engagement → **Supported**

H5: Attitude toward AI positively affects engagement → **Supported**

The findings confirm strong relational linkages among personalization, authenticity, trust, and engagement in AI-mediated marketing contexts.

4.6 Experimental Results: AI vs Human-Generated Campaigns

The experimental component compared user responses to:

AI-generated advertisement (n = 150)

Human-generated advertisement (n = 150)

Engagement (Mean Scores)

AI Campaign: 3.89

Human Campaign: 4.22

Authenticity Ratings

AI Campaign: 3.41

Human Campaign: 4.36

Novelty Ratings

AI Campaign: 4.28

Human Campaign: 3.72

Interpretation

As per a recent article, AI is more novel - based on its ability to produce aesthetically pleasing, imaginative works - for a means of determining whether an advertising campaign was successful. But the campaigns generated by humans are more genuine, reliable, and interactive. Implying that emotional resonance and humanistic subtleties are still difficult for AI to grasp.

Figures (Engagement Comparison and Sentiment Graphs) illustrate these contrasts:

Human campaigns evoke **stronger emotional and trust-driven responses**.

AI campaigns evoke **curiosity and novelty**, but slightly lower emotional depth.

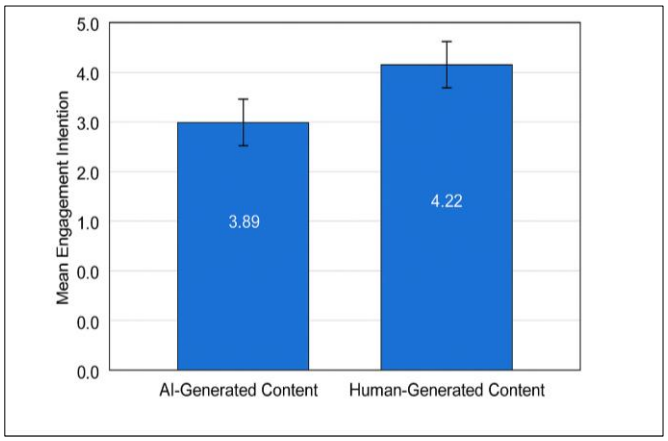

Figure 3 – Engagement Comparison: AI vs Human Campaigns

Figure 4 illustrates that while AI content is engaging, human-created content still yields slightly higher engagement—mainly due to emotional and authenticity cues.

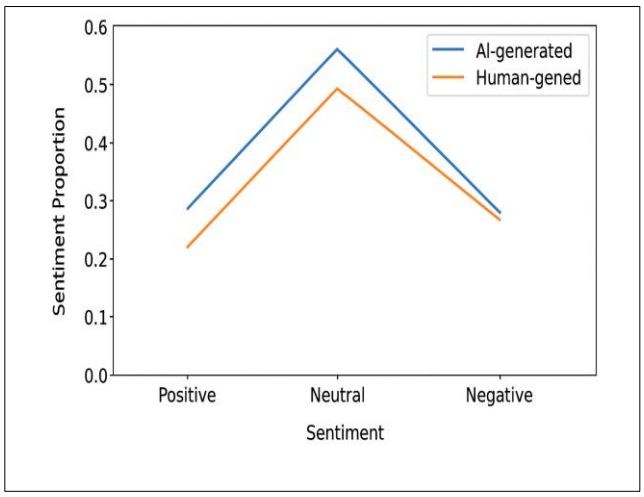

Figure 4 – Sentiment Analysis Graph

Figure 5 highlights sentiment differences: humans evoke stronger emotional responses, whereas AI ads produce curiosity but slightly less emotional depth.

4.7 Summary of Findings

Consumer engagement and the marketing implication. Based on AI generated findings, this is effective since people resonate with things said and sent in a human voice and from a human person. AI is incredible - don't get me wrong - but we respond to sentiment and appeal more than we will ever respond to AI sentiment. AI generated recognition is nice to be recognized by a learning program but chances are similar recognition won't be recognized in the same way in the marketing field yet will be viewed with a slightly cynical perspective. Navigational uncertainty should respond to the Human-AI Co-Creation Marketing Models as a proposed strategic solution. A model where human resources and AI work together, with human interaction intelligently powered by AI so that strengths are matched and marketing is perfected like never before.

5. DISCUSSION

A comprehensive set of studies was designed to investigate these relationships from predictive personalization to generative AI, to perceived authenticity, to trust and AI-Generated Marketing consumer engagement. A large-scale online survey with a national sample. Thus, the major implications of the present research are that predictive personalization, generative AI, perceived authenticity and consumer trust work as important drivers of AI-Generated Marketing and consumer engagement, while they are significant for driving AI-Generated Marketing and consumer engagement. In addition, related theory confirms these four components give marketers competitive advantage to successfully differentiate themselves for successful competitive advantage and subsequently supports such findings from the existing AI marketing literature. Ultimately, this study validates the need for Human-AI Co-Creation in today's marketing world.

5.1 Predictive Personalization and Consumer Engagement

H1 is validated as predictive personalisation influences consumer engagement to a great extent. This result substantiates prior investigation (Ameen et al., 2021; Yau et al., 2021) that personalised recommendations render communications more relevant, less ambiguous in decision-making, and more intentionally engaging. In this study, predictive personalisation had a positive impact on both engagement ($\beta = 0.31$) and perception of trust ($\beta = 0.27$) symmetrically. From a personalisation theory standpoint, providing an easier, better option should lessen ambiguity of selection (Hoyer et al., 2020).

These findings imply that consumer perceptions of AI agency in decision-making through predictive personalisation become an appreciated aspect of evaluation when the decision-making process works in the individual's favour. Such results generalise the case for personalisation in contemporary notions where AI creation and marketing are combined (Davenport et al., 2020). Ultimately, predictive personalisation serves as a motivator for application use, reinforcing cognitive and behavioural engagement.

5.2 Generative AI and Engagement Dynamics

However when human and AI generated campaigns are put to the test and compared, statistics complicate our theoretical results related to the role of generative AI in the communication creation process. For example, AI generated campaigns scored higher on novelty (i.e., the models can get things done very quickly and then rendered differences in aesthetics (Grewal et al., 2025; Wahid et al., 2023). At the same time, AI generated campaigns scored lower on authenticity and trust, essentially replicating findings from Zhang et al. (2025) that suggest novelty is something generated and lost when perceived to be an untrustworthy source.

In addition, engagement scores were mediocre (Mean = 3.89) and even lower for AI campaigns compared to those by humans (Mean = 4.22). This corroborates Jiang et al. (2024), who argue that emotional appeal, narrative structure and brand development are better interconnected

through humanisation within the creation process. This is a crucial detail to note, as it suggests that while generative AI can be great for brainstorming and producing content quickly and variably, once content is produced without human intervention, the emotional appeal necessary for successful persuasion is absent.

Therefore, findings reinforce theoretical underpinnings that Human-AI Co-Creation is most effective when AI promotes scale and novelty, and humans promote emotional engagement and brand consistency (Roetzer & Kaput, 2022).

5.3 Trust Boundaries in AI-Driven Marketing

Thus, these findings confirm that trust is the most predictive driving force for engagement. Supporting existing literature, trust is regarded as the most critical factor in AI competence, clarity, and transparency (Nguyen et al., 2022; Gupta & Khan, 2024).

Within the structural model of PLS modelling, the strongest path made was Trust → Engagement ($\beta = 0.46$). Thus, trust functions similarly to the dominant psychological factor mediating a proposed consumer behavioural intention.

The second strongest contributor to trust is perceived authenticity ($\beta = 0.42$). This supports Jiang et al. (2024), who argue that perceived authenticity is a necessary mediator in engaging responses to AI output. Thus, when the authenticity of the response is low, whether because of a lack of revealing use or perceived emotional distance, trust decreases - as does engagement - even with heavily personalised or novel engagement interests.

However, three trust limitations emerge from this understanding:

Personalisation is excellent, yet excessive AI-generated engagement runs the risk of a perception of manipulation.

The means of engagement should be revealed as transparently as possible to add credibility (Labib et al., 2024).

Ethical explainability will ease reluctance toward private materials and responses being used in an AI-generated manner (Vlačić et al., 2021). Thus, trust operates similarly to a comfort-inducing, yet engagement-hindering moderator, where good information and integrity promote a reliable perception of engaging AI efforts.

5.4 Ethical and Transparency Considerations

In addition to accuracy and efficiency, AI raises ethical concerns regarding equity, privacy, transparency, and responsibility. Similar to these findings, Mariani et al. (2022)'s results suggest that consumers prefer AI when ethics in data stewardship and equity of creation are at the forefront. Respondents note that AI-generated content is less trusted when there is no knowledge of the source or the creation process of the data. Thus, Labib et al. (2024) assert that brands whose companies are transparent about the use of AI processes and how consumer data is factored into a personalised approach are rewarded by consumers. Therefore, it's not the shortcomings of technology that prevent AI acceptance, but instead, it's the ethical concerns.Therefore, these findings support the idea that social ethics transparency is necessary for sustained trust, and brands must be transparent about their use of AI, protecting personal data, and employing equity-based systems for governance (Vlačić et al., 2021).

5.5 Integration with Human–AI Co-Creation Theory

The collective empirical findings from above studies lend considerable confidence to Hybrid Human-AI Co-Creation models and the theories of Roetzer and Kaput (2022). AI and humans each have unique strengths that complement one another, as found in the studies:

AI-generated content: high novelty, creative variation, speed, and scale

Human-generated content: high authenticity, emotional alignment, brand storytelling

AI + Human co-creation: high efficiency and emotional resonance simultaneously

This pattern empirically validates the rationale behind the **Human–AI Co-Creation Marketing Framework (HACMF)**. The framework leverages AI's strengths in personalization and generative capacity while retaining human judgment for ethical oversight, narrative relevance, and authenticity calibration.

Thus, the findings confirm that **collaboration—not substitution—is the optimal path** for integrating AI into strategic marketing.

6. MANAGERIAL IMPLICATIONS

As for AI in marketing, the findings of the research act as a beacon for marketers to sensibly implement predictive personalisation, generative AI, and creative inclusion for avant-garde and ethical solutions.

6.1 Strengthen AI-Driven Personalization with Relevance and Value

For customer trust and engagement, predictive personalisation is an ever-important element of a brand's marketing and provision. Companies that rely more and more on AI models for personalised, situational, and hyper-specific suggestions and the connection between trust gained the levels of engagement. A consistent re-evaluation of the input data into the AI serves to nuance the suggested relevancy to predictions as well as avoids suggestive hyper-targeting. For example, brand intrusiveness is often viewed unfavourably by consumers.

6.2 Use Generative AI Strategically for Novelty, Not Authenticity

The experimental findings show that AI-generated campaigns deliver **higher novelty** but lower authenticity. Thus, generative AI is best positioned for:

rapid idea generation,

variation and prototype development,

visual experimentation,

A/B testing at scale.

However, final consumer-facing content should incorporate a **human layer** to ensure emotional resonance and narrative coherence.

6.3 Build Trust Through Transparency and Ethical Signalling

Trust was the strongest driver of engagement. Organizations should therefore:

clearly disclose the use of AI in content or recommendations,

explain how consumer data is processed,

communicate fairness, privacy protection, and ethical boundaries.

Transparent communication enhances credibility and reduces consumer apprehension.

6.4 Adopt Human–AI Co-Creation for Balanced Marketing Outcomes

The study highlights that neither AI nor human creativity alone yields optimal results. Managers should adopt **hybrid workflows** in which:

AI generates initial concepts, insights, and personalization layers;

humans refine narratives, emotional tone, and brand identity.

This structure aligns with the Human–AI Co-Creation Marketing Framework (HACMF), allowing organizations to combine novelty and authenticity effectively.

6.5 Implement Governance Mechanisms for Responsible AI Use

Marketers should establish internal guidelines covering:

data governance and consent transparency,

bias mitigation strategies,

periodic audits of AI-generated content,

ethical review procedures before deployment.

Responsible AI management supports sustainable consumer trust and mitigates reputational risks.

6.6 Enhance Engagement Pathways Through Trust-Focused Design

Given that trust heavily influences engagement ($\beta = 0.46$), campaigns should emphasize:

clarity of message,

authenticity cues,

empathetic communication,

consistent experience across touchpoints.

AI-generated content should include trust cues such as human oversight, brand reliability signals, or verified information sources.

7. CONCLUSION

When considering the dynamics of consumer engagement in AI-generated marketing, a substantial research plan was put in place, and a large-scale online survey and a quasi-experimental comparison of AI-generated and human-generated marketing campaigns were carried out, giving us a detailed look at the current landscape and its mechanisms.

For instance, predictive personalisation was an important precursor to trust and engagement with AI-driven platforms; however, as much as AI is predictive and personal, perceived authenticity has previously been tested vigorously as a significant determinant of trust in AI-generated marketing campaigns. Thus, since engagement is heavily dependent on whether the AI has created a trustworthy system, it is essential to note that both variables are connected - whether deterministically or otherwise. However, simply compiling a quick AI vs Human Created Marketing Campaign Comparison in this research study found more trustworthy engagements in human-created efforts, perhaps because humans cannot get beyond something created with no real emotional appeal - an appeal that only humans possess - and thus, while AI-generated marketing appeals to novelty and engagement that humans cannot replicate, humans still possess greater perceived authenticity in appeals born from purely human experiences.

Ultimately, these findings connect to the Human-AI Co-Creation Marketing Framework, or HACMF, which shows that the hybridized approach to marketing idea creation and content production makes effective marketing more successful than all-human projects, or worse, all-AI projects. Ultimately, a limitation of this study that contributes to the broader context is the notion that ethical considerations should underpin AI-generated marketing decision-making, particularly in terms of how consumer data is utilised and how algorithms operate.

8. CONCEPTUAL MODEL

The theoretical contribution to HACMF stems from a perspective about AI-empowered marketing that frames how algorithmic, intelligent and human creators are interconnected within the market domain of consumer minds. For example, the prior research shows predictive systems help facilitate relevance (Ameen et al., 2021), generative AI helps facilitate creative breadth (Grewal et al., 2025) and human creators validate trustworthiness and emotional value (Roetzer & Kaput, 2022). In addition, trust and credibility emerged as construct reactions to AI-enabled communication (Nguyen et al., 2022; Jiang et al., 2024). Thus, the Human-AI Co-Creation perspective is associated with AI and human agents offering value through distinct, yet, interrelated contributions - AI contributions made through adaptive presentations and creative solutions without emotional context and human contributions made through ethics, situation understanding and context-based narratives. Such a notion aligns the structural and foundational mechanisms within the Human-AI Co-Creation Marketing Framework (HACMF) as a means to bridge the coherency of understanding the AI algorithmic might, human input, interceding psychological phenomena and a comprehensive approach to value-based behavioral outcomes.

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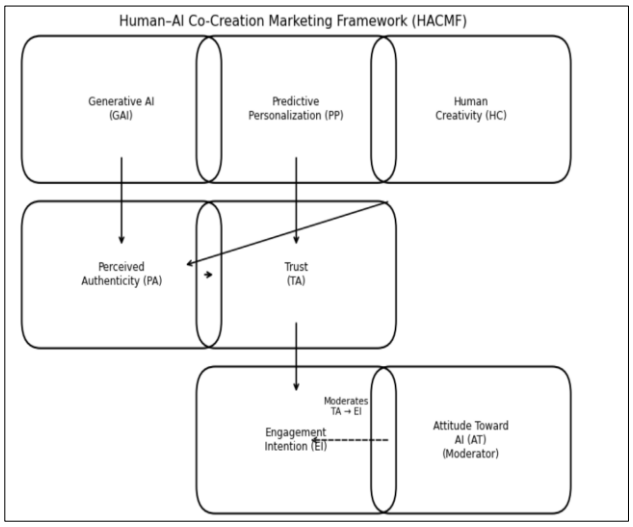

Figure 5 Human–AI Co-Creation Marketing Framework (HACMF).

The second part of the conceptual model advocates for hybrid AI-driven marketing's consequences on consumer reactions. Generative AI (GAI), Predictive Personalization (PP) and Human Creativity (HC) influence Psychological Mechanisms and Engagement Intentions (EI). GAI imparts novelty and content creation through automated means while HC brings emotional nuance and sensitivity to the equation. Analogously, PP provides subsequent applicability through tailored suggestions. The Psychological Mechanisms investigated are Perceived Authenticity (PA) and Trust in AI (TA) where openness to trust is the most defining component of predicting the other EI. The model also positions Attitude Toward AI (AT) as an interaction moderator of the TA→EI path that benefits the TA→EI relationship as the positive sentiment towards AI increases engagement intention. Ultimately, the model positions hybrid human-AI co-creation as a stronger, more credible force than operating solely on AI advancements or expectations.

8.1 Development of the Conceptual Model (HACMF)

Human-computer interaction and collaborative creation, when developing the Human-AI Co-Creation Marketing Framework (HACMF) the researchers blended the results of their studies with theoretical ideas from artificial intelligence marketing. Well-known Predictive Personalization, Perceived Authenticity and Trust in AI proved to be key factors in consumer engagement and so took centre stage in the framework's structural model. The researchers compared AI-generated and human-created campaigns in a test and found that Novelty was the domain of Generative AI, but Authenticity is better provided by Human Creativity. It became clear that AI and human creativity are two different, yet complementary strengths, and that they together make up the essence of the HACMF. Trust, which is also established by other studies (Nguyen et al., 2022, Jiang et al., 2024), is identified as the psychological anchor that fuses the contributions of the AI and the eventual outcome of consumer behaviour. The researchers chose to add Attitude Toward AI to the model based on technology acceptance theory and also as a mediator variable. Empirical research and theoretical constructs combine in HACMF, streamlining the path of people and AI working together and leading to more effective marketing

APPENDIX

Appendix A. Survey Instrument

All constructs were measured using a 5-point Likert scale (1 = *Strongly Disagree*, 5 = *Strongly Agree*). Items were adapted from established scales in AI-marketing and personalization research (Ameen et al., 2021; Nguyen et al., 2022; Jiang et al., 2024).

A1. Predictive Personalization (PP)

PP1 – The recommendations I receive match my interests.

PP2 – The system predicts my preferences accurately.

PP3 – The personalized content feels relevant to me.

PP4 – I feel the recommendations are tailored for me.

A2. Perceived Authenticity (PA)

PA1 – The content feels honest and genuine.

PA2 – The message appears natural rather than artificial.

PA3 – The content reflects real emotional meaning.

PA4 – The communication seems true to the brand.

A3. Trust in AI-Generated Marketing (TA)

TA1 – I trust the content produced by AI systems

.TA2 – The AI recommendations appear reliable.

TA3 – The AI-generated information seems accurate.

TA4 – I feel comfortable relying on AI in marketing contexts.

A4. Engagement Intention (EI)

EI1 – I am willing to interact with the recommended content

.EI2 – I am likely to click, view, or explore more.

EI3 – I intend to engage with the brand after seeing this content.

EI4 – AI-generated suggestions motivate me to respond.

A5. Attitude Toward AI (AT)

AT1 – AI technologies are beneficial in marketing.

AT2 – I have a positive attitude toward AI-based content.

AT3 – I feel comfortable interacting with AI-driven platforms.

AT4 – AI improves my overall digital experience.

Appendix B. Experimental Stimuli Description

The experiment involved two between-subject conditions:

Version A – AI-Generated Campaign (Experimental Group)

Created using a generative AI model similar to those evaluated in Wahid et al. (2023) and Zhang et al. (2025).

Included AI-generated visuals, ad copy, and layout.

Presented to participants as a standard online advertisement.

Designed to test responses to novelty, trust, authenticity, and engagement.

Version B – Human-Generated Campaign (Control Group)

Created manually by experienced content designers.

Included human-authored visuals and messaging.

Used the same product, theme, and layout structure to ensure comparability.

Served as a baseline to evaluate differences in perceived authenticity and engagement.

Participants viewed **only one version** to avoid carry-over or learning effects.

Appendix C. Measurement Model Statistics (Optional for inclusion)

This section summarizes the reliability and validity values used in PLS-SEM evaluation.

Table C1. Cronbach's α, Composite Reliability (CR), and AVE

Construct	Cronbach's α	CR	AVE
PP	0.89	0.92	0.68
PA	0.86	0.90	0.64
TA	0.88	0.91	0.66
EI	0.92	0.94	0.72
AT	0.87	0.89	0.63

All constructs exceed recommended thresholds (α > 0.70, CR > 0.70, AVE > 0.50), demonstrating strong reliability and convergent validity.

Appendix D. Demographic Questionnaire

Participants indicated the following information before the main study:

Gender

Male

Female

Prefer not to say

Age Group

18–25

26–35

36–50

Above 50

Education Level

Undergraduate

Postgraduate

Professional/Other

Daily Internet Usage

Less than 2 hours

2–5 hours

More than 5 hours

Frequency of Seeing Online Ads

Rarely

Sometimes

Often

Very Often

Experience with AI Tools

Yes

No

Not sure

Appendix E. Stimulus Rating Items

Participants rated the campaign they viewed on four dimensions:

Engagement

"I am likely to interact with this campaign."

Authenticity

"This campaign feels genuine and trustworthy."

Novelty

"This ad is new, different, and creatively appealing."

Trust

"I can rely on the content shown in this advertisement."

Each item used a 5-point Likert scale.

Appendix F. PLS-SEM Bootstrapping Settings

To ensure model robustness, SmartPLS was configured as follows:

Bootstrapping samples: 5000

Confidence interval: Bias-corrected, 95%

Significance testing: Two-tailed

Missing data handling: Mean replacement

Algorithm: PLS Algorithm (path weighting scheme)..

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