

A Study on Artificial Intelligence on E- Commerce And It's Impact on Digital Economy

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Abstract- Artificial intelligence (AI) is a large subject of computer science to the development of Intelligence computers capable of doing task that would typically need human intelligence.

AI programming focuses on three cognitive process, learning, reasoning, and self – Correlation. Many e-commerce firms today employ artificial intelligence to better Understand their customers and meet their expectations. Machine learning, the most

Popular subject of AI technology, can make sense of all the data that online stores collect And use it to provide insights that improve customer experience, streamline internal Business operations and combat fraud. This paper basically aims to identify some key digital Of AI in e- commerce by reviewing research articles from various sources. The study Conducted that AI based on digital e commerce improving the efficiency. The are investing More and more with coming time to help their business to grow and boom in the recent years.

Keywords- E – Commerce, Artificial intelligence, efficiency and insights, machine learning, business.

I. INTRODUCTION

AI based on e-commerce refers to integrating Artificial intelligence technologies into Online retail operations. Online stores that use AI often see happier customers due to personalized shopping experiences, smoother operations thanks to automated inventory management and better sales from targeted marketing. The modern information age being along new possibilities, software and technological innovations usable in marketing and shopping new technologies for companies to be more creative technologies help increase the efficiency. Quality and cost Effectiveness of services provided businesses. contemporary creativity is based primarily on the development of the so called information and communication technologies, which have a major on the development of the business environment. The effectiveness of information and communication technologies depends on several Factors, such as investment in human capital and an

appropriate combination of e-Commerce solutions. One sector where the digital transition and importance of e-Commerce are particularly pronounced is retail, where digital tools, such as website, replace to a certain extent, or complement physical commerce. Allowing for personalized product recommendations, targeted marketing, improved search functionality, and enhanced customer service through features live Chabot's, all aimed at optimizing the shopping Experience and increasing sales on an e-commerce platform.

II. STATEMENT OF THE PROBLEM

AI based on digital e-commerce has significantly transformed the way businesses engage With consumers, revolutionizing industries such as food, retail, and services transformation. Artificial Intelligence (AI) technologies has further enhanced this transformation, providing Opportunities for increased personalization, improved efficiency, and optimized business Processes. In digital ecommerce AI systems often rely on vast amounts of consumer data (such as purchase history, preferences, location, and more). Furthermore, issues Surrounding data protection regulations, such as challenges for businesses to ensure they Comply with the necessary legal frameworks while also leveraging data for AI based on digital e-commerce. However, challenges such as data privacy, algorithmic bias, job displacement, lack of transparency, and regulatory compliance must be addressed in order to realize the full benefits of AI technology. By addressing these issues headon, businesses, policymakers, and consumers can work together to create a more equitable, efficient, and transparent digital e-commerce ecosystems powered by AI.

III. REVIEW OF LITERATURE

Kaplan and Haenlein (2019), said that enable e-Commerce platform to deliver highly personalized shopping experiences by analyzing vast amount of consumer data to predict preferences, recommended products and tailor content. Machine learning algorithms, particularly collaborative filtering and content based filtering, have been shown to

significantly improve product recommendations systems (Smith et al., 2022) .¹

Chung et al. (2021) said that Consumers expect a personalized online experience and are more likely to make repeat purchases from platforms that provide tailored recommendations. However, the extent to which AI – powered personalization enhances the shopping experience depends on

the accuracy and relevance of the data used. Studies suggest the likelihood of driving sales (Lee, 2022).²

Gnewuth et al. (2017) said that AI chatbots are effective in handling customer inquiries, providing 24/7 assistance and reducing the need for human intervention. Chatbots are able to resolve common issues such as order tracking, product inquiries, and returns which leads to improved customer satisfaction and reduced operational costs.³

IV. RESEARCH GAP AND OBJECTIVES OF THE STUDY

Most of the research focused on the AI based on digital e-commerce often referring to the varying regulatory e-Commerce. At initial stage face AI platforms based eco friendly practices in their daily lives. Most of the times strategies of the AI based on digital e-Commerce related to regulation various from place to another place. Mostly studies provide a generalized view of artificial intelligence and e-Commerce also whether innovation of new technologies leads to AI based on digital e-Commerce platforms.

These research is based on the following objectives,

1. To examine the short-term impact of AI based on digital e-commerce.
2. To examine the whether a leads to better ROI for advertisers and more relevant ads or customers.
3. To evaluate the AI based on digital e-commerce related to regulation in creating innovative technology.
4. To understand how to face the AI digital e-commerce.

¹ Kaplan and Haenlein(2019) “significantly improve product recommendation systems”

² Chung et al (2021) “Consumer expect a personalized online experience “

³ Gnewuth et al (2017) “Improved customer of satisfaction and reduced operational costs “

5. To find out the contribute to increased sales and revenue generation.

V. METHODOLOGY

This research is based on both doctrinal and non doctrinal research. The sources of data collected from various newspaper, magazines, books, reports and e-resources. The sample size of the respondent are 50. In this research, stratified random sampling is used. In this research, adopted some of the statistical tool is percentage and average method. The Jurisdiction of the research is to cover is madurai and Chennai. The duration of the research Is three months.

VI. SIGNIFICANCE OF THE STUDY

It helps to understand how the E-commerce regulation has an impact on the AI based one digital e-commerce. To know both positive and negative Artificial intelligence of the e-Commerce

regulation on related to platforms. How it increase the e-commerce using in short run and leads to creation of new innovative technologies. How it creates sustainable AI based on digital ecommerce and for the AI to work in the e-commerce platforms. To know how it also helps to provide monetary benefit for the e-commerce. Artificial intelligence on digital e-commerce has significantly transformed the way businesses engage with consumers, revolutionizing industries such as food, retail and service transformation.

VII. HYPOTHESIS OF THE STUDY

The study is mainly based on following hypothesis,

H₁: The integration of Artificial Intelligence in digital e-commerce enhances customer satisfaction and engagement.

H₂ : Consumer trust in AI-based e-commerce systems is recommended by transparency and ethical considerations in AI use for online purchase.

VIII. LIMITATIONS OF THE STUDY

Reliability of this research is based on goggle form cannot be calculated. Duration of this research is only three months. This study is limited to Madurai and Chennai city Only. Reliability of financial data on compliance cost may not be accessibly. The e-Commerce may differ from industry to industry. The Artificial intelligence platforms Regulation may differ from industries and the stringency of regulation may differ from area to area and industry to industry.

IX. RESULTS & DISCUSSION

Artificial intelligence :

With all the hype around Artificial Intelligence, robots, self-driving cars, etc., it can be easy to assume that AI doesn't impact our everyday lives. In reality, most of us encounter Artificial Intelligence in some way or another almost daily. From the moment you wake up to check your smartphone to watching another Netflix-recommended movie, AI has quickly made its way into our everyday lives. According to a study by Statistics, the global AI market is set to grow up to 54 percent every single year. But what exactly is AI? Will it serve mankind well in the future there are tons of advantages and disadvantages to artificial intelligence, which we'll Discuss in this article. But before we jump into AI's pros and cons, let us glance over Bird's eye view, AI provides a computer program the ability to think and learn on its own. It is a simulation of human intelligence (hence, artificial) into machines to do Things that we normally rely on humans. This technological marvel extends beyond Mere automation, incorporating a broad spectrum of AI skills – abilities that enable Machines to understand, reason, learn, and interact in a human-like manner. Artificial intelligence enables machines to learn from experience, adapt to new Information, and perform tasks that typically require human intelligence. Many contemporary AI applications, such as autonomous vehicles, smart home devices, and language translation tools, heavily depend on deep learning and natural language processing. By leveraging these technologies, computers can be trained to perform. Specific tasks by analyzing vast amounts of data and identifying patterns within that data. Advantages of Artificial Intelligence ,Reduction in Human Error , Decision-Making Zero Risks,24x7 Availability ,Digital Assistance ,Automation ,Daily Applications ,Medical Applications , Efficiency and Production,Enhanced Safety and Fraud Detection Customer Experience, Smarter Surveillance , Bias and Fairness , Cost Savings ,Increase in Workforce Productivity ,Personalization , Better Decisions , Advanced Data Analysis , ProblemSolving and etc. While artificial intelligence offers numerous benefits, it also presents some disadvantage's. here are few cons of Artificial Intelligence, Creativity , Emotional Intelligence, Encouraging Human Laziness ,Privacy concerns,Job Displacement ,Over-dependence on Technology ,Environmental Issues, Interpretability and Transparency ,Sticking to Norms and Experience .AI is based on pre-loaded facts and experience and is proficient at repeatedly carrying Out the same task. It cannot be accessed and utilized like human intelligence but can Store infinite data. Machines can only complete tasks they have been developed or programmed for. If Asked to complete anything else, they frequently fail or provide useless results, which Can have adverse effects. Thus,

we are only able to make something conventional. Uses of AI in other industries , Healthcare ,Finance ,Retail, Transportation ,Manufacturing ,Education ,Entertainment.

E-Marketing or digital Marketing :

E-commerce is the practice of buying and selling goods over the internet. The e-Commerce sector has been one of the most transformative industries on the planet Because it offers qualities that traditional brick-and-mortar shopping methods often Can't compete with, such as enhanced convenience and personalization. E-Commerce has become the bedrock of how many retailers operate and will continue To dictate the way we buy and sell in the future. E-commerce refers to the buying and selling of goods and services over the internet. This type of commerce came into popular use in the late 1990s with the rise of Amazon.com and has grown exponentially in recent years, as more people use the Internet to purchase items. The prominence of e-commerce is demonstrated by the Fact that people now mention Cyber Monday in the same breath as black Friday during the holiday shopping season .e-commerce, or electronic commerce, refers to any type of commercial transaction That takes place over the internet. This can include buying and selling physical goods, as well as digital products and services. Unlike traditional retail stores, ecommerce businesses do not need to have a physical location.The e-commerce industry's rise has led to the creation of new online brands, new marketplaces that facilitate transactions between buyers and sellers, new sources of revenue for publishers and social media platforms, and a new burgeoning sector of vendors that service e-commerce businesses.

History of marketing :

On August 11, 1994, Phil Brandenberger of Philadelphia made the first ever credit Card purchase using encryption over the internet, ushering in the modern e-Commerce era. The purchase? Sting's 1993 CD Ten Summoner's Tales, of course. The Seemingly mundane \$12.48 purchase set off what would eventually become one of The most transformative industries in the world. By the turn of the century, notable e-commerce giants had emerged, including Amazon, which started as a bookseller but today accounts for 40 percent of the entire e-commerce market, and eBay, a marketplace platform that facilitates peer-to-peer selling of goods, such as electronics, art and clothing.By the early 2010s, it became clear that social platforms like Facebook and Instagram Were the most efficient places for e-commerce brands to advertise their products.

E Marketing Growth :

About one-fifth of all retail purchases are made online, which amounts to more than \$1 trillion in online retail sales. By 2026, that number is forecast to grow to about 25 Percent. For some perspective, consider that in 2004, e-commerce sales only made Up two percent of purchases in the United States.

Types of E-Commerce Models :

Business to Consumer (B2C) :

The most common type of e-commerce is business to consumer. This is when Retailers sell their products or services to shoppers through their own website or an Online platform.

Business to Business (B2B) :

In B2B e-commerce, businesses sell products or services to other businesses online.

Consumer to Consumer (C2C) :

In C2C e-commerce, consumers sell products or services to other consumers Through an online platform, such as eBay, Craigslist, Etsy or Postmarks.

Consumer to Business (C2B) :

Consumer to business e-commerce is a model in which consumers create or provide Value to businesses. Some examples include: a photographer licensing their work, a Freelancer offering contract work via a gig platform or a tech device blogger including Affiliate links .

E-Commerce Companies :

E-commerce companies could technically refer to any company within the e-Commerce industry. But for these examples, we only have online retailers in mind. Examples of e-commerce companies include: Stitch Fix, Chewy, Harry's, E-Commerce Marketplaces e-commerce marketplaces help facilitate transactions between buyers and sellers On a large platform. Examples of e-commerce marketplaces include: Amazon, eBay, Etsy, E-Commerce Vendors e-commerce vendors help ecommerce companies, platforms and marketplaces run Their businesses more efficiently — whether it's by providing cloud storage, payment Processing, web design, marketing or shipping and logistics services. Examples of e-Commerce vendors include: Big Commerce, shopify, yotpo.

Benefits of E-Commerce :

E-commerce offers benefits to both buyers and sellers that physical retail stores Simply can't.

Convenience for Consumers :

E-commerce provides shoppers with an unrivaled level of convenience. People can Buy just about anything they need without getting out of bed — day or night — and it Takes just a few mouse clicks or screen taps and a couple of shipping days (even fewer) for your purchase to arrive at your doorstep.

Wider Selection for Consumers :

With e-commerce, shoppers also have access to thousands of crowd-sourced Reviews to help verify a product's quality. Price, rather than simply sticking with Whatever the local retail store has on its shelves.

Lower Costs for Businesses :

Millions of entrepreneurs can set up their online shops with lower overhead costs Than traditional brick-and-mortar stores. There is no need to staff physical store Locations, for example.

Personalization for Both Consumers and Businesses :

E-commerce personalizes the entire shopping experience. This has benefits for both Shoppers and merchants alike. On the seller side, e-commerce allows you to Programmatically display specific advertisements and products that directly appeal To an individual customer. Using data on what sellers have viewed or put into their Online carts, sellers can then gently remind buyers to purchase their recently viewed Items. This type of information has streamlined the selling process and has enabled Online retailers to grow their profits.

Few of the latest trends in e-commerce:

Omnichannel :

To stay successful, many e-commerce brands will continue to employ an Omnichannel strategy. Omnichannel refers to having multiple touch points retail Store, website, social, email, mobile app, SMS that together provide a seamless, Unified experience for customers, no matter which channel they use. For example, if a customer starts shopping

on a website but then decides they want to finish in the Store, the retailer could, in theory, track their progress and continue the sale. This Trend is becoming increasingly important as customers expect a consistent Experience across all channels.

Personalization :

In recent years, the personalization of online shopping has become nearly ubiquitous In ecommerce. Many customers have come to expect relevant recommendations and uniquely tailored marketing messages just for them. This may present a challenge for brands as third-party data is phased out and regulations make data tracking more difficult, which means brands are looking to collect first-party data to cultivate customer loyalty in other ways.

Social Commerce :

More people are looking to shop on social media platforms. And at The same time, many are finding community in spaces cultivated by retail brands.

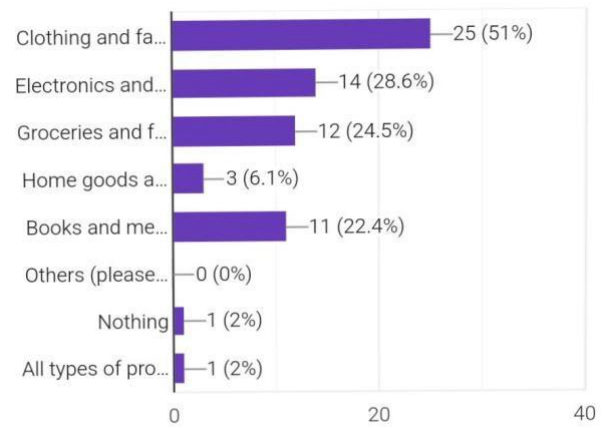
Voice-Enabled Search :

With the rise of voice assistants like Siri and Alexa, voice-enabled shopping may Become an increasingly important part of the e-commerce landscape.

Table – 1 : The types of products do you usually buy online.

Items	Particulars	No. Of Responsibility
The type of products do you usually buy online	Clothing and fashion	25 (51.0)
	Electronics and gadgets	14 (28.6)
	Groceries and food	12 (24.5)
	Books and media	3 (6.1)
	All types of products	11 (2.0)
	Nothing	1 (2.0)
	Others	0 (0.0)

Source : Primary Data.



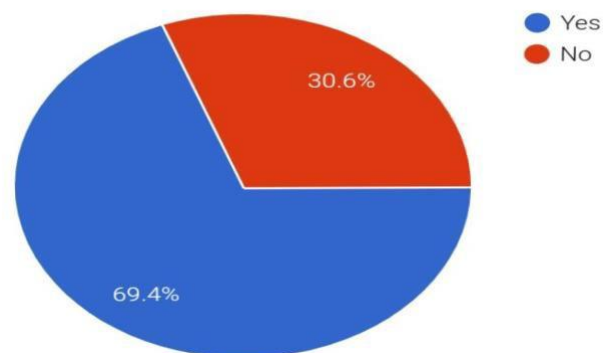
Interpretation :

Table -1 the type of products to you usually buy online to prefer the products the highly clothing and fashion is 51.0 percentage of responsibility. Next electronics and gadgets is 28.0 percentage of responsibility books and others there are 56.0 percentage of responsibility give me a vote.

Table 2 : AI – powered by recommendations to guide your online purchases.

Items	Particulars	No. Of Responsibility
AI powered by recommendation s to guide your online purchases	Yes	38 (69.4)
	No	15(30.6)

Source : Primary Data.



Interpretation :

Table -2 AI Powered recommended by guide your online purchases' are to highly responsibility are" yes" this percentage are 69.4 percentage of responsibility give a voting another one of the people of responsibility giving a opinion for 30 .6 percentage of responsibility give me a vote.

Part -C : DestingHypothesis :

H1: The integration of Artificial intelligence in digital Ecommerce customer satisfaction and Engagement.

Table 3 – the type products prefer to you online purchase are this illustration of first Hypothesis are connected this method accept the responsibility. This is null hypothesis.

H2 – Consumer trust in AI powered Ecommerce system is recommended by a transparency and ethical considerations in AI use for online purchase.

Table 6 : AI powered recommended to guide to online purchase this illustration are this Methods for applicability. There are responsibility in the accepted. This is null hypothesis.

X. RELATED TO CASELAWS**1.Christian Louboutin v. Abubacker (2018)**

The permission of the Plaintiff, and without ensuring that the products which are sold are in Fact genuine, would constitute violation of Plaintiff's rights. The Defendant has relied on a Judgement of a Ld. Single Judge in Christian Louboutin v. Abubacker 250 (2018) DLT 475 the Court was considering protection for the red sole trademark. In the said judgement the court Held that the red sole mark is not distinctive as there can be no monopoly on the colour red. The present suit does not relate to the red sole mark in isolation but the use of the plaintiffs Marks, name of its name of its founder, use of the words constituting the mark in various Ways including on the website, images, packaging material, invoice etc. by the Defendant Which is an e-commerce platform.

2.EBay Inc. vs Mohd. Waseem T/As Shopibay & Ors. On 17 November, 2022

Accordingly, a permanent injunction in terms of the prayers Mentioned in paragraph 65 (A) To (B) of the plaint is granted in favour of The plaintiff and against the defendants. The plaintiff Is also held entitled to the relief claimed in paragraph of the plaint and the defendant nos. 2 and 3 are directed to change. The name of the companies 'Shop bay Internet Private Limited' a 'Shop bay Ventures Private Limited' so as to remove the mark/work. 'SHOPIBAY' From the said commonly. As far as prayers made in paragraph 65 (D) and of the plaintiffs. The plaintiff is held entitled to an

award of damages to the tune of Rs. 2Lakh as also the costs Of the suit.

XI. CONCLUSION

The aim of the paper was to describe the essence of e-commerce and artificial intel-licence 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 importance 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. Use cases of artificial intelligence in Ecommerce Is in the area of personalized shopping, product recommendations, and inventory Management.

XII. SUGGESTIONS

- 1.Compare AI – based marketing strategies across different industries such as e- commerce, health care, education and entertainment.
2. Explore the challenges of implementing AI in digital e-marketing businesses face when digital e marketing such as cost of technology, lack of skilled professionals, data integration issues and resistance to change.

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