Participation of Artificial Intelligence with Productivity and Economic Development in India

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Abstract

The rapid progress of Artificial Intelligence (AI) has changed economies worldwide including India's economic scenario. Currently, the entire world is benefiting from the application and abilities of AI. Research paper studies the versatile role of artificial intelligence participation in economic development and management in India. Studies focuses on mainly economic factors such as agricultural development, business, research and innovation, fundamental education infrastructure Development, improvement in health sector and employment generation. where AI can contribute to improving Indian economy and stability. In fact, India's economy has seen a revolution of integration with the manufacturing, AI-robotics and automation. This has increased productivity and efficiency, and has reduced operational costs, and has improved production quality, so the application of AI has led to a radical change in factors such as the development of the nation infrastructure, skill growth and international cooperation, whereby Indian economy has become competitive globally village.

Keywords:- Artificial Intelligence, Growth and Development, Sustainability, Indian Economy, Management, Innovation, Productivity;

INTRODUCTION

Today the world is changing rapidly through technological innovation. In the last few years, many such innovations and progress have been seen which were previously under the scope of science fiction, but are gradually turning into reality. In order to give momentum to economic, socio-cultural, educational and technological development and providing better amenities to the people, state-of-the-art technology is being used in every field. Increasing industrialization, urbanization and globalization have accelerated the pace of development, while it has also given birth to many new problems, which are also being found to be constantly finding new solutions to solve it. State -of -the -art Artificial Intelligence is in infancy in India, many areas in the country in which AI are being used. Given the possibilities of AI in the development of the country, it seems where the use of artificial intelligence can be beneficial. In fact, artificial intelligence is a factor, in which the ability to introduce new sources of development and change the way it works in industries Is. AI is not only a new technique for 2024, but is a major driver of digital changes for the future economy, which acts as a catalyst for development in various fields. According to the PWC report, AI is ready to contribute $ 15.7 trillion in the global economy by 2035 and to be the most benefiting from the AI boom coming to China and the United States, which is about 70% of the global impact. According to "The Economy of Billion Connected Indians", India is in its digital decade. And India's digital economy will reach $ 1 trillion by 2030. This rapid increase will have to be led by AI. AI's participation has the ability to fundamentally change the Indian economic scenario and strengthen the development curve. In Budget 2025, the Government of India paid a lot of attention to AI to develop comprehensive Artificial Intelligence (AI) Ecosystem in the country under the AI mission by the Government of India, in which AI mission has been allocated a budget of about Rs 2,000 crore which is with artificial intelligence India to become super power in the technical sector Will work for fuel.

ARTIFICIAL INTELLIGENCE

Artificial intelligence means intellectual ability developed in artificial way. Artificial Intelligence is a major innovation in science and technology. Artificial Intelligence began in the 1950s. Artificial intelligence is a system under which computer controlled robots or

software are enabled to think wisely like a human brain. AI is completed by studying the pattern of the human brain and analyzing the cognitive process. With which a computer system or robotic system is prepared, which is attempted to run on the basis of the same arguments such as the human brain works. According to **John McCarthy**, the father of Artificial Intelligence, it is the science and engineering to create intelligent machines and intelligent computer programs, that is, it is intelligence displayed by machines. Artificial intelligence computer controlled robots that are a man -like intelligence -thinking manner -making software. How does the human brain think? And how does he learn while solving the problem? How to decide? And how would you work? Studies about etc.

LITERATURE REVIEW

Philippe Aghion et al., (2017) through his research studies for the development process. Discussed the possible implications of A.I. The production process of goods and services saw the growth of capital share and per capita GDP. AI Technology tried to cover the developed automation. According to him, A.I. in production technology Applying new ideas of can potentially increase growth, **According to Mohamed Ali Trabelsi (2024)** represents a driver of AI productivity and economic development. ,This can increase efficiency and improve the decision making process by analyzing large amounts of data, AI has the ability to significantly affect economic growth in various ways. However, it is worth noting that the impact of AI on economic development is not the same in all regions and regions. Some industries may experience more significant changes and development, while others may face challenges or disruption. Additionally, successful implementation and integration of AI technologies require sufficient infrastructure, data availability and accessories, which may vary in different economies. **Ekkehard Ernst (2021)** Artificial intelligence has been seen as the transformative power of modern economies. The role of artificial intelligence in the way human society affects to solves the fundamental problems of resource allocation, reduction in uncertainty and collective decision making. According to systematic review studies by **ChunHong Yuan et al., (2024)** expansion and contribution to the overall economic development of AI is transformative, it encourages efficiency, productivity and innovation in the economic environment. It opens new opportunities for simplifying businesses and simplifying operations, improving the quality of public services and innovation in every field. **Julius Tan Gonzales (2023)** The study of 1970 and 2019, using a panel dataset in countries, determines the relationship between AI innovation and prolonged economic growth level, which shows that AI technology on average long -lasting economic growth. There is a positive and important effect. AI generated over time is contributing to transformational results in all areas of the economy due to innovation and quality. **Filippucci et al., (2024)** By increasing capabilities, AI can help workers to do tasks requiring high level expertise, increase their earnings and improve economic mobility. AI are the major mediated factors for structural changes and total productivity results on market dynamics. To promote innovation and It can also be seen as a step in an automation process, with economies and societies more widely influenced. **According to Naqbi et al., (2024)** The integration of Generative Artificial Intelligence (GAI) in various organizations marks a significant innovation in digital changes and creativity growth. Its application in areas such as academia, engineering and communication is revolutionizing. GAI is a powerful tool for businesses, requiring careful management for its effective and responsible use. **Awasthi and Bajpai** study focuses on five major factors employment generation, agricultural development, research and innovation, infrastructure development and improvement in health sector where AI can contribute to improving Indian economy and stability. Conclusions show that health sector improves improvement AI for most Emerges as a sensitive factor. A healthy population plays an important role in increasing productivity and
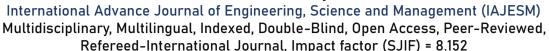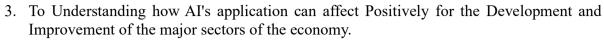
overall economic growth. By taking advantage of AI technologies, the health sector can increase the disease detection, diagnosis and treatment plan, which can improve health care results. The implementation of AI-based systems and equipment in the health sector can result in better access to health services in remote areas, especially in remote areas, in addition to innovation, entrepreneurship and skills. By promoting development AI can contribute significantly in generating employment opportunities. In research and innovation processes, AI may inspire India to become a global leader in state of the AI technologies. According to **Manjusha1 and Varshney (2024)** the AI and production automation can be seen as a motivational power behind economic progress during the last 150 years. For example, during the Industrial Revolution, many production processes were automated using steam and then electricity. Artificial intelligence is the next stage of this process. Which is leading to MRI tools, computer-control car engines, and autopilots, self-driving automobiles and artificial intelligence radiological reports, etc. which will give speed to productivity and economic growth. **Franc and Gâf-Deac (2024)** The article shows that with the help of Artificial Intelligence (AI), there is an opportunity to become excellent with the domestic economy by connecting the Romanian economy with technology for development. The report of the article emerges from several AI companies, and from the answers received, and reflect the ability to contribute to economic development through AI. It was clarified in the article that in the coming time, in Romania, the expected economic development can be encouraged due to activities coming from small and medium enterprises dominated by AI. **Abdullah Çağrı and Dr. Murat (2023)** The importance of mechanization in the production sector has been emphasized which AI technology should be considered as a new production system. AI Technologies, which will replace both capital and labor, will be the biggest effective factor of production in the coming years. On the basis of the article, we can say that the growth in all economies due to technology will not be seen immediately. Development may not occur in the same period because the differences in the economic growth levels of countries may affect the adaptation process for technology. And economic development and social development may vary from the country to the country. There is a possibility that there will be no economic growth in short term, for this each country must create a favorable system to reconcile with technology. **Yoganandham and Govindaraj (2024)** AI has the ability to revolutionize our education systems, with the help of AI, the learning process can be made more personal, accessible and effective, which promotes inclusive economic growth. By taking advantage of AI in education, governments can eliminate educational inequalities, create skills and capacity in students, and increase productivity in areas. To exploit AI capacity, policies must prefer equal access to digital resources. Such as private and government investment in high-speed internet, smart device and digital learning platforms, is necessary. **Srivastava (2018)** In fact, AI is likely to change our way of living and working. Due to its high capacity, its application can be called a technical revolution. In the era of globalization, no country can separate itself from the influence of progress in technology. However, the profit can be maximized and the loss can be reduced by giving the necessary infrastructure and policy place. India has a unique opportunity to implement technology to solve some of its biggest problems such as lack of healthcare facility, low quality of education, etc. The goal of providing good healthcare or quality education using traditional methods It is not possible to complete. Hence the AI technology offers an option to achieve the same.

OBJECTIVE
1. What is Artificial Intelligence? How can the application of AI be useful for us.
2. To find out the Participation of AI in Promoting Economic Development and Productivity in India.

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'Sanskriti Ka Badlta Swaroop Aur AI Ki Bhumika' (SBSAIB-2025)
DATE: 25 January 2025
International Advance Journal of Engineering, Science and Management (IAJESM)
Multidisciplinary, Multilingual, Indexed, Double-Blind, Open Access, Peer-Reviewed,
Refereed-International Journal, Impact factor (SJIF) = 8.152

3. To Understanding how AI's application can affect Positively for the Development and Improvement of the major sectors of the economy.

METHODOLOGY AND APPROACHES

This Paper examines an approach on Artificial Intelligence, as well as its impact in productivity and Development of Indian Economy. It represents a descriptive study in the context of AI.

RESULT AND DISCUSSION

Artificial Intelligence (AI) is the key to not only India but to further economic development for the whole world. India's growing semiconductor industry will become the backbone of the Indian AI market. We will examine the impact of AI's participation on the Indian economy through the following points:-

Artificial Intelligence Increase productivity in various sectors of economy:- India's economic in various fields like industry and manufacturing, agriculture, banking and financial, health, education, transport and tourism by improving AI processes, reducing waste and improving supply chain efficiency For growth and development AI is bringing revolution. AI-operated robots in **Industry And Manufacturing** are helpful in automatic and streamlining and streamlining labor costs and can improve the quality of manufacturing work in manufacturing industries and can improve the quality of manufacturing work. AI is important in the service sector in various industries Playing the role, such as AI-operated chatbots and virtual assistants are used to answer customer questions, provide help and handle regular tasks, AI e-commerce services and marketing enhance user experience, recommendations and materials Analysis of customer data for information of Does. Inventory management is helpful in optimizing AI-Inventory Management and Demand Forecasting Supply Chain and ensure 24/7 products available to customers as per their requirement. AI in the **Agriculture Sector** can help to monitor crop health, detect diseases, irrigate and assess the requirement of fertilization, AI-operated weather forecast models can provide accurate forecast, which can give farmers planting and harvesting programs Can help in planning. AI can identify crop disease and pests AI can analyze market trends and value fluctuations, The application of AI under **Banking And Financial Sector** is helpful in promoting financial inclusion, and detecting fraud, and making transactions in business more secure and efficient. Use AI to assess debt eligibility for the disadvantaged population. AI has greatly improved access to formal banking and financial services in rural areas through mobile based platforms and AI-operated chatbots. Due to which financial inclusion is enabled for small businesses. And it has helped to provide loans to thousands of enterprises across India. The AI application in India is making revolutionary changes by making the **Healthcare Sector** more accessible, cheap and efficient in India to detect the disease, its diagnosis, predictable health and individual medicine to improve the health sector. Telemedicine platforms and diagnostic algorithms such as AI-operated tools will prove to be important in eliminating intervals in rural healthcare infrastructure. The integration of AI in **Education And Skill Sector** has the ability to significantly improve learning results in individual learning platforms AI-driven individual education platforms. Students can get courses analogous quality material, which can develop better understanding and concept of knowledge. AI can help to bridge urban-rural education division by providing access to quality educational resources in remote areas. It can reduce inequalities in educational occasions. The new National Education Policy of the Government of India to encourage AI based education system emphasizes the importance of 2020 technology Atal Innovation Mission (AIM) AI-based teaching through its various programs Promotes solutions, in which Atal Tinkering Labs and Atal Incubation Centers include. India should establish a national AI skill work to remove large scale skills in areas related to AI. By integrating with the Skill India Mission, the government can run a scalable AI training program,

targeting medium-skilled workers. Middle-level AI-Practical training in areas such as data analytics, machine learning and robotics should also be noted to prepare workers for competent jobs. AI chatbots and virtual guides in the **Transport And Tourism Sector** strengthen the global positioning system by providing information, recommendations and navigation assistance to tourists and helping to maintain transport services more accessible and streamlined. To identify the face The use of chatbots can make flight forecasting and makes the management process more simple and effective.

AI Helps To India's Fiscal And Monetary Policy Making: AI can help policy makers to decide by making accurate forecasts of major economic indicators such as GDP growth, inflation rate and employment trends in the country. Also, AI models can assess the risk associated with various fiscal and monetary policy decisions. AI can be used to detect tax evasion and financial fraud, in the fiscal sector, AI can automate regular tasks such as data entry and processing, reducing the administrative burden on government agencies. In the context of monetary policy, AI-operated chatbots and virtual assistants can handle interrogation of banks and financial institutions.

AI Is Helpful In Enabling Smart Governance And Public Service Distribution In The Country: The goal of India's ambitious Digital India initiative is to convert the country into a digitally strong society. This includes various government activities, such as service distribution, communication, decision-making and digital civil participation, and online platforms to streamline government processes, increase public service distribution and facilitate civil participation , Digital system And using databases etc. have been improved. In which the Government of India has taken the initiative of online portal, digital identity system, electronic voting, e-taxation, e-license, online documents and various other digital conscience initiatives for government operations. Increased civil services and economic development Has the ability to promote. India has made regular progress in availing technology to increase the efficiency, transparency and access of its governance systems. Make India the world's largest AI hub. This big goal can have two advantages. This will increase the opportunity of new jobs and economic development will be faster.
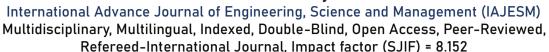
Application of AI in Research and Innovation: Innovation is considered the charioteer of the economy. Quantum technology, drones, and electric vehicles in the country are also innovating in areas like Fintech, Edtech, and Healthtech. Their potential applications in the automation of research techniques are - from generating a hypothesis to researching themselves - and reaching large banks of information; In dealing with issues related to colleague-review; In search of published material; To detect literary theft; And in fact-tongue data. It is proving to be helpful in India's indigenous AI research to reduce dependence on foreign AI technologies.

Artificial Intelligence Helps To Energy Sector: The role of AI in energy management is multifunctional and is important in moving us to a more sustainable future. As the world is recognizing the importance of stability and efficient energy use, the role of artificial intelligence (AI) in energy management has become more important. Taking advantage of AI technologies, the forecast of renewable energy production, optimization of renewable energy systems, regulation of solar panels and wind turbines, can adapt the use of energy by improving grid management, and can reduce the waste India continuously Economic development targets achieved AI has an important role To do the latest options for energy resources.

AI Helps in Indian Defense Sector: AI-based cameras, radar feeds, sensors etc. are helping for strict monitoring in defense sector. These advanced AI technologies are playing a skilled role in activities like infiltration, intelligence and survey, automatic vehicle and drone, cyber security, logistics and supply chain management, training and simulation etc. AI based systems satellite imagery, drone footage and Other data Sources can provide fast and accurate

information. This makes it easier to analyze intelligence and make decisions in real time. Automatic drones and vehicles are being used for border security, monitoring and supply. These machines can replace human soldiers under dangerous conditions. The AI -based cyber security system can detect rapid cyber attacks and stop them. AI is also being used in logistics and supply chain management. This gives the soldiers a smooth time necessary resources available on time. AI based simulation and virtual reality (VR) systems can provide real status experience to soldiers. With this they can be better trained, AI is also being used in medical services, which can provide rapid and effective treatment to the injured soldiers. AI based diagnostic tools and robotic surgery can play an important role in this. AI -equipped automated arms systems are helpful in target identification and accurate attacks. These systems can make the decision making process intense and more efficient

CONCLUSION

This study highlights the participation of Artificial Intelligence in the work productivity and the progress of the Indian economy. The findings of this research study have led to descriptive studies on the ability to increase productivity, expand employment prospects and to advance development in GDP. Which shows how AI is increasing productivity by using various types of industries such as telecom, e-commerce and IT services, education and health etc., in fact the nation to promote AI innovation To presents a transformative opportunity to. The inclusion of AI has significant impacts. AI can increase India's economic competition and flexibility globally in the near future. However, to exploit its capacity, challenges such as negative effects on manual procedures dependent on manual procedures, decrease in the need to outsource services will have to be resolved. For which India should focus on significant research and development investment in AI by both public and private sectors and encourage programs like providing technical skills to labor force.

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'Sanskriti Ka Badlta Swaroop Aur AI Ki Bhumika' (SBSAIB-2025)

DATE: 25 January 2025

International Advance Journal of Engineering, Science and Management (IAJESM)
Multidisciplinary, Multilingual, Indexed, Double-Blind, Open Access, Peer-Reviewed,
Refereed-International Journal, Impact factor (SJIF) = 8.152

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