

Influence of AI-Based Digital Marketing Practices on Consumer Buying Behaviour: An Empirical Study

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Abstract

Artificial Intelligence (AI) is increasingly being used in digital marketing through personalized advertisements, product recommendations, chatbots, targeted content, and data-driven customer interactions. This study examines how consumers perceive and respond to AI-based digital marketing practices, with particular attention to personalized advertising, online recommendations, unplanned purchases, privacy concerns, and chatbot experiences. Primary data were collected through a structured online survey from 35 respondents belonging to different age groups and including male and female participants. The responses were analysed using frequencies and percentages, while open-ended responses were reviewed for recurring themes. The findings show that 91.4% of respondents sometimes or always notice advertisements related to products they have previously searched for or viewed. In addition, 62.9% reported that they had at least sometimes purchased a product because of an online recommendation, while 82.9% reported that online recommendations or advertisements sometimes or frequently led them to buy more than they had originally planned. At the same time, privacy concerns were evident: 82.8% sometimes or often felt that advertisements knew too much about them, and 54.3% were unsure whether apps and websites used their personal data safely for advertising. The findings suggest that AI-based personalization can improve relevance and convenience while also raising concerns about privacy, intrusiveness, and consumer control. Because the study is based on a small sample of 35 respondents, the results should be interpreted as indicative of the surveyed group rather than generalized to the wider consumer population.

Keywords: Artificial Intelligence, Digital Marketing, Consumer Buying Behaviour, Personalized Advertising, Product Recommendations, Consumer Privacy, Chatbots, Online Shopping, AI Marketing, Consumer Behaviour

1. Introduction of Study

Artificial Intelligence has become increasingly important in digital marketing because it enables organizations to analyse consumer information, identify patterns, predict interests, and deliver more personalized marketing messages. AI applications in marketing include personalized advertising, recommendation systems, automated customer support, consumer segmentation, and targeted promotional content. Research has suggested that AI can influence both marketing strategies and customer behaviour while also creating questions around privacy, bias, transparency, and ethics [1].

Consumers encounter personalized advertisements and recommendations while browsing websites, using social media, and shopping online. Recommendation systems can reduce the effort required to search through large numbers of products by presenting items that appear relevant to an individual's interests. At the same time, the effectiveness of personalization depends on factors such as timing, placement, trust, and perceived intrusiveness [2,3].

The use of personal information for personalization creates a related tension. Consumers may appreciate relevant recommendations while feeling uncomfortable when they realize that their personal information is being collected and used for advertising. Aguirre et al. [1] describe this personalization paradox, while more recent research continues to examine the relationship between personalization, privacy, trust, and recommendation acceptance [4,5].

Recent literature also shows that AI and consumer behaviour is a growing research area. Reviews have examined AI applications in marketing, consumer decision-making, trust, privacy, recommendation systems, and brand interactions [6–10]. Against this background, the present study focuses on consumers' everyday experiences with AI-based digital marketing, particularly personalized advertisements, recommendations, chatbots, and privacy perceptions.

2. Objectives of Study

1. To examine how frequently consumers notice AI-driven personalized advertisements and recommendations while shopping online.
2. To analyze whether AI-based product recommendations influence consumers' purchasing decisions.
3. To study whether personalized advertisements and recommendations encourage consumers to make unplanned purchases.
4. To examine consumers' perceptions of privacy and trust regarding the use of their personal data for personalized advertising.
5. To understand consumers' experiences with AI-powered chatbots during online shopping.
6. To examine consumers' overall perception of whether AI-based advertisements and recommendations make online shopping better or worse.

3. Research Methodology

3.1 Research Design

The study follows a descriptive research design to understand consumer experiences and perceptions regarding AI-based digital marketing.

3.2 Source of Data

Primary data were collected through a structured online survey questionnaire. The survey dataset contains responses from 35 participants.

3.3 Sample Size and Respondent Profile

The total sample size was 35 respondents. The respondents belonged to different age groups and included both male and female participants. The study therefore captures a range of consumer experiences, but the small sample size limits the extent to which the findings can be generalized.

3.4 Data Collection Instrument

The questionnaire covered online shopping frequency, personalized advertisements, product recommendations, recommendation-influenced purchases, privacy concerns, trust in data usage, chatbot experiences, unplanned purchases, and overall perceptions of AI-based advertising.

3.5 Data Analysis

The responses were analysed using frequency counts and percentages. Open-ended responses were reviewed thematically to identify recurring views, including convenience, relevance, time saving, privacy concerns, irritation, and excessive personalization. No causal or predictive statistical model was applied; the findings therefore describe the reported responses rather than establish causal effects.

4. Review of Literature

4.1 AI and Digital Marketing

AI has become an important part of marketing because organizations can process large volumes of consumer information and use it to support personalization and decision-making. Davenport et al. [14] discuss how AI can affect marketing strategy and customer behaviour, while Jain and Kumar [11] review major applications of AI in marketing over the past two decades.

4.2 Personalized Online Advertising

Bleier and Eisenbeiss [2] found that personalized online advertising can improve advertising effectiveness, but the effect depends on factors such as timing and placement. Their findings also suggest that excessive personalization can become less effective when consumers perceive advertisements as intrusive.

4.3 Personalization and Privacy

Aguirre et al. [1] examined the relationship between information collection, trust-building strategies, and personalized advertising. Their work highlights the personalization paradox: personalization may increase relevance while also increasing consumers' sense of vulnerability when information collection is perceived as covert.

4.4 Trust in Personalized Advertising

Bleier and Eisenbeiss [3] found that trust in the retailer can influence the effectiveness of personalized online advertising. Their results show that personalization may be received differently depending on the level of trust consumers have in the retailer.

4.5 AI-Based Recommendations and Consumer Behaviour

Wang et al. [4] studied recommendation acceptance using a privacy-calculus perspective and found that the way products are organized and presented can influence perceived privacy violation, perceived variety, and recommendation acceptance. This supports the view that recommendation systems involve both usefulness and privacy considerations.

4.6 Recent Research on AI and Consumer Behaviour

Recent reviews and empirical studies continue to examine AI's relationship with consumer behaviour. Jain et al. [6] identify research themes involving consumer acceptance, trust, engagement, decision-making, and adoption. Hermann and Puntoni [7] discuss the development of AI from predictive systems toward generative AI and its implications for consumers. Ribeiro et al. [9] identify convenience, effectiveness, trust, security, and personalization as important themes in AI and consumer-brand research. Riandhi et al. [10] similarly identify trust, privacy, and behavioural intentions as major areas in the recent literature. Studies focused on social media and e-commerce also highlight the importance of personalization, trust, privacy, transparency, and ethical data use [12,13].

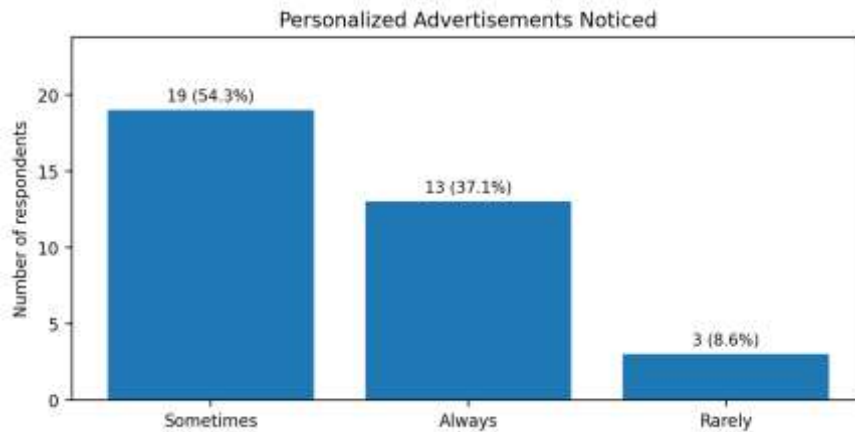
5. Survey Findings and Discussion

5.1 Objective 1: Notice of Personalized Advertisements and Recommendations

Personalized advertising was commonly noticed by the respondents. Nineteen respondents (54.3%) said they sometimes noticed advertisements related to products they had previously searched for or viewed, while 13 respondents (37.1%) said they always noticed such advertisements. Only 3 respondents (8.6%) selected rarely. Therefore, 91.4% of respondents reported noticing personalized advertisements either sometimes or always.

Regarding product recommendations, 17 respondents (48.6%) said that recommendations such as 'you may also like this' were useful. Thirteen respondents (37.1%) said they did not notice such recommendations, while 5 respondents (14.3%) did not find them useful.

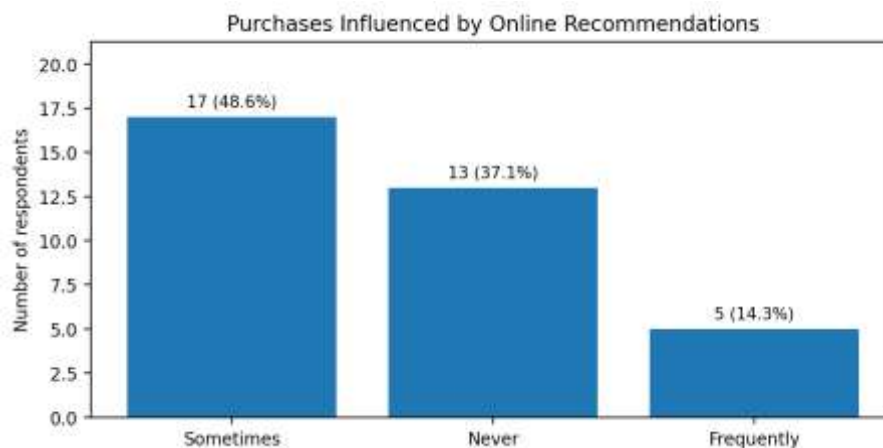
Figure 1: Respondents' Reported Frequency of Noticing Personalized Advertisements (n = 35)



5.2 Objective 2: Influence of Recommendations on Purchasing Decisions

Seventeen respondents (48.6%) stated that they had sometimes bought something because it was recommended to them online even though they had not originally searched for it. A further 5 respondents (14.3%) reported doing this frequently. Thus, 62.9% of the surveyed respondents had purchased a product at least sometimes because of an online recommendation. Thirteen respondents (37.1%) stated that they had never made such a purchase.

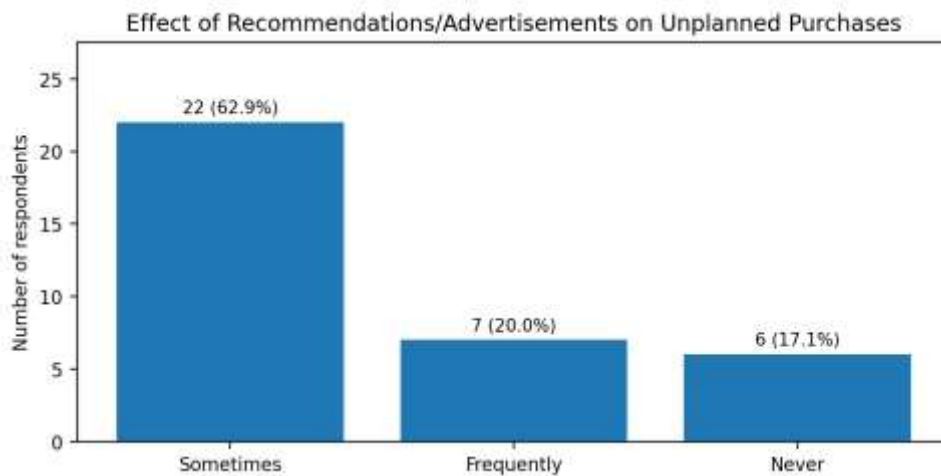
Figure 2: Purchases Influenced by Online Recommendations (n = 35)



5.3 Objective 3: Unplanned Purchases

Twenty-two respondents (62.9%) said that recommendations or advertisements sometimes made them buy more than they had planned. Another 7 respondents (20.0%) stated that this happened frequently. Overall, 82.9% of respondents experienced unplanned purchasing either sometimes or frequently due to online recommendations or advertisements. Six respondents (17.1%) said that such advertisements never made them purchase more than planned.

Figure 3: Reported Effect of Online Recommendations/Advertisements on Unplanned Purchases (n = 35)

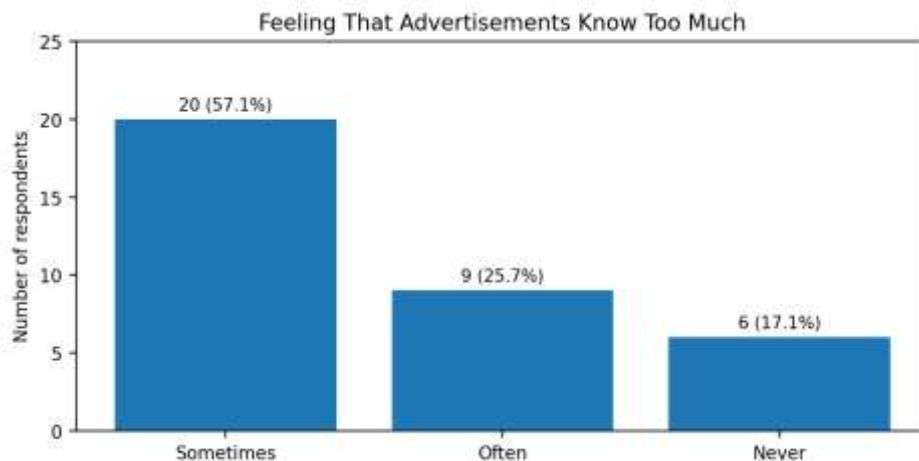


5.4 Objective 4: Privacy and Trust

Twenty respondents (57.1%) said they sometimes felt that an advertisement knew 'too much' about them, while 9 respondents (25.7%) experienced this often. Six respondents (17.1%) had never experienced this feeling. This indicates that privacy-related discomfort was present for a substantial proportion of the surveyed group.

Consumer trust in data usage was also uncertain. Nineteen respondents (54.3%) were not sure whether apps and websites used their personal data safely for advertising, while 8 respondents (22.9%) expressed trust and 8 respondents (22.9%) did not trust such data usage.

Figure 4: Respondents' Feelings That Advertisements Know Too Much About Them (n = 35)



5.5 Objective 5: Experiences with AI-Powered Chatbots

Fifteen respondents (42.9%) had used a shopping chatbot and found it helpful. Three respondents (8.6%) had used one but did not find it helpful. Meanwhile, 17 respondents (48.6%) had never used a chatbot while shopping online. These responses indicate that AI-powered customer assistance has potential to influence the shopping experience, but exposure to and adoption of shopping chatbots were not uniform among the respondents.

5.6 Objective 6: Overall Perception of AI-Based Advertising and Recommendations

The open-ended responses contained both positive and negative views. Positive responses commonly mentioned finding relevant products quickly, saving time, receiving similar product options, obtaining product information, and making online shopping easier. Negative responses focused mainly on privacy concerns, repetitive or irritating advertisements, excessive personalization, interruptions, and concerns that advertisements could influence consumer choices too strongly.

Overall, the responses suggest that consumers tend to value AI-based marketing when it provides useful and relevant assistance. Perceptions become less positive when personalization is experienced as intrusive, repetitive, or unclear in terms of how personal data are being used.

6. Discussion and Practical Implications

The survey results show a consistent pattern: respondents frequently encounter personalized digital marketing, and a sizeable share report that recommendations or advertisements can affect what they purchase. At the same time, privacy concerns are also visible. This combination is consistent with the personalization–privacy tension discussed in earlier research [1,4,5].

For marketers, the findings suggest that relevance alone may not be sufficient. Personalization should be accompanied by clear information about data use, reasonable advertising frequency, and attention to how consumers perceive the usefulness and intrusiveness of recommendations. These implications are consistent with the literature emphasizing trust, privacy, transparency, and consumer control [3,5,9,13].

The results should not be interpreted as proof that AI directly caused the reported purchases. The questionnaire measures respondents' reported experiences with personalized advertisements, recommendations, and other AI-related marketing practices. The descriptive design and sample size do not allow causal conclusions.

7. Limitations of the Study

- The study is based on a small sample of 35 respondents, so the findings should not be generalized to the entire consumer population.
- The study uses an online questionnaire and relies on self-reported responses, which may be affected by recall or response bias.
- The analysis is descriptive and uses frequencies and percentages; no inferential statistical testing was conducted.
- The study examines consumers' perceptions and experiences of AI-based digital marketing rather than experimentally isolating the effect of AI from other digital marketing factors.
- The respondents were from different age groups, but the available dataset does not provide a sufficiently detailed demographic breakdown to support subgroup comparisons.

8. Conclusion

The study examined consumer experiences and perceptions of AI-based digital marketing using primary survey data from 35 respondents. The findings indicate that personalized advertising is a common part of respondents' online experiences and that recommendations can influence reported purchasing behaviour. A major finding is that 91.4% of respondents sometimes or always notice advertisements related to products they previously searched for or viewed. In addition, 62.9% reported that they had at least sometimes purchased something because of an online recommendation that they had not originally searched for. The influence of recommendations and advertisements is further reflected in unplanned purchases, with 82.9% reporting that these sometimes or frequently make them buy more than they initially planned.

At the same time, the study highlights privacy and trust concerns. A substantial proportion of respondents sometimes or often felt that advertisements knew too much about them, while more than half were unsure whether apps and websites used their personal data safely for advertising. The findings therefore suggest that the perceived usefulness of AI-based personalization needs to be considered alongside privacy, transparency, and consumer trust.

The study is limited by its small sample and descriptive design. Its findings should therefore be understood as indicative of the surveyed respondents rather than as a general representation of all consumers. Future studies could use larger and more diverse samples and apply statistical techniques to examine relationships among personalization, trust, privacy concerns, and purchase intention.

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