



## A study on the impact of AI on consumer purchase behaviour with special reference to Coimbatore city

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### Abstract

Artificial Intelligence (AI) is an area that is fast growing in the business world. It has already been applied in many areas for instance commerce and everyday life. With AI in business, the industry will rely on faster cheaper, and more accurate marketing techniques. The present investigation is undertaken to find the relation between AI and consumer buying behaviour and secondly to know the difference between customer buying behaviour based on them demographic. The researcher has employed Descriptive statistics, Correlation, Cronbach alpha, Anova, Mann-Whitney Test, and Kruskal-Wallis Test and has utilized SPSS for these tests. Results concluded to have a significant relationship between AI and consumer buying behaviour. It was also concluded that there is a difference between consumer buying behaviour and gender & monthly income. These were supported with hypothesis testing.

**Keywords:** Artificial intelligence, consumer behaviour, purchase

### Introduction

Increasing the use of Artificial Intelligence (AI) technology will enable businesses to deal with large amounts of data in real-time. AI can use technologies such as natural language processing, genetic algorithms, and deep learning to train machines to recognize patterns from large amounts of data. AI includes systems that think reasonably and resemble humans AI can be well-defined as a technology that can perform tasks that require intelligence to perform when performed by humans. Introducing AI into various marketing processes opens up ample openings for marketers & raises interest among practitioners in their different applications Therefore, marketing scientists are also developing more and more research in this area in a fast-growing retail environment, retailers need to see what and how they are doing it, and how they are making their goods. The purchasing complex uses technology, to become smarter, provide satisfaction to customers.

### Objectives of the study

1. To know the demographic profile of respondents.
2. To understand the role of artificial intelligence in advertising.
3. To identify the relationship between artificial and consumer buying behaviour.

### Scope of the study

The study aims at understanding the concept of AI and its role in advertisement. The study tries to analyse how marketers can use AI in advertising to increase the effect of advertisement.

### Limitation of the study

1. The study was conducted in Coimbatore city.
2. The period of study is limited.
3. The sample size is limited to respondents.

### Statement of the problem

The problem statement of Artificial Intelligence (AI) refers to the specific issue or challenge that AI systems are designed to solve. It could be anything from natural language processing to computer vision tasks or even complex decision-making problems. Understanding the problem statement of Artificial Intelligence is important because it helps to define the objectives and scope of an AI project. It allows developers and researchers to design and implement AI systems that are tailored to address specific problems effectively.

### Review of literature

1. Shyna K and Vishal M (2017) Studied "Artificial Intelligence in E-Commerce" Author features the job of Artificial Intelligence reasoning in internet business and its application in various zones of online business. Computerized reasoning has the incredible capacity to procure and examine enormous volumes of information and give choices to activity. Web based business is currently receiving this innovation to recognize designs dependent on perusing, buy history, credit checks, account data and so on. This information gathered at that point structure the premise of making redid suggestions for every customer. Google and Microsoft are as of now putting into new activities.
2. Meenakshi Nadimpalli (2017) Discussed about "Artificial Intelligence – Consumers and Industry Impact". Author talks about the view of buyers with respect to Artificial Intelligence reasoning and outlines its impact in retail, healthcare, crime investigation, and Employment.
3. Savica Dimitrie ska, Stankov ska and Efremova (2018) Studied artificial Intelligence and Marketing". Author found in the next years, advertisers can expect more noteworthy AI sway, through increasingly wise pursuits, more astute promotions, refined substance conveyance, depending on bots, kept getting the hang of forestalling extortion and information penetrates,

- assessment investigation, picture and voice acknowledgment, deals figure, language acknowledgment, prescient buyer division, and so on.
4. S Balasubramaniam (2018) studied “Artificial Intelligence”. Author examines at the different features of what is AI, and how if at all will it sway innovation, employments, economy and fate of humanity as we get progressively associated and advanced in varying backgrounds.
  5. Girish Punj (2012) studied “Consumer Decision Making on the WEB: A Theoretical Analysis and Research Guidelines”. Author studied that customers can possibly settle on better quality choices while shopping on the web. In any case, regardless of whether such potential is being acknowledged by most customers is an uncertain issue. Subsequently, the motivation behind this exploration is to see how (1) certain highlights of electronic situations favourably affect the capacities of buyers to settle on better choices, and (2) recognize data preparing procedures that would empower customers to settle on better quality choices while shopping on the web.

**Research methodology**

The research is based on primary and secondary data to understand the scope of using consumer purchase among public and to make suggestions for the study of the impact of using consumer behavioural. The primary data was collected through a questionnaire from a random sample of 150 people in Coimbatore city.

**Primary data**

Primary Data is the process of collecting original data from your target audience or market, usually through surveys, interviews, focus groups, or experiments.

**Secondary data**

Secondary data refers to the date collected form already published sources in this study it is obtained from external sources, like websites, magazines, journal.

**Data analysis**

By analysing large amounts of data on consumer behaviour and preferences, AI can be used to personalize the customer experience. For example, an e-commerce website can use AI to make personalized product recommendations to individual customers based on their purchase history and browsing behaviour.

**Sample size**

150 respondents residing in Coimbatore city were selected for the study.

**Area of the study**

The area of study is through Coimbatore city.

**Tools used**

1. Simple percentage
2. Chi-square

**Simple percentage**

Simple Percentage Analysis refers to a special kind of rate or percentage used in making comparisons between two or more series of data. A percentage is used to determine the

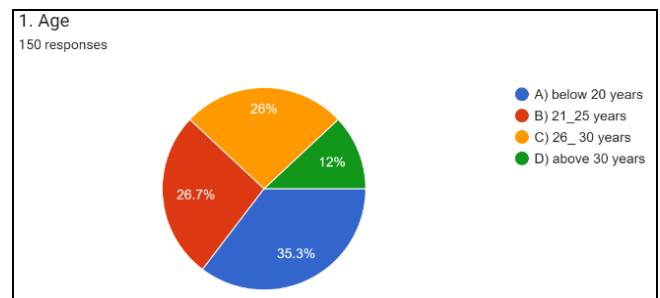
relationship between the series. One of the most frequent ways to represent statistics is by percentage. Percent simply means "per hundred," and the symbol used to express percentage is %.

$$\text{Simple Percentage} = \frac{\text{No of respondents}}{\text{Total no of respondents}} \times 100$$

**Data Analysis and Interpretation Percentage analysis**

**Table 1:** Age of the respondents

Age (years)	Respondents	%
Below 20 years	53	35.3%
21-25	40	26.7%
26-30	39	26%
Above 30	18	12%
Total	150	100%

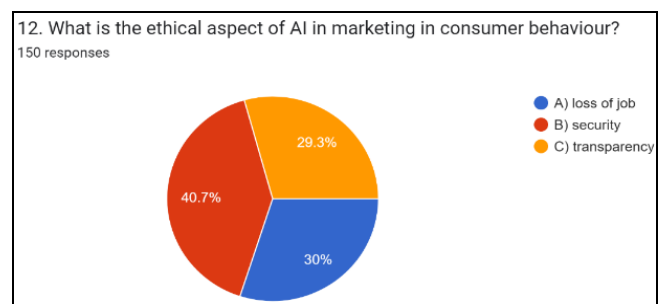


**Interpretation**

It is interpreted that the majority (35.3%) of the respondents are in the age group of below 20 years.

**Table 2:** Ethical aspect of AI in marketing in consumer behaviour

Ethical aspect of AI	Respondents	%
Loss of job	45	30%
Security	61	40.7%
Transparency	44	29.3%
Total	150	100%



**Interpretation**

It is interpreted that ethical aspect of AI in marketing in consumer behaviour the majority (40.7%) of the respondents are between Security.

**Chi-square analysis**

Chi-square analysis formula:  $\chi^2 = \sum (O_i - E_i)^2 / E_i$ .  
Degree of freedom = (r-1) (c-1).

**CHI-SQUARE**

The chi-squared test is done to check if there is any difference between the observed value and expected value.

**H0:** There is no significant relationship between frequency of Income.

Particulars	₹1001-₹2000	Above ₹2000	Below ₹500	Grand Total
10000-15000	20	23	18	61
15000-20000	28	18	12	58
20000-30000	8	22	9	39
Grand Total	48	63	39	150

O	E	O-E	(O-E) <sup>2</sup>	(O-E)/E
28	25.7	2.3	4.5	0.2
12	12.9	-0.9	-2.8	-0.1
31	34.4	-1.4	-1.7	-0.1
15	14.5	0.5	1	0.1
9	7.3	1.8	3.5	0.5
16	18.3	-2.3	-4.5	-0.2
7	11.6	-4.6	0.5	0.8
7	5.8	1.2	-4.2	0.4
18	14.6	3.4	3.70	0.5
8	6.2	1.8	6.8	0.6
1	3.1	2.1	2.4	-1.4
8	7.8	0.2	-9.2	0.1
			Total	-0.3

**Findings**

- The majority 35.3% of respondents are from the age below 20 years.
- The majority 56% of the respondents are Male.
- The majority 38% of respondents are Professional.
- The majority 52 % of the respondents are Married.
- The majority 42% respondents are income between ₹15,000-₹20,000
- The majority 53.3% of the respondents are seeing internet ads yes.
- The majority 54.7% of the respondents are prefer online.
- The majority 52% of the respondents are buying product direct from a chatbot online is No.
- The majority 50.7% of the respondents are online shopping Yes.
- The Majority 46% of the respondents are it will change my business of AI enterprise.
- The majority 44% of the respondents are Improved customer satisfaction.
- The majority 40.7% of the respondents are between Security of consumer behaviour in AI.
- The majority 51.3% of the respondents are in between Budget complaints.
- The majority 46.7% of the respondents are Neutral of the different product and services.
- The majority 55.3% of the respondents are Agree on purchase.
- The majority 37.3 of the respondents are development of Ai technology in Computer reference.
- The majority 53.3% of the respondents are personalised content in advertising Yes.
- The majority 48% of the respondents are Reduce Search Time.

**Suggestions**

**Suggestions for Future Work**

The following section contains some suggestions that may create numerous extensions and expansions to the current research. First of all, the current research focuses on the benefits that AI can introduce to both customers and brands,

while the obstacles of AI could be a suggestion for future research.

**Conclusion**

The digital transformation of retail activities becomes a condition to compete in dynamic markets. One of these technologies is Artificial Intelligence (AI) that enables marketers to better understanding and targeting consumers. AI radically changes the nature of marketing; AI entails significant changes in the way that consumers interact with companies. Therefore, marketers need to prepare themselves for the changes come in the era of Artificial Intelligence, marketers need to understand in-depth, how they can use AI in their marketing activities to predict and change consumer behaviour along the consumer journey.

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