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The Influence of Artificial Intelligence in Digital and Social Media Marketing on Customer Engagement and Satisfaction

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Abstract: This study investigates the role of Artificial Intelligence (AI) in enhancing customer engagement and satisfaction within digital and social media marketing environments. The growing adoption of AI technologies—including machine learning algorithms, predictive modeling, intelligent recommendation systems, and conversational chatbots—has fundamentally reshaped how businesses interact with consumers online. By enabling real-time data analysis and personalized communication strategies, AI allows organizations to deliver tailored marketing experiences. The findings indicate that AI-powered marketing practices significantly strengthen customer engagement, improve satisfaction levels, and create sustainable competitive advantages for firms operating in digital markets.

Keywords: Artificial Intelligence, Digital Marketing, Social Media Strategy, Customer Satisfaction, Personalization, Predictive Modeling

1. INTRODUCTION

Artificial Intelligence has emerged as a transformative force in modern marketing practices. AI refers to advanced computational systems capable of simulating human cognitive processes such as learning, reasoning, analysis, and decision-making. Within digital and social media marketing, AI enables organizations to process vast volumes of consumer data and convert insights into highly personalized marketing strategies. Social media platforms increasingly rely on intelligent algorithms to curate content, optimize advertisement placements, and enhance user engagement. AI applications in marketing include automated chat support systems, consumer behavior prediction tools, sentiment analysis mechanisms, recommendation engines, and programmatic advertising technologies. These innovations facilitate a shift from traditional mass marketing approaches toward individualized, data-driven engagement models. As digital competition intensifies, organizations leverage AI to enhance targeting precision, streamline marketing operations, and elevate customer experiences. Consequently, AI-driven marketing has become a strategic necessity for sustaining long-term customer relationships and achieving competitive differentiation.

2. . REVIEW OF LITERATURE

Existing scholarly work highlights the growing importance of AI in marketing transformation. Prior research emphasizes that digital marketing effectiveness increasingly depends on automation, analytics, and intelligent data utilization. The integration of AI technologies has been recognized as a critical factor in improving campaign performance and audience targeting. The concept of technology-enabled, human-centered marketing has further reinforced the importance of AI and big data in delivering personalized consumer experiences. Studies examining AI applications in service industries demonstrate that automation and intelligent systems enhance operational efficiency while improving customer satisfaction through customization. lthough previous research confirms the positive impact of AI on marketing outcomes, limited empirical studies have explored whether demographic variables such as gender and age influence satisfaction toward AI-driven marketing strategies. This research addresses that gap.

Objectives of the Study

The primary objectives of this study are:

- To evaluate customer satisfaction with AI-enabled marketing strategies.
- To determine whether gender influences satisfaction levels.

- To assess differences in satisfaction across age groups.
- To analyze the effect of AI-based personalization on customer engagement.

Hypotheses

- **Hypothesis**
H0: Gender has no significant relationship with customer satisfaction.
H1: Gender has a significant relationship with customer satisfaction.
- **Hypothesis**
H0: There is no significant variation in satisfaction across different age groups.
H1: Satisfaction levels differ significantly among age groups.

Research Methodology

The research adopts a descriptive and analytical design. Primary data were gathered from 50 respondents using a structured questionnaire. A simple random sampling method was employed to provide equal selection opportunity for participants. Customer satisfaction was measured using a five-point Likert scale ranging from “Highly Dissatisfied” to “Highly Satisfied.”

- The following statistical techniques were applied:
- Percentage Analysis
- Chi-Square Test
- One-Way Analysis of Variance (ANOVA)

Data Analysis and Interpretation

- **Demographic Profile:** Out of 50 respondents, 26 (52%) were male and 24 (48%) were female, indicating a relatively balanced gender distribution. Overall responses reflected moderate to high levels of satisfaction with AI-driven marketing initiatives.
- **Chi-Square Test:** The Chi-Square analysis produced a value of 0.003 with a p-value of 0.954. Since the p-value exceeds the 0.05 significance level, the null hypothesis is retained. Therefore, gender does not have a statistically significant association with satisfaction levels.
- **One-Way ANOVA:** The ANOVA test generated an F-value of 1.660 with a p-value of 0.189. As the p-value is greater than 0.05, the null hypothesis is accepted. This indicates that satisfaction levels do not significantly differ among various age groups.

Discussion

The findings demonstrate that AI-enabled personalization positively contributes to customer engagement. Participants expressed appreciation for customized product recommendations, targeted advertisements, and responsive chatbot interactions. The absence of statistically significant demographic differences suggests that AI-based marketing strategies are broadly effective across gender and age categories. However, some respondents raised concerns related to data privacy, transparency, and ethical considerations in AI usage. To ensure sustained trust and loyalty, organizations must implement responsible data governance practices and maintain transparency in AI-driven decision-making processes.

Key Findings

- Most respondents exhibit moderate to high satisfaction with AI-integrated marketing strategies.
- Personalization through AI significantly enhances customer engagement.
- No statistically significant relationship exists between gender and satisfaction.
- Satisfaction does not significantly vary across age groups.
- Consumers value the convenience, relevance, and efficiency provided by AI technologies.

Limitations

- The study is limited to a sample size of 50 respondents.
- Only selected demographic variables were examined.
- The geographical scope of the research is restricted.
- The findings rely on self-reported perceptions.

Recommendations for Future Research

- Conduct studies with larger and more diverse samples.
- Incorporate additional demographic and behavioral variables.

- Perform industry-specific analyses to compare sectoral differences.
- Investigate the long-term behavioral impact of AI-driven marketing strategies.

3. CONCLUSION

Artificial Intelligence has become a vital component of contemporary digital and social media marketing strategies. The study confirms that AI-powered marketing practices significantly enhance customer engagement and satisfaction. While demographic factors such as gender and age do not appear to influence satisfaction levels, overall consumer perception of AI-driven marketing remains favorable. Organizations that strategically integrate AI technologies into their marketing frameworks can achieve improved personalization, operational efficiency, and sustained competitive advantage in the digital marketplace.

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