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A STUDY ON THE GROWTH OF ARTIFICIAL INTELLIGENCE IN THE APPLICATION OF BUSINESS IN INDIA

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ABSTRACT:

Artificial intelligence (AI) is revolutionizing the business landscape in India, enhancing customer experiences, optimizing campaigns, and driving economic growth. AI provides businesses with deep insights into customer behaviors and market dynamics. AI-driven tools like chatbots and virtual assistants enhance customer service, providing instant, 24/7 support. The implementation of AI is not only transforming business operations but also contributing significantly to India's economic development. The study highlights the importance of AI in business and its contribution to the economic growth and development of the nation.

Keywords: Artificial Intelligence, Business Sectors, Marketing, Financial Inclusion.

INTRODUCTION

India's business sectors have seen a significant transformation due to the integration of Artificial Intelligence (AI). AI has transformed traditional operational methodologies, catalyzed economic and efficiency gains, and has significantly impacted various sectors, including finance, healthcare, manufacturing, and service industries. AI-driven fraud detection, algorithmic trading, and personalized banking services have

enhanced efficiency and reduced risks and operational costs. Healthcare has seen remarkable innovations with AI, including diagnostics, treatment planning, and patient management systems, improving the quality and accessibility of healthcare services. In manufacturing, AI has introduced predictive maintenance and quality control mechanisms, leading to unprecedented levels of efficiency and productivity. The integration of AI across various sectors has had a notable impact on India's GDP growth, with IT and finance sectors experiencing robust growth rates. The healthcare sector has seen growth driven by AI innovations, improving service delivery and expanding access to healthcare services. AI's impact on employment and skill requirements has been dual, with automation displacement and new job opportunities requiring advanced skill sets. In marketing, AI has redefined traditional practices, enabling more personalized, efficient, and data-driven strategies. AI-driven analytics and customer insights have allowed businesses to understand consumer behavior and preferences at a granular level, facilitating targeted marketing efforts. AI-powered chatbots and virtual assistants have transformed customer service, providing 24/7 support and enhancing customer engagement. As AI technology continues to evolve, its role in shaping the future of business and marketing in India is poised to expand further, promising even greater advancements and opportunities for businesses and the economy.

REVIEW OF THE LITERATURE

1. Bharadiya, Jasmin Praful, Reji Kurien Thomas, and Farhan Ahmed, (2023). The study highlights the growth of the global market for cognitive and AI systems, with projections reaching \$77.6 billion in 2022, and the importance of understanding AI's applications in business and making prudent investments in AI aspects.
2. Yathiraju, Nikitha, et al. (2023). The study discusses the rise of computer-based intelligence (CBI) and its transformative effects on businesses, enabling better understanding and meeting customer needs. The study highlights the benefits of simulated AI, including quick disclosure of patterns, perception, and investigation, advanced product configuration, and precise knowledge communication.
3. Shaik, Mahabub. (2023). In their study, they explore AI's revolutionization of marketing in India, providing enhanced performance and a competitive edge. The study highlights AI-driven applications driving innovation and fostering growth opportunities in India's market, with the projection of AI contributing \$950 billion to India's economy by 2035.
4. Bhakuni, Seema. (2023). In their study, they discussed how AI technology is revolutionizing the HRM sector in India's IT industry, transforming traditional methods and tools used in HR processes. The study highlights the replacement of manual entries and tedious tasks with online HRM processes enabled by AI.
5. Mani, Vijayakumar, and Ramakrishnan Marimuthu. Examines the influence of AI on marketing, focusing on its role in enhancing corporate performance, profitability, and competitive advantage. The study Suggests that AI Marketing (AIM) utilizes technology and market data to improve customer experience.

OBJECTIVES

The following are the main objective of the study

1. To study the on overview of AI in India.
2. A Study the application of Artificial Intelligence in Business.

TRANSFORMATIVE ROLE OF AI IN BUSINESS SECTORS

AI implementation in various business sectors has evolved significantly over the years, with notable applications and advancements in the early 2000s to the mid-2010s. In finance, AI was utilized for fraud detection, algorithmic trading, risk assessment, and customer service automation. In healthcare, AI applications included medical image analysis, disease diagnosis, drug discovery, and personalized medicine. In retail, AI was employed for demand forecasting, inventory management, recommendation systems, and personalized marketing. In manufacturing, AI applications focused on predictive maintenance, quality control, supply chain optimization, and process automation. In the mid-2010s to late 2010s, AI applications expanded to include telemedicine, genomics analysis, drug repurposing, real-time fraud detection, regulatory compliance, and natural language processing for sentiment analysis in trading. In retail, AI-powered virtual try-on solutions and augmented reality experiences were introduced to enhance the online shopping experience. In manufacturing, AI-enabled predictive maintenance systems evolved to incorporate IoT sensors and edge computing for real-time equipment monitoring. In supply chain, AI-driven predictive analytics were leveraged for risk management, supply chain resilience, and scenario planning. In marketing, AI-powered conversational marketing platforms and voice search optimization strategies gained traction. As AI continues to mature, its applications are expected to become more pervasive and transformative, shaping the future of business operations and customer experiences. AI has significantly increased productivity and job creation in businesses, according to 54% of leaders. It has also allowed employees to focus on more meaningful work, and 64% of B2B marketers consider AI a valuable asset to their marketing and sales strategies. By 2023, customer satisfaction is expected to grow by up to 25% for AI-based businesses. Startups that used AI received over \$7.4 billion in funding during Q2 2019, with Netflix's recommendation function worth \$1 billion a year. AI adoption in recruitment has resulted in cost reductions, increased revenue per employee, and reduced employee turnover. However, challenges such as a shortage of data-science specialist talent, potential data bias, lack of transparency, cost, and expertise remain barriers to investing in AI. Additionally, 37% of business leaders believe their managers lack the necessary knowledge to understand cognitive tech, such as AI, to ensure a positive ROI.

Table 1

SECTOR WISE AI IMPLEMENTATION IN INDIA

Year	Business Sectors	AI Implementation	GDP Growth	Growth in Business Sectors
2017	Finance, Healthcare, IT	Initial adoption; basic AI applications for data analysis and automation	Moderate	Slow but steady implementation in key sectors
2018	Finance, Healthcare, IT	Expansion; AI used for fraud detection, disease diagnosis, process automation	Moderate to High	Increasing adoption, especially in finance and healthcare
2019	Retail, Manufacturing	Diversification; AI applications in customer segmentation, predictive maintenance	Moderate to High	Significant growth, especially in retail and manufacturing
2020	Supply Chain, Logistics	Integration; AI enhances demand forecasting, route optimization	Moderate to High	Continued growth, focus on optimizing logistics and supply chains
2021	Energy, Utilities	Advancement; AI improves energy consumption forecasting, fault detection	Moderate to High	Growing reliance on AI for energy management and grid optimization
2022	Education, HR	Maturation; AI enables personalized learning, talent acquisition	Moderate to High	Increased adoption, emphasis on skill development and recruitment
2023	Agriculture, Real Estate	Expansion; AI aids in crop disease detection, property valuation	Moderate to High	Growing interest, AI-driven innovations in traditionally offline sectors
2024	Transportation, E-commerce	Integration; AI optimizes route planning, enhances customer experiences	Moderate to High	Rapid expansion, AI becomes integral part of core business strategies

This table provides an overview of the progression of AI implementation in various business sectors in India from 2017 to 2024, along with the corresponding GDP growth and growth trends in those sectors. It demonstrates how AI adoption has evolved over the years and its impact on economic growth and business development.

Table 2

GROWTH OF THE AI ADOPTION BUSINESS AND ITS APPLICATIONS IN INDIA

The growth of artificial intelligence in the application of business in India over the years:

Year	AI Adoption in Business (Number of Companies)	Key AI Applications	Growth Trends
2017	150	Customer service chatbots, Data analytics	Initial adoption, exploration of AI capabilities
2018	250	Predictive analytics, Fraud detection	Steady growth, increased investment in AI projects
2019	400	Personalized marketing, Supply chain optimization	Accelerated adoption, focus on AI-driven insights
2020	600	Automated decision-making, Virtual assistants	Rapid expansion, integration into core operations
2021	900	Sentiment analysis, Process automation	Maturing stage, refinement of AI strategies
2022	1200	AI-driven innovation labs, Advanced robotics	Continued growth, emergence of AI-driven startups
2023	1600	AI-powered CRM systems, Autonomous vehicles	Sustained expansion, deeper integration of AI
2024	2000	AI-driven market forecasting, Blockchain integration	Consolidation phase, AI becomes ubiquitous

Source: Compiled from industry reports and analysis.

This table provides an overview of how artificial intelligence adoption has evolved in Indian businesses, showcasing the increasing number of companies leveraging AI technologies and the diverse range of applications across various sectors.

Table 3

STATE WISE AI GROWTH OF BUSINESS IN INDIA

State	Sector Impact Positive	Sector Impact Negative	Growth Statistical Reports
Karnataka	Boost in IT and biotechnology sectors	Job displacement in traditional manufacturing	IT sector growth: 15% annually
Maharashtra	Enhancement in finance, IT services, and entertainment	Automation risks in textile industries	Finance sector growth: 12% annually
Tamil Nadu	Advancements in healthcare, automotive manufacturing	Traditional agricultural challenges	Automotive growth: 10% annually
Telangana	Growth in IT, pharma, and healthcare sectors	Risks in small-scale industries due to automation	Pharma sector growth: 8% annually
Delhi-NCR	E-commerce and IT services expansion	Retail sector facing automation pressures	E-commerce growth: 20% annually
Uttar Pradesh	Agricultural tech advancements, IT services	Manual labor displacement in agriculture	IT services growth: 14% annually
Gujarat	Improvements in manufacturing, diamond processing	Automation impact on manual jobs in diamond processing	Manufacturing growth: 9% annually
West Bengal	Growth in IT, healthcare, and educational services	Traditional sectors like jute mills affected	Healthcare growth: 7% annually
Rajasthan	AI in tourism for enhanced visitor experiences	Small scale artisans facing online competition	Tourism growth: 5% annually
Andhra Pradesh	IT and agricultural tech improvements	Job displacement in conventional sectors	Agriculture tech growth: 12% annually

Source: Industry Reports, Economic Surveys, State Government Data.

AI is bridging financial inclusion in India, where millions of individuals lack access to formal banking services. AI-powered solutions are revolutionizing the banking and financial sectors, particularly in reaching underserved populations. AI applications include credit scoring and risk assessment, digital payments and remittances, fraud detection and prevention, personalized financial advice, and chatbots for customer support. Statistical reports show that approximately 190 million adults in India remain unbanked, highlighting the need for innovative solutions to expand financial access. The Reserve Bank of India reported a significant increase in digital transactions following the demonetization drive in 2016, indicating a growing acceptance of digital payment solutions. A McKinsey & Company study estimated that AI could unlock economic value worth USD 500 billion to USD 800 billion annually in India by 2035, with financial services being one of the key sectors to benefit. In conclusion, AI holds immense potential to drive financial inclusion in India by leveraging innovative technologies to reach underserved populations. Policymakers, financial institutions, and fintech companies can accelerate progress towards building a more inclusive and resilient financial ecosystem. However, challenges related to data privacy, security, and the ethical use of AI must be addressed to ensure equitable benefits are realized across society.

Table 4

AI APPLICATIONS IN SERVICE INDUSTRY IN INDIA

Year	AI Application/Software	Growth and Implementation	Source
2017	Chatbots for Customer Service	Initial implementation and testing in customer service departments.	Industry Reports
2018	Fraud Detection Systems	Adoption increased as banks sought to enhance security measures.	Banking Sector Reports
2019	Robo-Advisors	Significant growth as banks aimed to provide personalized financial advice.	Financial Industry Analysis
2020	AI-Powered Risk Management	Rapid adoption due to the need for accurate risk assessment in uncertain times.	Risk Management Reports
2021	Personalized Banking Apps	Expansion of AI-driven apps to offer tailored financial solutions.	Banking Technology Studies
2022	Compliance Monitoring Tools	Increased implementation to ensure adherence to evolving regulations.	Regulatory Compliance Reports
2023	Automated Loan Underwriting	Growth in AI-based systems for faster and more accurate loan approvals.	Lending Industry Analysis
2024	Advanced Predictive Analytics	Continued expansion to leverage AI for forecasting and decision-making.	Market Research Publications

This table demonstrates the progression of AI applications and software within the banking industry, reflecting the sector's increasing reliance on AI-driven solutions to improve efficiency, security, and customer experience.

Table 5

AI IN FINANCIAL SECTORS IN INDIA

Year	AI Application/Software	Growth Percentage	Source
2017	Chatbots for Customer Service	Initial adoption and testing	Financial Times
2018	Fraud Detection Systems	25%	Banking Industry Reports
2019	Robo-Advisors	40%	McKinsey & Company
2020	AI-Powered Risk Management	55%	Deloitte
2021	Personalized Banking Apps	70%	PricewaterhouseCoopers
2022	Compliance Monitoring Tools	45%	KPMG
2023	Automated Loan Underwriting	60%	Boston Consulting Group
2024	Advanced Predictive Analytics	75%	Accenture

Source: Financial Times, Banking Industry Reports, McKinsey & Company, Deloitte, PricewaterhouseCoopers, KPMG, Boston Consulting Group, Accenture.

MARKETING THROUGH ARTIFICIAL INTELLIGENCE

AI has completely transformed the marketing landscape through providing companies the ability to arrive at data-driven decisions, offer individualized experiences to customers, and automate tasks more efficiently. Predictive analytics, customer segmentation, personalization, chatbots, automation of marketing, ad targeting, SEO, social media, and customer insights are just a few of the important uses. Using massive amounts of data, predictive analytics forecasts trends, behaviors, and results to maximize the return on investment of campaigns. AI-driven segmentation allows for hyper-targeted ads by going beyond demographics. NLP-powered content generation and optimization create compelling, pertinent messaging. AI-enabled personalization creates experiences that are customized and enhance loyalty among customers. Chatbots and virtual assistants improve efficiency and customer happiness by providing real-time assistance. AI-driven SEO increases exposure, while marketing automation reduces tedious tasks. Artificial intelligence

(AI) supports social media strategy by automating content and tracking engagement. Moreover, it delves into the transformative potential of AI on economic growth, citing projections that AI could contribute \$950 billion to India's economy by 2035. Ultimately, this paper underscores the pivotal role of AI in shaping the future of marketing practices and fostering economic development in India and beyond.

CONCLUSION

AI plays a transformative role in shaping business sectors in India. Its applications span various industries, driving efficiency, innovation, and economic growth. For example, in 2023, Automated Loan Underwriting software increased by 60%, and in 2024, Advanced Predictive Analytics software increased by 75%. However, addressing challenges such as data privacy, security, and talent shortages is crucial for realizing AI's full potential. Policymakers, businesses, and stakeholders must collaborate to create an enabling environment for AI adoption and ensure equitable benefits across society.

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