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A Study on Artificial Intelligence and Its Impact on It Industry: In Coimbatore City

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ABSTRACT
From software development to cyber security, the IT sector plays a crucial role in enabling digital transformation and driving innovation. It offers exciting career opportunities and is constantly adapting to meet the changing needs of businesses and society. AI had a profound impact on the IT sector. Also it automates repetitive tasks, freeing up valuable time for employees to focus on more strategic work. The study examines what the factors are influencing the respondents to adopt Artificial Intelligence, its impact and the opinion of the respondents while introducing towards AI in IT industry. For the purpose of the study percentage analysis and weighted average score analysis has been used for the analysis. The study suggested that implement the AI software in their respective companies which are well suited for their work capacity. The study concludes that the integration of Artificial Intelligence in the Information Technology industry is a testament to its potential to reshape the future of work.

Keywords: AI, Business, IT Industry, Information Technology, Software, Cyber Security.

INTRODUCTION

The ever-evolving landscape of Information Technology (IT) is marked by continuous technological advancements that redefine the way businesses operate and deliver value to their customers. In recent years, Artificial Intelligence (AI), have emerged as transformative forces in the IT sector. Artificial Intelligence automates repetitive tasks, enhancing efficiency, and reducing errors in the work process. AI has a significant influence in the IT sector and it brings automation to various processes, reducing manual effort and improving efficiency. It allows organizations to streamline repetitive tasks, freeing up employees to focus on more strategic and complex work. AI can be applied in areas like data entry, report generation, and system integration. It is transforming the way businesses operate and accelerating digital transformation.

AI is enabling machines to perform tasks that typically require human intelligence. AI is making a significant impact in the IT sector. It enables advanced automation, data analysis, and decision-making capabilities. AI-powered technologies like machine learning and natural language processing are transforming various areas, such as customer service, cyber security, and data analytics also plays a crucial role in the digital transformation of businesses and organizations. The perception of employees towards Artificial Intelligence in the IT sector can vary widely.

STATEMENT OF THE PROBLEM

As a concept, artificial intelligence has been used around decades. But from last 20 years, the successful application of machine learning enabled the boom of AI. This study is important because AI, today, has begun to engage the workforce. AI has the potential and capability to solve many business problems as well as to make shift in productivity of the industries by introducing automation for tedious, time consuming, mundane and repetitive tasks. Artificial Intelligence presents a unique set of challenges and opportunities for organizations seeking to streamline operations and enhance decision-making. These days, more and more HR professionals and employees of organizations are concerned and fear that AI would eventually supplant humans in the workplace, and this study tries to address this ongoing compelling issue. The introduction of automation and AI can be met with resistance from employees who fear job displacement. Managing this change and up skilling the workforce to collaborate effectively with automation is a problem that needs a strategic solution. Understanding the perceptions of IT employees is vital for organizations to effectively implement of AI technologies and ensure a smooth transition while addressing any potential challenges or obstacles. Hence the researcher made an attempt to conduct a study on "Artificial Intelligence and it's impact on IT industry- in Coimbatore" .

SCOPE OF THE STUDY

The scope of the study is to encompass a comprehensive examination of how employees in IT sector perceive and interact with AI .This research will involve surveying and analysing the attitudes, knowledge, and opinions of employees towards these emerging technologies, exploring their awareness of AI applications in the workplace, and assessing the potential impact on their job roles, job satisfaction, and job security. The study will aim to provide insights into the opportunities and challenges that AI pose for the workforce.

OBJECTIVES OF THE STUDY

- To study the factors influencing while introducing Artificial Intelligence in IT industry.
- To study the impact of Artificial Intelligence on the IT industry.
- To identify the opinion towards implementation of AI in IT industry

METHODOLOGY OF THE STUDY

Area of study - The study is confined to IT employees in Coimbatore City.
Source of data - This research involves both secondary and primary data.
Sample size - The data has been obtained using questionnaires from 150 respondents who are working in IT companies in Coimbatore. The research employs convenience sampling technique to collect the data.
Tools for analysis - For the purpose of the study, Average score analysis, Demographic chart, was used and interpretation was given through the respective tables.
LIMITATIONS - The study is conducted only in Coimbatore districts. The study is limited to 150 respondents only.

REVIEW OF THE LITERATURE

Lokesh G.R et al., (2023) study found that the dependent variable, AI on the IT sector is significantly impacted by the availability of enormous amount of data, innovation advancements, and competition driving efficiency & interests and advancement in deep learning.

Rahul Bhaskar (2023) study explains the interdisciplinary review of five theoretical frameworks on job automation, paying particular attention to the role played by artificial intelligence and machine learning also stated the integrated framework on job automation by addressing the research gaps in extant frameworks and thereby contributes to the research and practice on this important topic.

Vinay Reddy Venumuddala et al., (2022) study found that broadly indicate the need for streamlining workflows in these emerging work systems, engaging with new technologies like AI that are rapidly diffusing across the IT industry, particularly in offshoring contexts like India.

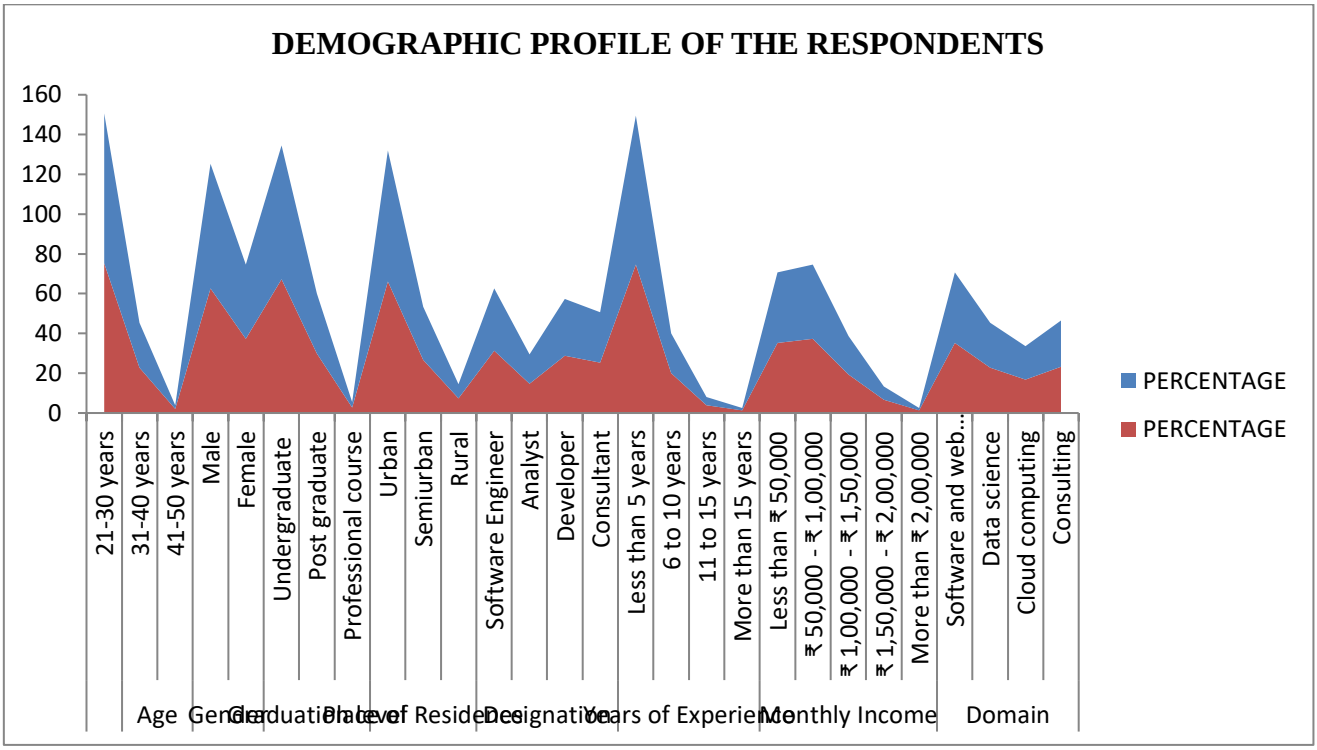
Yash Chawla et al., (2022) study revealed the development incentives for IT in the Indian energy sector: and argues that the needed holistic top-down approach is lacking, calling for due attention in this matter and also states that adaptive and swift actions from policymakers towards AI and IM are warranted in India.

Monika Arora et.al., (2022) study found that combining block chain (BC) and deep learning (DL) with Artificial Intelligence (AI) and discusses the revolutionary changes that would result by rapidly advancing the AI field.

Ibrahim Chaloob (2021), study shows that AI is the foundation of multiple concepts, such as computing, software creation, and data transmission. The technologies that use AI are machine learning, deep learning, Natural Language Generation, speech recognition, robotics, and biometric identification. It applies to many sectors such as healthcare sectors, assembling and manufacturing industries, business organizations, and in the automotive industries. AI also has various advantages that make it gain more popularity in many areas.

ANALYSIS AND INTERPRETATION

Chart 1 Demographic Profile of the Respondents



The above table shows that majority (62.7%) of the respondents are male, (67.3%) of the respondents are undergraduate, (66 %) of the respondents belong to urban area, (74.7 %) of the

respondents has less than 5 years of experience, (37.3 %) of the respondents has monthly income level between Rs.50,000 to Rs.1, 00,000 and (35.3%) of the respondents working in IT industry are software and web development.

Table -1 Major contribution of AI in IT industry by the respondents

Major contribution of AI	Number of respondents	Percentage (%)
Machine learning algorithms	54	36
Natural language processing	53	35.3
Computer vision	32	21.3
Deep learning	11	7.3

The above table describes that out of 150 respondents taken for the study, 36 percent of the respondents working in IT industry opined that the machine learning algorithms as the major contribution of AI, 35.3 percent of the respondents working in IT industry opined that the natural language processing as the major contribution of AI, 21.3 percent of the respondents working in IT industry opined that the computer vision as the major contribution of AI and 7.3 percent of the respondents working in IT industry opined that the deep learning as the major contribution of AI in IT industry by the respondents .
The study concluded that most (36%) of the respondents working in IT industry opined that the machine learning algorithms as the major contribution of AI in IT industry by the respondents.

Table-2 Most significant impact of AI application on IT industry by the respondents

Most significant impact of AI application on IT industry	Number of respondents	Percentage (%)
Chatbots & virtual assistance	56	37.3
Predictive analytics	41	27.3
Robotic Process Automation (RBA)	39	26
Cyber security	14	9.3

The above table describes that out of 150 respondents taken for the study, 37.3 percent of the respondents working in IT industry opined that the Chatbots & virtual assistance as the most significant impact of AI application on IT industry, 27.3 percent of the respondents working in IT industry opined that the predictive analytics as the most significant impact of AI application on IT industry, 26 percent of the respondents working in IT industry opined that the Robotic Process Automation (RBA) as the most significant impact of AI application on IT industry and 9.3 percent of the respondents working in IT industry opined that the cyber security as the most significant impact of AI application on IT industry by the respondents.
The study concluded that most (37.3%) of the respondents working in IT industry opined that the Chatbots & virtual assistance as the most significant impact of AI application on IT industry by the respondents

Table-3 Opinion of respondents towards implementation of AI in IT industry

Factors	AI has positively influenced technological innovations in IT	Integration of AI impacted the skill requirements of workforce in IT industry	AI has contributed to job creation in IT sector	Emergence of AI lead to job displacement in IT industry	AI lead to need for continuous up skilling in the IT industry
Score	4.28	3.91	3.37	3.86	3.32
Rank	1	2	4	3	5

The majority of the respondents had strongly agreed that AI has positively influenced technological innovations in IT gives first rank to AI has positively influenced technological innovations in IT and followed by Integration of AI impacted the skill requirements of workforce in IT industry, Emergence of AI lead to job displacement in IT industry, AI has contributed to job creation in IT sector, AI lead to need for continuous up skilling in the IT industry.

FINDINGS OF THE STUDY

- Most (75.33 %) of the respondents belong to the age group of 21-30 years.
- Majority (62.7%) of the respondents are Male.
- Majority (67.3%) of the respondents are undergraduate.
- Most (66 %) of the respondents belong to urban area.
- Most (74.7 %) of the respondents has less than 5 years of experience.
- Majority (37.3 %) of the respondents has monthly income level between Rs.50,000 to Rs.1, 00,000
- Most (35.3%) of the respondents working in IT industry are software and web development
- Most (36%) of the respondents working in IT industry opined that the machine learning algorithms as the major contribution of AI in IT industry by the respondents.
- Most (37.3%) of the respondents working in IT industry opined that the Chatbots & virtual assistance as the most significant impact of AI application on IT industry by the respondents
- The respondents strongly agree that AI has positively influenced technological innovations in IT industry.

SUGGESTIONS

The study suggested that the IT sectors need to implement and install various AI instruments in order to improve the job efficiency in the IT sector. So, implementation of AI instruments is advised. The work efficiency can be improved more with the help of AI & also AI can be implemented in complicated works to improve the work's efficiency. Cyber Security is the most benefitted domain in IT sectors. So, Cyber Security should be given more importance, as this domain is the most benefitted by the implementation of AI. As AI started to grow in IT fields, there must be professionals who develops AI software and handle them wisely. AI developers should be hired and given more importance, as they develop the AI systems and process those systems into IT fields and also handles them more efficiently.

The AI Software are categorized into many versions, the Cost of implementation of AI software are comparatively higher than installing normal software in IT fields. The IT sectors are suggested to implement the AI software in their respective companies which are well suited for their work capacity. By Implementation of AI in IT sectors, errors made by the human while coding the programs can be identified and improved easily by AI.

CONCLUSION

Artificial intelligence has revolutionized the processes in Information Technology industry by making them more efficient and accurate, leading to increased productivity and cost reduction. From automation to predictive analytics, Artificial Intelligence has become an integral part of modern Information Technology infrastructure. Additionally, Artificial Intelligence has created new job roles and opportunities while also raising concerns about job displacement. Thus, the integration of Artificial Intelligence in the Information Technology industry is a testament to its potential to reshape the future of work.

REFERENCES

1. Lokesh G. R and Geethanjali G (2023), “Impact of Artificial Intelligence in information technology sector with reference to Bangalore city”, International Journal of Advances in Engineering and Management (IJAEM), Vol.5 (3), pp.628-635.
2. Rahul Bhaskar (2023), “Artificial Intelligence & Machine Learning for Job Automation”, Database Management, Vol.34 (1), pp.1-10.
3. Rudra Tiwari (2023). “The impact of AI and machine learning on job displacement and employment opportunities", International Journal of Scientific Research in Engineering and Management (IJSREM), Vol.7 (1), pp.1-9.
4. Varun kisan Nharkar and Dr. Shiv Kumar Goel (2023), “Impact of generating AI on IT professionals” international Journal Research, Vol.11 (7), pp.15-18.
5. Eray Eliaçık (2022), “The ultimate combination of success: AI & IT”, Intelligent Data Acquisition and Advanced Computing Systems: Technology and Applications (IDAACS), Vol. 5, pp. 191 – 196.
6. Vinay Reddy Venumuddala and Rajalaxmi Kamath (2022), “Work systems in the Indian Information Technology (IT) industry delivering Artificial Intelligence (AI) solutions and the challenges of work from home”, Information System Frontiers, Vol.25(4), pp.1375-1399.
7. Reena Lenka and Nilesh V. Limbore (2022), “A study on Artificial Intelligence in IT and ITES sector in Bangalore”, The Online Journal of Distance Education and eLearning (TOJDEL), Vol.10 (4), pp.575-583
8. Yash Chawla, Fumio Shimpo and Maciej M. Sokolowski (2022), “Artificial Intelligence and information management in the energy transition of India: lessons from the global IT heart”, Digital Policy, Regulation and Governance, Vol.24 (1), pp.17
9. Monika Arora and Indira Bhardwaj (2022), "Artificial Intelligence in Collaborative Information system", I. J. Modern Educations and Computer Science (IJMEC), Vol.1, pp.44-55.
10. Ibrahim Chaloob (2021), “Artificial intelligence in information technology”, Journal of Xidian University, Vol.14, pp. 389 – 395.
11. Dhaya Sindhu Battina (2021),” AI and DevOps in Information Technology and Its future in United States”, International Journal of Research and Analytical Reviews (IJRAR), Vol. 8(1), pp.108-112.

12. Saeed AI Mansoori, Said A. Salloum and Khaled Shaalan (2021), "The impact of Artificial Intelligence and Information Technologies on the Efficiency of Knowledge Management at Modern Organizations: A Systematic Review", Studies in systems, decision and control recent advances in intelligent systems and smart applications, pp.163-182.
13. Sikender Mohsienuddin Mohammad (2020), "Different technologies in AI and how they apply to improve the performance of IT sector". 'International Journal of Innovations in Engineering Research and Technology '[IJIERT], Vol.7, pp.168-174.
14. Barani kumari P. and Hemalatha A. (2019), "Perception towards Artificial Intelligence in Human Resource Management practices- with reference to IT Companies in Chennai", International Journal of Recent Technology and Engineering (IJRTE), Vol.8 (4S3), pp.61-65.
15. Richa Verma and Srinivas Bandi (2019), "Artificial Intelligence & Human Resource Management in Indian IT sector", Social Science Research Network (SSRN), pp.962967. Bilal Alhayani, Husam Jasim Mohammed, Ibrahim Zeghaiton Chaloob and Jehan Saleh
16. Ahmed (2018), "Effectiveness of artificial intelligence techniques against cyber security risks apply of IT industry", Materials Today: Proceedings, Vol. 2, pp. 853– 858. Supriya Pal and Mohammad Amine Chabane (2018), "Inclusion of Artificial Intelligence in recruitment process", Liberal Studies, Vol.3, pp.245-250.
17. Rahul Reddy (2018), "Importance of AI in IT Industry", International Journal of Computer Trends and Technology (IJCTT), Vol.64, pp.29-42.
18. Sunil Mithas, Thomas kudey and Jonathan Whitaker (2018), "Artificial Intelligence and IT professionals", IEEE Computer Society, pp.6-13.