



REVIEW ARTICLE  
Vol.11.Issue.3: 2024  
July-Sept.



## INTERNATIONAL JOURNAL OF BUSINESS, MANAGEMENT AND ALLIED SCIENCES (IJBMAS)

*A Peer Reviewed and refereed Journal*

---

### A STUDY ON APPLICATION OF ARTIFICIAL INTELLIGENCE IN BUSINESS

Jeevia Harshini. M<sup>1\*</sup>, J. Gold Beulah Patturose<sup>2</sup>, Dr. R. Priscilla<sup>3</sup>

<sup>1</sup>Artificial Intelligence and data science,  
St. Joseph Institute of Technology, OMR, Chennai – 600119

\*Email: samiksha6414@gmail.com

<sup>2</sup>Assistant Professor, Artificial Intelligence and data science, St. Joseph Institute of  
Technology, OMR, Chennai – 600119

<sup>3</sup>Professor, Artificial Intelligence and data science, St. Joseph Institute of Technology, OMR,  
Chennai – 600119

DOI: 10.33329/ijbmas.11.3.17



---

#### ABSTRACT

The study aims to investigate the implications of AI (Artificial Intelligence) in business management. AI is utilized throughout industries to facilitate decision-making, construct simulations, and establish a competitive edge for organizations.

The use of AI has been applied in business sectors to achieve improved customer experience, efficient supply chain management, optimized operational efficiency, and reduced staff needs. The main goal is to establish consistent and reliable procedures for monitoring product quality and to investigate innovative strategies for reaching out to customers and providing cost-effective customer support. Implementing artificial intelligence technologies in many divisions of an organization can enhance business process efficiency and increase the level of satisfaction among customers with the organization's services and products. AI is mostly utilized in production, quality assurance, marketing, and research & development. Machine learning as well as deep learning is among the most widely used artificial intelligence methods. By utilizing AI, businesses have the ability to offer products to customers that are in line with their interests and maintain their engagement. The ability of a firm to show their customers with products that are comparable to those they have already viewed on their website is made possible by tracking the activity of their customers on their website. This is a strategy that is particularly helpful for businesses that operate in the e-commerce sector.

This study will contribute to the existing knowledge on the application of AI in business, offering valuable insights to business executives, regulators, and technology professionals to aid in making strategic decisions and utilizing models for predictive analysis and learning.

**Keywords:** Artificial Intelligence (AI), Business organization, Customer satisfaction, Machine learning.

---

## 1. INTRODUCTION

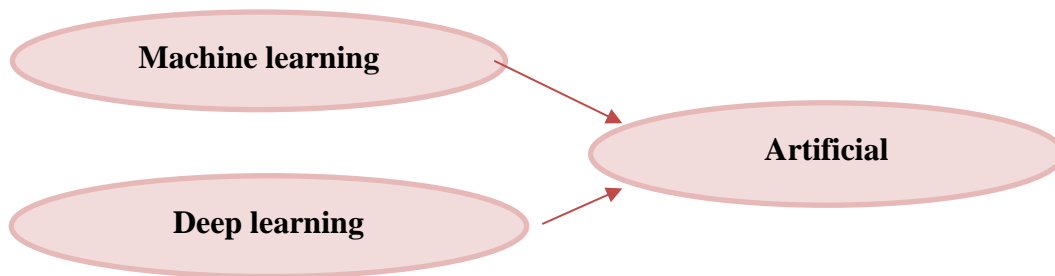
Innovation has consistently served as the primary catalyst for enhancing the quality of life across many historical periods. Nevertheless, the process of innovation can be exceedingly disruptive as it renders traditional technology out-dated. The advent of artificial intelligence (AI) is catalysing a profound transformation in the realms of business, economy, and society at large. This is achieved by fundamentally altering the dynamics and connections that underpin the interactions between stakeholders and individuals [1]. Nilsson states that the phrase "artificial intelligence" was initially introduced to the public during a workshop conducted in 1956 at Dartmouth College in the United States. According to John McCarthy, the pioneer of Artificial Intelligence, AI can be defined as the field of study and application of creating intelligent machines, namely computer programmes that possess the ability to think and learn. The term "artificial intelligence" is commonly used to describe when a machine imitates functions that humans typically identify with human minds, such as learning and problem-solving. In recent years, there has been a significant influx of software that incorporates artificial intelligence components. Artificial Intelligence has shown to be a valuable new tool in today's technology-driven culture [2].

Innovation has consistently been the predominant catalyst in enhancing living conditions throughout history. Nevertheless, the introduction of new technologies frequently leads to disruption as they supplant their predecessors. Cloud computing, the Internet of Things, big data, data science, artificial intelligence, and block chain are all instances of state-of-the-art technology that have the potential to bring advantages to certain individuals while causing harm to others on a global scale [3]. However, the utilisation of these technologies has significantly increased in recent years, and they are now ubiquitous in virtually every industry. The reasons for this phenomenon can be attributed to the extensive accessibility of free and open-source software, the enhanced transparency resulting from widespread code-sharing on platforms such as GitHub, GitLab, and BitBucket, and the advancements in computing technology, including high-performance computing, grid computing, and cloud computing. The widespread adoption of these technologies and their multifaceted applications has profoundly influenced every facet of human existence. The Fourth Industrial Revolution, also known as Industry 4.0, can be facilitated by these technologies, enabling the advancement of hyper-automation and hyper-connectivity [4]. The advancement of AI is the main driving force behind the evolution of Industry 4.0 and the improvement of other technologies. The literature provides abundant evidence indicating that AI technology offers significant potential for revolutionising both enterprises and the entire economic system [5]. The aforementioned benefits are anticipated to result in state-of-the-art service standards, higher revenues, business expansion, and cost-effective and efficient operational models [6]. This study examines the impact of artificial intelligence implementation on corporate operations.

Artificial intelligence (AI) is a computer science discipline focused on creating software that can make intelligent judgements, engage in reasoning, and solve problems. AI has the ability to enhance productivity, achieve a competitive edge, supplement human intelligence, and lower operational costs. Businesses of various sizes and industries are increasingly turning to artificial intelligence as a solution to address their challenges. Prior to examining the impact of AI technologies on the business sector, it is imperative to establish a clear definition of the term "artificial intelligence [7]." The term "artificial

intelligence" is a broad term that can be used to describe any type of computer software that engages in tasks similar to those performed by humans, such as learning, planning, and problem-solving. Artificial intelligence is the capacity of a computer or a computer-enabled robotic system to analyse data and generate outcomes in a manner that resembles human thought processes in learning, decision-making, and problem-solving. Furthermore, the objective of AI systems is to address complex issues using methods that resemble human logic and reasoning [8].

**Machine learning:** Machine learning is a widely used form of artificial intelligence (AI) that is currently being developed for business applications. The main objective of machine learning is to efficiently handle large amounts of data within a limited timeframe. The algorithms comprising these types of artificial intelligences provide the illusion of "learning" gradually. Providing supplementary data to a machine learning algorithm enhances the quality of the resulting model. The proliferation of the Internet of Things and interconnected devices is generating vast quantities of data, posing a challenge for humans to grasp without the aid of machine learning [9]. Machine learning has the capability to identify patterns and anomalies in real-time. Machine learning is extensive. **Deep learning:** Deep learning originated from artificial neural networks, which are composed of interconnected artificial intelligence "nodes". Artificial neural networks Deep learning employs neural networks to facilitate non-linear cognition. Deep learning is necessary for fraud detection. This is achieved by the analysis of numerous parameters. The application of deep learning in business has great potential and is expected to be progressively adopted. Deep learning models continue to improve as more data is added, while previous machine-learning algorithms reach a point where they no longer make significant progress. Deep learning models exhibit superior scalability, granularity, and autonomy [10].



**FIGURE 1. Artificial intelligence**

The importance of artificial intelligence (AI) in contemporary digital existence is rapidly rising, encompassing the advertising and marketing sectors as well. The advent of artificial intelligence is revolutionising various industries, exemplified by the clever and intelligent Siri, Tesla's autonomous vehicle, and Google's AI system that can rapidly acquire video gaming skills within a few hours. Artificial intelligence has diverse applications, including the identification of data patterns to mitigate market risks, enhancement of customer service through virtual assistants, and analysis of numerous documents across multiple servers to detect compliance breaches. [11] However, businesses have recently started to see and predict the potential advantages that robots and artificial intelligence (AI) could provide for the future of business. The longevity of the system, combined with continuous improvements and the ability to document procedures, contributes to promising economic opportunities. Artificial intelligence applications utilise robotics, computer vision, voice recognition, machine learning, and natural language processing technologies. These technologies present several business opportunities. Here are some of the primary applications of AI in business, however AI is utilised in numerous other domains inside modern organisations. [12]

- ❖ **Work Automation:** AI-driven labour automation has the potential to result in the loss of over 9 million manufacturing jobs in the United States. The integration of artificial intelligence (AI)

and the Internet of Things (IoT) is empowering organisations to enhance operational efficiency, reduce costs, and cultivate novel opportunities in the job market. [13]

- ❖ **Commercial and promotional activities:** The utilisation of artificial intelligence is progressively assuming a pivotal position in the domain of marketing and sales, leading to extensive transformations in this industry. Facebook utilises machine learning algorithms to monitor user behaviour for the purpose of delivering personalised internet advertisements. Internet-based platform for renting accommodations Airbnb is employing artificial intelligence (AI) to compute the most lucrative prices for rooms in a specific location, while factoring in the overall number of potential visitors. [14]
- ❖ **Cyber security:** Artificial intelligence is crucial in identifying vulnerabilities in computer networks. Artificial intelligence (AI) systems have the capability to identify and identify cyber-attacks and various other cyber risks by examining patterns and trends in data. It has the ability to accurately identify the origin of a potential hazard within your data and proactively avert any future risks. AI's on-going and watchful surveillance will enhance your infrastructure. [15]
- ❖ **Customer management:** Artificial intelligence is also transforming customer relationship management (CRM) systems. Artificial Intelligence (AI) transforms a Customer Relationship Management (CRM) system into an automated, self-updating, and error-correcting system for managing relationships [16].
- ❖ **Customer support:** Estimates from the retail sector indicate that around one-third of all internet purchases are conducted using a mobile device. Due to the widespread adoption of smart phones, an increasing number of individuals are relying on applications for various purposes, ranging from entertainment and information to online shopping and financial transactions. Emotion artificial intelligence technique is used by organisations to assess the reactions of their customers. Artificial intelligence and machine learning enable firms to get data on consumer perceptions of their brand [17].
- ❖ **Fraud Detection:** AI can aid firms in detecting possible occurrences of fraud and developing efficient strategies to counter them. By employing diverse machine learning algorithms, the banking and financial sector has already developed accessible systems capable of detecting potentially fraudulent transactions. If the application detects any indication of fraud, it will block the transaction and inform the appropriate individuals involved [18].

## 2. RELATED SURVEYS AND CONTRIBUTIONS

**Jasmin Praful Bharadiya et al. (2023) [19]** argued that the continuous progress of business and the latest advancements in artificial intelligence (AI) enable the enhancement of various business practices through the ability to construct novel forms of collaboration, which presents a notable competitive edge. This quickly advancing technology allows for the provision of new services and novel forms of business interactions with both consumers and workers. The advent of AI digitalization has underscored the importance for organisations to focus on their current strategy while actively and proactively exploring new opportunities in the market. Artificial intelligence (AI) is being utilised and transforming various industry areas, not only limited to business. This study specifically examines the utilisation of artificial intelligence (AI) methodologies in various corporate sectors and industries. **Srikar Soma (2023) [20]** examined the extensive impact of artificial intelligence, tracing its development from the laboratory to its current practical implementations in contemporary culture. This study examined significant advancements in AI research that have influenced business and, consequently, the global economy. The study's findings will illuminate the advancements and impacts of AI on many businesses and the general population. Moreover, it will elucidate the impact of AI on corporate operations and, consequently, the global economy. **Anupama Prasanth et al. (2023) [21]** explored the implementation of artificial intelligence and decision-making in business, with a focus on

understanding how AI is utilised to improve decision-making processes and transform company models. The study demonstrates that artificial intelligence plays a transformative role in business decision making, providing substantial benefits in terms of efficiency, accuracy, and innovation. AI-driven solutions empower organisations to efficiently process and analyse large volumes of data, resulting in expedited and well-informed decision-making. In summary, the incorporation of artificial intelligence (AI) into the process of making business decisions holds the capacity to propel organisational achievements and influence the trajectory of business methodologies.

### 3. METHODOLOGY

The current study is organised in a way that reflects the growing interest in AI in the corporate world. Initially, the approach is elucidated, relying on a bibliometric analysis. Subsequently, the findings of the inquiry are disclosed. Lastly, this study presents conclusions and potential research limitations. This article provides a valuable contribution by highlighting the primary patterns in the utilisation of Artificial Intelligence (AI) in the business sector. The objectives are

- To evaluate the present status of AI integration in businesses
- To identify the primary utilizations of Artificial Intelligence in businesses
- To offer practical suggestions for effectively implementing AI in businesses

### 4. STATEMENT OF THE PROBLEM

The incorporation of Artificial Intelligence (AI) into business operations has become more widespread, offering improved efficiency, innovation, and competitive edge. Nevertheless, when organisations endeavour to embrace and execute AI technology, they encounter a multitude of obstacles and apprehensions. AI use in business raises ethical concerns, including algorithmic prejudice, privacy issues, and the possibility of employment displacement. Organisations encounter difficulties in effectively integrating AI technologies into their operational procedures. This study seeks to offer significant insights into the intricate terrain of AI adoption in business by addressing crucial difficulties. Additionally, it strives to provide practical recommendations for organisations to optimise the advantages of AI while effectively tackling the related challenges.

### 5. FINDINGS

The study highlights the significance of assessing the present extent of AI integration in businesses across diverse sectors and identifying the prevailing AI applications that are frequently utilised. It is crucial to emphasise the ethical quandaries associated with the use of AI, such as algorithmic bias, privacy difficulties, and the possibility of job displacement, and assess the steps organisations are doing to tackle these ethical concerns. In regards to security and data privacy, organisations must assess the security protocols established by other organisations to mitigate potential dangers and vulnerabilities related to AI. Additionally, they should scrutinise how businesses are guaranteeing data privacy in the context of adopting AI. The study also identified implementation barriers that organisations must acknowledge when facing common obstacles in integrating AI, including technical intricacies, employee opposition, and insufficient organisational preparedness.

### 6. SUGGESTIONS

The study seeks to provide significant insights to the subject of AI implementation in business and offer practical suggestions for organisations facing obstacles in implementing AI technologies.

- Implement explicit protocols and regulations to guarantee privacy and safeguard data.
- Participate in ethical AI dialogues with relevant parties to establish confidence.
- Establish resilient cyber security measures to protect AI systems.
- Provide personnel with training on optimal strategies for safeguarding data privacy.

- Create a specialised compliance team to oversee and guarantee compliance.
- Promote ethical AI practices in industry forums and regulatory agencies.

By incorporating these recommendations, businesses can effectively address the difficulties linked to the adoption of AI, optimise the advantages of AI technologies, and actively contribute to a conscientious and ethical integration of artificial intelligence into their operations.

## 7. CONCLUSION

This article explores the growing significance of artificial intelligence in various business operations, including data analytics and competitive intelligence. Numerous corporations might enhance their performance by establishing novel forms of collaboration, giving them a significant edge over other organisations due to the continuous evolution of business and recent advancements in artificial intelligence. Furthermore, this benefit is facilitated by the latest breakthroughs in AI. Due to the swift progress of technology, it is now possible to provide branded services and even explore novel methods of corporate interaction with both customers and employees. The advent of AI digitalization has prompted organisations to prioritise their current strategy while actively and expeditiously exploring new opportunities in the market. It is imperative for these organisations to achieve this need in order to maintain their competitiveness. The application of artificial intelligence methods has not only transformed the corporate realm but also various other industrial sectors. AI has the potential to revolutionise business through cutting-edge technical advancements and scientific expertise. Artificial intelligence has profound effects on governments, society, industry, and individuals. The benefits of AI in business include enhanced productivity, reduced time and costs, decreased human error, expedited decision-making, accurate consumer choice prediction, and sales growth through automation and data analysis. In conclusion, AI affects company development, cyber security, privacy, and income equality. Artificial intelligence can improve global corporate frameworks. Artificial intelligence is predicted to grow, transforming the business environment. Thus, to succeed, people and businesses must embrace innovation to prepare for future technology needs.

## REFERENCES

- [1]. Marston, Sean, et al., "Cloud computing – The business perspective." *Decision support systems*, vol. 5, no.1, pp. 176-189, 2011.
- [2]. Park and Sang-Chul., "The Fourth Industrial Revolution and implications for innovative cluster policies." *AI & Society*, vol. 33, no. 3, pp. 433-445, 2017.
- [3]. N.J.Nilsson., *The quest for artificial intelligence*. Cambridge University Press; 2009.
- [4]. H. Muñoz-Hernandez, R. Osorio-Mass, and L. Zúñiga-Pérez, L., "Business intelligence. Key to Success in the information age." *Clío Am*. Vol. 10, 1877. doi: 10.21676/23897848.1877
- [5]. D. Zumstein, C. Brauer, and A. Zelic, "Benefits, challenges and future developments in digital analytics in German speaking countries: an empirical analysis." *Appl. Market. Anal*, pp. 246-259. 2022.
- [6]. Y. Shi, T. Cui, and F. Liu, "Disciplined autonomy: how business analytics complements customer involvement for digital innovation." *Journal of Strategies Information System*. Vol. 31, pp. 101706. 2022. doi: 10.1016/j.jsis.2022.101706
- [7]. L. Boullart, "A gentle introduction to artificial intelligence." *Appl Artif Intell Process Control*, pp. 5 - 40, 1992.
- [8]. Vidhi Jain, "An Impact of Artificial Intelligence on Business". *IJRAR- International Journal of Research and Analytical Reviews*, vol. 6, no 2, 2019.
- [9]. Raygun. Developers are building better software, faster, using AI; 2017. Retrieved from <https://thenextweb.com/dd/2017/09/19/developers-are-building-bettersoftware-faster-using-ai/>

- [10]. S. Alsheibani, D. Messom, Y. Cheung, M. Alhosni. "Reimagining the strategic management of artificial intelligence: five recommendations for business leaders." *Americas Conference on Information Systems*, Online, 2020.
- [11]. A.N. Mishra, and A.K.Pani, "Business value appropriation roadmap for artificial intelligence." *VINE Journal of Information and Knowledge Management Systems*, 51(3), 353 – 368, 2020.
- [12]. Y. Shi, T. Cui, and F.Liu, "Disciplined autonomy: how business analytics complements customer involvement for digital innovation." *J. Strateg. Inform. Syst.* 31, 101706., 2022.
- [13]. P. Donepudi, "Application of Artificial Intelligence in Automation Industry." *Asian Journal of Applied Science and Engineering* 7(1):7-20, 2018.
- [14]. K.N. Kavitha, C.U. Nouhar, C.U., S.T. Anjali, "A Study On 'Application Of Artificial Intelligence In Digital Marketing.'" *International Journal of Creative Research thoughts*, 10(12), 367 – 374, 2022.
- [15]. N. Wirkuttis, and H. Klein, H, "Artificial intelligence in cybersecurity." *Cyber Intelligence and Security Journal*, 1(1), 21–23, 2017.
- [16]. C. Coombs, D. Hislop, S.K. Taneva and S. Barnard. "The strategic impacts of Intelligent Automation for knowledge and service work: an interdisciplinary review." *J Strateg Inf Syst.* Vol. 29, no. 4, pp. 101600, 2020.
- [17]. JP. Higgins, "Cochrane Handbook for Systematic Reviews of Interventions Version 5.0. 1." *The Cochrane Collaboration*, 2008. Available: <https://www.cochranehandbook.org>
- [18]. P. Glauner, "Unlocking the power of artificial intelligence for your business. In: Innovative technologies for market leadership. Future of business and finance." *Springer International Publishing*. pp. 45-59, 2020.
- [19]. Jasmin Praful Bharadiya, Reji Kurien Thomas and Farhan Ahmed, "Rise of Artificial Intelligence in Business and Industry." *Journal of Engineering Research and Reports*, vol. 25, no 3, pp. 85-103, 2023.
- [20]. Srikar Soma, "Applications of Artificial Intelligence On Business Analytics." *International Journal of Creative Research Thoughts (IJCRT)*, vol. 11, no. 1. 2023.
- [21]. Anupama Prasanth, Densy John Vadakkan, Priyanka Surendran and Bindhya Thomas, "Role of Artificial Intelligence and Business Decision Making." (*IJACSA*) *International Journal of Advanced Computer Science and Applications*, vol. 14, no. 6, pp. 965, 2023.