



# A Study on the Impact of Artificial Intelligence on the Labor Market: With Special Reference to Coimbatore District

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**Abstract** – Artificial Intelligence (AI) is transforming the global labor market by automating routine tasks, creating new employment opportunities, and reshaping skill requirements. While AI improves productivity and innovation, it also raises concerns regarding job displacement and workforce inequality. This article examines the opportunities and challenges associated with AI adoption using secondary data from global reports and surveys. Statistical insights are presented through tables along with interpretations to understand AI's influence on employment patterns.

**Keywords**- Artificial Intelligence, Labor Market, Employment, Automation, Job Displacement, Skill Development, Workforce Transformation, Digital Skills, Economic Impact, Coimbatore District, Regional Employment, Reskilling, Industrial Automation, Future of Work

## I. INTRODUCTION

Artificial Intelligence refers to computer systems capable of performing tasks that normally require human intelligence, such as decision-making, language processing, and problem-solving. Organizations across industries increasingly rely on AI to enhance efficiency, reduce operational costs, and improve service delivery.

However, the integration of AI into workplaces has generated debate regarding its impact on employment. Some researchers argue that AI will eliminate jobs, while others believe it will create more advanced roles and transform the nature of work rather than replace it entirely.

### Objectives of the Study

- To analyze the impact of AI on employment levels.
- To identify job creation opportunities driven by AI.
- To study the challenges faced by workers due to automation.
- To know future labour market trends influenced by AI.

## III. STATEMENT OF PROBLEM

The rapid growth of Artificial Intelligence has significantly transformed the labour market by introducing automation and intelligent systems across various industries. While AI improves efficiency and productivity, it has also created uncertainty regarding employment opportunities, especially for workers engaged in routine and low-skilled jobs. Many employees face the risk of job displacement due to automation, and there is growing concern about skill mismatches between the existing workforce and the new requirements of AI-driven workplaces. This situation has raised serious questions about job security, wage stability, and the future employability of workers.

Research Methodology

Research methodology refers to the systematic and structured approach adopted to collect, analyze, and interpret information for achieving the objectives of a study. It provides the framework that guides the research process and ensures reliability and validity.

### Sampling Design

- Sampling Method: Convenience sampling
- Sample Size: 120 sample has been selected for this study.

### Data Collection Tools

- Questionnaire (closed-ended and Likert scale questions)
- Interview schedule for detailed insights

The questionnaire includes sections on:

- Employment status
- Awareness of AI
- Impact of AI on job roles
- Skill changes and training needs
- Perceived future job opportunities

### Area of the Study

The study is limited to Coimbatore district, focusing on key sectors such as:

- Textile and manufacturing industries
- IT and service sectors

### Tools Used for the Study

The following tools were used for collecting and analyzing data related to the impact of Artificial Intelligence on the labor market in Coimbatore district

## III. REVIEW OF LITERATURE

1. Fan (2024) examined how artificial intelligence is transforming employment patterns across industries. The study found that AI-driven automation is causing job



displacement in routine-task sectors while simultaneously creating new opportunities in technology-oriented roles such as data management and AI maintenance. The research also highlighted growing inequality between workers who benefit from AI and those who lack the necessary skills, emphasizing the need for workforce rehabilitation and policy intervention.

2. Eloundou et al. (2023) analyzed the labor-market implications of large language models and reported that nearly 80% of the workforce could have at least 10% of their tasks affected, while about 19% may experience impacts on half of their tasks. The study suggests that AI functions as a general-purpose technology capable of reshaping productivity and work processes across wage levels.

3. Colombo et al. (2024) developed a task exposure index to measure how susceptible occupations are to AI technologies. Their findings revealed that approximately one-third of U.S. employment is highly exposed to AI, particularly white-collar jobs. Interestingly, exposure was positively associated with wage and employment growth, indicating productivity benefits alongside technological disruption.

#### IV. DATA ANALYSIS AND INTERPRETATION

Table 1.1 Showing the: Impact of AI on Employment Levels

Response	No. of Respondents	Percentage (%)
Increased employment	28	23%
No significant change	34	28%
Reduced employment	58	49%
Total	120	100%

##### Interpretation

The table shows that 49% of respondents believe AI has reduced employment opportunities, while 23% feel it has increased jobs. This indicates that automation is perceived as a threat to traditional jobs, especially among low-skilled workers.

Table: 2 Showing the AI-Driven Job Creation Opportunities

Response	No. of Respondents	Percentage (%)
High opportunities	42	35%
Moderate opportunities	50	42%
Low opportunities	28	23%
Total	120	100%

##### Interpretation

The table shows that 49% of respondents believe AI has reduced employment opportunities, while 23% feel it has increased jobs. This indicates that automation is perceived as a threat to traditional jobs, especially among low-skilled workers.

Table: 3 Showing the AI-Driven Job Creation Opportunities

Challenges	No. of Respondents	Percentage (%)
Job insecurity	46	38%
Lack of skills	40	33%
High competition	20	17%
No major challenges	14	12%
Total	120	100%

##### Interpretation

The major challenge identified is job insecurity (38%), followed by lack of skills (33%). This indicates a strong need for skill development and training programs to help workers adapt to AI technologies.

##### Findings of the Study

- AI is perceived to reduce traditional employment A significant 49% of respondents believe that Artificial Intelligence has reduced employment opportunities, indicating a strong concern about job displacement due to automation.
- Limited perception of employment growth due to AI benefits of AI-driven job creation are not widely experienced among all groups.
- Majority acknowledge AI creates new opportunities Despite job loss concerns, 77% of respondents agree that AI offers moderate to high job opportunities, especially in emerging sectors like IT, data analytics, and AI-based roles.

##### Suggestions

- Governments should promote skill development programs aligned with emerging technologies.
- Educational institutions must integrate AI-related courses into curricula.
- Organizations should implement structured reskilling initiatives.
- Workers should adopt lifelong learning to remain competitive.

#### V. CONCLUSION

Artificial Intelligence is reshaping the labor market by redefining job roles, skill requirements, and organizational structures. Although automation presents significant challenges, the long-term outlook suggests that AI will act as a catalyst for economic growth and employment generation. The future workforce must therefore emphasize adaptability, technological literacy, and continuous learning to thrive in an AI-driven economy.



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