

An Analysis of Artificial Intelligence Implications and its Impact on Marketing. A Systematic Review

Simerjeet Singh Bawa¹, Kishore Kunal², Kismat Kaur³, Jyotsna Sharma⁴, Vishal Srivastava⁵, Prerna Tikku⁶

¹Professor, Chitkara School of Business, Chitkara University, Punjab

²Professor, Loyola Institute of Business Administration, Nungambakkam, Chennai.

³Associate Professor, Chandigarh Business School of Administration, Chandigarh Group of Colleges, Landran, Mohali, Punjab.

⁴Associate Professor, Department of Management Studies and Commerce, RIMT University, Mandi Gobindgarh, Punjab.

⁵Associate Professor, School of Commerce, Jain University, Bangalore, Karnataka.

⁶Assistant Professor, Chandigarh Business School of Administration, Chandigarh Group of Colleges, Landran, Mohali, Punjab.

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Abstract:

Artificial intelligence (AI) is being used by marketers to track and forecast the future purchasing behaviour of their target audience and to gain further insights into their journey. The three areas of artificial intelligence that best demonstrate its potential are machine learning, big data, and resilient solution. Big data allows marketers to quickly and manually sort through enormous amounts of data and combine it. Businesses can use this information to ensure that the correct message is sent through the right channel to the right target at the right time. Marketers can use machine learning (deep learning) to analyse and interpret vast amounts of data. They have the ability to predict consumption trends and keep an eye on, assess, and analyse consumer spending and behaviour. Effective decision-making proves that we live in a time when robots can think like humans and have a complete comprehension of the universe. Automated systems have the ability to promptly identify concepts and trends throughout diverse datasets, interpret human emotions and actions, and provide pertinent customer support. They have the ability to quickly predict the decisions and actions of their clients and use that knowledge to solve issues down the road. More innovative and intelligent ads, reliance on bots, better content delivery, continuous learning, prevention of fraud and data breaches, sentiment analysis, voice and image recognition, predictive customer services, sales forecast, customer segmentation, etc. are just a few of the ways that marketers can expect a greater impact from AI in the coming years. The study aims to explore how artificial intelligence has changed the marketing environment overall, as well as to better comprehend the function that AI plays in it.

Keywords: Artificial Intelligence (AI), Big Data, Machines, Marketers, Consumer Behaviour, Solutions.

Introduction

Artificial Intelligence, which includes capabilities like image and voice recognition, semantic search, decision-making, and machine learning techniques, is the replication of human intelligence processes by computers. The next big thing, artificial intelligence, or AI, is predicted to completely upend digital technology.

The "big data" is changing how people work, live, and conduct business, as well as how they shop and purchase movie tickets. Each piece of data is divided into segments, which are then utilised to assess how consumers think and choose products (Fu et al., 2023). One must abandon the current

antiquated and non-innovative solutions in order to seize this chance. These days, new technologies make it easy to forecast consumer trends and look more closely at the decision-making process involved in consumer purchases (Ali & Johl, 2023).

Since 2013, the investment in AI has increased at a rate that has roughly tripled, although only 20% of the market has adopted AI altogether (McKinsey, 2017). organisations that outperform their competitors financially are more likely (88%) than other organisations (57%) to think they are ready to employ cognitive computing, according to a study done by the IBM Institute for Business Value. Furthermore, they are more likely to believe that artificial intelligence will be essential for the future prospects of their company (92% vs. 63%) and that the technology is advanced enough to be economically viable (94% vs. 58%). (Ellett, John's 2017).

The digital frontier will see a increase in the use of AI, expanding the divide between leaders and laggards in a variety of sectors, locales, and businesses. Significant expenditures are being made in the sectors closest to the company's core, even if AI is being employed at every stage of the value chain. According to Peter Drucker, marketing and innovation are a company's two main responsibilities. As a result, sales and marketing are a crucial linkage with value chain and has witnessed a great adoption of AI since they produce enormous amounts of data. (McKinsey 2017).

Although AI applications are employed globally along the entire value chain, an analysis of their advantages from an Indian perspective has not yet been done. We still don't know how Indian firms are using AI in day-to-day operations or whether Indian consumers are ready for AI.

Literature Review

In the twenty-first century, almost every field has become a significant area of study, including engineering, medicine, education, science, business, marketing, accounting, economics, law, stock markets and finance (Masnikosa 1998, Halal 2003, Raynor 2000, Metaxiotis et al. 2003, Tay and Ho 1992, Zhzhikashvili and Stefanuk 2002). Keeping up with the increase of studies in the field of artificial intelligence has become difficult (Balazinski et al. 2002, Knoblock and Ambite 2001, Goyache 2003 and Cristani 1999).

Artificial intelligence as opposed to human intelligence, is the intelligence exhibited by machines. The most common definition of artificial intelligence is a system of intelligent agent machines that can efficiently finish a task by observing its environment. Norvig and Russell, 2016, define artificial intelligence as the term used to characterize machines (computers) that replicate the emotional and cognitive processes of the human mind. Because of the experts' hard work over the last few decades, artificial intelligence has advanced dramatically. Some significant advancements came from the study, such as the use of machine learning and big data analytics in a variety of contexts and industries (Han et al., 2021; McElheran et al., 2024; Polisetty et al., 2023; Alwadain et al., 2024)

AI-powered equipment is designed to be aware of its environment and react appropriately. They observe their surroundings, react appropriately, and consider what might happen in the future. For example, AI can forecast when a machine will break down based on past data. It has the ability to alert us before we act.

The market for AI is expected to reach \$80 billion by 2025, and it will have a profound impact on consumer, business, and government markets all around the world. Although there are still obstacles to be solved, customers believe AI may help develop medicine, democratise pricey services, enhance mediocre customer care, and perhaps unleash a suppressed power. Some academic optimists believe artificial intelligence (AI) will result in a future where people's talents will be increased because robots will assist humans in processing, assessing, and appraising the vast amount of knowledge that

makes up the modern world. This will free up more time for people to engage in higher-order thinking, creativity, and decision-making (Verma et al. 2021).

It's crucial to understand how people currently perceive AI, how it will change the world in the future, and what guiding principles will be required to navigate this enormous shift (PwC, 2017).

Research Objectives

This paper has the following objectives

1. To understand the concept of AI.
2. To investigate how AI improves consumer convenience, which increases an organization's sales and market share.

Research Methodology

We used a qualitative method to better understand consumer acceptance of AI in order to evaluate the influence of AI on the broader marketing environment in India. The following parameters of comparison were used in the creation of the questionnaire to align with the objectives of the study, which were to understand Indian customers' adoption of AI:

- i. A willingness to personalize services using AI.
- ii. AI's simplicity of usage
- iii. The use of AI in practice

Customer acceptance of AI is referred to as adoption, whereas service personalisation is the process of tailoring services to individual consumers' interests.

The millennial who answered the question didn't fall between the 22 and 37 age range. Millennials were chosen for the survey because they are early adopters of cutting-edge technology and will profit from it in the future. 276 replies were assessed out of the 302 comments that were received, 26 of which were outliers. Convenience sampling was used. To analyse the collected data, SPSS was utilised. The initial section of the questionnaire gathered information on respondents' age, gender, income, and frequency of internet use. Other questions measured respondents' agreement or disagreement with the use of artificial intelligence (AI) in customer support services, online stores, and virtual assistants.

Result and Discussions

1. Personalisation

By comprehending customer preferences and customising the service accordingly, AI aids in delivering a more personalised service experience. From a research standpoint, understanding Indian customers' inclination towards service personalisation is crucial before estimating the extent to which use of AI in personalisation might impact India.

Hypothesis:

H_{0A} : There is no interest in implementing AI to personalize services.

H_{1A} : There is a willingness to utilise AI for service personalization.

When creating the research questionnaire, consideration was given to the inclination of Indian consumers for a personalised shopping experience on e-commerce platforms. This was a result of the target audience's extensive knowledge with the same.

Table 1.1: Personalization Preferences Cross tabulation

	Purchases using E-Commerce website, After Recommendations		Total
	Yes	No	
Number	25	65	90
% Preferences for Personalization	27.78%	72.22%	100.00%
Total Percentage	9.19%	23.89%	33.08%
Number	36	42	78
% Preferences for Personalization	46.10%	53.90%	100.00%
Total Percentage	13.00%	15.20%	28.30%

Table 1.2: Chi - Square Test

	Val	df.	Assymp. sign. (2 - side)
Pearson Chi-Square	7.720 ^a	2	0.021

Table 1.3: Symmetric Measure

		Value	Assymp. Std . Error ^a	Approx . T ^b	Approx. Sign.
Nominal by Nominal	phi	0.167			0.21
	Crammer's V	0.167			0.21
	Contingency Coefficient	0.165			0.21

As can be seen in the above table, the majority of respondents who do not presently rely their purchases on suggestions from e-commerce websites believe that these recommendations should be more tailored to the person rather than being overly generic.

Table 2.1: Usefulness of advice offered on e-commerce websites Cross tabulation

	Attitude toward purchases made on websites offering a virtual trial		
	Neutral	Likely	Most Likely
Number	15	36	18
% Usefulness of advice offered on e-commerce websites	20.10%	48.00%	24.00%
Total Percentage	5.50%	13.00%	6.50%
Number	24	51	36
% Usefulness of advice offered on e-commerce websites	17.80%	37.80%	25.90%
Total Percentage	8.70%	18.60%	13.10%
Number	15	9	6
% Usefulness of advice offered on e-commerce websites	33.30%	20.10%	13.20%
Total Percentage	5.40%	3.30%	2.20%

Table 2.2: Chi - Square Test

	Val	df.	Assymp. Sign. (2- side)
Pearson Chi - Square	64.927 ^a	16	.000

Table 2.3: Symmetric Measure

		Val	Assymp. Std . Error ^a	Apprx. T ^b	Apprx. Sign.
Nominal by Nominal	Phi	0.488			.000
	Cramer's V	0.243			.000
	Contingency Coefficient	0.429			.000

According to the above table, respondents who are unsure about the guidance given by e-commerce websites have revealed a greater preference towards online purchasing when a virtual trial is available.

Hypothesis Results

Given a 95% confidence level, it is evident that the Cramer’s V and PHI value is significance and lesser than 0.05 in both cases. Consequently, the null hypothesis is refuted. Therefore, it can be concluded that there is a readiness to use AI to personalize services.

2. Customer Services

By automating customer support services, AI can not only help enterprises cut costs but also improve consumer convenience. From a research standpoint, it is essential to comprehend Indian consumers' comfort levels and preference for using automated customer support services before estimating how big of an impact acceptance of artificial intelligence application for Customer Support Service would have from an Indian perspective.

Hypothesis:

H_{0B}: There is no interest in implementing AI in applications for customer support services.

H_{1B}: Applications for customer support services are open to include AI.

Given the nature of the powered by AI current application for supporting customer services, which primarily use texting as a communication mode, the research questionnaire was designed using Indian consumers' preferences for the communication mode with customers support and their perceptions of the usefulness of each mode of communication.

Table 3.1: Communication Preference Cross tabulation

	Texting is easier to use than calling			
	Extremely Easy	Easy	Neutral	Difficult
Number	15	54	93	30
% of Communication Preferences	7.50%	26.90%	46.30%	14.90%
Total Percentage	5.40%	19.60%	33.70%	10.90%
Calling is easier to use than texting				
Number	18	18	21	12
% of Communication Preference	24.00%	24.00%	28.00%	16.00%
Total Percentage	6.50%	6.50%	7.60%	4.30%

Table 3.2: Chi - Square Test

	Val	df.	Assymp. Sign. (2 - side)
Person Chi - Square	19.36 ^a	4	.001

Table 3.3: Symmetric Measure

		Val	Assymp. Std . Error ^a	Appro x. T ^b	Approx. Sign.
Nominal by Nominal	Phi	0.258			.001
	Crammer's V	0.258			.001
	Contingency Coefficient	0.25			.001

If texting is perceived as being more convenient than phoning, the aforementioned data shows that phone usage is still preferred over texting. This can be explained by the fact that calling establishes a stronger emotional connection because a human is involved. Texting may become the preferred method of communication if AI is used to enable texting incorporate the human element.

Hypothesis Results:

Assuming a 95% confidence level, it can be demonstrated that the significance value of Cramer's V is 0.001, or lesser than 0.05. Consequently, the null hypothesis is refuted. Consequently, there is a readiness to use AI in customer support applications.

Conclusion

While there are a number of obstacles to be overcome, AI has the ability to both address many current issues and go far beyond. Companies change their operational procedures to boost productivity, responsiveness, and competition. Technical developments have always created new marketing options. Artificial intelligence will completely change the way that people interact with services, products, technology and information. This is comparable to how television ushered in a really mass advertising and reaches period and how the mobile and internet devices provided a new level of targeting and context. In addition to advancing the AI agenda by establishing national programmes that would encompass research and development of its applications, the Indian government has taken significant steps toward digitization.

Together, these advancements will eventually accelerate the creation of an ecosystem for artificial intelligence and its applications to everyday life. We shall soon experience a "augmented age." The use of AI by the businesses is essential if they want to stay competitive in the current industrial environment.

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