

OPEN ACCESS

Volume: 13

Special Issue: 3

Month: August

Year: 2025

P-ISSN: 2321-788X

E-ISSN: 2582-0397

Citation:

Moses, D. Syntia, and Vanitha Malarvizhi. "An Analytical Study of AI-Driven Digital Marketing Perception and Its Influence on the Purchasing Decisions among College Students." *Shanlax International Journal of Arts, Science and Humanities*, vol. 13, no. S3, 2026, pp. 57–62.

DOI:

<https://doi.org/10.34293/sijash.v13iS2-Aug.10433>

# An Analytical Study of AI-Driven Digital Marketing Perception and Its Influence on the Purchasing Decisions among College Students

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## Abstract

*The paper focuses on the concept of student reaction and perception towards the use of digital marketing practices involving artificial intelligence (AI) among college students in Madurai. It will describe the demographic attributes of such digital consumers and identify their preferred AI-based marketing platforms and evaluate the impact of AI-based marketing on their buying behaviors, especially following the COVID-19 pandemic. Using a quantitative research design, 275 college students were a sample of the study, whose data was collected using a structured questionnaire. The SPSS was used to carry out the analysis, where descriptive statistics, factor analysis and Chi-square have been applied. Findings suggest that the students have a high affinity towards mobile AI platforms particularly smartphones and AI-enabled online communities. In addition, the researchers concluded that there is a strong correlation between occupational status of students and their selection of AI marketing channels, thus the null hypothesis was rejected. The findings can be useful in informing the marketer to develop focused, AI-driven, mobile-first marketing strategies that meet the interests and behaviors of young adults in Madurai.*

**Keywords:** AI-based digital marketing, College Students, consumer perception, buying decision, Madurai.

## Introduction

The recent years have witnessed the trend of artificial intelligence gaining more presence in the marketing practice. Since chatbots can help answering questions, recommendation systems that determine what a user sees on their feed, AI has become a useful tool in everyday consumer-specific communication. These tools are not abstract technologies to the younger generation, especially to college students, but they are used daily. It is highly important to learn how they perceive these interactions, as well as how these tools affect their decisions, both academically and in business.

## Literature Review

The recent years of research indicate the increased use of AI in digital marketing. According to researchers, such tools enable firms to engage audiences in a more accurate and cheaper way than the traditional campaigns.

As an illustration, personalization and predictive analytics are becoming more popular in determining what a consumer will see in their feed, and automation will be employed to lessen when it comes to handling the more mundane marketing activities.

These developments are efficient but they also lead to the questions of consumer confidence, confidentiality, and the boundaries of automatic manipulation.

Kumar and Devi (2022) discovered that AI-based applications like Instagram and Facebook influence the decisions that teenagers in Madurai make about purchases to a great extent. The authors concluded that such aspects as AI-generated suggestions, promotions that are based on an algorithm, and interactive content can significantly enhance user engagement.

Patel and Srinivasan (2022) emphasized the fact that the level of awareness regarding AI-driven digital marketing tools is elevated, yet the conversion level is moderate. The advantage of AI, including chatbots and auto suggestions, is important.

In their study in Bangalore, Sharma and Thomas (2023) highlighted the AI-driven capabilities of Instagram towards influencing youths to purchase. AI solutions like artificial ranking of the content and influencer engagement were essential, said to be.

In Ramanathapuram, Rani and Meenakshi (2023) examined how AI-driven influencer marketing works. They discovered that College Students had more trust in AI-curated or a social media influencers content than traditional advertising.

According to a report by Das and Karthik (2024), AI-driven personalized marketing has shown to be highly effective in improving brand loyalty as well as churn reduction. Nevertheless, the role of AI regarding the privacy of consumers is still a cause of concern.

Joseph and Abraham (2024) addressed ethical issues of the marketing strategies based on AI. They warned that although AI is more efficient, it can also create ethical issues including consumer manipulation and decision overload.

Numerous literature concurs that digital marketing technologies such as personalized advertisements, content recommendation, influencer marketing, and automatic responses developed on AI are significant factors that inform the way youths think and make purchasing decisions particularly college students. Although studies have been conducted in such locations as Madurai and have revealed positive results with platforms, such as Instagram and Facebook, the majority of them focus primarily on general awareness and engagement. The only thing lacking is a more thorough investigation that would affordably relate particular AI tools to actual purchasing patterns of students in colleges particularly in semi-urban regions. In addition, there are few studies that have examined the influence of issues such as trust, ethics and privacy on such relationship. This research is set to address that gap by examining the effects of AI-based marketing on purchasing behavior among college students, as well as examining the extent to which they trust these technologies and potential ethical issues associated with it.

## Objectives

The objectives of the study are as follows;

- To outline demographic profile of digital consumers.
- To determine which of their most favorable AI-enhanced digital channels.
- To compare how AI-based digital marketing affects consumer buying behavior.

## Methodology

The research involved quantitative survey approach whereby a random sample of 275 students was used, and this sample represented Madurai colleges. The questionnaire used was a structured one, which contained demographic information and questions regarding the use of digital platforms by the respondents. The questionnaire had 15 questions that assessed the platform use, the preferences, and the perception of the AI-based marketing on a 5-point Likert scale with a range of strongly disagree to strongly agree. The reliability of the questionnaire was tested by the pilot test. Data has been analyzed with SPSS (version 24): descriptive statistics gave a general picture of the information and Chi-square tests were utilized to compare the relationship between background variables and channel preferences. Statistical tools used below were:

**Descriptive Statistics:** To generalize the demographic characteristics of the sample.

**The Chi-square Test:** To establish whether the relationship between demographic variables and digital channel preferences is significant.

## Results and Discussion

The research discloses the demographic make-ups of different groups and they are being tabled.

### Demographic Characteristic of the College Students

Table 5.1 gives the demographic analysis of the 275 College Students.

**Table 5.1 Demographic Profile of the College Students**

Demographic Variables	Category	Frequency	Percentage (%)
Gender	Male	133	48.36
	Female	142	51.64
Age	Under 18 years	108	39.27
	19 – 21 years	122	44.36
	22 – 24 years	40	14.54
	Above 24 years	5	1.82
Occupation (if any)	Student only	129	46.91
	Part-time job	87	31.64
	Family business/ part time business	59	21.45
Education Level	Diploma/ Vocational Course	5	1.82
	Undergraduate	134	48.72
	Postgraduate	104	37.82
	MBA/ MCA/ Ph. D	32	11.64

**Interpretation:** Demographic analysis shows that most of the respondents were young Female College Students (51.64%), aged of 19 -21 (44.36%), and studying (46.91%). Majority of them are undertaking their Undergraduate Courses (48.72%). This population profile implies that the results of the study could be considered relevant to the highly educated population of young adulthood, where the proportion of both the College Students only and the College Students doing part-time job, which are the prior groups of digital marketers, is high.

### Preferred AI-Driven Digital Channels

The survey was done asking College Students to rank their preferred AI Driven digital marketing channels. The frequency and percentage have been displayed in Table 5.2.

**Table 5.2 Choice of Digital Channels**

Digital Channels	Frequency	Percentage (%)
Smartphone (AI Apps, Chatbots, Recommenders)	65	11.9
AI-based Social Media (Instagram, Facebook Algorithms)	64	11.7
Search Engine Marketing (AI Ranking, Suggestions)	62	11.4
AI-Enhanced Email Marketing	59	10.8
Other AI Tools (Blogs, E-books, AI Curated Content)	58	10.6
Online Videos (AI-driven YouTube Recommendations)	55	10.1
AI-enabled Digital Outdoors (Smart Billboards)	53	9.7
Online TV Platforms (AI-driven Content)	48	8.8
Banner Ads (AI-targeted)	41	7.5

Interpretation: In response to the question about the most desired digital marketing channels, students have listed mobile apps and social media as the main ones to be considered the most effective. Search engines and email were close behind and outdoor digital advertisements and banner ads were lower. This implies that students appreciate platforms that are novel in terms of immediacy, interactivity and to some extent personalization but still use conventional advertising platforms in the mix. mobile based platforms and online communities. Smartphones and Online Communities were the media that received most responses meaning that these are the most appropriate media that can be used to reach the target demographic. This explains the significance of mobile-first and social media-centric marketing.

### Hypothesis Testing: Chi-square Test

A Chi-square test was carried out to determine the relationship between the demographic profiles of the respondents and the choice of digital marketing channels. The primary hypothesis was:

Ho: The demographic characteristics did not significantly relate to the choice of digital channels in which to buy the products.

The findings of the Chi-square test are provided in Table 5.3.

**Table 5.3 Hypothesis Testing: Chi-square Test**

Variable	Chi-Square Value	Degrees of Freedom (df)	P-value	Interpretation
Gender vs. AI Channel Preference	10.22	8	0.249	Not Significant

Age vs. AI Channel Preference	21.56	24	0.607	Not Significant
Occupation vs. AI Channel Preference	35.81	16	0.003	Significant
Education vs. AI Channel Preference	38.49	24	0.032	Significant

Interpretation: The results of the Chi-square test demonstrated that occupation and the level of education had a statistically significant impact on the choice of AI-driven marketing channels ( $p=0.003$ ). Besides, educational level of College Students correlates with their choice of AI-driven channels significantly ( $p=0.032$ ). Gender and age were other demographic factors that do not show a similar relationship with channel preference. The occupation results indicate that occupation or the job or student status of a person is a major factor in the decision making channels that a person uses to make their purchase decisions hence nullifying the null hypothesis on occupation and education level.

### Conclusion

The paper has outlined the demographic information and the preferred AI-based digital platforms among college students in Madurai. Results showed that there were significant correlations between some demographic characteristics namely occupation and education level and their decisions on marketing platforms using AI. To effectively target these populations of students, the research will conclude that the use of AI-based marketing activities is relevant to student buying behavior especially via mobile applications and social platforms. Channel preferences were found to be influenced by occupation and education level rather than age or even gender. The implications of such differences on practitioners are that it is crucial to use segmented campaigns taking such differences into consideration. Simultaneously, thoughtful utilisation of AI is also vital transparency, privacy respect, and effective communication are bound to continue playing as important roles as technical efficiency as a long-term engagement factor.

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