



A Study on Socio-Economic Impact of AI Implementation In india: Unemployment Trends and Economic Dynamics

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ABSTRACT:

This research paper explores the socio-economic impact of AI (Artificial Intelligence) implementation in India, focusing on unemployment trends and economic dynamics. The study aims to understand the types of jobs most affected by AI, assess the impact on unemployment rates, and analyze the socio-economic effects post-AI implementation in India. Utilizing secondary data, the research investigates these aspects to provide valuable insights into the transformative effects of AI on the Indian job market and economy. We're trying to figure out these changes so the Government and Policy maker can make good plans to help people find new jobs and keep the economy strong as Artificial Intelligence grows in India.

KEYWORDS: Artificial Intelligence, socio-economic and unemployment trends.

1. INTRODUCTION:

In the evolving landscape of technology, Artificial Intelligence (AI) has become a game-changer, seeping into every aspect of our lives. Here in India, we are witnessing the rise of AI, not just in fancy gadgets, but in our workplaces and economy. This research paper zooms in on a crucial aspect that affects us all – jobs. Picture this: some jobs disappearing, new ones cropping up, and the job market doing a bit of a dance. That's what we're digging into – the impact of AI on employment, particularly focusing on how it shakes up the job market and plays a role in unemployment trends. No jargon here; we're keeping it real and straightforward as we explore the influence of AI on our jobs, income, and the sectors that keep our economy buzzing. So, let's dive in and uncover the story of AI and its socio-economic effects on unemployment trends and sectoral dynamics in India.

2. OBJECTIVES:

The key objectives of the study are as follows:

- To study the Socio-Economic Impact of AI Implementation In india
- To Know the Impact of AI Tools on Unemployment trends.
- To know the types of jobs that are most affected by AI implimentation in India.

3. BACKGROUND AND SIGNIFICANCE:

Artificial Intelligence (AI) is making waves in Industry 4.0, prompting organizations to integrate it for enhanced productivity and global competitiveness. As AI progresses, human resources are adapting to skill upgrades in the era of smart intelligence. Despite significant advancements, AI is not yet surpassing human capabilities, but it is reshaping industries and attracting substantial investments. The thesis focuses on understanding the impact of AI on human resources in the automotive sector in western India. India's startup ecosystem and innovative mindset offer a unique opportunity, but strong global competition, particularly from China, requires a futuristic economic framework. The evolution of AI, compared to historical developments, underscores the need for time to settle into a stable state. Overall, AI's transformative potential is evident, shaping the future of work and economies worldwide.

3.1. Benefits of Artificial Intelligence

Artificial Intelligence is an endeavor of humans to develop an alternative intelligence, which can be deployed in specific areas for enhancement of productivity and assistance in executing difficult tasks. The key areas where AI benefits can be reaped are in: Artificial Intelligence AI-Automation in related Processes Human Resources Employee Behavior in Support Functions Skill Management and development AI Infrastructure & Organizational Growth Job Structure 14

- Risk mitigation • Difficult terrain & territory • Error containment • Repetitive Digital assignments • Uninterrupted service executions • Cost efficiency • Enhanced productivity

3.2. Challenges of Artificial Intelligence

Every coin has two sides, so does every innovation or technology. AI also comes with its share of benefits and risks.

The key challenges are:

- Human redundancy • Job scarcity • Infringement on privacy • Lack of human connect

- Addiction • Ethical travesty

4. DATA COLLECTION METHODS:

Secondary Data source: This study relies on secondary data obtained from reputable sources such as government reports, academic journals, and industry publications. online write-ups, portals and websites accessed to draw the parallels between the real world and actual field to analyze the data.

5. RESEARCH METHODOLOGY:

This study embraces both a descriptive and exploratory approach of research. This study attempts to understand the Socio-Economic Impact of AI Implementation In India and To Know the Impact of AI Tools on Unemployment trends.

6. LIMITATIONS OF THE STUDY:

- The data has been collected only from India by secondary source.
- Artificial Intelligence is a wide area of research but its awareness is limited.

7. REVIEW OF LITERATURE:

7.1 Zee News (12th Feb 2024): It layoffs 2023 over 17400 Tech employees got Fired in Feb globally to date major companies which commenced layoff this month include Yahoo, Byju's, Godaddy, Guitar, eBay, autodesk, OLX group and others.

More than 17400 employees in the tech industry lost jobs in February in 2023 so far around 340 companies have Laid off more than 1.10 lakh employees worldwide. more than 3300 Tech employees lost jobs daily on average.

7.2 INDIA TODAY (4th August 2023): AI will replace millions of human jobs by 2030 but these 4 jobs to be at most risk, reveals study The report predicts that jobs requiring automation, such as data collection and repetitive tasks, will be replaced by AI. Low-wage workers are expected to be more severely affected, as they are up to 14 times more likely to require occupational changes by 2030 compared to higher earners.

7.3 CNBC (18th July 2023): Most outsourced coders in India will be gone in 2 years due to A.I., Stability AI boss predicts. In India, Mostaque said, “outsourced coders up to level three programmers will be gone in the next year or two, whereas in France, you’ll never fire a developer. Most outsourced programmers in India will see their jobs wiped out in the next year or two, Stability AI CEO Emad Mostaque said.

7.4 The Economics Times(11th July 2023): Layoffs in 2023: Microsoft, cognizant,Accenture among latest firms to cut jobs amid economic turmoil

7.5. BBC NEWS(28 March 2023): Artificial intelligence (AI) could replace the equivalent of 300 million full-time jobs, a report by investment bank Goldman Sachs says.

7.6. India Today(3rd March 2023): Layoffs in 2023: Google, Microsoft, **Salesforce and more fire thousands of employees in the last 2 months.**In the past two months, 567 layoffs were announced across big tech, startups and unicorn tech companies. The latest layoff spree impacted more than 150,000 IT employees around the globe.

7.7. Carl Benedikt Frey, future of-work director at the Oxford Martin School:Oxford University:According to Carl Benedikt Frey, the future of work director at the Oxford Martin School, technologies like ChatGPT are enabling individuals with average writing skills to produce essays and articles, intensifying competition among journalists. Frey draws parallels with the impact of GPS and platforms like Uber, which devalued the knowledge of all London streets, leading to substantial wage cuts for incumbent drivers. Similarly, as generative AI becomes more prevalent, it is anticipated to have analogous effects on a wider range of creative tasks, potentially driving down wages in creative professions rather than reducing the number of practitioners.

7.8. According to research cited by the report chief executive of the Resolution Foundation think tank Torsten Bell told BBC News: Predicting the long-term impact of AI should be approached with caution. Bell emphasizes the uncertainty surrounding how technology will evolve and how businesses will integrate it into their operations. While acknowledging the potential for AI to disrupt traditional work patterns in the short term, Bell urges a broader perspective. He suggests considering the potential gains in living standards from more productive work and cost-effective services. Bell also highlights the risk of falling behind if firms and economies fail to adapt effectively to technological changes. In essence, while acknowledging the challenges, he encourages focusing on both the potential disruptions and the positive aspects of technological advancement.

7.9. Jared Jaskot (Feb2022): According to a paper written by economists at MIT and Boston University, robots could replace about two million workers by 2025. While many of these lost jobs are in manufacturing and other jobs that inherently require more repetitive, linear tasks, it's not outside the realm of possibility that AI continues to creep into the legal profession.

7.10. KHATRI, SAPNA,Amity University Madhya Pradesh(2022)

The study on artificial intelligence (AI) implementation and its impact on India's automotive industry reveals that

AI is still in its early stages in the country, facing challenges like limited infrastructure and misconceptions about its role. While expert AI systems show potential in reducing decision-making ambiguity, concerns arise regarding job reductions with neural systems. The study emphasizes the importance of reskilling human resources over complete AI automation, considering India's ample skilled workforce. Balancing AI's infrastructure demands with optimal human resource utilization is crucial. AI's inability to grasp human emotions underscores the significance of human psychology in the workplace. Concerns about data biases and potential impacts on memory and mental exercise are raised, emphasizing the need for employee well-being. Despite challenges, the study anticipates a promising future for AI, foreseeing continued growth and evolution.

8. SOCIO-ECONOMIC IMPACT OF AI IMPLEMENTATION IN INDIA

The socio-economic impact of AI implementation in India is transformative, influencing various facets of the nation's economy and society.

- **Diverse Industry Impact:** AI implementation in India is significantly enhancing productivity and driving innovation across various sectors, including manufacturing, healthcare, finance, and services. Automation in manufacturing, faster healthcare diagnostics, and optimized financial services showcase the transformative effects.
- **Business Adoption Trends:** There is a notable trend in India where businesses are actively integrating AI technologies to streamline operations, reduce costs, and introduce innovative solutions. This reflects a commitment to staying competitive in the global market.
- **Industry-Specific Variances:** While AI adoption is prevalent, industry-specific variances exist, emphasizing the need for tailored analyses. Technology-centric sectors tend to exhibit higher adoption rates compared to traditional industries.
- **Inclusive Workforce Development:** To address the evolving job landscape, inclusive upskilling and reskilling initiatives are crucial. These efforts ensure that the Indian workforce is adequately prepared for the demands of AI-driven industries.
- **Government Role:** Government policies, financial support, and collaborations with educational institutions play pivotal roles in shaping the response to AI-induced changes in India. These efforts contribute to a comprehensive and strategic approach towards AI implementation.
- **Global Competitiveness:** The impact of AI in India extends beyond economic dimensions, influencing social dynamics, workforce development, and the nation's global competitiveness. The nation is actively positioning itself as a participant in the global AI landscape.

9. IMPACT OF AI TOOLS ON UNEMPLOYMENT TRENDS

The impact of AI tools on unemployment trends is a complex and multifaceted issue, with both positive and negative aspects:

- **Job Displacement:** The implementation of AI tools, particularly automation and machine learning, has the potential to displace certain jobs that involve routine and repetitive tasks. Industries like manufacturing, customer service, and data entry may experience a reduction in demand for human labor as AI systems take over these functions.
- **Job Creation:** On the positive side, the adoption of AI tools often leads to the creation of new job roles in emerging fields. Positions related to AI development, data science, and AI system maintenance become increasingly important, creating opportunities for individuals with the right skill sets.
- **Skill Shift:** The integration of AI tools necessitates a shift in the skill requirements of the workforce. While some traditional jobs may decline, there is a growing demand for skills related to AI, such as programming, data analysis, and AI system management. Workers who acquire these skills can remain competitive in the job market.
- **Increased Productivity:** AI tools have the potential to significantly increase productivity in various industries. This boost in efficiency can contribute to economic growth, potentially creating more opportunities for employment in sectors that experience expansion due to increased productivity.
- **Social and Economic Disparities:** The impact of AI on unemployment can contribute to social and economic disparities. Individuals without the means or access to acquire the necessary AI-related skills may face challenges in the job market, leading to a potential widening of the income gap.
- **Policy and Education:** Government policies and educational initiatives play a crucial role in mitigating the negative impacts of AI on unemployment. Programs focused on upskilling and reskilling the workforce, alongside policies that encourage the responsible adoption of AI technologies, can help address challenges associated with job displacement.

In summary, the impact of AI tools on unemployment trends is nuanced and dynamic. While certain jobs may be at risk of displacement, there are opportunities for new types of employment. The key lies in proactive measures, including education and policy interventions, to ensure a smoother transition for the workforce and mitigate potential negative consequences on unemployment.

10. TYPES OF JOBS THAT ARE MOST AFFECTED BY AI IMPLEMENTATION IN INDIA

In India, the impact of AI implementation varies across different sectors, but certain jobs are more susceptible to automation and transformation due to AI technologies. Some of the jobs that may be most affected include:

- **Routine Manufacturing and Assembly Line Jobs:** Jobs involving routine tasks in manufacturing and assembly lines are at risk of being automated. AI-powered robots can efficiently handle repetitive tasks, impacting roles that involve manual labor in production.
- **BPO and Call Center Jobs:** AI-driven chatbots and virtual assistants are increasingly used in customer service roles, potentially affecting jobs in Business Process Outsourcing (BPO) and call centers. Routine queries and basic support tasks can be handled by AI, impacting traditional customer service roles.
- **Data Entry and Processing Jobs:** Jobs that primarily involve data entry, data processing, and basic information retrieval may face automation. AI systems can handle these tasks with speed and accuracy, reducing the demand for manual data entry roles.
- **Telemarketing and Telesales:** AI applications can handle outbound calls, conduct surveys, and perform telemarketing tasks, potentially impacting jobs in telemarketing and telesales.
- **Routine IT Support Roles:** Basic IT support roles involving repetitive troubleshooting and issue resolution may see changes due to AI. Automated systems can handle routine queries and provide technical assistance.
- **Routine Accounting and Bookkeeping:** AI applications in accounting can automate tasks such as data entry, transaction categorization, and basic bookkeeping, potentially affecting jobs in routine financial tasks.
- **Routine Healthcare Tasks:** Certain routine healthcare tasks, such as basic diagnostics and data analysis, may be impacted by AI applications. While AI can support medical professionals, it may affect roles that involve routine and repetitive tasks.
- **Routine Agricultural Tasks:** In the agriculture sector, routine tasks like monitoring crops, assessing soil conditions, and basic agricultural activities may see changes with the introduction of AI-powered agricultural technologies.

It's important to note that the impact of AI is not uniform, and many jobs will also see transformations where AI complements human capabilities rather than completely replacing them. Additionally, AI implementation creates new opportunities in roles related to AI development, maintenance, and oversight, emphasizing the importance of upskilling and adapting to the evolving job landscape.

11. CONCLUSIONS:

Our study delves into the impact of AI implementation on unemployment trends and economic dynamics in India. We recognize AI's transformative influence across sectors, from manufacturing to healthcare, highlighting its role in enhancing productivity and driving innovation. As businesses in India actively adopt AI technologies, we observe a varied impact across industries, with technology-centric sectors leading in adoption. The emphasis on inclusive upskilling and reskilling initiatives is vital to prepare the Indian workforce for the demands of AI-driven industries. Government policies, financial support, and collaborations with educational institutions play a pivotal role in shaping a comprehensive response to AI-induced changes.

Examining the impact of AI tools on unemployment trends reveals a nuanced scenario. While there is a risk of job displacement, especially in routine tasks, there is a parallel creation of new opportunities in emerging AI-related fields. The shift in skill requirements towards programming, data analysis, and AI system management is evident, necessitating proactive measures in education and policy. The potential increase in productivity due to AI tools offers opportunities for employment in expanding sectors, but concerns about social and economic disparities emerge, necessitating careful policy considerations.

Exploring job types most affected by AI implementation in India highlights vulnerabilities in routine manufacturing, customer service, data entry, and other tasks susceptible to automation. The significance of adapting to this changing landscape through upskilling is reiterated. In essence, while AI poses challenges to certain job roles, it also opens avenues for innovation, skill development, and economic growth. Our findings underscore the need for a balanced approach, emphasizing education and policy interventions for a smoother transition and addressing potential negative consequences on unemployment.

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