



AN EMPIRICAL STUDY TO ASSESS THE INFLUENCE OF AI TECHNOLOGY ON THE CONSUMER BEHAVIOUR IN THE WESTERN SUBURBS OF MUMBAI

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Abstract

Artificial intelligence (AI) has enormous potential benefits for marketing. It facilitates the spread of information and data sources, improves software's capacity for managing data, and allows for the development of intricate and sophisticated algorithms. Artificial Intelligence is revolutionizing brand-consumer communication. The type of website and business determine a lot about how this technology is employed. Marketers may now quickly respond to client needs with a more customer-focused strategy. AI is able to quickly determine which channel to employ at any given time and what material to target clients with because it develops and collects data using algorithms. Users feel more at ease and are more inclined to buy what is given when AI is used to tailor user experiences. AI methods can also be used to determine target audience expectations and assess competitors' marketing campaigns' efficacy. Machine learning (ML) is a type of artificial intelligence that makes it possible for computers to study and interpret data without the need for explicit programming.

Keywords: Consumer Behaviour, Artificial Intelligence, Demographics, Profitability, Marketers

Introduction

Artificial intelligence refers to the technological advancements that allow computers or other devices with human-like intellect to carry out tasks like those executed by the human brain. In the modern world, artificial intelligence (AI) and technological advancements are utilized in practically every facet of daily life. It has been utilized in conjunction with digital marketing to facilitate firms' timely and effective communication with customers. "Marketers can process massive amounts of information, conduct customers' expectations" (Farrokhi, et.al. 2020). Using AI, it has been possible to guarantee customer satisfaction (Jain & Aggarwal, 2020). AI-based digital marketing strategies include advanced analytics, machine learning, and industry-specific customer insights.

There are two types of AI: artificial intelligence that is symbolic and seeks to imitate human thinking using complex algorithms and logical guidelines (Li,et.al., 2015). The second category is called "instinctual artificial intelligence," which aims to mimic real biological processes by using simple mathematical models to infer intelligent behaviors using sequences of self-organizing, more basic structural components ("behavioral artificial intelligence").

Nowadays, it's rare to find a location where people and robots don't coexist (Füller, et.al. 2022). We think we are always one step ahead of the competition. Science fiction is the only place where human traits like ingenuity and empathy are shown, even though automation is capable of greater speed and intelligence (Hildebrand, et.al., 2019). On the other hand, it is theoretically feasible for machines to evolve via experience and learning, much as the human brain does (Verma,et.al., 2021).

Review of Literature

Artificial intelligence is a crucial tool for marketers, as it eliminates human errors like delays, biased approaches, and other little problems. (Katyal, 2019). Marketers are familiar with buzzwords such as automation, big data, pattern recognition, artificial intelligence, and artificial neural networks. These are some of the terms and methods that helped to shape modern marketing. Chatbots powered by artificial intelligence, such as Apple's Siri, Amazon's Alexa, Google Assistant, and Microsoft's Cortana, are intended to converse with users and provide assistance by providing a variety of information and attending to their other information demands. These advancements have made it simple for businesses to attain excellent marketing outcomes (Madaio, et.al., 2020).

A recommendation is an example of artificial intelligence in marketing. E-commerce businesses, blogs, and a number of social media and online media websites employ artificial intelligence to evaluate user behavior online and provide product and content recommendations to boost conversions and time spent on their websites (Bala & Verma, 2018). Additionally, ad targeting takes into account the client's devices, interests, and habits prior to displaying to them as an advertisement. By customizing advertisements to the target population, marketers aim to maximize their impact. Online, we frequently see adverts for products we've looked at before or from websites we have recently visited. Due to the numerous elements that must be taken into account before selling, it becomes challenging to convey diverse messages to people with varied interests (Davenport, et.al., 2020).

Artificial Intelligence on Digital Marketing: First, we need to examine the key subfields of artificial intelligence (AI) in order to comprehend how AI seems to contribute to digital marketing strategies (Brynjolfsson,et.al., 2017). Next, we look at each of those fields individually to see if any of them use digital marketing strategies. This would illustrate how research on digital marketing is impacted by artificial intelligence (AI). There has been discussion on several facets

of artificial intelligence (AI) research. Among many other applications, artificial neural networks have been employed in time series prediction, brain modeling, and classification processes. Evolutionary computation includes techniques such as genetic programming and algorithms (Moore, et.al. 2022).

Examples of vision include object identification, conceptual picture interpretation, and other image processing techniques (Paschen, 2019). The term "robotics" refers to autonomous exploratory processes, intelligent control, etc. Expert systems include instructional systems, management information systems, and so forth. Vocal recognition, the production process, etc. are all included in recognition systems. Planning includes things like game play processes and other things, as machine translation pointed out. Machine learning techniques include decision tree learning, data mining, and others.

Objectives of the Study

1. To check the relevance of AI in social networking
2. To understand the impact of Demographic variables on consumer behaviour
3. To highlight the influence of AI on Consumer Buying Behaviour

Hypothesis of the Study

It is hypothesized that –

Hypothesis 1

There is no significant relationship between the Demographic aspects and buying behavior of the consumers.

There is a significant relationship between the Demographic aspects and buying behavior of the consumers.

Hypothesis 2

There is no significant relationship between the implementation of AI technology and buying behavior of the consumer.

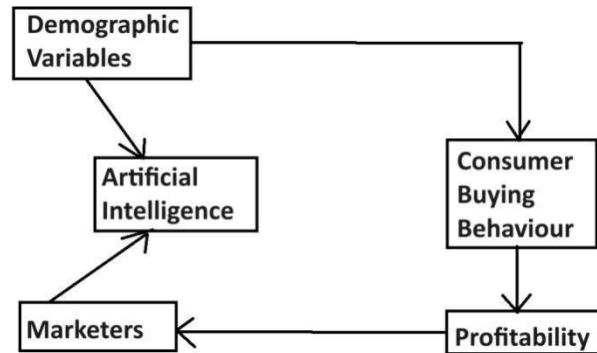
There is a significant relationship between the implementation of AI technology and buying behavior of the consumer.

Research Methodology

This is a cross sectional study conducted with both primary and secondary data. Primary data is obtained through online mode, where the data was gathered by circulating the link of structured questionnaires amongst the respondents. Total 300 respondents in the age category ranging from 18 to 50 years were interrogated for the study. Convenience sampling method was used. The empirical and descriptive research design was adopted. The scope was confined to the citizens from western suburbs of Mumbai. The demographic parameters included – age, gender, educational qualifications, income status and awareness of AI technology. The data was analyzed using advanced excel options and conclusions were drawn.

Conceptual Model for the Research

The role of Artificial Intelligence and Machine Learning is predicted to be significant in all walks of life. From education to research to marketing, Artificial Intelligence is found influential in targeting its consumers. The present study focuses on the way Artificial Intelligence influences consumer behavior. With this the researcher has drawn the following model to denote the linkage between the key concepts.



Source: Drafted by the researcher

Figure 1 shows the impact of demographic variables on the buying behavior of the consumers and the mediating role of Artificial Intelligence in influencing the buying behavior. Further the model also explains the interconnectivity between the Buying Behaviour, Profitability and tendency of the marketers in adoption of Artificial Intelligence model in the process of marketing.

Factors influencing Artificial Intelligence on digital Marketing:

Personalized experience: Personalized gifts, notes, or exclusive deals are appreciated by all customers. Every company wants to satisfy its clients by giving them exactly what they desire. Encouraging the gathering of consumer data for this reason is very important, as is making investments in artificial intelligence. Businesses can customize their own products as needed by using machine learning to analyze customer behavior trends.

Instantaneous Response: Businesses that use artificial intelligence can better keep their customers' loyalty. Consumers favor goods or services that promptly assist in resolving their problems. AI chatbots, for instance, lets users respond and solve problems quickly. Certain chatbots possess additional senses, like speech or touch. Customers enjoy this since it gives them an almost direct experience and makes them feel as though they are speaking with a computer. The majority of the time, these chatbots are available around-the-clock, which can raise client satisfaction levels.

Predicting Customer Behavior: AI is able to anticipate both current and potential customers' actions in addition to personalizing customer happiness. Artificial Intelligence can employ data management platforms (DMPs) to collect user data from the internet. This isn't just about one person visiting your website. This will enable the business to target future clients, create more successful marketing campaigns, and tailor its services to meet the needs of its current clientele. The process of AI gathering, analyzing, interpreting, and assessing data is constantly changing.

Over time, the accuracy in this field will allow a firm to forecast sales and ROI and succeed in their endeavors.

Improve the Search Sessions: Users have benefited immensely from technological advancements, as seen by their apparent increased intelligence. Consumers are searching for a range of instruments or programs that can connect them to superior goods and services. Consequently, companies need to incorporate AI into their plans. AI can be used to identify trends in the behavior of customers. These days, an essential component of every AI technology is voice recognition.

Advertising: Businesses mainly rely on advertising to promote their goods and services, both online and off. Since technology may be utilized to totally eliminate the majority of manual labor, this looks like a significant factor. For instance, customer data is quite helpful for creating customized marketing. The AI technology determines the consumers' areas of interest by analyzing all the data that has been gathered from them. This gives businesses' advertisements a structure that makes it simple for them to align with the preferences of potential clients. Businesses benefit from this by having an advantage over rivals in the market.

SEO: SEO stands for search engine optimization. It suggests having one of the best possible scientific editions. When it comes to search engine marketing, or SEO, a lot of related scientific research focuses on fuzzy intelligent systems, evolutionary computations, machine learning, and web crawlers for the purpose of reading, gathering, and analyzing website data. All of these techniques are used to improve website page ranking positions in search engine results by integrating ranking factors through an intelligent learning model.

Applications of Artificial Intelligence in Digital Marketing:

In the past, digital marketers were hesitant to use artificial intelligence (AI) in their work, but as AI has developed and produced results, it has become clear that AI will significantly alter the marketing landscape.

Content Generation: With data input into coding, machines may now generate content entirely from scratch. To save time and money, they can be useful. Using data and information, AI is able to generate news articles and reports. Many of the biggest news organizations today, including BBC News, The New York Times, The Washington Posts, and others, use automated journalism. Facebook also uses AI to weed out false news.

Product Recommendation and Content Curation: These involve not only producing content but also assisting in the recommendation of goods and services according to the search, interest, and actions of the user. It is reasonable to assume that artificial intelligence can comprehend the behavior of the intended audience and know better than you how to locate the appropriate goods or services that you are now considering. Netflix suggests content to you according to your interests. Artificial intelligence (AI) technology is often utilized to provide users with personalized

content recommendations that they would find interesting. Examples of these recommendations include products that are comparable to Amazon and that suggest Y if X is purchased.

AI Chatbot: We are aware of automated responses that companies employ to answer consumer questions and to gather data, informing the public about new goods and services. They can keep their clients' data for later use and provide 24/7 customer service. Furthermore, chatbots have a plethora of uses, and the fusion of chatbots with AI and machine learning is the next big thing.

Website Development: Marketers still have your website without the assistance of a programmer or designer by using Grid, which leverages artificial intelligence to build it for you depending on the data you provide, such as content, calls to action, graphics, and so on. They can quickly and affordably make the website appear professional in a lesser time.

Predictive analysis: AI makes likely-looking future predictions based on data. All that is involved in predictive analysis is the utilization of data, machine learning, and statistical algorithms.

Digital advertising: To ensure optimum success, artificial intelligence is frequently employed in digital advertising. It is used to deliver the greatest experience possible across platforms like Facebook, Google, and Instagram. Examining user data, including gender, age, interests, and other details, to display advertising that is appropriate for them. Marketers can identify and even forecast trends with the use of AI technologies. As a result, they can take calculated decisions; firms may cut down on wasteful digital advertising expenditures and make sure their money is working to its fullest potential.

Online search engine: Since content is now found differently, marketers must adapt their content creation and modification strategies. Google's algorithm, voice search, and other AI advancements are examples of recent improvements. Other advancements include Google Home, Apple's Siri, Microsoft's Cortana, and Amazon Echo, which can all conduct searches with just a button push or voice command.

Email marketing: Using AI, brands are personalizing emails to reach their target demographic. They can now tailor material to the interests and behaviors of their customers. Through the analysis of millions of data, machine learning, also known as autonomous learning, can now determine the optimal time of day and recommended frequency of contact with the user. They can now tell which titles and subjects generate the most clicks, as well as which material grabs the most attention.

Data Analysis and Findings

Table 1: Demographic Variables

Category	Sub-Category	Number of Respondents	Percentage
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1. Gender	Male	175	58.3
	Female	123	41.0
	Others	2	0.7
2. Age	18 to 30 years	63	21.0
	31 to 40 years	111	37.0
	41 to 50 years	126	42.0
3. Educational Background	Arts	42	14.0
	Science	81	27.0
	Commerce	83	27.7
	Engineering	23	7.7
	Medicine	16	5.3
	Technology	29	9.7
	Others	26	8.7
4. Gross Annual Family Income	Less than 5 lacs	63	21.0
	5 to 10 lacs	114	38.0
	10 to 20 lacs	84	28.0
	20 lacs and above	39	13.0
5. Marital Status	Single	162	54.0
	Married	124	41.3
	Separated	12	4.0
	Widow	2	0.7
6. Awareness of AI technology	Yes	277	92.3
	No	17	5.7
	Partial	6	2.0
7. Accessibility to technology and internet	Yes	282	94.0
	No	18	6.0

Source: Compiled by author from Primary data

Table 2: Testing of Hypothesis

ANOVA					
	Sum of Squares	D F	Mean Square	F	sig.
Impact of Demographic variables on Consumer Buying Behaviour	2.058	5	2.058	2.25 9	0.019 8
Impact of AI on Consumer Buying Behaviour	2.829	4	0.721	2.98 2	0.035 2

The above table shows that there is significant difference in the mean square. Null Hypothesis is rejected in both the cases as the significance value is lesser than 0.05. It means that there is a

significant relationship between the Demographic aspects and buying behavior of the consumers and even between the implementation of AI technology and buying behavior of the consumer.

Conclusion

Artificial intelligence is rapidly changing the technical landscape for businesses through the use of big data, machine learning, and ideal solutions. Organizations modify their operational procedures to enhance their agility, efficiency, and competitiveness. New marketing opportunities have always been generated by technological improvements. Artificial intelligence will change how people connect with information, technology, businesses, and services, much as the advent of television announced a new era of really mass advertising and attainment and the Internet and mobile phones heralded a new degree of targeting and backdrop.

Marketers are made aware of the possibility for personalization and relevance by artificial intelligence. Reach billions of people every day via search engines, Facebook, YouTube, and Google. Businesses will soon be able to create customized advertising in real time thanks to determination paired with the personalization made possible by artificial intelligence. Artificial Intelligence applications are the way of the future.

AI has the ability to tailor brand experiences, which encourages user loyalty and engagement. Marketers use language-based AI as payment processors, engagement managers, and sales tools to improve the customer experience. Instead of figuring everything out on their own, customers may now rely on chatbots to finish the shopping process. Language-based artificial intelligence (AI) is emerging rapidly. It "learns" from previous interactions and makes the necessary adjustments to provide an even better experience going forward. It can assist advertisers by revealing the kinds of content that individuals are interested in reading. It can now collect, analyze, and personalize material with the help of AI through observation and data collection. This digital marketing technology helps marketers make the most of their efforts when it comes to email campaigns. Email marketing is one of the digital marketing services that ensures relevant conversion strategies and assists in reaching the target audience at the right time. Data analysis is artificial intelligence's main advantage in marketing. Marketers will be able to extract useful, actionable insights from massive amounts of data analysis by utilizing this technology.

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