13. A Study on Impact of Artificial Intelligence on E – Commerce with Reference to Chennai

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ABSTRACT:

We Are living in the global village, today's business context is entirely different. With the rapid development of science and technology and economic society, the application of artificial intelligence(AI) is more and more common, its development has a profound impact on our work and lifestyle. In the field of e-commerce, AI technology has also been well applied and achieved good results. AI has become an important driving force for the development of e-commerce. This paper simply described the e-commerce development situation and prospects of AI technology, analyzes the present situation of the application of AI technology in the field of e-commerce, mainly study and discuss in detail from the aspect of assistant of AI, intelligent logistics, recommendation engine and the optimal pricing application through the research of e-commerce intelligent operation instance - Baidu take-away, probes into the important impact and great significance on the e-commerce development of artificial intelligence. This paper concentrates on the impact of Artificial Intelligence on E Commerce of consumers in Chennai City. The researcher used both of the primary and secondary data. Random sampling used to collect the data. The sample was consumers using AI to E commerce practices in Chennai city and the sample size is 142. The researcher used correlation analysis to find the result.

KEYWORDS:

Artificial Intelligence, E – Commerce and Business development

Introduction:

Electronic commerce (e-commerce) can be defined as activities or services related to buying and selling products or services over the internet. Firms increasingly indulge in e-commerce because of customers' rising demand for online services and its ability to create a

competitive advantage. However, firms struggle with this e-business practice due to its integration with rapidly evolving, easily adopted, and highly affordable information technology (IT). This forces firms to constantly adapt their business models to changing customer needs. Artificial intelligence (AI) is the latest of such technologies. It is transforming e-commerce through its ability to "correctly interpret external data, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptation" Depending on the context, AI could be a system, a tool, a technique, or an algorithm. It creates opportunities for firms to gain a competitive advantage by using big data to uniquely meet their customers' needs through personalized services

Over the last few decades, artificial intelligence applications have evolved rapidly. In the early stages, artificial intelligence was used in expert and knowledge systems to provide recommendations. At present, in the age of technological advancements, artificial intelligence has become more human and more capable of solving problems, learning, manipulating objects, and navigating physical space. Thus, innovation and more efficient use of technology have led to the creation of intelligent systems that can manage and monitor business models with reduced human participation. The development of artificial intelligence has brought enormous economic benefits to humanity, improved almost all aspects of life, and significantly promoted social development and brought about a new era.

Artificial intelligence is considered to be a new interdisciplinary technological science that develops theoretical methods, technologies, and applications for the simulation and expansion of human intelligence. The application of artificial intelligence has been examined in sectors such as health care, business, education, manufacturing, marketing, and financial management. It is not easy to find a uniform and correct definition of artificial intelligence. Russell and Norvig summarized different definitions of artificial intelligence systems within two categories. Artificial intelligence systems should have capabilities such as information processing for communication in natural language, the ability to store and present information, automatic reasoning—using stored information to answer questions and draw new conclusions, machine learning to adapt to new circumstances, and to detect new patterns of behavior

Thus, artificial intelligence is able to carry out the automatic activity of mental work by simulating and expanding human intelligence. The core of artificial intelligence is intelligent technology on the basis of which intelligent tools similar to human intellectual work are developed, One of the means used by artificial intelligence is also fuzzy logic. It is a tool that can computer-display human action, process, and interpret information and knowledge as if it was performed by a human. The correct use of fuzzy logic in conjunction with artificial intelligence enables better planning, objective professional evaluation and risk assessment, rational decision-making, and management. It can also help eliminate errors associated with human factor failure.

Objectives:

- To study the impact of Artificial Intelligence on E – Commerce with Reference to Chennai City
- To study the intention of consumers on AI on searching Informations
- To suggest feasible solutions to E – Commerce

Review of Literature:

Song X, Yang S, Huang Z, Huang T (2023) reports that the artificial intelligence demand will increase between 2019 and 2023, and that chatbots will make around 22 billion interactions, which represent an increase from the current 2.6 billion over the same period. This study highlights a new trend—companies are investing heavily in artificial intelligence to improve trend analysis, logistics planning, and inventory management. Innovations based on artificial intelligence, such as Virtual Mirror and Visual Search, are tailored to improve customer interaction and reduce the gap between physical and virtual shopping experiences. Scientists say that in the future the relationship between artificial intelligence and humans will strengthen—this theory is moving away from the previously held opinion that AI will replace humans. Companies that will enter the market in future are likely to focus on creating values through integrated collaboration between the human workforce and artificial intelligence tools. An important step to success is to create partnerships in which artificial intelligence will work and predict, and human will explain and decide on appropriate measures. Thus, people will focus on value-added activities that require design, analysis, and interpretation based on the processing and outputs of artificial intelligence The great potential of artificial intelligence is unquestionable, but many challenges still need to be met in order to be perfectly put into practice.

Gburová J (2019) Recommends researching the consequences of the unintentional impact of artificial intelligence on customers. recommend that it be appropriate to focus research on improving bots and eliminating their defects, which could strengthen consumer confidence.

They also state that businesses should focus on streamlining the use of artificial intelligence in social networking., the connection between artificial intelligence and virtual reality applications should be researched in more detail. future research should also focus on examining the relationship between artificial intelligence and online evaluations, in particular the identification of false reviews.

Khrais L (2020) point to potential e-commerce threats and challenges that limit the efficiency and effectiveness of artificial intelligence in meeting business expectations. For this reason, it is necessary to constantly explore the possibilities and opportunities in view of the changing requirements of consumers in e-commerce. In order to support progress in research on the application of artificial intelligence in the business sector, it is necessary to examine the effectiveness of artificial intelligence in a multidisciplinary context. Based on comprehensive knowledge, experts and researchers will be able to set priorities and tasks to manage investments in important aspects of artificial intelligence, including for e-business more efficiently.

Research Methodology:

This paper concentrates on the impact of Artificial Intelligence on E Commerce of consumers in Chennai City. The researcher used both of the primary and secondary data. Random sampling used to collect the data. The sample was consumers using AI to E commerce practices in Chennai city and the sample size is 142. The researcher used correlation analysis to find the result.

Analysis and Interpretation:

Table 13.1: Correlation among selected determinants and E- Commerce

Determinants	E- Commerce	
	R – Value	P - Value
Predictive analysis	.304	.000
Visual search and Image recognition.	.381	.000
Personalized Recommendations	.447	.000
Customer sentiment analysis	.345	.000
Dynamic Pricing	.246	.000
Recommendation engines	.307	.000

Source: Primary data, ** Significant at five percent level

To test the correlation between independent variables on dependent variable Pearson correlation was applied. The independent variables of the study were Predictive analysis, Visual search and Image Customer sentiment analysis. Personalized Recommendations, Customer sentiment analysis, Dynamic Pricing and Recommendation engines and dependent variable is E commerce. the following Hypothesis was formulated to test the relationship. Ho – There is no relationship among the selected study variables and E commerce. From the result it was observed that there was positive correlation between all dependent variables and E Commerce. It implies that all independent variables contribute to E- Commerce. All independent variables are having lowest r-value (r < 0.40) that is Predictive analysis r value = .304, Visual search and Image Customer sentiment analysis. r value = .381, Personalized Recommendations r value = .447, Customer sentiment analysis r value = .345, Dynamic Pricing r value = .246 and Recommendation engines r value = .307. This implies that it contributes less to E Commerce. From the p-value in the correlation matrix, it was observed that the level of all independent variables was significant at 0.001 levels. Hence, the null hypothesis was rejected. So, it is concluded that there is significant relationship between Predictive analysis, Visual search and Image Customer sentiment analysis. , Personalized Recommendations, Customer sentiment analysis, Dynamic Pricing and Recommendation engines with E Commerce.

Findings:

From the result it was observed that there was positive correlation between all dependent variables and E Commerce. It implies that all independent variables contribute to E-Commerce. All independent variables are having lowest r-value (r < 0.40) that is Predictive analysis r value = .304, Visual search and Image Customer sentiment analysis. r value = .381, Personalized Recommendations r value = .447, Customer sentiment analysis r value = .345, Dynamic Pricing r value = .246 and Recommendation engines r value = .307. This implies that it contributes less to E Commerce. From the p-value in the correlation matrix, it was observed that the level of all independent variables was significant at 0.001 levels. Hence, the null hypothesis was rejected. So it is concluded that there is significant relationship between Predictive analysis, Visual search and Image Customer sentiment analysis. , Personalized Recommendations, Customer sentiment analysis, Dynamic Pricing and Recommendation engines with E Commerce.

Suggestions:

AI algorithms analyze customer behavior, preferences, and purchase history to provide personalized product recommendations. This enhances the customer experience, increases engagement, and boosts sales by suggesting relevant items.

AI enables e-commerce businesses to analyze vast amounts of data to predict trends, customer behavior, and demand patterns. This helps in inventory management, pricing strategies, and targeted marketing campaigns, optimizing operations and maximizing revenue.

AI-powered visual search allows users to search for products using images instead of text. Image recognition technology enables e-commerce platforms to identify and recommend similar products based on visual cues, enhancing the shopping experience

AI optimizes supply chain processes by predicting demand, optimizing inventory levels, streamlining logistics, and improving delivery times. This results in cost savings, efficient operations, and better customer service through faster order fulfillment

AI-powered tools analyze customer reviews, social media interactions, and feedback to gauge sentiment and identify areas for improvement. This helps businesses enhance product offerings, marketing strategies, and customer service based on actionable insights

AI algorithms analyze market conditions, competitor pricing, demand trends, and customer behavior to dynamically adjust prices in real time. This strategy maximizes revenue by offering competitive prices while optimizing profit margins

AI-driven recommendation engines use collaborative filtering, content-based filtering, and hybrid approaches to suggest products, up sell/cross-sell items, and personalize promotions based on individual preferences and behavior

Conclusion:

The aim of the paper was to describe the essence of e-commerce and artificial intelligence and their benefits. The paper also provides insight into the evaluation of the importance of artificial intelligence and its future use in the context of e-commerce based on available studies on this issue. In today's world of commerce and digital technology, e-commerce plays an important role. Today, people use the Internet on a daily basis; they are willing to try new products and brands, but they are also critical and demanding. In this case, e-commerce appears to be a suitable option to meet their requirements.

The application of artificial intelligence in e-commerce has become the subject of interest of many business scientists and experts. Previous research has highlighted the need for further research that would contribute to the development of knowledge and strategies in the application of artificial intelligence in e-commerce. It is possible to expect that artificial intelligence in the conditions of electronic commerce will be used more and more often and will become an integral part of all companies of this type.

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