Role of Artificial intelligence and digitalization in the economic growth: A study on its influence on sustainable development and its awareness in the selected taluks of Dakshina Kannada District.

Vijaya Saraswathi. B

Assistant Professor, PG department of Commerce
Centre for Post Graduate studies and Research
Vivekananda College of Arts, Science
and Commerce (Autonomous) Puttur
vijayasaraswathi@vcputtur.ac.in

Abstract

Artificial Intelligence and digitalisation is transforming Indian economy by igniting the productivity and economic growth. Proper implementation of AI will open new economic opportunities that would increase the productivity and in turn will influence on sustainable development of business sector. Artificial intelligence is widely used by e-commerce businesses to understand their clients better and fulfil their expectations. E-commerce has transformed the business operations in India, attracting a large number of customers and generating millions of dollars in sales. With the advancement of information and communication technologies, artificial intelligence is becoming more popular. Studies reveal that by 2025, AI is estimated to add up to 500 billion dollars to the India's gross domestic product and by 2030, $ 15.7 trillion to the global economy as it is increasingly being used across industries - from banking and health care to farming and manufacturing. The present research paper is aimed at identifying the role of AI and digitalization in the sustainable development of economy and its contribution to the economic growth. Further it focuses on identifying the level of awareness on impact of AI in E-business. The research is based on both primary and secondary data.

Key words: Digitalization, Artificial intelligence, Economic growth, Sustainable development.

Introduction

India is one of the fastest-growing economies in the world; with an average of 5.5% gross domestic product growth over the years. Digitalization and artificial intelligence are the two important forces driving the economy and economic growth. Artificial Intelligence and digitalisation is transforming Indian economy by igniting the productivity and economic growth. Artificial intelligence is widely used by e-

commerce businesses to understand their clients better and fulfil their expectations. E-commerce has transformed the business operations in India, attracting a large number of customers and generating millions of dollars in sales. . With the advancement of information and communication technologies, artificial intelligence is becoming more popular. Studies reveal that by 2025, AI is estimated to add up to 500 billion dollars to the India's gross domestic product and by 2030, $ 15.7 trillion to the global economy as it is increasingly being used across industries - from banking and health care to farming and manufacturing.

Ridham Desai, Morgan Stanley's Chief Equity Strategist for India stated in an interview that India is set to surpass Japan and Germany to become the world's third-largest economy by 2027. Due to technological developments, Indian companies are able to outsource the services like software development, customer service on real time basis and 24x7 etc across the world.

Artificial Intelligence is a strongly emerging pillar of the socio-economic growth. Today, the world is running so fast, in the light of the technological advancements in Artificial Intelligence.

The global economy has gone for a big change in its dynamics over the last two decades especially during post covid period. Studies also reveal that it has every potential to go for further change in the coming years Between 2000 and 2020, India achieved a growth rate of 6.2 percent, while the World as a whole registered a growth rate of 3.3 percent. The overall growth of the Indian Economy has increasingly come from major three sectors such as service sector, Industry sector and agriculture sector. The major inventions in these three sectors contributed to the economic growth to a great extent. As per the news report, India will become the growth engine for the World in coming years and that country will have $ 5 trillion tag soon.

Objectives

The main purpose of this study is to analyze Role of Artificial intelligence and digitalization in the economic growth of a country. The specific objectives of study are

To identify the areas contributing to sustainable development

To analyse the role of artificial intelligence and digitization on the economic growth.

To analyse the customer awareness on digitalization and perception of users towards AI applications in e-commerce platform.

Scope of The Study

Innovation is a driving force for every economy and its growth. Emerging digital technologies such as artificial intelligence, digitalisation, and digital payment methods etc have an impact on society and business. Through Industry 4.0 revolution the economy is growing with technological advancement. Digital revolution has become one of the powerful tool for a social change.

Research Methodology

The study has used both primary and secondary data to analyze the objectives framed and to obtain the findings.

A structured questionnaire is administered to selected 150 respondents who were selected on simple random sampling basis and convince basis from Sullia ,Puttur and Bantwal taluks of DK District. The questionnaire is used to know the perceptions and awareness on digitization and role of AI .As a source

of secondary data various Journals, Magazines, annual reports and Papers were consulted. For more information various e journals and websites were also consulted.

Literature Review

A review of the available literature is conducted to identify the development made in the field.

Richard Fedorko (2022) in his research paper, "Artificial Intelligence in E-commerce" discussed the importance of artificial intelligence and its potential applications to e-commerce and economic growth stated that Many business scientists and professionals are now interested in the application of artificial intelligence in e-commerce due to the potential it has on business performance.

Anli Suresh, N. Jannifer Rani (2020) in their research paper, " Consumer Perception towards Artificial Intelligence in E-Commerce With Reference to Chennai City, India" The study indicate that there is more room for AI technology to advance in different industries. Since AI has been developing, many new inventions in numerous fields are now possible. AI has the potential to spark a new revolution and pave the way for machine learning and new data sciences".

Halima Afroz Lari, Kuhu Vaishnava, Manu K S (2022) in their research paper, "Artificial Intelligence in E-commerce: Applications, Implications and Challenges". The study thoroughly examined all of the applications, significant businesses, difficulties, and potential uses of AI in the E-commerce sectors. Further the paper highlighted that, AI has a significant influence on e-commerce.

Digital Revolution

India is playing a very important role in the latest technological advancement – Information and communication revolution. Globally, India has emerged as the largest payer in real time payment transaction, with a share of about 50 percent. To meet the emerging needs of 21st century, it is essential to develop critical thinking, problem solving and such other skills. Equipping the young minds with latest technology and skills will help them and develop within them an ability to handle the complexity of the Modern world.

Role of digitalization in business and economic growth

Digitalization in banking transactions has empowered retail customers with greater control choice and convenience. It has increased the level of customer engagement, personalization and access to information. Retailers that efficiently leverage digital technologies to enhance customer experience are more likely to build customer loyalty. The confidence of people about digitalization values among individuals and can depend on fallers such as their familiarity with technology, past experience and the perceived benefit and risks associated with digitalization. Building confidence in digitalization requires addressing concerns around privacy, security and useably. Government organization and technology providers play a crucial role in promoting digital literacy; implement robot security measures and ensuring transparent and ethical practice. By addressing these concerns providing user friendly, interface and demonstration the benefit of digitalization confidence levels can be increased among individual and community. It's important to note that confidence in digitalization is not universal and can vary among individual and communities. Understanding these variations and addressing concern can help foster trust and encourage broader adoption of digital technologies for the benefit of individuals and society as a whole. Saima Khan, Dr.Shazia Khan, Mohsina Aftab (2015) in their study on Digitalization and its Impact on Economy stated that Digital conversion of print sources has improved speedily within the past few years leading a economic growth .

Role of AI and customer satisfaction

In 2018, a customer experience futurist named Blake Morgan, examined an aspect by which AI Positively affects customer experience. She stated that many customers enjoy talking to a virtual assistant during or after their purchasing process. In addition, she said that the use of customer Personalised service has provided effective, when customers are deciding what product to buy. This means, AI plays a vital role in the buying behaviour as well as loyalty of a consumer, towards a brand. Effective utilisation of AI could bring a tremendous change in the business sector. Since a long time ago, artificial intelligence has advanced significantly and this is already influencing the future of marketing

Impact of Digital Technology on Economy

Emerging digital technologies such as artificial intelligence, 3D printings, 5G network, digital payment methods etc have an impact on society and business. Digitalisation has lead to the creation of new jobs and resulted in improvement of economic growth. In 2014 Digital economy was 4.5% of GDP. But in 2023 it is raised to 11% . In almost 10 years, it showed an increase of 144.44% and further studies estimate that by 2026 it will reach to 20%. India is growing with technology. Remarkable changes in the import –export of mobiles show the growth of digital economy in India. Earlier India used to import Mobile phones. But today country is able to produce to meet its internal needs and also exporting mobiles to the rest of the world. Giant companies are planning to start manufacturing units of i-phones in India. In addition, the e-payment systems have been adopted by petty shop owners and common man.

Table showing the potential areas using AI and digitalisation and contributing to the growth of economy.

Area	Benefits
Production	AI has the capacity to improve production, increase efficiency and improve safety along production lines. AI-powered robots can continuously work around the clock, this ensures a continuous supply of output. According to Saxon reports, AI-powered robots could reduce labour costs by up to 33 percent, reduce unplanned downtime by 50 percent, reduce product defects by 50 percent and increase manufacturing efficiency by 20 percent.
Economics and Finance	In the field of economics and finance, there are several economic indicators like growth rates, interest rates, exchange rates and inflation rates that are vital for monetary policy management and economic stability. AI algorithms makes them very suitable in forecasting these economic indicators.. Furthermore, for those trading assets like stocks and bonds, AI technology can predict price movements and enable them trade when it is optimal to do so. The AI algorithm may even be allowed to conduct the trade itself in the absence of a human trader.
Transportation	Traffic control remains a huge problem all over the globe, particularly in the busy and modern cities. Optimal traffic control ensures that cities get decongested within the shortest possible time. This has a direct effect on the supply chain efficiency and movement of goods between the producers and consumers. AI algorithms study traffic movements and make predictions on the rates at which vehicles should enter/exit cities, without necessarily disrupting business. Timely decongestion of cities further has an environmental upside, less time in traffic means less emissions and pollution. Travellers also get to save on energy consumption.

Business and Industry	In the business world, AI algorithms aid in target marketing and customer engagement management. It is important to understand customers behaviour over time, particularly in the marketing niche. For instance, each time a consumer visits a website, AI algorithms gathers data, analyse it, and make predictions about the next time the customer may visit or the next website the customer is likely to visit. This is an advantage to both the seller and the customer; the seller learns exactly what the customer desires. On the other hand, once the seller learns the customer's needs, then there will be less need for the customer to hop from one seller to the next. It saves time and related costs.
Entrepreneurship	Innovations in the form of entrepreneurship are one of the major driving forces of economic growth. Youth of today are creating vibrant start ups and ecosystem that provides an opportunity for job creation. The digital fluency seems to be powerful tool for a social change.
Agriculture, Defence Service sector	Digital transformation in these sectors is contributing to the economic growth.

(Source:)

Data analysis and interpretation

The importance of AI and its potential applications to e-commerce is a major area of economic growth. As per 2020 report, it is found that e-commerce contribution to GDP is reached 2.3%. Indian e-commerce is expected to grow at a compound annual growth rate of 27% by 2026, which is three times the growth of the retail Market. Customers are very much aware of the AI applications, but they are not aware that it is being used in e-commerce platform. Since AI is moving in an upward trend it has ways for many new inventions in many areas.

Table: showing AI powered feature that people are aware of while online shopping.

Response	Number of respondents (150)	Percentage
Product recommendation	46	30.66
Customer service	39	26
Fraud detection	17	11.33
Inventory management	11	7.33
Pricing optimisation	25	16.66
Personalised marketing	21	14
All of the above	25	16.66
None of the above	16	.04

Findings

The major research findings are;

AI can be used to increase customer satisfaction through the personalization of the experience. Personalization refers to the creation of consumer - tailored communications, based on socio-demographic patterns and previous purchase behaviour. We found that machine learning algorithms can

estimate consumer's price elasticity and adapt prices accordingly, which in turn would help in framing a good pricing strategy, based on consumer price sensitivity. This will gain competitive advantage to the business.

In the area of customer service, the most used technology is AI chatbots. Through the natural language processing, chat bots can answer a number of different questions and provide immediate and accurate support 24/7 to consumers.

AI can support traditional market research methods through machine learning based analysis. Text mining is a powerful tool for delivering insights from online reviews, opinions and behaviour in the form of text, image, audio or video. This will help in understanding the pulse of customers in the light of frequently changing rhythms of customers buying behaviour. Traditionally, it was difficult to do market survey manually through a heavy bulk of customer data. Now AI has reduced the manual work to zero, in the area of analysis and interpretation of customer data. This is the dynamic change created by AI.

Majority of consumers feel satisfied and are more comfortable while speaking to a chatbot to clear their queries. This has enhanced customer experience by providing personalized service. By leveraging on to internet based devices, companies may collect actual real-time, in-depth data about the consumer's usage of the product. Therefore, IOT enables a deeper consumer understanding, allowing companies to develop better products, and improve consumer values.

Majority of the respondents are users of E-commerce platform and they are not aware of all the AI features. Only 16.66%% of the respondents are aware about all the AI features present in E-commerce platform and .04% of the respondents are not aware.

AI is estimated to add up to 500 billion dollars to the India's gross domestic product and by 2030, $ 15.7 trillion to the global economy.

There is vast opportunity for technology enabled digital economy. The various dimensions of digital economy such as information technology, artificial intelligence, electronic computing etc are giving enormous opportunities for the youth and development of economy.

Artificial intelligence is considered to be, one of the strong drivers of productivity and economic growth. Proper implementation of AI will open new economic opportunities that would increase the productivity and in turn will influence on sustainable development of business sector.

Challenges for the future and suggestions

Being the world's fastest-growing economy, India's main challenge is to guarantee the smooth distribution of that growth over income levels. Digital technology gives the highest potential for decreasing the gap between wealthy and poor customers. Building comprehensive digital economies needs the combined action of governments, industry, financiers, and civil society. What we see are the real changes that the digital revolution in India is holding on to the economic growth of the country.

Conclusion

Utilizing the AI powered marketing and technologies will be one of the requirements to run a successful business in the upcoming days or years. Marketers should invest their time and money to test new techniques and make sure that, their marketing is prepared for ongoing success in both now and future, as AI is expected to continue in expand across all industries and market groups. .Major changes in the dynamics of Indian economy are boosting economic growth. The recent initiatives of Government of India

such as make in India, Design India, Innovate India are not mere slogans. They have been implemented effectively for the growth of Indian economy through digitalisation. Due to technological advancement, youth of India found a key to unlock the immense potential that lies with in India.

References

1. Anil suresh, N. J. (2020). "consumer perception towards AI in E-commerce with reference to Chennai city". Journal of IT and economic development.

2. Halim afroz lari, K. V. (2022). "AI in E-commerce: Applications, implications and challenges".Asian Journal of Management.Vol.13, Issue 03.

3. Indian E-commerce Industry Analysis IBEF. (2020). IBEF. https://www.ibef.org

4. Michael Debabrate(2023) "Digital Revolution-The dawn of India's age", Southern Economist,Vol.62.No.10.