



INDIAN FINANCIAL SYSTEMS POWERED BY ARTIFICIAL INTELLIGENCE: A KEY TO ECONOMIC EXPANSION

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ABSTRACT:

A potential engine of economic growth in India might be the banking industry's use of artificial intelligence (AI). The purpose of this research is to examine how banks powered by AI would affect the economy of the country. The study aims to examine the many applications of AI in banking and assess its influence on economic growth. The study delves into the use of AI in several areas, including risk management, fraud detection, relationship building, and process automation. It does this by doing a thorough literature review and analyzing relevant data. Greater efficiency, an improved customer experience, and expanded financial inclusion are just a few of the potential benefits of AI-driven banking that the study evaluates. The results highlight AI's revolutionary potential to promote economic growth in India's banking sector.

KEYWORDS:

ARTIFICIAL INTELLIGENCE, ECONOMIC GROWTH, RISK MANAGEMENT AND FRAUD DETECTION.

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INTRODUCTION

A time of transition is now taking place all over the world, and it is being driven by the development of technology. Our transformation is taking place in our day and age. The technological shifts that are occurring in a range of industries have been significantly influenced by information technology, which has made a big contribution to making these changes. Because of this, there is a rising need for artificial intelligence (AI) across a wide range of various businesses. This is one of the consequential effects of this. To begin, let's make sure that we have a solid understanding of the notion of artificial intelligence. According to the definition that was supplied by Latimore (2018), artificial intelligence (AI) is defined as the ability of a machine or computer to replicate and apply knowledge and skills that are acquired from natural sources. The process by which a computer imitates human cognition and decision-making choices is referred to as artificial intelligence, and the word that is used to describe this process is artificial intelligence.

The banking industry has lately acknowledged the significance of artificial intelligence due to the fact that it provides a distinctive advantage over other businesses. The attainment of this recognition occurred not too long ago. On the other hand, the implementation of artificial intelligence (AI) in the banking business in India has been slowed down, which is analogous to the implementation of AI in other industries. This is mostly attributable to the fact that positions in the banking industry need the participation of humans. In spite of this, there is a continuing need for artificial intelligence in the banking

industry since it assists with the retention of customers, the administration of digital data, and the provision of real-time support via the use of virtual assistants. Additionally, organizations are using AI-driven solutions in their day-to-day operations in order to fight money laundering, uncover fraudulent behavior, and analyze loan chances. These technologies are being used to evaluate loan prospects.

REVIEW OF LITERATURE

The introduction of artificial intelligence methods, such as predictive analytics, robotic process automation, and machine learning, has resulted in an improvement in the quality of service provided by Indian banks, as well as an improvement in decision-making and a streamlining of regular processes, according to Kumar and Garg (2024). It is essential for financial institutions to take steps to improve their efficiency and reduce the costs of transactions in order to contribute to the expansion of the economy. In the same spirit, Salvi (2023) highlights the role that artificial intelligence plays in boosting the contribution of the banking industry to economic growth in India. This is accomplished via innovations in customer relationship management, credit evaluation, and operational resilience for the banking sector. There is a recurring theme across the study that focuses on the use of artificial intelligence to increase access to financial services.

The empirical data that Lokeshwari et al. (2023) provided demonstrates that AI-driven financial services significantly

improve both efficiency and accessibility, particularly for locations that are underserved and rural. Banks are able to assess the creditworthiness of persons who do not have formal financial records via the use of alternative credit scoring systems that are powered by artificial intelligence. This helps to improve access to loans and other financial services. In a developing nation like India, where the economy is still in its early phases of growth, it is necessary to offer banking services to those who were not previously banked in order to encourage investment and to create new business opportunities. New research that focuses on policy has brought to light the economic significance of financial systems that are driven by artificial intelligence. The Reserve Bank of India (2024) suggests that the use of generative artificial intelligence technologies might result in a major improvement in banking operations, with an estimated increase of roughly 46%. This improvement could be achieved via the enhancement of client service, fraud detection, and risk assessment. The strengthening of financial intermediation and the facilitation of loan access for productive economic sectors are two key effects that have resulted from these advances in productivity.

According to the Economic Survey of India (2024-25), the use of artificial intelligence by financial institutions has caused a rapid acceleration of innovation within the service sector, which has ultimately led to an improvement in India's macroeconomic competitiveness and efficiency. According to findings from recent research, the use of artificial intelligence plays a significant part in improving risk management and guaranteeing financial stability. Through the adoption of AI-driven fraud detection and cyber security systems, research suggests that the ability of banks to swiftly notice suspicious transactions and effectively manage operational risks has been greatly strengthened. This improvement has been brought about by the installation of these systems. According to the findings of another piece of study (Artificial Intelligence and Cyber Security in Banking Sector, 2024), a banking system that is both resilient and safe is absolutely necessary for continued economic development. The trust of investors is boosted, and their financial assets are protected on account of this. As stated in policy papers, the Indian economy has a substantial potential for growth that may be realized via the use of artificial intelligence in a variety of industries, including banking.

According to NITI Aayog it is projected that the financial services industry would be the key accelerator for faster deployment of artificial intelligence, with the potential to contribute between 500 and 600 billion US dollars to India's gross domestic product by the year 2035. The findings of the study indicate that financial systems that are driven by artificial intelligence constitute a major improvement since they improve efficiency, encourage innovation, and promote growth that is made more equal. Recent studies highlight the difficulties associated with the application of artificial intelligence within India's banking industry, despite the fact that the prognosis continues to

be hopeful. The issues of algorithmic bias, data privacy, cyber security threats, and workforce shortages have received a substantial amount of attention in recent times. A number of issues have been raised by the Economic Survey (2024-25) with respect to the fair distribution of the advantages of artificial intelligence. These concerns highlight the need of establishing suitable legal frameworks and ethical protections.

RESEARCH METHODOLOGY

With "The foundation of AI in Finance and its Role in Economic Growth" as its stated goal, the study's descriptive and scientific tone is in line with its purpose. Additional techniques are used to collect data.

THE IDENTIFICATION OF DECEPTIVE FINANCIAL DEALS

In order to increase profits while decreasing operating costs, the banking industry uses machine learning. In order to improve security across different institutions and prevent fraudulent claims, machine learning algorithms analyze real-time data in order to identify and emphasize questionable or fraudulent activities.

EFFICIENCY AND ACCURACY RAISED

The efficiency, accuracy, and speed of mathematical calculations are all improved by artificial intelligence. With the right data management strategies in place, banks may improve their trading by finding the sweet spot for initial margin reduction based on past data and specific deal combinations.

ENHANCEMENT OF CUSTOMER SUPPORT

Customers prefer self-service solutions that mimic the conversational flow of human customer service agents with artificial intelligence virtual assistants. The best banks have integrated AI-powered chatbots, smartphone apps, and voice response systems into their customer service offerings. Chatbots (virtual assistants) are able to get a better understanding of what customers require since every encounter with AI is seen as a learning opportunity.

HEDGE FUND TRADING AND MANAGEMENT

With the help of AI-powered mobile software, banks can now buy and manage hedge funds in real-time. The analysis and faster decision-making made possible by these AI technologies are based on real-time data collected from a variety of global financial marketplaces.

SOLUTIONS FOR IMPROVED SECURITY

Banking sector security standards are enhanced by AI. By learning user habits and providing individualized content, AI-powered mobile apps make financial transactions easier and more secure. As a result, banks may efficiently manage customer-centric tasks with a minimum of additional staff.

PRODUCTIVITY IN THE WORKPLACE AND HAPPY CUSTOMERS

Increased sales and productivity are the outcomes of intelligent technology's ability to improve employee performance and client engagement via targeted messaging and customized offerings. Artificial intelligence improves the accuracy and precision of many processes, leading to happier customers. These processes include bill payments, money transfers, and card management. These chores may be easily accomplished using computers, mobile phones, and other portable devices.

THE RELATIONSHIP BETWEEN AI AND ECONOMIC GROWTH

When used across a variety of sectors, artificial intelligence (AI) has the potential to significantly impact economic growth by boosting efficiency, productivity, and creativity. A number of key points demonstrating AI's contribution to economic growth.

PRODUCTIVITY IN THE WORKFORCE IS BOOSTED BY AI

Every industry is vulnerable to the dual effects of artificial intelligence (AI): increased production and job displacement. Singapore places a premium on education in order to equip its residents with a diverse set of skills, since the country is known for attracting labor-intensive industries (Shaimerdenova&Zamor, 2017). Purchasing new tools and machines raises the bar for both capital productivity and worker quality (Korkmaz, 2017). According to Maitra (2016), economic growth is greatly affected by contributions to human capital and the creation of jobs. To foster a knowledge-driven economy, Singapore places a premium on education and continues to invest in research and technology. Both developed and developing countries' economies may benefit from human capital investment and a skilled labor population, according to the study's authors. As seen in Japan, technological progress and increased productivity are critical factors in economic expansion.

AI PROMOTES THE EXPORT OF CUTTING-EDGE INNOVATION

In order to compete with multinational corporations, generate new capital, increase profitability, supply capital goods, and boost exports, economies are seen as benefiting from robust export growth, particularly in high-tech commodities. Several studies have shown that exports of high-tech goods and services contribute to economic development, which emphasizes the importance of technology advancements in enabling actual GDP increase. This correlation has been seen in OECD countries and is expected to have a significant role in driving economic growth in the Asia-Pacific region. In particular, Singapore has become an economic powerhouse with a focus on high-tech industries because to its mastery of the art of utilizing research and development expenditures for

knowledge production. In order to take advantage of technical advancements and propel their economy forward, countries must make good use of indigenous R&D.

CONCLUSION

India's AI-powered banking system is a prime example of the widespread use of AI technology and its significant impact on driving economic growth. Artificial intelligence (AI) technologies such as chatbots, data analytics, and robotic process automation have revolutionized the banking industry by improving decision-making processes, automating formerly manual operations, and predicting consumer behavior. The findings demonstrate that AI-powered banking enhances operational efficiency, client happiness, and financial accessibility. The banking industry is expected to benefit from the growing integration of AI technology, which is expected to boost innovation, productivity, and the Indian economy as a whole.

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