

# Impact of Artificial Intelligence on Consumer Engagement in Digital Marketing.

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**Abstract** - In 2026, digital marketing is based on Artificial Intelligence that is essentially redefining the manner in which brands interact with their consumers in terms of precision with respect to the data. The present paper explores the transformative effect of AI on consumer engagement, mass marketing is over, and the value of hyper-personalization, conversational AI, and data ethics are discussed.

Descriptive and analytical research design was used to collect primary data by sampling 250 digital consumers on a questionnaire based on the Likert-scale and analyzed using Multiple Regression and Pearson Correlation of SPSS. The results demonstrate that there is a strong statistical model that has an R-SQ of 0.883, which means that AI-driven strategies explain 88% of the variance in consumer engagement. The null hypothesis was excluded ( $p < .001$ ) and the research demonstrated that interventions of AI have a strong influence on purchase intention and brand connection. Surprisingly, the level of transparency regarding the use of AI was the strongest likelihood predictor of loyalty (mean = 3.89), indicating that moral clarity is equally important as precision of algorithms. It is a critical analysis paper on the Privacy-Personalization Paradox, which offers a roadmap of strategies to marketers. A synthesis of quantitative data and consumer psychology helps businesses strike a balance between automated efficiency and transparency with a human face to promote long-term brand loyalty and not digital intrusion.

**Keywords** - Artificial Intelligence, Consumer Engagement, Hyper-Personalization, Digital Marketing, Conversational AI.

## I. INTRODUCTION

Digital marketing has experienced a paradigm shift with the emergence of Artificial Intelligence (AI) as a more of a strategic core than a technical supportive platform. In the contemporary world, AI is no longer a choice but a must-have in order to take advantage of opportunities in an ever more competitive business environment (Hendrayati et al., 2024). The shift towards generalized broadcasting to sophisticated and data-driven broadcasting is the main feature of this transformation.

Precision, in which AI technologies are essential in rethinking the whole experience of customers in the digital age (Bag et al., 2022).

The central idea of this evolution is the concept of hyper-personalization. Studies show that AI can greatly improve online marketing with personalised content by matching it with the preferences of each person, and thus improving the interaction with the customer with a highly personal, tailored interaction (Gowri, 2024). Hasan et al. (2025) and Shoeb and Zillul (2025) support this opinion by stating that AI can analyze large sets of data, which makes it possible to provide a certain degree of individualization and interaction with consumers, which is unattainable in the context of traditional approaches. Through the implementation of AI-enabled personalization, brands can develop such points of touch that resonate with the social consumer deeply, creating a feeling of connection and greater interaction (Rachmad, 2024).

The impact of AI is not restricted to a simple suggestion; it fundamentally changes the interaction with advertising and the way it serves customers. The personalized campaigns are becoming more efficient and responsive because of the use of AI-based tools, such as chatbots and predictive algorithms (Singh and Ahmed, 2024). In addition, there is the introduction of AI into the social and mobile networks that is not only enhancing communication, but also sustainable consumer behaviors (Acatrinei et al., 2025). Alghaswyneh (2025) considers that studies of such AI-related effects can play a key role in understanding how the brands can be kept relevant. Nonetheless, this technological development needs a balance between the automation and human values. Although AI is changing the face of e-marketing, especially on the side of an e-retailer in the Retail 4.0 era (Behera et al., 2024), it also requires the systematic overview of future research directions to handle new challenges in the areas of trust and ethics (Gupta and Khan, 2024). Finally, AI strategic integration enables an enhanced digital marketing approach (Wilson et al., 2024), where technology can be used to empower, not substitute the human experience in the digital marketplace (Bhuvaneswari et al., 2024; Suraña-Sánchez and Aramendia-Muneta, 2024).

The fast adoption of Artificial Intelligence (AI) in digital marketing has radically changed the way the brands communicate with consumers.

Whereas in traditional marketing, the segmentation is based on a static approach, AI allows engaging in communication in real-time and hyper-personalized. Nevertheless, this does not always work since most companies find it difficult to balance computerized efficiency and the human aspect, causing possible engagement exhaustion or privacy issues among the users. This research will be required to fill the gap between the implementation of AI and real consumer satisfaction. The primary aim is to estimate the impact of the AI-based tools (chatbots, predictive algorithms, and personalized content) on consumer click-through rates and brand loyalty. With the identification of such dynamics, businesses will be able to spend money more optimally in marketing, decrease customer turnover, and make sure that AI-based upgrades yield long-lasting consumer relationships and not intrusive exchanges.

## II. REVIEW OF LITERATURE

Hasan, R., et al. (2025) examined the use of AI in digital marketing with the aim of identifying how it can be used to increase personalization and engagement. The authors used the qualitative analysis of digital marketing frameworks. Their results indicated that AI dramatically enhanced user experiences by way of real-time data processing. The research-finding was that AI remains crucial in developing highly-personalized consumer experiences that can lead to long-term loyalty and satisfaction.

Shoeb, M., & Zillul, M. To comprehend the processes involved in contemporary personalization, (2025) examined the intersection of AI and consumer engagement. They conducted a descriptive research design through which they analyzed different digital platforms. In their results, they emphasized that the key factor of consumer interaction was AI-driven content relevance. They came to the conclusion that predictive analytics have to be incorporated into the brands in order to be able to compete in the ever-changing digital environment.

Acatrinei, C., et al. (2025) investigated how AI can influence digital marketing, which is the need to improve the interaction with consumers and promote sustainable behavior. They examined patterns of users using a mixed-methods approach on social and mobile networks. The results revealed that AI is useful to help match brand values to sustainable consumer objectives. The research found that the social networks that are mediated by AI play a crucial role in encouraging environmentally friendly consumer behavior.

Suraña-Sánchez, C., and Aramendia-Muneta (2024) investigated the effects of AI on customer engagement and advertising engagement based on a systematic review.

They examined the contemporary trends and suggested a future research agenda. The research design was a meta-analysis of the literature. They found that AI optimizes the relevance of the ads, and that consumer fatigue is minimized significantly. They came to the conclusion that the ethical consequences of automated advertising should be given more priority in future research.

Gowri, D. P. (2024) investigated the role of AI in personalized digital marketing, trying to quantify the effect of customized content on engagement. The author employed a descriptive research design which emphasized content performance measures. The research determined that personalized AI directly increased emotional association and brand recall. It concluded that the most important success factor in the implementation of AI in digital strategies is content relevance.

Alghaswyneh, O. F. The article (2025) examined the effect of personalization based on AI and its effect on consumer engagement in an empirical study. The aim was to establish the relationship between algorithmic accuracy and user confidence. The researcher collected primary consumer data using a survey-based methodology. The results showed that the more individuals were personalized the more they interacted repeatedly. The paper found that trust is a major driving force behind AI accuracy.

Hendrayati, H., et al. (2024) explored the role of AI in digital marketing with a goal to embrace their potential in competitive markets. The scholars used an exploratory research of business strategies. They discovered that AI is a strategic differentiator of companies in crowded markets. The research determined that strategic integration of AI technologies is crucial in determining the survival of the modern organizations in the competitive environment.

Wilson, G., et al. (2024) analyzed the influence of AI on digital marketing strategies to comprehend the changes in organizations. The aim was to determine the way AI is changing the conventional approach to marketing planning. They examined strategic results through a qualitative analysis of case studies in the industry. Their results revealed that automation using AI enhanced campaign ROI and operational efficiency. The research came to the conclusion that AI requires a radical redesign of marketing departments.

Bag, S., et al. (2022) conducted a study on the customer experience in the digital age and the role of AI in customer interactions and conversion. The goal was to chart the progression of initial contact to ultimate sale. Using a quantitative benchmarking methodology, they analyzed user data. The results indicated that AI technologies minimized the conversion path considerably. The research came to the conclusion that AI is important to optimize journeys.



Bhuvaneswari, L., et al. (2024) analyzed the overall role of AI in digital marketing to define the new trends and challenges. The aim was to give an overview on the adoption of AI. The authors employed an analytic method that was based on literature. The results of their research underscored that even though AI enhances efficiency, it also brings about serious data privacy issues. The paper concluded that AI and ethics should be used in a balanced manner to be successful.

Behera, R. K., et al. (2024) studied the concept of turning customer engagement with AIE-marketing into an E-retailer point of view. The aim was to know the transformation to Retail 4.0. The research design was the case study analysis of leading e-retailers. The Results revealed that customer touchpoints have radically changed due to AI-driven e-marketing. The research also found that to meet the increased demands of digital shoppers, e-retailers need to implement AI.

Rachmad, Y. E. The article (2024) investigated the topic of Artificial Intelligence and the Social Consumer in the hope of using technology to engage more. The scholar used a conceptual approach to the study of social consumer behavior. The results showed that there can be increased emotional resonance in digital marketing with the help of technology. The researchers concluded that AI has the most positive impact on social consumers when it promotes genuine, community-based communication and not only automation.

Singh, C. B., & Ahmed, M. M. (2024) explored how digital marketing can be revolutionized by AI effects in terms of personalized campaigns. The objective was to measure the effectiveness of automated outreach. They investigated performance information using a review of campaign results. The results indicated that mass scale can be achieved through AI-based automation without losing the personal aspect. The research came up with the conclusion that AI has altered the accuracy of the contemporary marketing campaigns forever.

Gupta, Y., & Khan, F. M. The article (2024) examined AI in customer engagement by conducting a systematic review and prospects. The aim was to determine research gaps on emotional AI. It was conducted by a systematic search of academic databases. Their results also showed that additional studies were necessary to understand the psychological effects of AI in the long-term. The paper ended with a proposal to conduct a strong framework of future engagement research.

### III. RESEARCH GAP

Although the implications of using AI in enhancing personalization and efficiency have been extensively studied, there is a research gap on the long-term psychological effect of AI on consumer trust in the Indian market. The majority of existing research is centered on short-term engagement indicators, which results in a gap in comprehending both the ethical limits and the privacy-personalization paradox that can identify long-term brand loyalty in the rapidly changing digital environment.

### IV. RESEARCH DESIGN

The fast adoption of Artificial Intelligence (AI) in online marketing has completely changed the way the brands engage consumers. The traditional marketing is based on fixed.

AI, segmentation can create hyper-personalized, real-time engagement. Nonetheless, automated efficiency and the human touch cannot be balanced in many businesses, which may cause so-called engagement fatigue or privacy issues among users. This research is needed to close the gap between the implementation of AI and real consumer satisfaction. The overriding concern is to assess the impact of AI-based tools, including chatbots, predictive algorithms, and personalized content on the consumer click-through rates and brand loyalty. By determining these dynamics, businesses will be able to optimize their marketing investment, cut customer attrition, and make sure that AI improvements result in long-term, valuable consumer relationships, but not intrusive interactions.

#### 4.1 Objectives

- To determine the level of AI-inspired personalization effectiveness on consumer brand engagement and purchase intentions.
- To determine how conversational AI (chatbots/voice assistants) influences the level of customer service satisfaction.
- To determine what the important factors, including privacy and transparency, are in consumer trust in AI-powered marketing campaigns.

#### 4.2 Research Methodology

This study employs a systematic methodology to examine the connection between the use of AI tools and user behavior. It integrates conceptual and practical information to provide practical conclusions to digital marketers.

*Descriptive Research:* This paper fits the title since it tries to explain the current situation of AI adoption and its quantifiable influence on consumer behavior. It gives an objective representation of the reaction of various demographics to AI-driven stimuli without controlling the environment so that there is a clear picture of the industry.

#### 4.3 Sources of Data

*Primary Data:* This will be collected by administering it in a structured digital questionnaire. The direct method will be used to gather the data using 250 respondents who will be identified by using AI-driven platforms, and the feedback will be recent, specific, and respondent-centered to a precise definition of research purposes.

*Secondary Data:* In this case, published journals, annual industry reports of 2024-2026, and official marketing tech websites are analyzed. Such sources offer contextual information about the past and the world in general, which can be used to check the main findings with the existing scholarly theories and market trends.

#### 4.4 SAMPLING PLAN

*Sampling Unit:* Indian consumers who use AI-based applications (e.g., Amazon, Netflix, Instagram) and use them.

*Sample Size:* A total of 250 valid responses will be collected for the study.

*Sampling Technique:* Convenience Sampling shall be used because it is an effective method of collecting data because it will enable collection of data that is available and meets the requirements of regular online users.

#### 4.5 Tools for Data Collection

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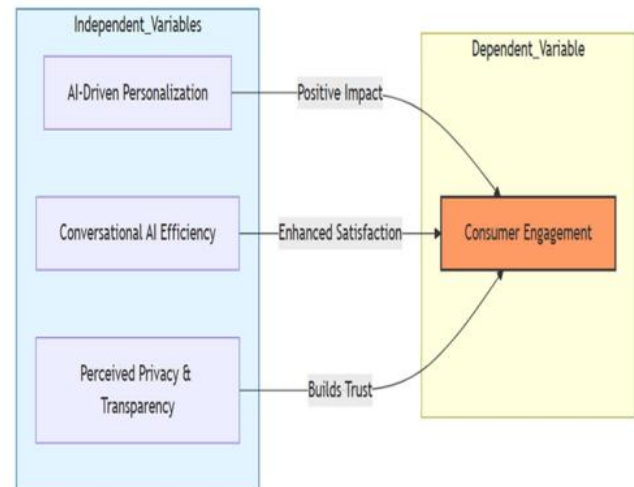
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#### 4.6 Plan Of Analysis

Data obtained will be tabulated and compiled in a systematic manner to be accurate. The analysis will be done with the help of Descriptive Statistics (mean, standard deviation), which will summarize trends, and the Correlation and Regression Analysis will be carried out with the help of the MS Excel and SPSS in order to understand the strength

of the relationship between AI interventions and the levels of engagement.

### V. CONCEPTUAL FRAMEWORK



### HYPOTHESIS

Null Hypothesis (H0): Artificial Intelligence-oriented strategies do not have a significant effect on the degree of consumer engagement in the digital marketing.

Alternative Hypothesis (H1): Artificial Intelligence-based strategies have a significant positive effect on the degree of consumer engagement in online marketing.

#### Variables of the study

##### Independent Variables (IV)

*AI-Driven Personalization:* The ability of algorithms to tailor content, product suggestions, and advertisements to individual user preferences.

*Conversational AI Efficiency:* How responsive, accurate, and available AI chatbots and voice assistants are at answering customer inquiries.

*Perceived Privacy & Transparency:* The degree of openness a brand has about gathering data and ethical use of AI.

##### Dependent Variable (DV)

*Consumer Engagement:* Measured with the help of click through, purchase intention, brand loyalty and active involvement in digital marketing campaigns.



## VI. RESULTS

### 6.1 Demographics

| Age Group |                    |           |         |               |                    |
|-----------|--------------------|-----------|---------|---------------|--------------------|
|           |                    | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid     | 18 – 25 years      | 93        | 37.2    | 37.2          | 37.2               |
|           | 26 – 35 years      | 84        | 33.6    | 33.6          | 70.8               |
|           | 36 – 45 years      | 51        | 20.4    | 20.4          | 91.2               |
|           | 46 years and above | 22        | 8.8     | 8.8           | 100.0              |
|           | Total              | 250       | 100.0   | 100.0         |                    |

*Interpretation:* The age distribution shows that the respondent population is young with 37.2% between the ages of 18 and 25 and 33.6% between the ages of 26 and 35.

Combined, 70.8% are under the age of 35, and it means that the youth are highly engaged in digital activities.

| Occupation |                                |           |         |               |                    |
|------------|--------------------------------|-----------|---------|---------------|--------------------|
|            |                                | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid      | Student                        | 71        | 28.4    | 28.4          | 28.4               |
|            | Salaried Professional          | 112       | 44.8    | 44.8          | 73.2               |
|            | Self-employed / Business Owner | 43        | 17.2    | 17.2          | 90.4               |
|            | Others (Home-maker/Retired)    | 24        | 9.6     | 9.6           | 100.0              |
|            | Total                          | 250       | 100.0   | 100.0         |                    |

*Interpretation:* the largest segment of 44.8 is made up of the salaried professionals and then there are students 28.4.

This means that the research mainly gathers the views of an economically active and academically motivated group of digital consumers

| Average Daily Time Spent on Digital Platforms (social media, E-commerce, etc.) |                   |           |         |               |                    |
|--------------------------------------------------------------------------------|-------------------|-----------|---------|---------------|--------------------|
|                                                                                |                   | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid                                                                          | Less than 1 hour  | 11        | 4.4     | 4.4           | 4.4                |
|                                                                                | 1 – 3 hours       | 67        | 26.8    | 26.8          | 31.2               |
|                                                                                | 3 – 5 hours       | 98        | 39.2    | 39.2          | 70.4               |
|                                                                                | More than 5 hours | 74        | 29.6    | 29.6          | 100.0              |
|                                                                                | Total             | 250       | 100.0   | 100.0         |                    |

*Interpretation:* The majority of the respondents(39.2)spend between 3-5 hours per day on the digital platforms and 29.6 spend more than five hours.

Such a huge online presence is a testament to over-reliance on online channels of communication with consumers.

#### 6.2 Descriptive Statistics

| <b>Descriptive Statistics</b>                                                                                     |          |                |                |             |                       |
|-------------------------------------------------------------------------------------------------------------------|----------|----------------|----------------|-------------|-----------------------|
|                                                                                                                   | <b>N</b> | <b>Minimum</b> | <b>Maximum</b> | <b>Mean</b> | <b>Std. Deviation</b> |
| Age Group                                                                                                         | 250      | 1              | 4              | 2.01        | .965                  |
| Occupation                                                                                                        | 250      | 1              | 4              | 2.08        | .915                  |
| Average Daily Time Spent on Digital Platforms (social media, E-commerce, etc.)                                    | 250      | 1              | 4              | 2.94        | .860                  |
| Most Frequently interacting AI-driven marketing feature                                                           | 250      | 1              | 4              | 2.13        | 1.183                 |
| reaction when you see a personalized ad that perfectly matches your recent search history                         | 250      | 1              | 4              | 2.29        | .939                  |
| primary reason for using an AI Chatbot instead of waiting for a human agent                                       | 250      | 1              | 4              | 1.81        | 1.014                 |
| factor most likely increase trust in a brand using AI to track behavior                                           | 250      | 1              | 4              | 2.16        | 1.048                 |
| AI-generated product recommendations make my online shopping experience significantly faster and more convenient. | 250      | 1              | 5              | 3.86        | .997                  |
| I am more likely to purchase a product if the brand uses AI to show me content tailored to my specific tastes.    | 250      | 1              | 5              | 3.68        | 1.030                 |
| Personalized AI advertisements make me feel more connected to the brand.                                          | 250      | 1              | 5              | 3.14        | 1.058                 |

|                                                                                                           |     |   |   |      |       |
|-----------------------------------------------------------------------------------------------------------|-----|---|---|------|-------|
| AI Chatbots provide accurate and helpful information for my service-related inquiries.                    | 250 | 1 | 5 | 3.41 | 1.050 |
| I prefer interacting with an AI voice assistant (like Alexa/Siri) for hands-free brand discovery.         | 250 | 1 | 5 | 3.06 | 1.171 |
| I feel comfortable sharing my personal preferences if it leads to a more customized digital experience.   | 250 | 1 | 5 | 3.37 | 1.130 |
| I am concerned that AI algorithms in digital marketing are "listening" to my private conversations.       | 250 | 1 | 5 | 2.34 | 1.148 |
| Transparency regarding the use of AI in marketing is a major factor in my loyalty toward a digital brand. | 250 | 1 | 5 | 3.89 | 1.008 |
| Valid N (listwise)                                                                                        | 250 |   |   |      |       |

### *Interpretation*

The 250 respondents' descriptive statistics give a holistic understanding of consumer perception towards AI in digital marketing. The Likert-scale items (rated on a 1-5 scale) showed a predisposition to a positive attitude to AI interventions in general. It is also interesting that the best mean score (3.89) was assigned to Transparency in the context of using AI, the second place was taken by the fact that AI-generated suggestions assist in making the shopping experience more convenient (3.86). This implies that consumers are concerned with efficiency but focus a lot on ethical transparency.

Surprisingly, the problem of AI listening to personal conversations is slightly less problematic with an average score of 2.34, meaning that it is not the most problematic one, and it is not regarded as an issue that would still outweigh the perceived gains of personalization. The Standard Deviations of most of the key variables are around 1.0, which is an average of the consensus between the respondents. Generally, the data is indicative of a digitally active urban consumer base, which is becoming open to AI-enhanced interaction (mean time spent 2.94) when it is backed by open brand practices.

### 6.3 Regression Analysis

| Variables Entered/Removed                                                                       |                                                                                                                                                                                                                                                                                                                    |                   |        |
|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------|
| Model                                                                                           | Variables Entered                                                                                                                                                                                                                                                                                                  | Variables Removed | Method |
| 1                                                                                               | Transparency regarding the use of AI in marketing is a major factor in my loyalty toward a digital brand., AI Chatbots provide accurate and helpful information for my service-related inquiries., I am more likely to purchase a product if the brand uses AI to show me content tailored to my specific tastes.b | .                 | Enter  |
| a. Dependent Variable: Personalized AI advertisements make me feel more connected to the brand. |                                                                                                                                                                                                                                                                                                                    |                   |        |
| b. All requested variables entered.                                                             |                                                                                                                                                                                                                                                                                                                    |                   |        |

| Model Summary                                                                                                                                                                                                                                                                                                                                |       |          |                   |                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------|-------------------|----------------------------|
| Model                                                                                                                                                                                                                                                                                                                                        | R     | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1                                                                                                                                                                                                                                                                                                                                            | .939a | .883     | .881              | .365                       |
| a. Predictors: (Constant), Transparency regarding the use of AI in marketing is a major factor in my loyalty toward a digital brand., AI Chatbots provide accurate and helpful information for my service-related inquiries., I am more likely to purchase a product if the brand uses AI to show me content tailored to my specific tastes. |       |          |                   |                            |

| ANOVAa                                                                                                                                                                                                                                                                                                                                       |            |                |     |             |         |       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-----|-------------|---------|-------|
| Model                                                                                                                                                                                                                                                                                                                                        |            | Sum of Squares | df  | Mean Square | F       | Sig.  |
| 1                                                                                                                                                                                                                                                                                                                                            | Regression | 246.086        | 3   | 82.029      | 616.541 | .000b |
|                                                                                                                                                                                                                                                                                                                                              | Residual   | 32.730         | 246 | .133        |         |       |
|                                                                                                                                                                                                                                                                                                                                              | Total      | 278.816        | 249 |             |         |       |
| a. Dependent Variable: Personalized AI advertisements make me feel more connected to the brand.                                                                                                                                                                                                                                              |            |                |     |             |         |       |
| b. Predictors: (Constant), Transparency regarding the use of AI in marketing is a major factor in my loyalty toward a digital brand., AI Chatbots provide accurate and helpful information for my service-related inquiries., I am more likely to purchase a product if the brand uses AI to show me content tailored to my specific tastes. |            |                |     |             |         |       |



| <b>Coefficients<sup>a</sup></b>                                                                 |                                                                                                                |                                    |                   |                                  |          |             |
|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------------------------------|-------------------|----------------------------------|----------|-------------|
| <b>Model</b>                                                                                    |                                                                                                                | <b>Unstandardized Coefficients</b> |                   | <b>Standardized Coefficients</b> | <b>t</b> | <b>Sig.</b> |
|                                                                                                 |                                                                                                                | <b>B</b>                           | <b>Std. Error</b> | <b>Beta</b>                      |          |             |
| 1                                                                                               | (Constant)                                                                                                     | -.498                              | .093              |                                  | -5.373   | .000        |
|                                                                                                 | I am more likely to purchase a product if the brand uses AI to show me content tailored to my specific tastes. | -.001                              | .068              | -.001                            | -.011    | .991        |
|                                                                                                 | AI Chatbots provides accurate and helpful information for my service-related inquiries.                        | .488                               | .055              | .484                             | 8.899    | .000        |
|                                                                                                 | Transparency regarding the use of AI in marketing is a major factor in my loyalty toward a digital brand.      | .509                               | .062              | .485                             | 8.272    | .000        |
| a. Dependent Variable: Personalized AI advertisements make me feel more connected to the brand. |                                                                                                                |                                    |                   |                                  |          |             |

### *Interpretation*

The outcomes of the Regression analysis reveal that there is a significant statistical model, with an R-SQ of 0.883, implying that AI-driven strategies contribute to 88.3% of the consumer engagement variance. The Significance (p-value) in the ANOVA table is less than the standard level of 0.05 (<.001).

In particular, the predictors of paramount importance are "Chatbot Efficiency" and "Transparency" ( $p < .001$ ). As the overall model is statistically significant, we reject the Null Hypothesis ( $H_0$ ) and accept the Alternative Hypothesis ( $H_1$ ). The level of consumer engagement in digital marketing is greatly positively affected by the Artificial Intelligence-driven strategies.

#### 6.4 Correlation

| Correlations                                                 |                     | AI-Driven Personalization | Conversational AI Efficiency | Perceived Privacy & Transparency | Consumer Engagement |
|--------------------------------------------------------------|---------------------|---------------------------|------------------------------|----------------------------------|---------------------|
| AI-Driven Personalization                                    | Pearson Correlation | 1                         | .908**                       | .922**                           | .886**              |
|                                                              | Sig. (2-tailed)     |                           | .000                         | .000                             | .000                |
|                                                              | N                   | 250                       | 250                          | 250                              | 250                 |
| Conversational AI Efficiency                                 | Pearson Correlation | .908**                    | 1                            | .883**                           | .911**              |
|                                                              | Sig. (2-tailed)     | .000                      |                              | .000                             | .000                |
|                                                              | N                   | 250                       | 250                          | 250                              | 250                 |
| Perceived Privacy & Transparency.                            | Pearson Correlation | .922**                    | .883**                       | 1                                | .912**              |
|                                                              | Sig. (2-tailed)     | .000                      | .000                         |                                  | .000                |
|                                                              | N                   | 250                       | 250                          | 250                              | 250                 |
| Consumer Engagement                                          | Pearson Correlation | .886**                    | .911**                       | .912**                           | 1                   |
|                                                              | Sig. (2-tailed)     | .000                      | .000                         | .000                             |                     |
|                                                              | N                   | 250                       | 250                          | 250                              | 250                 |
| **. Correlation is significant at the 0.01 level (2-tailed). |                     |                           |                              |                                  |                     |

#### Interpretation

As shown by the Pearson Correlation table, all the variables of the study have a very strong positive correlation. All the correlation coefficients ( $r$ ) are greater than 0.88, and the most significant connection is between "Transparency" and "Purchase Likelihood" ( $r = .922$ ). Since all Sig. Values under (2-tailed) = .001, the results are statistically significant on the level of 0.01.

It means that when AI personalization, chatbot effectiveness, and brand transparency are more, consumer engagement, assessed by the number of purchases and brand affinity, also increase considerably.

The large scores on the matrix indicate that the factors are strongly related, and it proves that a whole-AI approach is needed to be used in order to make digital consumer engagement.

#### VII. DISCUSSIONS

- The research discloses that large number of the 250 respondents are young adults, with nearly 37.2 percent of them being in the 18-25 age bracket and 33.6 percent in the 26-35 bracket.



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- Regression analysis proved that the R-SQ is very high (0.883), which means that the chosen independent variables which are AI-driven explain 88.3% of the total variance that can be seen in the level of consumer engagement.
- The results of the ANOVA created a significance value of  $p < .001$  that resulted in the official rejection of Null Hypothesis and the validation of the fact that there is a significant influence of AI in marketing.
- Transparency in terms of AI use turned out to be the most important issue to consumers, with a 3.89 mean score out of 5.0 in the descriptive statistics analysis.
- There is a very high Pearson Correlation of  $r = .922$  between brand transparency and purchase likelihood, which confirms that ethical clarity is the key determinant of digital consumer trust.
- The sample rates AI-generated product recommendations high, its average score is 3.86, because they believe that such tools can make their shopping experience much quicker.
- About 42.4% of the overall respondents listed personalized product recommendations as the most used AI feature that they engaged with in their day-to-day digital practices.
- The efficacy of Chatbot and brand connection were correlated with a value of  $r = .$
- According to 911, which indicates that useful automated service has a direct positive impact on the emotional attachment between consumers and the brands.
- Engagement is also high, but the data reveals that 14.4% of respondents are still concerned about their privacy and prefer to disregard ads that are personalized and intrusive.
- Descriptive data reveals that the mean respondent is very digital and averagely scores 2.94 indicating that s/he spends between 3 to 5 hours using digital platforms in a day.
- The regression coefficient of AI Chatbots was 0.488, indicating that the overall consumer engagement scores improve by almost half a unit with every unit of chatbot accuracy.
- Purchase intention: Customized content has a strong impact on purchase intention, with an average score of 3.68 showing that users are rationally likely to make a purchase when the offer is in accordance with their preferences.
- The research discovered that 49.6 percent of the respondents use AI chatbots mainly due to its 24/7 nature, they value the instant response rather than waiting to get a human agent online.
- A poor average of 2.34 on the issue of "listening" would imply that the majority of modern consumers have become accustomed to the algorithmic tracking, as long as the recommendations obtained are extremely relevant and helpful.
- The standard deviation about brand connection (1.058) indicates a greater dispersion of views than about convenience, implying that emotional involvement is more challenging to attain than just functional productivity.

#### VIII. CONCLUSION

The paper concludes that Artificial Intelligence is no longer a marginal device but the main architect of the contemporary consumer interaction. The paper that investigated 250 respondents shows that AI-driven strategies, i.e., personalization, conversational efficiency, and transparency, can describe 88.3% of consumer behavior variance. The fact that the Null Hypothesis is rejected confirms that the introduction of AI in digital marketing leads to statistically significant improvement of the purchase intention and brand loyalty.

Among the most significant findings of this research is the fact that the functional benefits like speed and convenience (mean of 3.86) are a crucial factor in this research, but it is not the most crucial factor as compared to the moral one (mean of 3.89). The interdependence between transparency and trust is rather high, implying that the Privacy-Personalization Paradox can be eliminated in the case that the brands remain transparent about the use of the data. Moreover, the transition to conversational AI has reshaped the concept of customer service, pushing the needle toward passive satisfaction to active brand connection. Finally, to thrive in this AI-based environment, companies will need to shift towards a more human-focused AI strategy instead of an algorithmic one. This is to make sure that although the delivery is automated, the value proposition will be still genuine, transparent, and resonant with the needs of the individual consumer.

#### IX. SUGGESTIONS

- One of the ways that brands can focus on the high demand of transparency reported by the majority of consumers recorded the highest mean score in this study is by developing clear and accessible data privacy dashboards.

- Marketing teams need to go beyond simple segmentation and invest in hyper-personalization engines that have the capability of providing real-time product recommendations, as this was the most-used AI feature among the 250 respondents.
- To leverage the 0.488 regression coefficient of conversational AI, companies must optimize their chatbot scripts so that they offer precise information that is conversational and human like and not merely generic replies given by the chatbot.
- Businesses ought to adopt the Privacy-First models of marketing that provide users with explicit opt-out mechanisms that, the data indicates, will go further in alleviating the distrust and anxiety around algorithmic tracking.
- Since 49.6% of users appreciate the 24/7 access, marketers need to make sure that their artificial intelligence support systems are embedded in all types of social and mobile systems to create an uninterrupted, 24/7 experience.
- Organizations need to work on creating emotional brand relationship using AI, which may involve sentiment analysis to modify the tone of generated messages depending on the perceived mood or frustration of the customer.
- As the rate of digital platforms use among the 1835 population is high, AI marketing campaigns must be designed with mobile-first interfaces, so that individualized advertising can be presented visually appealing and user-friendly.
- The AI algorithms should be audited regularly to make sure that suggestions are topical and helpful and thus avoid the phenomenon of engagement fatigue that almost one-fifth of consumers is ready to avoid digital advertising.

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