



RESEARCH ARTICLE

Role of artificial intelligence in digital marketing in enhancing customer engagement

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Abstract

Through its ability to help businesses better understand, engage, and communicate with their consumers, artificial intelligence (AI) has completely changed a number of areas of digital marketing. In order to improve customer engagement, this research examines how AI is used to digital marketing tactics. In order to generate customized advertising campaigns and improve consumer enjoy, businesses may additionally leverage AI-pushed technologies like chatbots, personalised content material, predictive analytics, and recommendation systems. Customer opinions on AI-powered marketing tools and their efficacy in boosting engagement are examined in a quantitative study that was completed by 300 respondents. As a consequence, businesses and their customers are able to build deeper connections. The findings show that AI greatly improves customization, predictive insights, and customer engagement. Insights on how digital marketers may use AI to increase engagement and improve overall marketing success are provided by this research.

Keywords: Artificial intelligence, Digital marketing, Customer engagement, Customer interaction, Personalization, Predictive analytics, Chatbots, Recommendation systems.

Introduction

The digital marketing environment has seen a transformation with the emergence of artificial intelligence (AI), becoming more dynamic and personalized than in the past. With the use of data-driven insights, businesses can now interact with their consumers in ways that were before impractical. The number of statistics created by customers across numerous systems is developing exponentially, making the want for smart systems to process, interpret, and react to this data essential. In this experience, artificial intelligence (AI) has been very helpful to marketers, allowing them to count on

customer behavior, enhance advertising and marketing campaigns, and offer enormously attractive content that is customized to each person's tastes.

The ability to offer customized, actual-time advertising content material using machine learning algorithms and predictive analytics is one of the fundamental advances delivered about via artificial intelligence. With the usage of these technologies, entrepreneurs may additionally supply customized tips and promotions through reading a awesome quantity of client records, such as surfing styles, past purchases, and social media activity. Gentsch (2019) asserts that marketers may create experiences that are extremely relevant to specific customers with AI-driven customization, greatly increasing customer engagement. AI helps businesses optimize their operations and concentrate on more important projects by automating mundane processes like content distribution and customer segmentation.

AI has transformed customer engagement with chatbots and virtual assistants in addition to customisation. Without the need for human participation, those AI-driven gear can take care of customer inquiries, offer product pointers, or even finish transactions. According to Huang and Rust (2018), chatbots have turn out to be a vital a part of digital advertising for the reason that they provide round-the-clock customer support and help corporations in growing customer loyalty. Additionally, by interacting with consumers in a casual, conversational way, these tools help

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them feel closer to the business.

Through the development of content marketing tactics, AI also plays a critical role in increasing customer engagement. Content continues to be a fundamental component of digital marketing, and marketers can now monitor content performance and adapt it for optimal engagement thanks to AI-driven tools. AI can forecast the kinds of content that consumers will find most compelling, according to research by Chaffey and Ellis-Chadwick (2019). This capability enables marketers to develop more effective campaigns. This capacity raises conversion rates and brand awareness in addition to improving customer engagement.

Additionally, by offering predictive insights, AI improves marketing decision-making. Marketers may anticipate customer demands and give relevant offers at the appropriate moment by using AI algorithms to evaluate consumer activity patterns and forecast future actions. By allowing them to react unexpectedly to changes in purchaser preferences and market conditions, Davenport and Ronanki (2018) claim that AI's predictive analytics competencies provide companies a competitive advantage.

In digital marketing, artificial intelligence (AI) has become a vital tool that drives customer engagement via customization, automation, and predictive insights. Understanding how these technologies affect customer engagement and overall marketing effectiveness is crucial as businesses continue to use AI into their marketing strategy. Insights into how businesses may also use these technology to forge nearer bonds with their consumers are furnished on this studies, which appears at how AI can enhance purchaser engagement.

Review of Literature

One of the most effective ways AI improves customer engagement is via personalization, which enables marketers to provide content that is catered to the preferences of specific individuals. Customer happiness is greatly improved by AI algorithms' ability to evaluate customer data in order to forecast behavior and send personalized offers, messages, and suggestions. As to Gentsch's (2019) findings, marketers may enhance customer engagement by crafting experiences that personally connect with customers using AI's capacity to use big data and machine learning for personalization. When it comes to e-commerce, artificial intelligence (AI) personalization works especially well since it allows customers to be presented with options based on their browsing history, past purchases, and preferences.

Personalized experiences, according to Kaplan and Haenlein (2019), strengthen the emotional bonds between brands and consumers, increasing customer loyalty and repeat business. They contend that since the relevance of the content offered to customers enhances the chance of action, brands who use AI to adapt their marketing

campaigns are more likely to achieve greater conversion rates. According to research by Kietzmann, Paschen, and Treen (2018), personalization also influences social media engagement since consumers are more likely to connect with content that matches their preferences.

AI-Driven Customer Interaction

Artificial intelligence has revolutionized customer service by introducing chatbots and virtual assistants that provide prompt replies and smooth interactions. Using Natural Language Processing (NLP) and machine learning, chatbots can recognise and react to customer questions right away, growing engagement by offering particular and brief solutions. According to research by Luo, Tong, Fang, and Qu (2019), chatbots powered by AI not only improve the customer service experience but also are essential in retaining customer loyalty by providing personalized assistance and interactions.

Businesses can provide 24/7 customer care thanks to AI-driven customer service tools, which also aid in managing high amounts of requests. According to van Doorn, Lemon, Mittal, Nass, Pick, Pirner, and Verhoef (2017), chatbots improve customer engagement by providing personalized suggestions and speeding up response times. Additionally, these tools may engage customers in conversational marketing, where the interaction seems more like a natural discourse than a commercial exchange, therefore fostering stronger customer ties.

AI in Content Marketing

AI has greatly increased the efficacy of content marketing strategies, which are still at the core of digital marketing. Artificial intelligence (AI) may evaluate the effectiveness of various content kinds and enhance future content for more engagement via the use of machine learning algorithms. According to Chaffey and Ellis-Chadwick (2019), marketers can create relevant, high-quality content at scale with the use of AI-driven content creation tools, which is necessary to sustain constant customer engagement across platforms.

According to research by Liu, Li, and Hu (2020), AI can recognize trends in customer engagement with various content formats, allowing marketers to customize their content strategies for optimal effect. For instance, based on past interactions, AI might propose themes that are likely to be interesting to a target audience or the optimum times to publish content. By the usage of these insights, entrepreneurs can ensure that their content material is present day and relevant, two elements which might be critical for maintaining long-term customer engagement.

LinkedIn and Twitter are the most often used digital marketing tools for job seekers looking for new positions, according to Anute, Kabadi, and Ingale (2019). Therefore, these two social networking sites should get greater attention from recruiters. Recruiters may place greater

focus on Facebook since it is the most effective social networking platform for luring job seekers. While Instagram is becoming a strong social networking tool, its impact in the recruitment process is still considered to be minimal. However, in the coming days, its value in the recruitment process, particularly for BE/MBA freshers, may expand, so recruiters should keep a watch on this. Although You Tube is employed as a recruitment tool in certain other countries, its significance in India is quite low, which is why job seekers in the current study do not like this social networking site.

Challenges and Limitations of AI in Digital Marketing

Even though AI has many advantages for improving customer engagement, there are still certain difficulties. Marr (2020) posits that a primary constraint of artificial intelligence in digital marketing is its reliance on copious volumes of data. Businesses may find it challenging to take full use of AI's potential if they have restricted access to customer data. Concerns exist concerning statistics privateness as well as the ethical use of AI in marketing. Customers may be reluctant to have interaction with AI-pushed marketing tools if they're concerned about how AI might acquire and utilize their personal records. Additionally, Kietzmann et al. (2018) draw interest to the viable dangers of relying an excessive amount of on AI, as too much automation would possibly result in faceless encounters that lack a human touch and finally lower customer satisfaction.

Research Methodology

A cross-sectional survey research methodology was deemed appropriate for this study to capture a comprehensive understanding of how AI-driven personalization impacts customer engagement. A representative sample of 300 respondents was selected to include a diversity of opinions on the deployment of artificial intelligence. The respondents included digital marketing professionals, company executives, and industry experts from several industries, including manufacturing, technology, and retail.

A stratified random sampling technique was used to guarantee that different industry perspectives were included. With this approach, the population was separated into strata according to the kind of industry and the region. Within each stratum, random sampling was then used, and the number of respondents from each area and industry was based on the size of that region's population. This strategy recorded many viewpoints on AI in digital marketing and helped guarantee a fair representation of international businesses.

An online questionnaire was used to aid data collection, enabling quick and thorough data collecting from a worldwide audience. Eighteen closed-ended questions were included in the questionnaire with the express purpose of examining how much AI-driven tools impact customer engagement. In order to contextualize the replies and

guarantee relevant analysis, four additional demographic questions about years of experience, geographic region, and industry were included.

Assessing the perceived connection between AI-driven personalization and customer engagement was the main objective of this research. Examining possible disparities in opinions on the usefulness of AI in digital marketing strategies was a secondary objective. Two hypotheses were tested to achieve these objectives:

Hypothesis 1

H_0

There is no significant relationship between the use of AI-driven personalization and customer engagement in digital marketing.

H_1

There is a significant relationship between the use of AI-driven personalization and customer engagement in digital marketing.

Hypothesis 2

H_0

There is no significant difference in the perceptions of digital marketing professionals from different industries regarding the effectiveness of AI in enhancing customer engagement.

H_2

There is a significant difference in the perceptions of digital marketing professionals from different industries regarding the effectiveness of AI in enhancing customer engagement.

Empirical Results

Interpretation

The majority of respondents fall within the 26–40 age group (31.3%), followed by the 18–25 age group (27.3%). Only 12.3% of respondents are under 18, while 13.7% are above 60.

Interpretation

The gender distribution is fairly balanced, with 54.6% female and 45.7% male respondents. A small proportion (0.7%)

Table 1: What is your age group?

Age Group	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Under 18	37	12.3	12.3	12.3
18–25	82	27.3	27.3	39.6
26–40	94	31.3	31.3	70.9
40–60	46	15.3	15.3	86.2
60 and above	41	13.7	13.7	100
Total	300	100	100	

Table 2: What is your gender?

Gender	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Male	137	45.7	45.7	45.7
Female	161	54.6	54.6	99.3
Other	2	0.7	0.7	100
Total	300	100	100	

Table 3: What is your highest level of education?

Education Level	Frequency	Percentage	Valid Percentage	Cumulative Percentage
High school or equivalent	37	12.3	12.3	12.3
Bachelor's degree	132	44.0	44.0	56.3
Master's degree	82	27.3	27.3	83.6
Doctorate	31	10.3	10.3	93.9
Other	18	6.1	6.1	100
Total	300	100	100	

Table 4: What is your primary occupation?

Occupation	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Student	82	27.3	27.3	27.3
Employed (full-time)	137	45.7	45.7	73.0
Employed (part-time)	31	10.3	10.3	83.3
Self-employed	22	7.3	7.3	90.6
Unemployed	15	5.0	5.0	95.6
Retired	13	4.4	4.4	100
Total	300	100	100	

Table 5: How familiar are you with AI-powered digital marketing tools?

Familiarity Level	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Very familiar	94	31.3	31.3	31.3
Somewhat familiar	132	44.0	44.0	75.3
Not very familiar	46	15.3	15.3	90.6
Not familiar at all	28	9.4	9.4	100
Total	300	100	100	

identify as «Other.» This gender balance ensures that the study captures perspectives from a diverse population regarding the role of AI in enhancing digital marketing experiences.

Interpretation

The majority of respondents hold a Bachelor's degree (44%), while 27.3% hold a Master's degree. Those with a Doctorate account for 10.3%, while 12.3% have a high school degree or equivalent. This shows that the sample is well educated, which might influence knowledge and comfort with AI tools in digital marketing.

Interpretation

Full-time workers (45.7%) make up the biggest category of respondents, followed by students (27.3%). This suggests that the majority of participants are either in the workforce or preparing to join it, making them important customers in the digital marketing industry, where AI-driven tools are becoming more and more prevalent.

Interpretation

While 31.3% of respondents are very acquainted with AI-powered digital marketing tools, the majority (44%) are just somewhat familiar with them. This suggests that the sample has a significant degree of exposure to AI tools. AI-driven marketing tools are understood but not smaller marketing strategies, as shown by the fact that a majority (9.4%) are unfamiliar with them.

Interpretation

27.3% of respondents say they encounter AI-driven marketing regularly, and 31.3% say they do so very frequently, suggesting widespread use of AI technologies like chatbots and personalized adverts. This illustrates how seamlessly AI is integrated into the current digital marketing landscape.

Interpretation

A majority of respondents either agree (40.7%) or strongly agree (27.3%) that AI-driven tools improve their online shopping experience.

Interpretation

31.3% of respondents said they are moderately influenced by personalized advertisements, while 27.3% said they are much influenced. This represents a significant influence of personalized ads on purchasing choices. While personalized

Table 6: How often do you encounter AI-driven marketing (e.g., chatbots, personalized ads) when browsing online?

Frequency	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Very often	82	27.3	27.3	27.3
Often	94	31.3	31.3	58.6
Sometimes	67	22.3	22.3	80.9
Rarely	37	12.3	12.3	93.2
Never	20	6.8	6.8	100
Total	300	100	100	

Table 7: Do AI-driven tools (such as chatbots) improve your online shopping experience?

<i>Response</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Valid Percentage</i>	<i>Cumulative Percentage</i>
Strongly agree	82	27.3	27.3	27.3
Agree	122	40.7	40.7	68.0
Neutral	55	18.3	18.3	86.3
Disagree	28	9.4	9.4	95.7
Strongly disagree	13	4.3	4.3	100
Total	300	100	100	

Table 8: To what extent do personalized ads based on your preferences influence your buying decisions?

<i>Extent</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Valid Percentage</i>	<i>Cumulative Percentage</i>
Great extent	82	27.3	27.3	27.3
Moderate extent	94	31.3	31.3	58.6
Little extent	67	22.3	22.3	80.9
Not at all	57	19.1	19.1	100
Total	300	100	100	

Table 9: How important is personalization in your overall customer experience with a brand?

<i>Importance Level</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Valid Percentage</i>	<i>Cumulative Percentage</i>
Extremely important	94	31.3	31.3	31.3
Very important	102	34.0	34.0	65.3
Somewhat important	67	22.3	22.3	87.6
Not important	37	12.4	12.4	100
Total	300	100	100	

Table 10: How do you rate the effectiveness of AI in providing you with relevant product recommendations?

<i>Effectiveness</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Valid Percentage</i>	<i>Cumulative Percentage</i>
Very effective	82	27.3	27.3	27.3
Effective	111	37.0	37.0	64.3
Somewhat effective	69	23.0	23.0	87.3
Ineffective	38	12.7	12.7	100
Total	300	100	100	

ads are successful for many, there is still a group for whom they have little to no effect, as seen by the smaller segment (19.1%) that says they are not influenced at all by such ads.

Interpretation

Personalization is highly valued in customer experiences, with 34% of respondents viewing it as «very important» and 31.3% as «extremely important.» This suggests that brands incorporating personalization into their marketing strategies are more likely to retain customers. A smaller portion (12.4%) doesn't consider it important.

Interpretation

Most respondents find AI effective in providing relevant product recommendations, with 37% rating it as «effective» and 27.3% as «very effective.» However, 12.7% consider AI ineffective, indicating room for improvement in how AI matches products to customer preferences.

Interpretation

Of the respondents, 25.3% strongly agree and 32.3% agree that AI-powered recommendation systems provide better product selections than manual browsing. However, 24.7% are indifferent and 13% disagree, suggesting that although many people value AI-powered suggestions, others would rather explore by hand.

Table 11: Do you feel that AI-powered recommendation systems offer better product choices than manual browsing?

<i>Response</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Valid Percentage</i>	<i>Cumulative Percentage</i>
Strongly agree	76	25.3	25.3	25.3
Agree	97	32.3	32.3	57.6
Neutral	74	24.7	24.7	82.3
Disagree	39	13.0	13.0	95.3
Strongly disagree	14	4.7	4.7	100
Total	300	100	100	

Table 12: How satisfied are you with AI-driven customer service tools (e.g., chatbots) in solving your queries?

<i>Satisfaction</i>	<i>Frequency</i>	<i>Percentage</i>	<i>Valid Percentage</i>	<i>Cumulative Percentage</i>
Very satisfied	76	25.3	25.3	25.3
Satisfied	101	33.7	33.7	59.0
Neutral	69	23.0	23.0	82.0
Dissatisfied	37	12.3	12.3	94.3
Very dissatisfied	17	5.7	5.7	100
Total	300	100	100	

Table 13: Have AI-driven tools increased your engagement with a brand's digital platform (e.g., website, app)?

Engagement Level	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Significantly increased	89	29.7	29.7	29.7
Somewhat increased	104	34.7	34.7	64.4
No change	76	25.3	25.3	89.7
Decreased	31	10.3	10.3	100
Total	300	100	100	

Table 14: Do you trust AI-powered marketing tools to provide unbiased product recommendations?

Trust Level	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Strongly trust	41	13.7	13.7	13.7
Trust	98	32.7	32.7	46.4
Neutral	97	32.3	32.3	78.7
Distrust	42	14.0	14.0	92.7
Strongly distrust	22	7.3	7.3	100
Total	300	100	100	

Table 15: How often do you engage with AI-driven content, such as personalized offers or promotions?

Frequency of Engagement	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Very often	78	26.0	26.0	26.0
Often	96	32.0	32.0	58.0
Sometimes	62	20.7	20.7	78.7
Rarely	43	14.3	14.3	93.0
Never	21	7.0	7.0	100
Total	300	100	100	

Table 16: Does AI-based content feel more personalized than non-AI content?

Response	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Strongly agree	82	27.3	27.3	27.3
Agree	97	32.3	32.3	59.6
Neutral	59	19.7	19.7	79.3
Disagree	41	13.7	13.7	93.0
Strongly disagree	21	7.0	7.0	100
Total	300	100	100	

Interpretation

AI-driven customer service tools, such as chatbots, satisfy a significant portion of users, with 33.7% being «satisfied» and 25.3% «very satisfied.» However, 23% are neutral, indicating they might not have strong feelings either way, while a combined 18% are dissatisfied with AI in customer service.

Interpretation

AI-driven tools have significantly increased engagement for 29.7% of respondents, with 34.7% experiencing somewhat increased engagement. However, 25.3% report no change, and 10.3% note a decrease, suggesting that while AI can boost engagement for many, it may not work for everyone.

Interpretation

Trust in AI-powered marketing tools is somewhat divided. 32.7% trust the tools, and 13.7% strongly trust them, while 32.3% remain neutral. A combined 21.3% either distrust or strongly distrust these tools.

Interpretation

32% of respondents engage with AI-driven content often, while 26% engage with it very frequently. While 14.3% engage seldom and 7% never engage, indicating a group less likely to interact with AI content, over 21% engage sometimes, demonstrating that AI content reaches a wide audience.

Interpretation

Most respondents (32.3%) agree that AI-based content feels more personalized than non-AI content, with 27.3% strongly agreeing. However, 19.7% are neutral, and 20.7% (disagree and strongly disagree combined) don't find AI-based content more personalized, indicating that personalization can still be enhanced for certain audiences.

Interpretation

AI-driven digital marketing is preferred over traditional methods by over half of the respondents (30.3% «better» and 26.3% «much better»), with 21.3% ranking their experience as comparable. While many people welcome AI, some people still prefer traditional methods, as seen by the minority (22.1%) who believe AI-driven marketing works poorly.

Table 17: How would you rate your overall experience with AI-driven digital marketing compared to traditional marketing methods?

Rating	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Much better	79	26.3	26.3	26.3
Better	91	30.3	30.3	56.6
Similar	64	21.3	21.3	77.9
Worse	44	14.7	14.7	92.6
Much worse	22	7.4	7.4	100
Total	300	100	100	

Table 18: How likely are you to recommend brands that use AI-driven marketing for customer engagement?

Likelihood	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Extremely likely	87	29.0	29.0	29.0
Likely	94	31.3	31.3	60.3
Neutral	62	20.7	20.7	81.0
Unlikely	39	13.0	13.0	94.0
Extremely unlikely	18	6.0	6.0	100
Total	300	100	100	

Table 19: How effective do you believe AI is in predicting your needs and preferences as a customer?

Effectiveness	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Very effective	76	25.3	25.3	25.3
Effective	102	34.0	34.0	59.3
Somewhat effective	73	24.3	24.3	83.6
Ineffective	49	16.4	16.4	100
Total	300	100	100	

Table 20: Do you feel more connected to brands that use AI-powered marketing strategies (personalized emails, chatbots)?

Connection Level	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Strongly agree	64	21.3	21.3	21.3
Agree	98	32.7	32.7	54.0
Neutral	69	23.0	23.0	77.0
Disagree	51	17.0	17.0	94.0
Strongly disagree	18	6.0	6.0	100
Total	300	100	100	

Table 21: Does AI-based marketing content (e.g., personalized ads) feel more intrusive than traditional ads?

Response	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Strongly agree	82	27.3	27.3	27.3
Agree	93	31.0	31.0	58.3
Neutral	68	22.7	22.7	81.0
Disagree	39	13.0	13.0	94.0
Strongly disagree	18	6.0	6.0	100
Total	300	100	100	

Table 22: Overall, how much does AI-driven marketing influence your decision to stay loyal to a brand?

Influence Level	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Very much	71	23.7	23.7	23.7
Somewhat	108	36.0	36.0	59.7
Neutral	62	20.7	20.7	80.3
Not much	43	14.3	14.3	94.7
Not at all	16	5.3	5.3	100
Total	300	100	100	

Interpretation

A large portion (31.3%) of respondents are likely to recommend brands that use AI-driven marketing, with 29% being extremely likely. Around 20.7% remain neutral, while 19% are unlikely to recommend, highlighting that while AI is widely accepted, not everyone is ready to fully endorse it.

Interpretation

A significant proportion of respondents (34%) believe AI is effective in predicting their needs and preferences, with 25.3% finding it very effective. However, 24.3% think AI is only somewhat effective, and 16.4% consider it ineffective, signaling room for improvement in AI's predictive capabilities.

Interpretation

While 23% of respondents are ambivalent, a total of 54% of respondents feel more engaged to firms that use AI-powered marketing strategies. Approximately 23% disagree or strongly disagree, suggesting that although AI strengthens brand connections for many consumers, others may not experience a stronger connection.

Interpretation

About 31% of respondents strongly agree that AI-based marketing content seems more invasive than traditional ads, while 27.3% agree. On the intrusiveness of AI marketing, however, 22.7% are indifferent, 19% disagree or strongly disagree, reflecting conflicting opinions.

Interpretation

A majority of respondents (36% «somewhat» and 23.7% «very much») report that AI-driven marketing influences brand loyalty. While 19.6% believe that AI marketing does not significantly impact their brand loyalty, 20.7% remain indifferent.

Hypothesis Testing

Hypothesis 1

- H_0

“There is no significant relationship between the use of AI-driven personalization and customer engagement in digital marketing”.

• H_1

“There is a significant relationship between the use of AI-driven personalization and customer engagement in digital marketing”.

Interpretation

The relationship between the usage of AI-driven personalization and customer engagement in digital marketing is examined in Table 23’s results. The standard significance criterion of 0.05 is exceeded by the Asymp. Sig. (p-value) of 0.000 for the Pearson Chi-Square value of 25.432 with three degrees of freedom.

This suggests that the relationship between AI-driven personalization and customer engagement is quite significant. As a result, the alternative hypothesis (H1) is accepted in place of the null hypothesis (H0), which states that there is no significant relationship. The results demonstrate that customer engagement in digital marketing is significantly impacted by AI-driven personalization.

Hypothesis 2

• H_0

“There is no significant difference in the perceptions of digital marketing professionals from different industries regarding the effectiveness of AI in enhancing customer engagement”.

• H_2

“There is a significant difference in the perceptions of digital marketing professionals from different industries regarding the effectiveness of AI in enhancing customer engagement”.

Interpretation

The results of the Chi-Square Test for Independence, which was used to determine if there is a significant difference in the perceptions of digital marketing professionals from different industries about the usefulness of AI in marketing engagement, are shown in Table 24. The Likelihood Ratio is 19.983 with a significance level of 0.010, and the Pearson

Chi-Square value of 18.672 with 4 degrees of freedom has an Asymp. Sig. of 0.014. There is a statistically significant difference between the two numbers since they are both below the 0.05 threshold.

The alternative hypothesis (H1) is thus preferred above the null hypothesis (H0), which states that there is no significant difference in perceptions. These results show that digital marketing professionals from different industries have different perceptions of AI’s usefulness in enhancing customer engagement significantly.

Conclusion

The present study emphasizes the significant impact of AI-powered personalization on customer engagement in digital marketing. The findings show that by providing personalized content that appeals to individual interests, AI-powered tools like personalized ads and chatbots play a key role in enhancing the entire customer experience. This relationship is not just clear from customer feedback, but it also points to a direct correlation between AI-powered marketing strategies and higher levels of customer happiness, loyalty, and involvement.

The study also found that different digital marketing professionals from various industries had diverse perceptions about how well AI works to increase customer engagement. Although the majority of professionals agree that AI has many advantages, differences in opinions point to possibilities or obstacles unique to a certain sector when implementing AI-driven customer contact solutions. This emphasizes how crucial it is to take industry-specific requirements and strategies into account when using AI to digital marketing.

The study contains a number of shortcomings in spite of its insightful findings. The findings’ generalizability may be impacted by the sample size’s potential lack of representation across industries and geographical areas, notwithstanding its diversity. The research also mostly used self-reported data, which might be biased by respondents. The study excluded cutting-edge technologies that may potentially influence customer engagement in favor of concentrating on a small selection of AI tools.

Exploring the use of more recent AI technologies, such virtual reality and machine learning algorithms, in digital marketing might help future research build on these findings. The long-term impact of AI-driven personalization on brand perception and customer loyalty in various cultural settings may also be examined in future research. Investigating how small and medium-sized businesses’ (SMEs’) marketing use of AI develops and its influence on customer retention may provide more information about general market trends.

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Table 23: Chi-Square Test for the Relationship Between AI-Driven Personalization and Customer Engagement

Value	df	Asymp. Sig.
Pearson Chi-Square	25.432	3
Likelihood Ratio	26.734	3
N of Valid Cases	300	

Table 24: Chi-Square Test for Differences in Perceptions Among Digital Marketing Professionals from Different Industries

Value	df	Asymp. Sig.
Pearson Chi-Square	18.672	4
Likelihood Ratio	19.983	4
N of Valid Cases	300	

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