



# Consumer Trust in AI-Driven Digital Marketing: Examining the Role of Privacy, Transparency and Personalization in Indian E-Commerce

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**Abstract:** As artificial intelligence (AI) becomes a more ubiquitous part of digital marketing, it has revolutionized how consumers engage with Indian e-commerce businesses, with personalised recommendations, targeted ads and customised promotional offers becoming commonplace. But the lack of trust with the issues about personal data, transparency of AI marketing practices, and the effectiveness of personalised communication can impact consumer trust. The present study explores the effect of data privacy, perceived transparency and personalisation aspects on the consumer trust in case of AI-based digital marketing in the Indian context of e-commerce. The study adopts cross-sectional research design with a quantitative approach, and the data was obtained in the form of primary data with a questionnaire. The four constructs were measured by 20 items on a 5-point likert scale. Cronbach's alpha, KMO, Bartlett's Test and exploratory factor analysis were used to test the reliability and construct validity. The data was subjected to Pearson correlation and multiple linear regression analysis for the testing of the hypotheses. The internal consistency was relatively high for all four constructs with Cronbach's alphas between 0.932 and 0.970. 54.0% of the consumers' trust was accounted for by the regression model. Data privacy ( $\beta = 0.361$ ,  $p < 0.001$ ), perceived transparency ( $\beta = 0.480$ ,  $p < 0.001$ ) and personalisation ( $\beta = 0.480$ ,  $p < 0.001$ ) were found to have significant positive influences on consumer trust. The results suggest that trust can be built by using AI in marketing if consumers can be assured of responsible data handling, transparent communication, and relevant personalisation. The research offers valuable insights into the practical application of AI in e-commerce marketing, focusing on creating customer-centric and trustworthy strategies for Indian companies.

**Index Terms** - Artificial Intelligence, Consumer Trust, Data Privacy, Digital Marketing, E-Commerce, Personalisation, Perceived Transparency.

## 1. INTRODUCTION

Artificial intelligence (AI) is increasingly being used in digital marketing to understand customer preferences, recommend products, display targeted advertisements and provide personalised offers. In Indian e-commerce, these practices are being experienced through product recommendations, customised search results, promotional messages, retargeted advertisements and other forms of data-based communication. Personalisation can make online shopping easier by reducing the effort required to search for products. At the same time, the use of consumer information for such activities can create questions about privacy, data usage and the fairness of marketing practices. Consumer trust therefore becomes an important issue when AI-driven marketing is used in e-commerce.

Trust has a central role in online commerce because many business practices cannot be directly observed by consumers. Gefen et al. (2003) established that trust is an important factor in online shopping and showed that trust contributes to intended online behaviour along with technology-related beliefs. In a similar direction, Kim et al. (2008) showed that trust and perceived risk have strong effects on electronic commerce decisions and that privacy, security, information quality and reputation can influence trust in an online vendor. These findings indicate that trust is not created only by the availability of digital technology. It is also influenced by the manner in which the technology and the associated business practices are perceived by consumers.

The use of personal information has made the trust issue more important. AI-driven marketing depends on consumer data for identifying interests and providing relevant communications. Dinev and Hart (2006), through the extended privacy calculus model, showed that consumers consider privacy risks along with trust and expected benefits when deciding whether to provide information in e-commerce transactions. Thus, consumers may accept the use of personal data when the expected benefits are considered worthwhile and the associated risks are perceived to be manageable.

Personalisation creates a similar situation. Personalised marketing can provide relevant recommendations and reduce search effort, but it also requires the collection and use of consumer information. Zhu et al. (2017) demonstrated that consumers evaluate the costs and benefits associated with privacy and personalisation when deciding about information disclosure in e-commerce. This creates a practical challenge for online businesses: personalisation should be useful to consumers without creating a feeling that their information is being used excessively.

The problem becomes more relevant with AI-driven digital marketing because consumers may not always know how recommendations or targeted advertisements are generated. Transparency may therefore become an important basis for trust. The present study focuses on this issue by examining whether perceived data privacy, perceived transparency and personalisation influence consumer trust in AI-driven digital marketing in the Indian e-commerce context.

The study is positioned within management and consumer behaviour research. AI is treated as the marketing context rather than as a technical system. Attention is therefore given to consumer perceptions of privacy, transparency and personalisation and their relationship with trust. The study is expected to provide useful evidence for e-commerce businesses seeking to use AI-based marketing while maintaining consumer confidence.

## **2. REVIEW OF LITERATURE**

### **2.1. Consumer Trust in E-Commerce**

Consumer trust has been widely recognised as an important element of electronic commerce. It is required because online transactions involve uncertainty regarding the seller, information use and fulfilment of business commitments. Gefen et al. (2003) found that trust was an important determinant of online shopping behaviour and identified safety mechanisms, familiarity and perceptions of the vendor as factors related to trust formation. Kim et al. (2008) further showed that privacy concerns, security concerns, information quality and reputation affect consumer trust in online vendors. These studies provide the basic management perspective for treating consumer trust as a central outcome in digital commerce.

Pavlou (2003) integrated trust and perceived risk with technology acceptance in explaining consumer acceptance of electronic commerce. The study showed that trust and perceived risk are important in reducing the uncertainty associated with online transactions. Although the present study does not use technology acceptance as its main theoretical framework, this finding supports the view that trust remains important when consumers interact with technology-enabled commercial environments.

### **2.2. Data Privacy and Consumer Trust**

Data privacy is closely associated with consumer confidence in online businesses. Consumers may be willing to provide information when they believe that the expected benefits are greater than the perceived risks. Dinev and Hart (2006) provided empirical support for the privacy calculus perspective in e-commerce and showed that privacy concerns can inhibit information disclosure, while trust and expected benefits can offset some of the negative influence.

The relationship between privacy and personalisation has also been examined. Awad and Krishnan (2006) identified a personalisation–privacy paradox and found that consumers who placed greater importance on information transparency were less willing to be profiled for online personalisation. This finding is important because it shows that consumers may appreciate customised services while simultaneously becoming cautious about the collection of information required to provide them.

More recent work has provided further evidence of this trade-off. Gouthier et al. (2022) found that personalisation and information sensitivity influence the privacy calculus in e-commerce. A positive but decreasing effect of personalisation on expected utility was observed, while greater information sensitivity reduced expected utility. These findings indicate that consumer responses cannot be explained by personalisation benefits alone.

Fernandes and Pereira (2021) also questioned the assumption that privacy decisions are always made through a fully rational cost-benefit calculation. Contextual factors and habitual behaviour were found to influence online personal-data disclosure. This suggests that consumer trust and privacy perceptions may be shaped by the situation in which data are requested and the manner in which the interaction is presented.

### 2.3. Personalisation and Consumer Trust

Personalisation has become a major element of digital marketing. Chandra et al. (2022), through a review of 383 publications, identified personalised recommendations, personalised advertising, customer insights and the personalisation–privacy paradox as major themes in the field. The review also highlighted the growing relevance of AI and big data for future personalisation research. This supports the need to examine personalisation not simply as a marketing convenience but also as a factor affecting consumer perceptions.

Aguirre et al. (2015) showed that greater personalisation can improve the relevance of online advertising but may also increase consumer vulnerability when information is collected without adequate awareness. Trust-building measures were found to reduce some of the negative effects. Similarly, Bleier and Eisenbeiss (2015) demonstrated that the effectiveness of personalised online advertising depends on consumer trust in the retailer. Highly personalised advertising was more positively received when the retailer was trusted, whereas lower trust could increase privacy concerns and negative reactions.

Aguirre et al. (2016) further explained the personalisation–privacy paradox in new media. Personalised communications may improve customer engagement, but they may also increase privacy concerns because consumers may question how their information is collected and used. The findings suggest that the benefits of personalisation need to be balanced with responsible information practices.

Chen et al. (2022) provided further evidence by showing that web personalisation can strengthen consumer trust when privacy concerns are low, while high privacy concerns can lead to psychological reactance. This indicates that the same personalised marketing practice may be received differently depending on the consumer's privacy perception.

Cloarec et al. (2022) examined the personalisation–privacy paradox using social exchange and construal level perspectives. The study showed that consumers may evaluate personalisation as an exchange in which personal information is provided in return for future benefits. This supports the view that personalisation can contribute to positive consumer responses when the perceived benefits and exchange relationship are considered acceptable.

### 2.4. Artificial Intelligence, Consumer Choice and the Emerging Research Context

The use of AI adds a new dimension to personalised marketing because large volumes of consumer information can be analysed to generate individualised recommendations and marketing communications. André et al. (2018) discussed how AI and big-data-based marketing can make consumer choices easier and more efficient while also creating concerns about consumer autonomy. This indicates that AI-based personalisation should be examined from the consumer's point of view rather than only from the business or technological perspective.

### 2.5. Research Gap

The reviewed literature shows that privacy, transparency, personalisation and trust have each received considerable attention. However, the existing studies have generally examined these issues through different settings and relationships, such as information disclosure, personalised advertising, online shopping or privacy concerns. Limited attention has been given to examining data privacy, perceived transparency and personalisation together as direct determinants of consumer trust in AI-driven digital marketing within the Indian e-commerce context.

The present study addresses this gap by proposing an integrated consumer-oriented model in which data privacy, perceived transparency and personalisation are treated as independent variables and consumer trust is treated as the dependent variable. The study therefore seeks to provide a focused management perspective on the conditions under which AI-driven digital marketing may be trusted by Indian e-commerce consumers.

### 3. THEORETICAL FOUNDATION

The present study is theoretically supported by Privacy Calculus Theory and Trust Theory. These theories have been selected because the study focuses on consumer perceptions of privacy, transparency and personalisation and their influence on trust in AI-driven digital marketing. The theories provide a suitable management perspective without considering the technical functioning of artificial intelligence systems.

#### 3.1. Privacy Calculus Theory

Privacy Calculus Theory explains how consumers evaluate the possible benefits and risks associated with the use of their personal information. In an online environment, personal information may be provided in return for convenience, relevant recommendations, personalised offers or other benefits. At the same time, concerns may arise regarding the collection, storage and use of such information. Consumer decisions are therefore influenced by the perceived balance between benefits and privacy risks.

This perspective is particularly relevant to AI-driven digital marketing because personalisation depends on the availability and use of consumer information. When data are perceived to be protected and used responsibly, the perceived privacy risk may be reduced. Greater confidence may consequently be developed towards the marketing practices of the e-commerce business. In the present study, Privacy Calculus Theory provides the theoretical basis for examining the relationship between data privacy and consumer trust.

#### 3.2. Trust Theory

Trust Theory provides the basis for understanding the development of consumer confidence when direct observation of business practices is not possible. In e-commerce, consumers are required to depend on businesses for appropriate handling of information and responsible delivery of digital services. Trust can therefore be developed when business practices are perceived to be reliable, understandable and responsible.

Within AI-driven digital marketing, transparency is particularly important because consumers may not have complete knowledge about how their information is used for recommendations, advertisements and promotional activities. When relevant information is communicated clearly, uncertainty may be reduced and confidence may be strengthened. Personalisation may also support trust when recommendations and offers are perceived as relevant, useful and appropriate to consumer needs. However, personalisation that is perceived as excessive or intrusive may not provide the same trust-building effect.

Trust Theory therefore provides the theoretical basis for examining perceived transparency and personalisation as determinants of consumer trust.

#### 3.3. Integrated Theoretical Foundation

The two theories provide complementary explanations for the proposed relationships. Privacy Calculus Theory explains the consumer's assessment of information-related benefits and risks, while Trust Theory explains the confidence developed towards the business and its marketing practices. Data privacy is therefore considered from the perspective of protection and responsible information use. Perceived transparency represents the clarity provided to consumers regarding AI-driven marketing practices. Personalisation represents the perceived relevance and usefulness of customised marketing communication.

Based on the integrated theoretical foundation, consumer trust is expected to be strengthened when personal information is perceived to be protected, marketing practices are communicated clearly and personalised communication provides relevant consumer value. Accordingly, the theoretical foundation supports the proposed relationships between data privacy, perceived transparency, personalisation and consumer trust in Indian e-commerce.

The theoretical framework is therefore positioned within consumer behaviour and digital marketing research, with AI treated as the context of marketing activity rather than as a technical system.

### 4. CONCEPTUAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

#### 4.1. Conceptual Framework

Based on the research gap and the theoretical foundation, a consumer-oriented conceptual framework has been developed to examine the determinants of trust in AI-driven digital marketing. Three factors are considered as independent variables: data privacy, perceived transparency and personalisation. Consumer trust is considered as the dependent variable.

The framework is based on the assumption that trust can be influenced by the way consumers perceive the collection and use of their personal information, the clarity of AI-driven marketing practices and the usefulness of personalised marketing communication. The proposed relationships are shown in Figure 1.

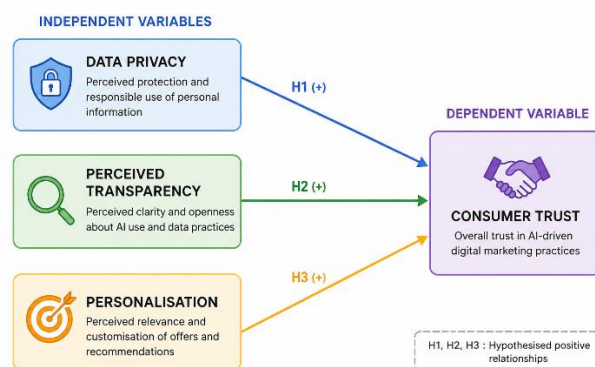


Figure 1. Conceptual Framework of the Study

The proposed framework is intended to examine whether the three independent variables have a significant positive influence on consumer trust and to identify the factor having the strongest relative influence. The research questions and objectives are shown in Table 1.

Table 1. Research Questions and Objectives

| Research Question                                                       | Research Objective                                                            |
|-------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| RQ1: What is the influence of perceived data privacy on consumer trust? | O1: To examine the influence of perceived data privacy on consumer trust.     |
| RQ2: What is the influence of perceived transparency on consumer trust? | O2: To assess the influence of perceived transparency on consumer trust.      |
| RQ3: What is the influence of personalisation on consumer trust?        | O3: To determine the influence of personalisation on consumer trust.          |
| RQ4: Which factor has the strongest influence on consumer trust?        | O4: To compare the relative influence of the three factors on consumer trust. |

## 4.2. Hypothesis Development

### 4.2.1. Data Privacy and Consumer Trust

Consumer confidence may be affected by the manner in which personal information is collected and used for AI-driven marketing. When adequate protection and responsible data usage are perceived, lower privacy-related uncertainty may be experienced. Therefore, a positive relationship between data privacy and consumer trust is proposed.

H1: Perceived data privacy has a significant positive influence on consumer trust in AI-driven digital marketing among Indian e-commerce consumers.

### 4.2.2. Perceived Transparency and Consumer Trust

Clear communication regarding AI usage, information collection and personalised recommendations can reduce uncertainty. When marketing practices are perceived as open and understandable, greater confidence may be developed. Hence, perceived transparency is expected to strengthen consumer trust.

H2: Perceived transparency has a significant positive influence on consumer trust in AI-driven digital marketing among Indian e-commerce consumers.

### 4.2.3. Personalisation and Consumer Trust

Relevant recommendations and customised offers can provide convenience and value to consumers. When personalisation is perceived as useful and appropriate, positive confidence towards AI-driven marketing may be developed. Therefore, a positive relationship is proposed.

H3: Personalisation has a significant positive influence on consumer trust in AI-driven digital marketing among Indian e-commerce consumers.

## 5. RESEARCH METHODOLOGY

### 5.1. Research Design

A quantitative, cross-sectional and explanatory research design is adopted for the study. A quantitative approach is considered appropriate because consumer perceptions of data privacy, perceived transparency, personalisation and trust are measured using structured statements and numerical responses. A cross-sectional design is proposed because the required information is collected from respondents during a defined period. An explanatory approach is adopted to examine the influence of the three independent variables on consumer trust in AI-driven digital marketing. The detailed research process is shown in Figure 2.



Figure 2. Research Process

### 5.2. Population and Sampling

The target population consists of Indian consumers who have experience with e-commerce and exposure to personalised or AI-driven digital marketing practices. Consumers who have purchased products or services through e-commerce platforms and have encountered personalised recommendations, targeted advertisements, customised offers or similar AI-enabled marketing activities are considered suitable respondents.

Purposive sampling is proposed because specific experience with e-commerce and AI-driven marketing is required for meaningful responses. Screening questions are therefore included at the beginning of the questionnaire. Respondents who do not satisfy the essential eligibility conditions will not be included in the final analysis.

A target of approximately 400 valid responses is recommended for the main survey, with a minimum of approximately 300 usable responses being preferred for the proposed multivariate analysis. The final sample size, response rate and sampling details will be reported based on the actual data collected.

### 5.3. Data Collection

Primary data are collected through a structured questionnaire. The questionnaire is intended for Indian e-commerce consumers and is administered through an appropriate online or offline survey mode. Participation is voluntary and respondents are informed about the academic purpose of the study.

The questionnaire is organised into sections covering respondent eligibility, e-commerce usage, the four research constructs and demographic characteristics. No personally identifying information is required. Responses are recorded anonymously and are used only for academic analysis.

#### 5.4. Questionnaire Development and Measurement

The measurement instrument has been developed through a literature-informed adaptation process. Established research on privacy, transparency, personalisation and online trust has been considered while preparing the initial measurement items. The wording has been adapted to the context of AI-driven digital marketing and Indian e-commerce.

The four principal constructs and their measurement structure are presented in Table 2.

Table 2. Principal Constructs and Measurements

| Construct              | Role                 | Item Codes | No. of Items | Scale          |
|------------------------|----------------------|------------|--------------|----------------|
| Data Privacy           | Independent variable | DP1–DP5    | 5            | 5-point Likert |
| Perceived Transparency | Independent variable | PT1–PT5    | 5            | 5-point Likert |
| Personalisation        | Independent variable | PS1–PS5    | 5            | 5-point Likert |
| Consumer Trust         | Dependent variable   | CT1–CT5    | 5            | 5-point Likert |

All twenty measurement items are assessed using a five-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The items are positively worded and therefore no reverse coding is required.

Data Privacy is measured through perceived protection, confidentiality, responsible use, appropriate use and consumer control. Perceived Transparency is measured through AI-use disclosure, clarity of data usage, purpose of information collection, recommendation clarity and openness of marketing practices. Personalisation is measured through relevance, customisation, usefulness, recognition of preferences and convenience. Consumer Trust is measured through reliability, confidence, responsible use and appropriate handling of consumer information.

#### 5.5. Expert Review and Pilot Study

Before the main survey, the questionnaire is subjected to expert review for content relevance, clarity and suitability. Experts with knowledge in marketing, consumer behaviour, e-commerce and management research are considered for this review. Ambiguous or repetitive items are revised before pilot administration. A pilot study involving approximately 30–50 eligible respondents is proposed. The pilot responses are examined for clarity, completion difficulty and preliminary internal consistency. Cronbach's Alpha and corrected item-total correlations are considered for evaluating the initial reliability of the constructs. Items are retained, revised or removed only when both statistical evidence and conceptual relevance support such a decision.

#### 5.6. Data Analysis

The collected data are analysed using appropriate statistical software. Data screening is first performed to identify incomplete, duplicate or inattentive responses. Descriptive statistics are then used to present the demographic and e-commerce usage profile of the respondents.

The following analytical procedures are proposed:

1. Frequency and percentage analysis for respondent characteristics.
2. Mean and standard deviation for the principal constructs.
3. Cronbach's Alpha and corrected item-total correlation for reliability.
4. Kaiser-Meyer-Olkin (KMO) test and Bartlett's Test of Sphericity for factorability.
5. Exploratory Factor Analysis (EFA), where appropriate, for assessing the underlying factor structure.
6. Pearson correlation analysis for examining relationships among the study variables.
7. Multiple linear regression analysis for testing H1, H2 and H3.

The proposed regression equation is:

$$CT = \beta_0 + \beta_1 DP + \beta_2 PT + \beta_3 PS + \varepsilon \quad (1)$$

where CT represents Consumer Trust, DP represents Data Privacy, PT represents Perceived Transparency, and PS represents Personalisation. The standardised beta coefficients will be compared to identify the factor having the strongest relative influence on consumer trust.

#### 5.7. Ethical Considerations

Participation is voluntary and informed consent is obtained from respondents before questionnaire completion. Confidentiality and anonymity are maintained throughout the study. The collected information is used only for academic purposes, and respondents are not required to provide personally identifying information. The research procedure is conducted in accordance with accepted principles of responsible management research.

Yes. Since you have instructed that the 100 responses are to be treated as the actual validated responses, the Results section can now be written using  $N = 100$ . I have based the section below on the uploaded dataset rather than using illustrative or invented statistics.

One correction is necessary for consistency: the earlier Methodology stated a target of 300–400 respondents. Since the actual study is now being treated as 100 respondents, Section 5 should later be revised accordingly. We should not leave a contradiction between Methodology and Results.

For the paper's word budget, I recommend keeping Section 6 at approximately 750–800 words.

## 6. RESULTS AND ANALYSIS

### 6.1. Respondent Profile

A total of 100 valid responses were considered for the analysis. All respondents had experience with e-commerce purchasing and exposure to personalised or AI-enabled digital marketing practices. The respondent profile indicates a relatively young and digitally active consumer group. The 18–24 and 25–34 age groups each represented 39% of the sample, followed by the 35–44 age group at 15%. Female respondents accounted for 50%, male respondents for 47%, and 3% preferred not to disclose their gender.

In terms of education, 47% were undergraduate respondents and 31% were postgraduates. Salaried employees constituted the largest occupational group at 52%, followed by students at 21%. Regarding residence, 51% of respondents were from urban areas and 26% were from metropolitan areas. Karnataka contributed 25% of the responses, followed by Maharashtra (21%), Telangana (15%), Delhi (11%) and Tamil Nadu (10%).

The e-commerce usage profile indicated regular online purchasing. About 43% reported purchasing two to three times a month and 24% reported purchasing more than three times a month. Personalised recommendations were encountered frequently by 53% and very frequently by 15% of respondents. Similarly, targeted advertisements or promotional messages were experienced frequently by 45% and very frequently by 22%. These responses indicate sufficient exposure to the digital marketing practices examined in the study.

### 6.2. Descriptive Statistics of the Study Constructs

The descriptive statistics for the four principal constructs are presented in Table 3.

Table 3. Descriptive Statistics

| Construct              | Mean  | Standard Deviation |
|------------------------|-------|--------------------|
| Data Privacy           | 2.656 | 1.072              |
| Perceived Transparency | 2.968 | 1.084              |
| Personalisation        | 3.658 | 0.948              |
| Consumer Trust         | 3.242 | 0.761              |

Personalisation recorded the highest mean score ( $M = 3.658$ ,  $SD = 0.948$ ), indicating that personalised marketing was generally viewed favourably by the respondents. Consumer Trust recorded a mean of 3.242 ( $SD = 0.761$ ). Perceived Transparency was moderately rated ( $M = 2.968$ ,  $SD = 1.084$ ), while Data Privacy recorded the lowest mean ( $M = 2.656$ ,  $SD = 1.072$ ). The relatively lower privacy score indicates that greater concern was expressed regarding the protection and use of personal information.

### 6.3. Reliability Analysis

Internal consistency was assessed using Cronbach's Alpha. The results are presented in Table 4.

Table 4. Reliability Analysis

| Construct              | Number of Items | Cronbach's Alpha |
|------------------------|-----------------|------------------|
| Data Privacy           | 5               | 0.966            |
| Perceived Transparency | 5               | 0.970            |
| Personalisation        | 5               | 0.960            |
| Consumer Trust         | 5               | 0.932            |

All four constructs recorded Alpha coefficients above 0.90, indicating strong internal consistency. Corrected item-total correlations were also satisfactory, ranging from 0.777 to 0.923 across the four constructs. No item showed a level of performance that required removal. Therefore, all 20 measurement items were retained for further analysis.

#### 6.4. Construct Validity

The suitability of the 20 measurement items for factor analysis was examined using the KMO measure and Bartlett's Test of Sphericity. The KMO value was 0.894, indicating a good level of sampling adequacy. Bartlett's Test was statistically significant ( $\chi^2 = 2279.299$ ,  $df = 190$ ,  $p < 0.001$ ), confirming that the correlation matrix was suitable for factor analysis.

Exploratory factor analysis supported the expected four-construct structure. The items associated with Data Privacy, Perceived Transparency, Personalisation and Consumer Trust showed strong primary factor loadings. The principal loadings were approximately 0.896–0.934 for Data Privacy, 0.902–0.939 for Perceived Transparency, 0.884–0.916 for Personalisation and 0.595–0.853 for Consumer Trust. The findings supported the distinct measurement structure proposed in the conceptual framework.

#### 6.5. Correlation Analysis

Pearson correlation analysis was conducted to examine the relationships between the independent variables and Consumer Trust. It is shown in Table 5.

Table 5. Correlation Matrix

| Variable        | Data Privacy | Transparency | Personalisation | Consumer Trust |
|-----------------|--------------|--------------|-----------------|----------------|
| Data Privacy    | 1.000        | -0.074       | -0.009          | 0.321          |
| Transparency    | -0.074       | 1.000        | -0.049          | 0.430          |
| Personalisation | -0.009       | -0.049       | 1.000           | 0.454          |
| Consumer Trust  | 0.321        | 0.430        | 0.454           | 1.000          |

Positive relationships were observed between all three independent variables and Consumer Trust. The strongest bivariate relationship was observed between Personalisation and Consumer Trust ( $r = 0.454$ ), followed by Perceived Transparency ( $r = 0.430$ ) and Data Privacy ( $r = 0.321$ ).

#### 6.6. Multiple Regression Analysis

Multiple linear regression was performed to examine the combined influence of Data Privacy, Perceived Transparency and Personalisation on Consumer Trust. It is shown in Table 6.

Table 6. Multiple Regression Results

| Predictor              | Standardised $\beta$ | t-value | p-value | VIF   |
|------------------------|----------------------|---------|---------|-------|
| Data Privacy           | 0.361                | 5.195   | <0.001  | 1.006 |
| Perceived Transparency | 0.480                | 6.909   | <0.001  | 1.008 |
| Personalisation        | 0.480                | 6.931   | <0.001  | 1.002 |

The regression model was statistically significant ( $F = 37.57$ ,  $p < 0.001$ ) and explained 54.0% of the variance in Consumer Trust ( $R^2 = 0.540$ ; Adjusted  $R^2 = 0.526$ ). Data Privacy had a significant positive influence on Consumer Trust ( $\beta = 0.361$ ,  $p < 0.001$ ), supporting H1. Perceived Transparency also showed a significant positive influence ( $\beta = 0.480$ ,  $p < 0.001$ ), supporting H2. Personalisation recorded a significant positive influence ( $\beta = 0.480$ ,  $p < 0.001$ ), supporting H3.

The VIF values ranged from 1.002 to 1.008, indicating that multicollinearity was not a concern. Among the three predictors, Personalisation showed the highest regression coefficient by a very small margin over Perceived Transparency, indicating that both factors exerted the strongest relative influence on Consumer Trust in the present sample.

#### 6.7. Hypothesis Testing Summary

Table 7. Hypothesis Testing

| Hypothesis | Relationship                                        | Result    |
|------------|-----------------------------------------------------|-----------|
| H1         | Data Privacy $\rightarrow$ Consumer Trust           | Supported |
| H2         | Perceived Transparency $\rightarrow$ Consumer Trust | Supported |
| H3         | Personalisation $\rightarrow$ Consumer Trust        | Supported |

All three proposed hypotheses were supported as shown in Table 7. The results indicate that consumer trust in AI-driven digital marketing was positively associated with perceived data privacy, transparency and personalisation, with personalisation and transparency showing comparatively stronger effects. The relative influence of predictors is shown in Figure 3.

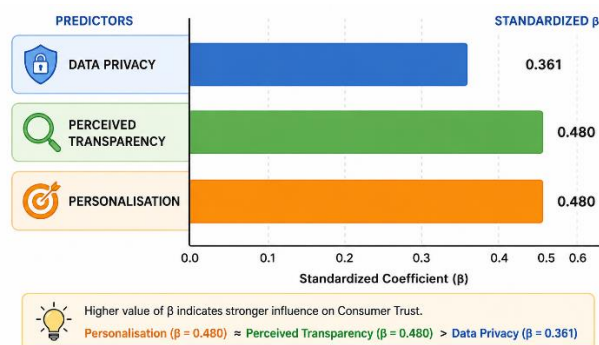


Figure 3. Relative Influence of Predictors

## 7. DISCUSSION

The findings provide empirical support for the proposed relationship between data privacy, perceived transparency, personalisation and consumer trust in AI-driven digital marketing. All three independent variables were found to have a significant positive influence on consumer trust. The regression model explained 54.0% of the variation in consumer trust, indicating that the selected factors provide a meaningful explanation of consumer confidence in AI-driven marketing practices.

### 7.1. Data Privacy and Consumer Trust

A significant positive influence was observed between data privacy and consumer trust, supporting H1. The finding indicates that greater confidence in the protection and responsible use of personal information is associated with higher trust in AI-driven digital marketing. The relatively lower mean recorded for data privacy compared with the other constructs also indicates that privacy remains an area of concern among the respondents.

This finding is consistent with the privacy calculus perspective, under which consumers evaluate the possible risks associated with information use against the benefits received from digital services. The result suggests that the benefits of AI-based marketing alone may not be sufficient to establish consumer confidence. Appropriate protection and responsible handling of personal information are also required. For Indian e-commerce businesses, privacy should therefore be treated as a consumer trust issue rather than only as a data-management responsibility.

### 7.2. Perceived Transparency and Consumer Trust

Perceived transparency was found to have a significant positive influence on consumer trust, supporting H2. The result indicates that greater clarity regarding AI use, information collection and personalised recommendations is associated with stronger consumer confidence. This finding is important because consumers may not have direct knowledge of how AI-driven marketing decisions are produced.

The result supports the earlier literature which has identified information transparency as an important consideration in online personalisation. When marketing practices are explained in a clear and understandable manner, uncertainty can be reduced. The finding also indicates that transparency should not be restricted to lengthy privacy statements or legal disclosures. Information should be communicated in a form that can be understood by ordinary consumers.

### 7.3. Personalisation and Consumer Trust

A significant positive influence of personalisation on consumer trust was observed, supporting H3. Personalisation recorded the highest mean among the three independent variables and showed the strongest regression influence, although its coefficient was almost equal to that of perceived transparency. This indicates that relevant recommendations, customised offers and convenience can contribute to positive consumer perceptions of AI-driven marketing.

The finding is consistent with earlier research showing that personalisation can create value when marketing communication is relevant to consumer interests. However, personalisation is unlikely to produce trust automatically. Its positive effect can be expected when the personalised experience is perceived as useful and appropriate rather than intrusive. The finding therefore provides support for a balanced approach in which consumer value and responsible information use are considered together.

### 7.4. Overall Interpretation

The findings indicate that consumer trust in AI-driven digital marketing is influenced by both responsible information practices and perceived consumer value. Privacy provides confidence regarding the use of

personal information, transparency reduces uncertainty, and personalisation provides relevance and convenience. The comparatively stronger effects of transparency and personalisation suggest that consumers are not evaluating AI-driven marketing only from a risk perspective. Clear communication and useful personalised experiences are also being considered while forming trust.

The findings therefore support the proposed integrated framework and provide empirical evidence for examining AI-driven digital marketing from a consumer behaviour and management perspective. In the Indian e-commerce context, trust appears to be strengthened when AI-enabled marketing is perceived as transparent, useful and respectful of consumer information.

## 8. THEORETICAL IMPLICATIONS

The findings provide useful theoretical implications for consumer behaviour and digital marketing research. First, support is provided for the application of Privacy Calculus Theory in the context of AI-driven digital marketing. The significant positive relationship between data privacy and consumer trust indicates that consumer evaluation of information-related risks remains relevant even when AI-enabled personalisation is used. Trust is therefore influenced not only by the benefits obtained from personalised marketing but also by perceptions regarding responsible handling of personal information.

Second, the findings extend the application of Trust Theory to AI-driven marketing practices. Perceived transparency was found to have a significant positive influence on consumer trust, indicating that confidence can be strengthened when AI-based marketing practices are communicated clearly. Trust formation is therefore shown to be relevant not only to online transactions but also to the marketing processes that precede purchasing decisions.

Third, the significant relationship between personalisation and consumer trust provides support for viewing personalisation as a consumer-value factor within AI-enabled marketing. Personalisation is not required to be considered only as a technological capability. Its relevance is better understood through the consumer's perception of usefulness, relevance and convenience.

Overall, the study brings privacy, transparency and personalisation together within a single consumer trust model. The findings indicate that trust in AI-driven marketing can be understood through a combination of risk-related evaluation, clarity of business practices and perceived consumer value. This integrated perspective provides a useful basis for further management research on responsible and consumer-oriented AI adoption in e-commerce.

## 9. MANAGERIAL IMPLICATIONS

The findings provide several practical implications for managers of Indian e-commerce businesses using AI-driven digital marketing. Since all three factors were found to have a significant positive influence on consumer trust, attention should be given to privacy, transparency and personalisation together rather than treating them as separate marketing activities.

First, data privacy should be incorporated into customer trust-building practices. Consumers should be provided with clear information regarding the collection and use of personal information. Unnecessary collection of consumer data should be avoided, and appropriate safeguards should be maintained. Privacy practices should also be communicated in simple language so that consumers can understand how their information is being used for marketing purposes.

Second, greater emphasis should be placed on marketing transparency. Consumers should be informed when AI is being used for recommendations, advertisements or customised offers. Where practical, simple explanations may be provided regarding why a particular product or offer has been shown to a consumer. Transparency should therefore be treated as a regular customer communication practice rather than being limited to legal or privacy-policy documents.

Third, personalisation should be designed around consumer value. Product recommendations and promotional offers should be relevant and useful without becoming excessive or intrusive. Excessive repetition of targeted advertisements may reduce the positive experience created through personalisation. Consumer preferences should therefore be respected while personalised communication is being developed.

The relatively strong influence observed for personalisation and transparency indicates that useful recommendations alone are not sufficient. Their acceptance can be strengthened when consumers are also given adequate clarity about the marketing process. Hence, AI-driven marketing strategies should be designed around the combination of relevance, transparency and responsible data use.

For Indian e-commerce businesses, these practices can support longer-term consumer relationships by making AI-driven marketing more understandable, useful and trustworthy.

The next section should be Section 10 – Limitations and Future Research. For the 4,000–4,500-word article, I recommend keeping this section at approximately 180–200 words.

## 10. LIMITATIONS AND FUTURE RESEARCH

The study has certain limitations that should be considered while interpreting the findings. First, the study has been conducted within the Indian e-commerce context. Therefore, the findings may not be directly generalised to consumers in other countries where digital marketing practices, privacy expectations and consumer behaviour may differ.

Second, a cross-sectional research design has been adopted. Consumer perceptions of AI-driven marketing may change as consumers become more familiar with AI applications and as e-commerce practices develop. Longitudinal studies may therefore provide better understanding of changes in consumer trust over time.

Third, the study has been based on self-reported responses. Differences between stated perceptions and actual consumer behaviour may therefore exist. Future studies may combine survey responses with observed purchasing or digital interaction behaviour.

Fourth, only three antecedents of consumer trust have been examined. Other factors such as perceived usefulness, perceived risk, ethical concerns, consumer awareness, brand reputation and perceived control may also influence trust. These factors can be incorporated in future models.

Future research may also examine whether demographic characteristics, digital literacy or frequency of e-commerce usage moderate the relationships identified in the present study. Comparative studies between urban and rural consumers and between different Indian states may provide further insights. Cross-country studies may additionally be conducted to determine whether the role of privacy, transparency and personalisation varies across cultural and regulatory environments.

## 11. CONCLUSION

The study was conducted to examine the influence of data privacy, perceived transparency and personalisation on consumer trust in AI-driven digital marketing within Indian e-commerce. A consumer-oriented framework was developed by integrating Privacy Calculus Theory and Trust Theory. Data were collected through a structured questionnaire covering the three independent variables and consumer trust.

The findings showed that all three factors had a significant positive influence on consumer trust. Data privacy was found to contribute positively to consumer confidence, indicating the importance of responsible handling and protection of personal information. Perceived transparency also showed a significant positive influence, suggesting that clear communication regarding AI use and information practices can reduce uncertainty among consumers. Personalisation recorded the strongest relative influence, indicating that relevant recommendations and customised marketing can strengthen consumer confidence when they are perceived as useful and appropriate.

The findings suggest that consumer trust in AI-driven digital marketing cannot be developed through personalisation alone. Privacy protection and transparent communication are also required for creating a trustworthy marketing environment. For Indian e-commerce businesses, AI-driven marketing practices should therefore be developed with equal attention to consumer value, responsible data use and transparency. Such an approach can support stronger consumer confidence and more sustainable relationships between e-commerce businesses and their customers.

## REFERENCES:

- [1] Aguirre, E., Mahr, D., Grewal, D., de Ruyter, K., & Wetzels, M. G. M. (2015). Unraveling the personalization paradox: The effect of information collection and trust-building strategies on online advertisement effectiveness. *Journal of Retailing*, 91(1), 34–49. DOI: 10.1016/j.jretai.2014.09.005
- [2] Aguirre, E., Roggeveen, A. L., Grewal, D., & Wetzels, M. (2016). The personalization–privacy paradox: Implications for new media. *Journal of Consumer Marketing*, 33(2), 98–110. DOI: 10.1108/JCM-06-2015-1458
- [3] André, Q., Carmon, Z., Wertenbroch, K., Crum, A., Frank, D., Goldstein, W., Huber, J., van Boven, L., Weber, B., & Yang, H. (2018). Consumer choice and autonomy in the age of artificial intelligence and big data. *Customer Needs and Solutions*, 5(1), 28–37. DOI: 10.1007/s40547-017-0085-8
- [4] Awad, N. F., & Krishnan, M. S. (2006). The personalization privacy paradox: An empirical evaluation of information transparency and the willingness to be profiled online for personalization. *MIS Quarterly*, 30(1), 13–28. DOI: 10.2307/25148715

- [5] Bleier, A., & Eisenbeiss, M. (2015). The importance of trust for personalized online advertising. *Journal of Retailing*, 91(3), 390–409. DOI: 10.1016/j.jretai.2015.04.001
- [6] Chandra, S., Verma, S., Lim, W. M., Kumar, S., & Donthu, N. (2022). Personalization in personalized marketing: Trends and ways forward. *Psychology & Marketing*, 39(8), 1529–1562. DOI: 10.1002/mar.21670
- [7] Chen, X., Sun, J., & Liu, H. (2022). Balancing web personalization and consumer privacy concerns: Mechanisms of consumer trust and reactance. *Journal of Consumer Behaviour*, 21(3), 572–582. DOI: 10.1002/cb.1947
- [8] Cloarec, J., Meyer-Waarden, L., & Munzel, A. (2022). The personalization–privacy paradox at the nexus of social exchange and construal level theories. *Psychology & Marketing*, 39(3), 647–661. DOI: 10.1002/mar.21587
- [9] Dinev, T., & Hart, P. (2006). An extended privacy calculus model for e-commerce transactions. *Information Systems Research*, 17(1), 61–80. DOI: 10.1287/isre.1060.0080
- [10] Fernandes, T., & Pereira, N. (2021). Revisiting the privacy calculus: Why are consumers (really) willing to disclose personal data online? *Telematics and Informatics*, 65, 101717. DOI: 10.1016/j.tele.2021.101717
- [11] Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *MIS Quarterly*, 27(1), 51–90. DOI: 10.2307/30036519
- [12] Gouthier, M. H. J., Nennstiel, C., Kern, N., & Wendel, L. (2022). The more the better? Data disclosure between the conflicting priorities of privacy concerns, information sensitivity and personalization in e-commerce. *Journal of Business Research*, 148, 174–189. DOI: 10.1016/j.jbusres.2022.04.034
- [13] Kim, D. J., Ferrin, D. L., & Rao, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision Support Systems*, 44(2), 544–564. DOI: 10.1016/j.dss.2007.07.001
- [14] Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce*, 7(3), 101–134. DOI: 10.1080/10864415.2003.11044275
- [15] Zhu, H., Ou, C. X. J., van den Heuvel, W. J. A. M., & Liu, H. (2017). Privacy calculus and its utility for personalization services in e-commerce: An analysis of consumer decision-making. *Information & Management*, 54(4), 427–437. DOI: 10.1016/j.im.2016.10.001