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Decoding Customer Perception of AI-Driven Digital Marketing: Evidence from Kerala

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Abstract: *The rise of Artificial Intelligence (AI) technology is considered a game-changer for digital marketing practices. This paper attempts to assess the customer perception towards the AI-based digital marketing practices by studying factors like personalization, trust, data privacy, engagement and purchase intentions of customers. Technologies such as chatbots, recommendation engines, predictive analytics and auto-advertising among others have enhanced interactions between business organizations and customers. Nonetheless, fears about data protection and ethical usage of data have remained to shape customer perception about the marketing approaches of using AI technology. In this regard, this paper endeavors to study the perceptions of customers about the marketing initiatives based on AI and the factors which affect their perception. 100 respondents in Kannur District of Kerala were taken as the sample size by using convenient sampling technique. It is concluded that although customers greatly value the convenience, personalization and speed of the digital marketing through AI, their overall perception will depend on data privacy and the value of personalized experience to them.*

Keywords: Artificial Intelligence, Technologies, Customers, Marketing, Perception.

I. INTRODUCTION

AI-driven digital marketing refers to the application of AI technology to digital marketing practices. AI allows firms to analyze vast customer data, predict customer behavior, personalize marketing campaigns, and make better decisions faster than non-AI technologies. Using various AI tools like machine learning, NLP, predictive analytics, and automation, marketers can send messages that resonate well with their target audiences. In today's competitive digital space, AI has become an integral part of any firm. AI helps businesses know what the customers want, create personalized messages, automate repetitive processes, optimize advertising campaigns, and improve customer engagement through chatbots/virtual assistants. AI platforms help firms gain valuable insights through analyzing customer engagements on various platforms like websites, social media, emails, and search engines. Incorporating artificial intelligence in digital marketing has revolutionized how business firms interact with their clients. Rather than depending on manual analysis and conventional marketing tools, organizations can incorporate the use of artificial intelligence to make predictions, enhance customer experiences and raise return on investment (ROI). Some common uses of artificial intelligence in digital marketing include recommendation engines, email marketing personalization, voice search optimization, social media analytics, sentiment analysis and programmatic marketing. With the continued development of digital technologies, AI is likely to become increasingly important in determining the future of marketing. Companies that utilize AI-driven marketing can have a competitive edge due to efficiency, improved customer satisfaction and better results in marketing endeavors. Thus, artificial intelligence-based digital marketing is a great milestone in modern marketing practices.

II. NEED FOR THE STUDY

The fast adoption of AI technology has brought about a change in digital marketing through personal recommendations, advertising, automated customer services, and data-driven marketing. Although the introduction of AI has made digital marketing more effective and efficient, the success of AI-based marketing initiatives is highly influenced by the customers' perception of such techniques. The perception of the customers is crucial in helping organizations in creating trust and building relationships with the customers. Kerala is among the Indian states with the highest level of digital connectivity and penetration of the Internet, mobile phones, and e-commerce and payments systems. It is becoming necessary to investigate the perceptions of customers in Kerala with regard to AI-based digital marketing due to their increased exposure to such marketing initiatives through various social media platforms, shopping websites, search engines, and mobile applications.

III. PROBLEM IDENTIFICATION

Artificial intelligence (AI) is now a vital part of digital marketing that helps organizations provide personalized advertisements, personalized products recommendations, automated customer services, and predictive marketing. Despite all the benefits of these technologies in terms of efficiency and engagement, there are also many issues connected to privacy, data security, algorithmic bias, ethical aspects of using customer information and transparency. Therefore, it is important to note that effectiveness of these technologies depends both on technology itself and customers' perception of these solutions. In Kerala, the growing number of users of the Internet, smartphones and e-commerce makes companies actively implement artificial intelligence technologies for marketing. Nonetheless, different people have different levels of awareness, knowledge, trust to AI technologies, which may lead to different perceptions of these marketing techniques. Some consumers value the comfort and personalization provided by AI technologies, whereas other people may feel uncomfortable with data gathering and intrusive advertising, which may be a crucial factor when considering satisfaction and engagement of clients.

IV. AIM OF THE STUDY

The study aimed to assess the customer perception towards the AI-based digital marketing practices in Kannur District of Kerala.

V. MATERIALS AND METHODS

Proposing their theory, Lemon and Verhoef (2016) stated that customer experience is determined by interactions through the whole customer journey and not at a particular point of time. The authors claim that the use of personalized and technology-mediated interactions is one of the factors contributing to customer satisfaction and loyalty; thus, they provide an adequate theoretical background to AI-based marketing strategy development. In the study devoted to the increasing significance of AI in digital marketing, Marinchak et al. (2018) revealed that AI technologies such as chatbots, predictive analytics, and recommendations are essential elements transforming customer experience and improving marketing performance in general as they create more personalized customer experience. Discussing the development of AI technologies, Kaplan and Haenlein (2019) highlighted the impact of AI on marketing and business. The authors claim that AI changes marketing from mass communication into personalized intelligent interactions, which positively influence decision making and competitiveness of organizations. AI, machine learning, and big data analytics are among the key technologies identified by Kumar et al. (2019) in the field of modern marketing. AI allows predicting customer behavior, improving campaign optimization and CRM and requires more research on consumer acceptance. In conducting this study, a quantitative research methodology was used to assess the perception of customers regarding AI-enabled digital marketing in Kerala, where data were collected from 100 respondents residing in Kannur district of Kerala through convenience sampling technique. Convenience sampling was chosen as it was the most convenient technique for collecting data from respondents who were easily accessible and knowledgeable about digital marketing channels and AI-powered marketing channels including personalized ads, chatbots, and product suggestions. Primary data were collected through a questionnaire that consisted of demographic information and statements to measure the customer perception of AI-based digital marketing on a five-point Likert scale. The data collected were coded, arranged, and analyzed through appropriate statistical methods. In order to find whether any differences were statistically significant in customer perception across various demographic categories, Mann Whitney U test and Kruskal–Wallis H test was applied, which is a non-parametric statistical test.

VI. RESULTS AND DISCUSSIONS

The Mann Whitney U test and Kruskal-Wallis test was chosen since the study used Likert scale ratings that generate ordinal data, and the subjects were classified into different demographic categories.

A. Gender and Perception of Customers towards AI-Enabled Digital Marketing

H₀: There is no relationship between gender and perception of customers towards AI-enabled digital marketing.

H₁: There is a close relationship between gender and perception of customers towards AI-enabled digital marketing.

Table 1

Gender and Perception of Customers towards AI-Enabled Digital Marketing

Gender	N	Mean Rank	Z	Sig.
Male	66	55.42	-2.379 (D.F-2)	.017
Female	34	40.94		

A Mann Whitney U-test was performed in order to determine if there is any difference in customers' perception of AI-powered digital marketing according to their gender. According to the results, men ($n = 66$) have a higher mean rank (55.42) compared to women ($n = 34$) whose mean rank equals 40.94. z value of -2.379 and $p < 0.05$ ($\alpha = 0.05$) suggest that the obtained result is statistically significant. Thus, the null hypothesis (H_0) should be rejected while the alternative hypothesis (H_1) can be accepted.

B. Age and Perception of Customers towards AI-Enabled Digital Marketing

H_0 : There is no relationship between age and perception of customers towards AI-enabled digital marketing.

H_1 : There is a close relationship between age and perception of customers towards AI-enabled digital marketing.

Table 2
Age and Perception of Customers towards AI-Enabled Digital Marketing

Age	N	Mean Rank	K.W.H	Sig.
Upto 25 years	10	32.05	10.625 (D.F-4)	.031
25 - 35 years	66	53.38		
36-45 years	12	64.38		
46-55 years	3	41.50		
Above 55 years	9	34.39		

The test results indicated a statistically significant difference among the age groups (Kruskal-Wallis $H = 10.625$, $df = 4$, $p = 0.031$). Because the p -value (0.031) is below the 0.05 significance level, the null hypothesis (H_0) will be rejected while accepting the alternative hypothesis (H_1). This suggests that customers' perceptions regarding AI-based digital marketing differ significantly among the various age groups. Among the various age groups, those who were aged 36-45 years had the highest mean rank (64.38), while the age group aged 25-35 years had the second highest mean rank (53.38). Those who were aged up to 25 years had the least mean rank (32.05).

C. Marital Status and Perception of Customers towards AI-Enabled Digital Marketing

H_0 : There is no relationship between marital status and perception of customers towards AI-enabled digital marketing.

H_1 : There is a close relationship between marital status and perception of customers towards AI-enabled digital marketing.

Table 3
Marital Status and Perception of Customers towards AI-Enabled Digital Marketing

Marital Status	N	Mean Rank	Z	Sig.
Married	48	57.88	-2.457 (D.F-2)	.014
Unmarried	52	43.69		

A Mann Whitney U-test was performed in order to determine if there is any difference in customers' perception of AI-powered digital marketing according to their marital status. According to the results, married customers ($n = 48$) have a higher mean rank (57.88) compared to unmarried customers ($n = 34$) whose mean rank equals 43.69. z value of -2.457 and $p < 0.05$ ($\alpha = 0.05$) suggest that the obtained result is statistically significant. Thus, the null hypothesis (H_0) should be rejected while the alternative hypothesis (H_1) can be accepted.

D. Educational qualification and Perception of Customers towards AI-Enabled Digital Marketing

H_0 : There is no relationship between educational qualification and perception of customers towards AI-enabled digital marketing.

H_1 : There is a close relationship between educational qualification and perception of customers towards AI-enabled digital marketing.

Table 4

Educational qualification and Perception of Customers towards AI-Enabled Digital Marketing

Educational Qualification	N	Mean Rank	K.W.H	Sig.
School level	7	55.07	5.008 (D.F-4)	.286
Under graduate	50	50.14		
Professional	11	38.59		
Diploma/ ITI/ Polytechnic	24	49.56		
Post graduate	8	67.94		

The test results indicated that there was no statistically significant difference in customers' perceptions among the different educational qualification groups (Kruskal–Wallis $H = 5.008$, $df = 4$, $p = 0.286$). Since the p-value (0.286) is greater than the 0.05 level of significance, the null hypothesis (H_0) is accepted, and the alternative hypothesis (H_1) is rejected. This indicates that educational qualification does not significantly influence customers' perceptions of AI-enabled digital marketing. Although respondents with postgraduate qualifications had the highest mean rank (67.94), followed by those with school-level education (55.07), and respondents with professional qualifications had the lowest mean rank (38.59), these differences were not statistically significant.

E. Occupation and Perception of Customers towards AI-Enabled Digital Marketing

H_0 : There is no relationship between occupation and perception of customers towards AI-enabled digital marketing.

H_1 : There is a close relationship between occupation and perception of customers towards AI-enabled digital marketing.

Table 5

Occupation and Perception of Customers towards AI-Enabled Digital Marketing

Occupation	N	Mean Rank	K.W.H	Sig.
Private employee	47	59.91	10.030 (D.F-4)	.040
Government employee	27	42.69		
Business	12	37.17		
Professional	10	44.45		
Others	4	47.75		

The test results indicated a statistically significant difference in customers' perceptions among the different occupational categories (Kruskal–Wallis $H = 10.030$, $df = 4$, $p = 0.040$). Since the p-value (0.040) is less than the 0.05 level of significance, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted. This indicates that occupation has a significant influence on customers' perceptions of AI-enabled digital marketing. Among the occupational groups, private employees recorded the highest mean rank (59.91), indicating a comparatively more favorable perception of AI-enabled digital marketing, followed by respondents in the 'Others' category (47.75), professionals (44.45), and government employees (42.69). Respondents engaged in business had the lowest mean rank (37.17), indicating a comparatively lower perception of AI-enabled digital marketing.

F. Monthly Income and Perception of Customers towards AI-Enabled Digital Marketing

H₀: There is no relationship between income level and perception of customers towards AI-enabled digital marketing.

H₁: There is a close relationship between income level and perception of customers towards AI-enabled digital marketing.

Table 6
Monthly Income and Perception of Customers towards AI-Enabled Digital Marketing

Monthly Income	N	Mean Rank	K.W.H	Sig.
Below Rs.20000	38	50.03	10.705 (D.F-4)	.030
Rs.20000 – Rs. 30000	19	33.76		
Rs.30001 – Rs. 40000	11	53.68		
Rs.40001 – Rs. 50000	7	51.50		
Above Rs.50000	25	62.26		

The test results indicated a statistically significant difference in customers' perceptions among the different monthly income categories (Kruskal–Wallis $H = 10.705$, $df = 4$, $p = 0.030$). Since the p-value (0.030) is less than the 0.05 level of significance, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted. This indicates that monthly income has a significant influence on customers' perceptions of AI-enabled digital marketing. Among the income groups, respondents with a monthly income of above Rs. 50,000 recorded the highest mean rank (62.26), indicating a comparatively more favorable perception of AI-enabled digital marketing. This was followed by respondents earning Rs. 30,001–Rs. 40,000 (53.68), Rs. 40,001–Rs. 50,000 (51.50), and below Rs. 20,000 (50.03). Respondents with a monthly income of Rs. 20,000–Rs. 30,000 had the lowest mean rank (33.76), indicating a comparatively lower perception of AI-enabled digital marketing.

VII. RECOMMENDATIONS

- 1) Because the male respondents have a significantly higher perception of AI-enabled digital marketing compared to the female respondents, the organizations need to ensure that they create marketing campaigns for the female consumers which suit them and build their level of comfort with AI technology.
- 2) The companies need to customize content and user interactions to be friendlier to the individual age segments.
- 3) Because the married customers had a higher perception of AI-enabled digital marketing compared to the unmarried individuals, the marketers need to create AI-driven advertisements and promotional messages that consider the lifestyle of these two categories of people.
- 4) The educational qualification was not found to affect customer perception. Hence, the businesses should continue developing AI-enabled digital marketing platforms which would be easier to use and understand by all customers irrespective of their educational levels.
- 5) The organizations need to create occupation-specific marketing activities to address the unique characteristics of different occupations.
- 6) The premium products and services can be aimed at high-income earners while affordable offers can be directed to low-income customers.
- 7) The organizations should also engage in education of the customers regarding the benefits, accuracy, and convenience of AI-enabled digital marketing to build customer confidence.

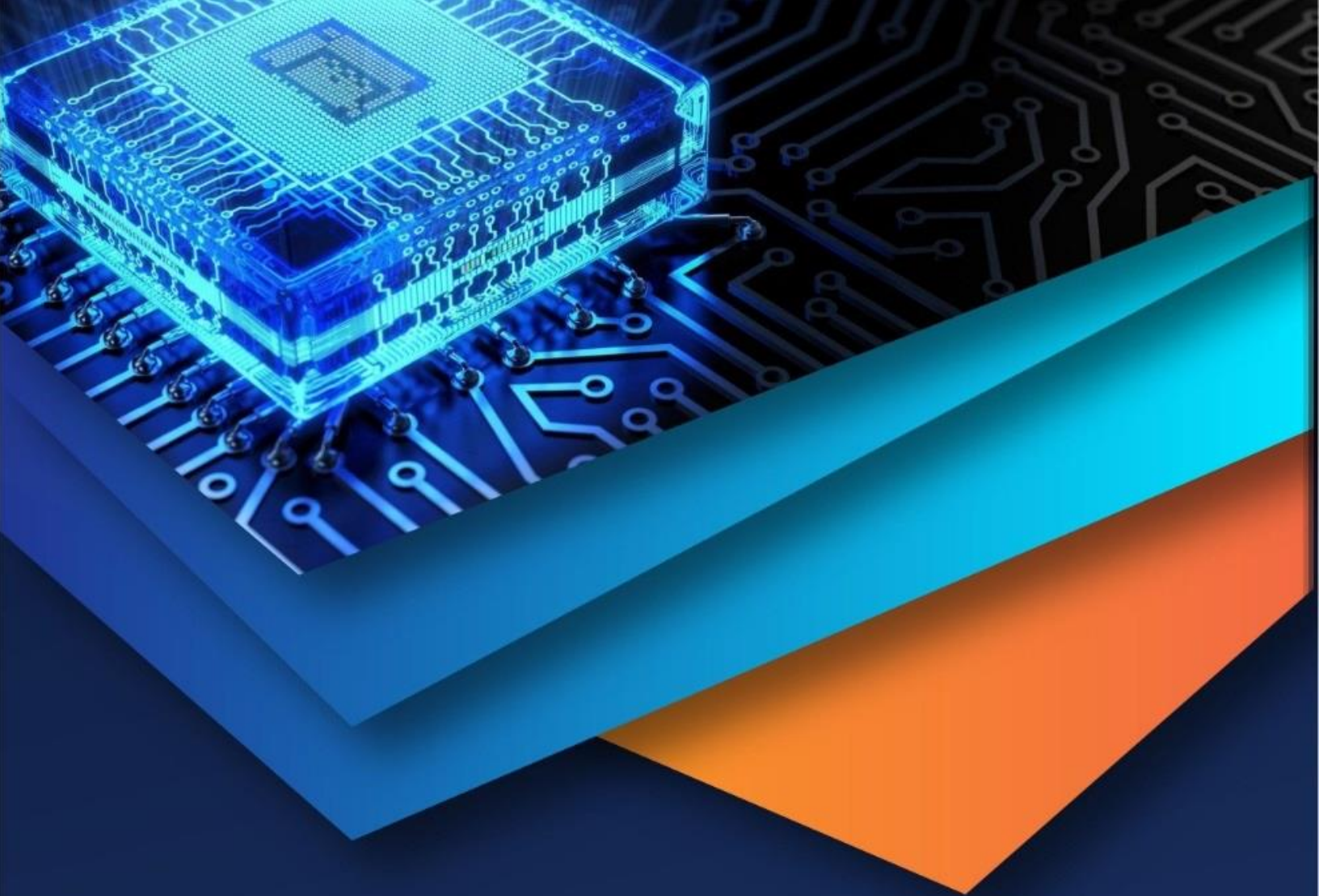
VIII. CONCLUSION

The study highlights the fact that AI-based digital marketing has become a vital tool in improving the customer experience and competitive edge in Kerala. Organizations which adopt AI-based technologies with transparency, ethics, and customer-centricity can be successful in ensuring greater customer satisfaction and trust, as well as competitive advantage. The study offers great lessons to marketers, business organizations, tech innovators, and policy makers in adopting AI-based marketing strategies that can fulfill both the technological needs and customer requirements. It is concluded that although customers greatly value the convenience, personalization and speed of the digital marketing through AI, their overall perception will depend on data privacy and the value of personalized experience to them.



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