APPLICATION AND SCOPE OF ARTIFICIAL INTELLIGENCE IN E-COMMERCE

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Abstract:
In the present research paper 'Application and Scope of Artificial Intelligence in e-commerce' the researcher aims to find out the extent of present application and the scope for the future application of Artificial Intelligence tools in the various aspects of electronic commerce including business operations, customer relationship and business strategies. The paper is mainly based on the secondary data collected from printed and electronic sources. The researcher visited various websites for review of related literature available online in form of global market research reports and research papers published in research journals. After presentation and analysis of the relevant data, the researcher arrived at the conclusion that there is further scope for better utilization of artificial intelligence and generative artificial intelligence in e-commerce market for more effective personalized services and enhanced consumer satisfaction.
***Kewords:** Scope, Artificial, Intelligence, e-commerce*

Introduction:

In modern times, e-commerce is a commonly used and popular mode of commerce that has spread all over the world. E-commerce means electronic commerce. It encompasses online trade of goods and services as well as all trade related activities carried out with the help of computers and smart phones through internet. In the present decade, artificial intelligence and generative artificial intelligence have emerged as advanced technological developments in the field of commerce and electronic commerce. The application of artificial intelligence tools in e-commerce operations is limited for a few business operations and customer interactions. In the present write up let's throw light on the further scope and limitations of the application of artificial intelligence in e-commerce with the help of the analysis of the relevant survey reports.

Research Objective:

The main objective of the present research paper is to study the significance and relevance of Artificial Intelligence in global e-commerce industry and global e-commerce markets. The researcher aims to put forward the findings of the different research survey reports to highlight the scope of extended application of Artificial Intelligence in e-commerce in future.

Research Methodology:

This paper is based mainly on the data obtained from the secondary sources. The researcher carried out some library work and made use of primary data collection techniques of observation and discussion to a small extent. The present paper predominantly relies on the study of the secondary data available in the form of printed and electronically published works. The researcher has tapped the sources of related official data available on different websites.

Literature Review:

The following survey reports and business reviews indicate that artificial intelligence is not an optional technology for e-commerce companies but it's application is vital for the success of e-commerce industry in the world.

(Coherent Market Insights Artificial Intelligence in E Commerce Market , 2025) Coherent Market Insights presented an online report on its website. In this report, it presented size and share analysis of the adoption of artificial intelligence in various operational areas of e-commerce. The report is based on the comprehensive analysis of different aspects of application of Artificial Intelligence in E Commerce Market. The analysis is done in different parts pertaining to technology, processing, deployment and geography. The global AI in e-commerce market projected to grow substantially from USD 7.68 billion in 2025 to USD 37.69 billion by 2032.

The other report from Harvard Business Review Analytic Services appears on the website with the name of 'Future of Commerce'. The report takes into account not only the clearcut benefits of artificial intelligence and generative artificial intelligence but also it demonstrates the challenges posed by the application of artificial intelligence and generative artificial intelligence in the e-commerce market. According to the report, 70% respondents consider artificial intelligence as critical for their operations and 65% respondents think that generative artificial intelligence is crucial for e-commerce strategies whereas 90% respondents have the opinion that personalized consumer experience is must for the success of e-commerce.

(Shanmugapriya and Pavithra 2024) In the paper 'Artificial Intelligence and e-commerce, the authors define and explain the use of artificial intelligence in the field of e-commerce. They state that the

application of AI in e-commerce aims to improve customer engagement, personalization, recommendation systems, fraud detection, inventory management, and supply chain optimization. The paper focuses on the description of the essence of e-commerce and artificial intelligence and their benefits. The aim is also to evaluate the importance of artificial intelligence and its use in the context of e-commerce

The author Ajay Thakur in the blog 'How Artificial Intelligence can benefit E-Commerce Business in India' enlists the benefits of artificial intelligence to the e-commerce companies and comes to the conclusion that Artificial intelligence companies have helped E-Commerce websites in providing the better user experience. Artificial intelligence research in the field of E-commerce is leveraging the sales of E-commerce too.

Research Work: Presentation and Analysis of Data

The presentation and analysis of the secondary data can be done in the following manner:

Table No. 1 Artificial Intelligence in E Commerce Forecasts from 2025 to 2032.

Sr. No.	Particulars	Value or Percentage
1	Value of global AI in E Commerce in 2025	USD 7.68 Billion
2	Value of global AI in E Commerce in 2032	USD 37.69 Billion
3	Compound Annual Growth Rate	25.5%

Source: Data compiled from Coherent Market Insights Survey Reports

The projected value of artificial intelligence in e-commerce market as contained in the industry report of Coherent Market Insights, Pune is displayed in the above table. It has been estimated that the value of artificial intelligence in e-commerce market will increase by more than USD 30 Billion during the period 2025 to 2032 over the current value of USD 7.68 Billion and it will reach to USD 37.69 Billion in 2032.

Table No. 2 Need of Artificial Intelligence in E Commerce

Sr. No.	Opinion	Percentage of respondents
1	Artificial intelligence is critical for e-commerce operations	70%
2	Generative artificial intelligence is crucial for e-commerce strategies	65%
3	Personalized consumer experience is must for the success of e-commerce.	90%

Source: Data compiled from Coherent Market Insights Survey Reports

Artificial intelligence and generative artificial intelligence is vital for providing personalized services to potential customers for better consumer relationship and consumer satisfaction. The data displayed in the above table clearly indicates that e-commerce companies or stakeholders are well aware of the need and importance of application of artificial intelligence in e-commerce business operations as well as e-commerce business strategies.

An e-commerce software firm, Uptain conducted a research survey about the adoption of artificial intelligence in various areas of business. In its report, the data about the application of artificial intelligence by ecommerce players is displayed in the table and depicted in the graph as presented below:

Table No. 3 Areas of application of Artificial Intelligence in E Commerce

Sr. No.	Particulars	Percentage of respondents
1	Content Creation	30%
2	Marketing	18%
3	Data analysis and Forecasting	14%
4	Customer Support	13%
5	Product Recommendation	8%
6	Pricing	3%
7	Fraud Detection	3%

Source: Data compiled from Uptain Survey Reports
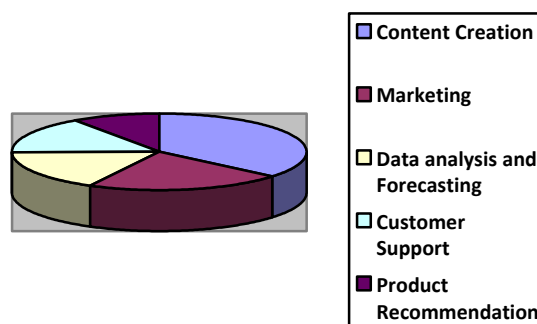
The figures displayed in the graph clearly indicate that the highest percentage of adoption of artificial intelligence by ecommerce firms is for content creation. Thirty percent respondents applied artificial intelligence for content creation. The second largest application is for online marketing activities. But only eighteen percent respondents engaged in e-commerce business adopted artificial intelligence for marketing, fourteen percent

respondents for data analysis and forecasting, thirteen percent respondents for customer support and only eight percent respondents for product recommendations. The least application of artificial intelligence in the field of e-commerce indicated in the table is for pricing and fraud detection.

Conclusion:

The present application of artificial intelligence in business operations is mainly for content creation and for efficiency in marketing activities, data processing, analysis, market forecasting and more effective customer interactions. There is further scope for better utilization of artificial intelligence and generative artificial intelligence in e-commerce market for better pricing strategies, fraud detection, personalized services and enhanced consumer satisfaction. Artificial intelligence has become a part and parcel of today's commerce and e-commerce. Different types of surveys and business reviews indicate that artificial intelligence is not an optional technology for e-commerce companies but it has become an essential element for their success.

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