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Impact of Ai on employment and future jobs

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Abstract
The impact of Artificial Intelligence (AI) is widespread and rapidly changing the face of industries, and thus the nature of the workforce across the world. In light of growing use of AI technologies in every sector, questions are being raised on how it affects jobs and employment in the future. This research paper looks at the ways AI is contributing to job creation, displacement of jobs and its impact on the future of work. It looks at how machines and machine learning is replacing the repetitive and routine work and creating new employment in the new technological era. It also looks at how it is changing skill requirements by increasing demand for skills such as, digital literacy, analytical skills and problem-solving skills among workers. The research paper also identifies some challenges due to AI usage; job insecurity, workforce inequality and the need to re skill and up-skill human workforce. In light of literature review and researches made on AI and workforce this research paper defines key trends that will drive the nature of employment in the future. According to some researchers, while AI will displace certain jobs, it will create other jobs and human-AI partnership will lead to greater efficiency and increased productivity. Thus, governments, industries and educational institutions need to work together in implementing policies and programs that will better prepare workers for jobs in the AI economy.

Keywords: Artificial intelligence, employment, automation, future of work, workforce skills, labor market

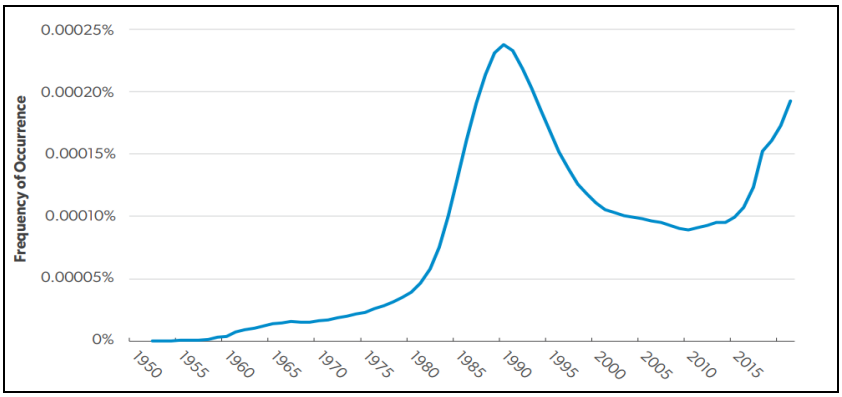
Introduction

Background of Artificial Intelligence

Artificial Intelligence (AI) has become a key driver of change in modern economies and labor markets. Over the past decade, advancements in machine learning, data analytics, and automation have enabled AI adoption across sectors like healthcare, finance, manufacturing, and IT, improving efficiency and decision-making. However, its rapid growth has also raised concerns about its impact on employment and the future of work.

Growth of Artificial Intelligence Research

The expansion of AI is also evident in the rising volume of research and scholarly publications, highlighting its increasing significance in technological and economic transformation.



Source: Google Books Ngram Viewer (2024)

Fig 1: Mention of 'Artificial Intelligence' in popular literature.

The number of citations of AI in popular science literature is shown in this figure. As it shows the trend over time which demonstrate growing research interest of the topic of AI and spreading of AI in many areas.

Automation and the risk of job loss

Advances in AI have raised concerns about whether jobs will be eliminated or created. AI can now perform cognitive tasks like pattern recognition, data processing, and forecasting, making many repetitive and data-driven roles vulnerable to automation.

Human-AI collaboration at the workplace

While automation poses risks, it also creates new opportunities. AI often replaces specific tasks rather than entire jobs, leaving humans to focus on creativity, judgment, and social interaction. In many cases, AI complements human work by enhancing efficiency and supporting decision-making.

Expansion of AI Research in Academic Literature

The rapid rise in academic publications on AI reflects its growing importance and the increasing need to understand its technological and economic impact.

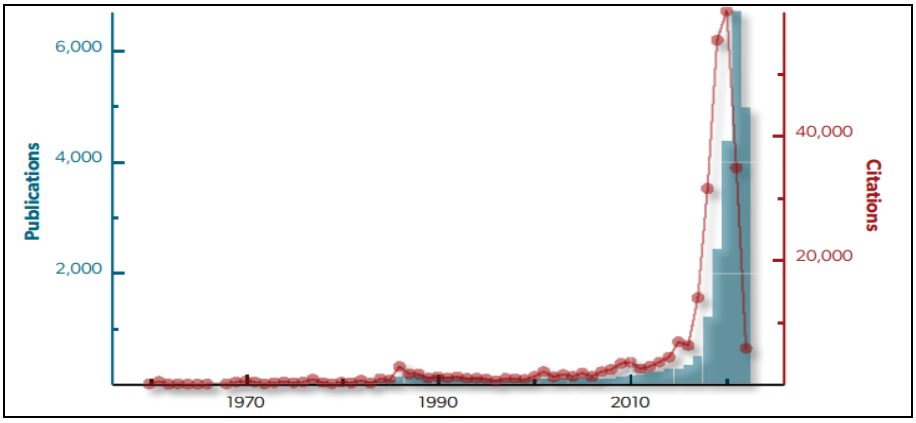


Fig 2: Mentions of "Artificial Intelligence" in academic papers (1950 to 2022)

This diagram demonstrates the exponential rate at which AI related research is developing and the extent to which AI is being looked at from many different subject areas.

Workforce Transformation and Skill Requirements

AI-driven transformation is reshaping workforce skill demands, increasing the need for abilities like critical thinking, problem-solving, creativity, and emotional intelligence as routine jobs decline. To adapt, governments and organizations must invest in education, training, and reskilling.

The economic and institutional implications of AI

AI's impact on employment also depends on broader economic and institutional factors, including workplace policies, governance, and how benefits are distributed among workers.

Research Objective

This research aims to examine how AI influences job displacement, job creation, and evolving skill requirements, highlighting its complex effects on the future of work.

Literature Review

1. Artificial Intelligence: An Enabling Technology

AI is widely seen as a transformative "general-purpose technology" with broad impacts across industries. Advances in machine learning and generative models enable computers to perform tasks that once required human intelligence, expanding AI use in sectors like finance, healthcare, software, and education. Researchers highlight that AI improves prediction by leveraging large datasets, reducing costs and reshaping how firms operate, similar to past breakthroughs like electricity.

2. Automation and Job Displacement

A major concern in AI literature is job displacement. AI-driven automation excels at performing repetitive and routine tasks—both manual and cognitive—leading to reduced demand for such roles. At the same time, it increases the need for skilled workers who can develop, manage, and work alongside these technologies.

3. AI and Workforce Skills Transformation

AI adoption is transforming workforce skill requirements by reducing demand for routine tasks and increasing the need for advanced cognitive, technical, and social skills. Workers must develop adaptable skill sets combining analytical, digital, and interpersonal abilities, with growing emphasis on creativity, critical thinking, and problem-solving.At the same time, AI is creating new opportunities in fields like data science, artificial intelligence, and digital management. Workers with strong digital literacy and adaptability are better positioned to benefit, highlighting the importance of education, training, and reskilling programs. Additionally, roles are evolving to emphasize uniquely human strengths such as communication, creativity, and complex decision-making.

4. AI and Worker Well-Being

AI adoption affects workers' job security, especially in routine roles, leading to concerns about future automation. However, exposure to AI is not linked to higher rates of anxiety or depression; its main impact is on workers' perceptions of economic insecurity, influenced by their specific work environment.

Methodology

1. Research Design

This research examines how AI will impact work using a qualitative, literature-based approach. By analyzing existing studies on AI, automation, and labor market transitions, it identifies trends in job changes, creation, displacement, and evolving skill requirements.

2. Data Collection Method

The sources used in this research are based on secondary research. Academic journals and papers discussing the employment effects of Artificial Intelligence, are accessed from the digital library known as JSTOR (www.jstor.org). Of the results obtained from search, a number of articles most related to the topic were chosen and read through. These chosen articles include findings on theoretical insights, empirical studies, and analysis discussion related to artificial intelligence effect to the structure of employment and workforce

3. Data Analysis Procedure

Once the research papers that fit the criteria were found, the next step was data analysis. This involves reading the papers selected and analyzing their contents. The major findings, arguments and conclusion from the selected papers were recorded.Through reviewing and cross-referencing studies on this topic, the researcher has established the general trends associated with artificial intelligence and employment.

Results and Findings

The following shows the results obtained from analyzing selected AI and employment literature. Results are presented based on the research questions outlined in the introduction. The results illustrate the effects of artificial intelligence on employment patterns, workforce skills, workers' well-being and the workplace's adaptation to change.

1. Influence of Artificial Intelligence on Employment Patterns

AI is reshaping work across industries like healthcare, finance, manufacturing, and IT by automating routine tasks, enhancing productivity, and improving decision-making. As a general-purpose technology, AI increasingly performs cognitive tasks, leading to technology-assisted jobs where humans work alongside and are augmented by AI.

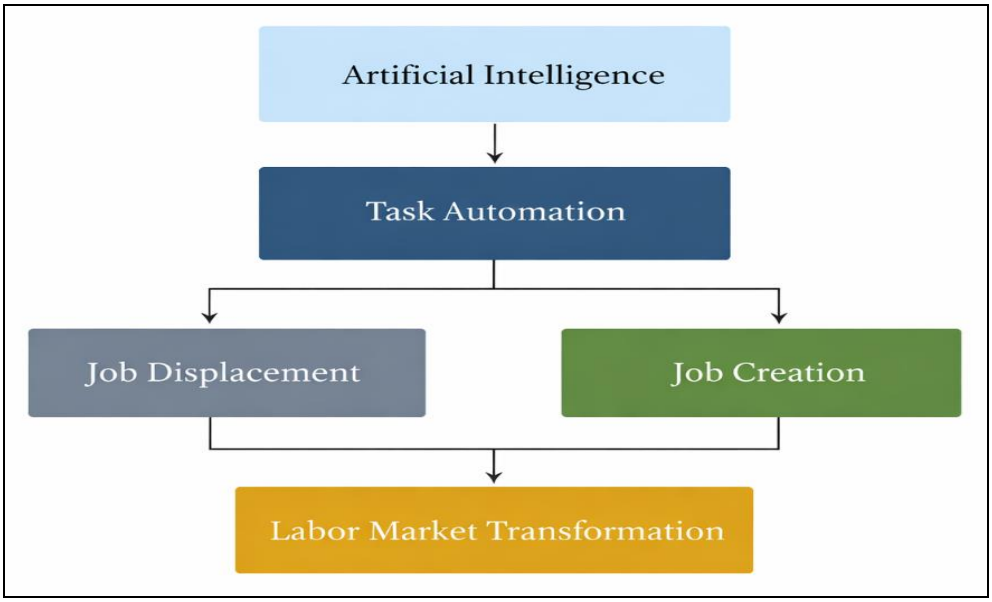


Fig 3: The effect of Artificial Intelligence on jobs

Figure 3 shows that, with the introduction of AI, the Automation of tasks is performed, impacting the job configuration in the labor market. While AI displaces workers in the routine jobs, it is also observed that the introduction of AI contributes to the formation of new jobs.

2. Job Displacement and Job Transformation

AI has mixed effects on employment: it excels at predictive tasks, enhancing data-driven decision-making, but generally automates tasks rather than entire jobs. Work requiring human judgment, creativity, and social intelligence remains largely with workers, while the nature of jobs evolves.

Table 1: Impact of AI on Different Job Categories

Job Category	Impact of AI	Examples
Routine jobs	High automation risk	Data entry, clerical work
Analytical jobs	AI-assisted	Financial analysis
Creative jobs	Low automation risk	Research, design
Social interaction jobs	Human-dominant	Teaching, healthcare

This information indicates that rather than jobs being destroyed, they are in fact changed by the use of AI.

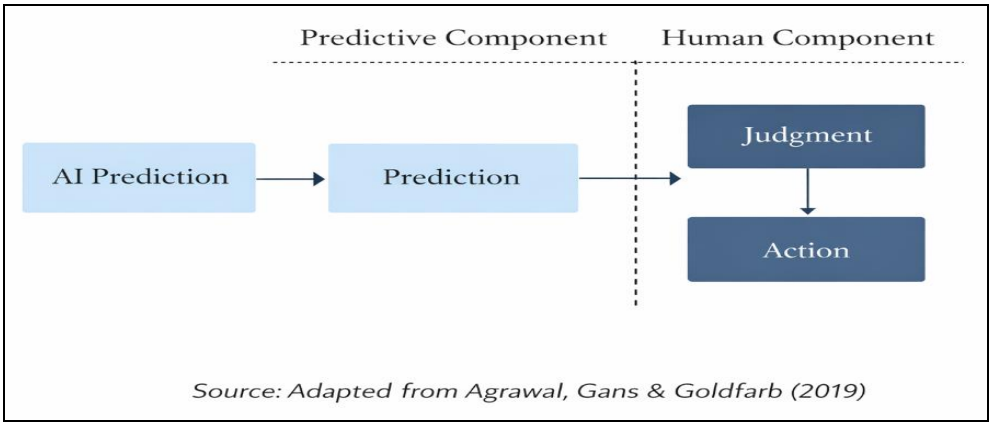


Fig 4: AI Prediction and Decision-Making Process

Through this frame, it is shown how AI can improve the predictive capability while human workers take charge of the judging and action part.

3. Workforce Skill Transformation

AI-driven automation of repetitive tasks is shifting skill demands, prompting employers to seek abilities that are hard to replicate by machines. Workers should develop flexible skill sets that combine technical, cognitive, and social skills.

Source: Drawn by author from Orrell & Veldran(2024) [4]

Fig 5: Skills Required in an AI-Driven Workforce

This figure demonstrates that there is rising demand for Industry-specific and Noncognitive skills.

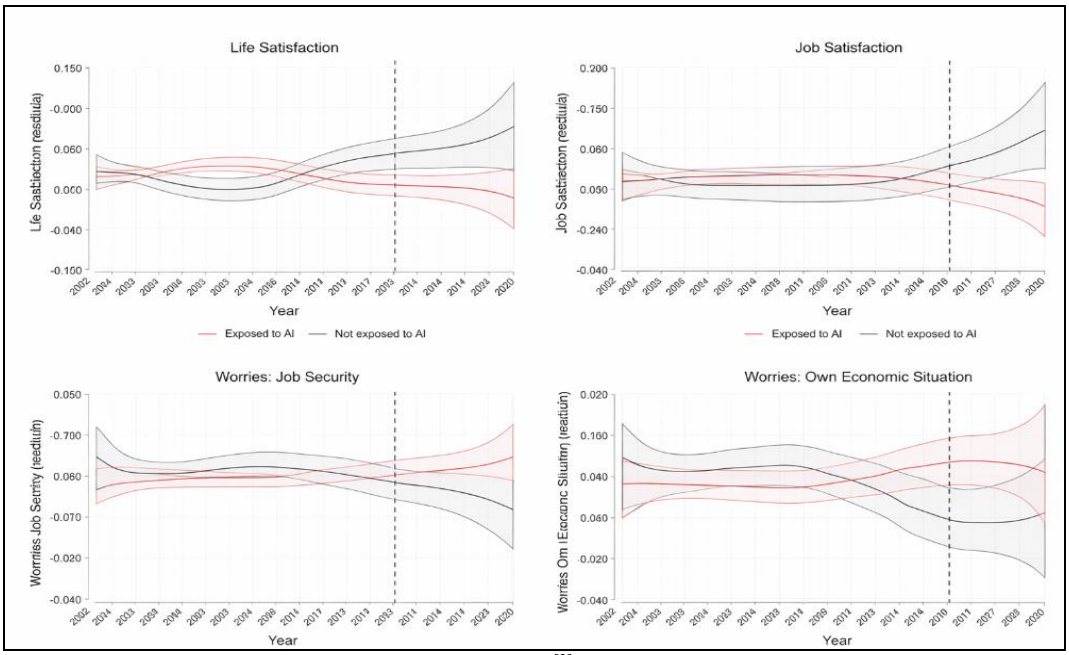
4. Worker Perceptions and Well-Being

The study found that workers exposed to AI often feel lower job security, though AI adoption is not clearly linked to higher anxiety or depression. It is, however, strongly associated with financial uncertainty and concerns about future employment.

Table 2: Worker Perceptions of AI Adoption

Worker Category	Perception of AI
Routine workers	High job insecurity
Technical professionals	Career opportunities
Creative workers	Low automation concern

The findings suggest that the impact of AI on employee well-being is largely a function of work tasks and level of exposure to AI.



Source: Adapted from Giuntella, Konig & Stella (2023) [3]

Fig 6: Artificial Intelligence Exposure and Worker Well-Being

5. Organizational Adaptation to Artificial Intelligence

Organizations are adopting AI in ways that minimize employee displacement, with implementation influenced by workplace governance and task design. Jobs involving simple, predictable tasks are most at risk of automation, while roles requiring complex problem-solving and interpersonal skills are less affected.

6. Summary of Findings

Artificial intelligence is reshaping employment by automating repetitive tasks, creating new tech-sector jobs, and shifting demand toward analytical, digital, and creative skills. Workers' perceptions of AI vary with job type and automation level, making reskilling and human-AI collaboration essential. Governments, companies, and

educational institutions must proactively prepare the workforce for the AI-driven economy.

Discussion

This section places the research questions and the literature on artificial intelligence and employment into the context of the results. This section draws out the effects of adopting AI on labor markets, workforce skills and worker welfare.

1. Interpretation of Employment Transformation

Artificial intelligence is reshaping work by automating tasks within jobs rather than entire occupations. As a task-based technology, it alters occupational structures without necessarily eliminating jobs, suggesting it will reorganize work rather than cause widespread job loss.

2. Job Displacement and Job Creation

Artificial intelligence has a dual impact on the job market: it efficiently automates routine tasks, reducing roles like clerks and data entry, while simultaneously creating new jobs in tech sectors, such as AI engineers, ML specialists, and data analysts. The long-term effect of AI depends largely on workers' ability to adapt through re-skilling and education.

3. Workforce Skill Transformation

The research also underscores the increasing demand for high skills in an AI economy, as artificial intelligence takes over the simple, repetitive tasks and human employees are required to have more higher-order, complex skills, which AI cannot easily replicate. The identified skills are critical thinking, creativity, problem-solving and digital literacy. Workers equipped with good analytical and digital skills will more likely take advantages from AI adoption.

4. Worker Perceptions and Well-Being

What is equally relevant about these results is on the psychological and economic effects of the introduction of AI technologies on workers. In general, these results indicate that employees confronted with AI tools seem to suffer from elevated concerns about employment security. Interestingly, the literature suggests that exposure to AI has relatively small effects on the average life satisfaction and mental health indicators.

5. Limitations of the Study

The study has limitations: it relies on secondary literature rather than original surveys or interviews, analyzes a limited number of articles, and may not capture the full range of perspectives on AI and labor. Rapid technological change, including generative AI, could alter its future impact on the labor market.

Conclusion

AI impacts the labor market by automating repetitive tasks, enhancing efficiency, and reshaping jobs rather than fully replacing humans. While some roles decline, new opportunities emerge in fields like data science and machine learning. The shift emphasizes technical, digital, and interpersonal skills, highlighting the need for education, training, and reskilling to thrive in an AI-driven economy.

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