



THE IMPACT OF ARTIFICIAL INTELLIGENCE ON THE LABOUR MARKET AND EMPLOYMENT

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Artificial intelligence (AI) has rapidly moved from a specialized technological field into a major component of modern economic activity. Its application in manufacturing, finance, education, healthcare, logistics, customer service, and other sectors is changing the way organizations produce goods and services and how workers perform their tasks. While AI can increase productivity, reduce operational costs, and create new occupations, it also raises concerns about job displacement, changing skill requirements, wage inequality, and the future of traditional employment. This article examines the relationship between artificial intelligence and the labour market, focusing on both the opportunities and challenges created by the increasing adoption of AI. The analysis suggests that the main economic effect of AI is not simply the elimination of jobs but the transformation of occupational tasks. Jobs that involve repetitive and predictable activities are particularly exposed to automation, whereas occupations requiring creativity, complex decision-making, interpersonal communication, and contextual understanding are more likely to be complemented by AI. The article argues that education, lifelong learning, reskilling, and effective labour-market policies will be essential for ensuring that technological progress contributes to inclusive economic development.



Introduction

Artificial intelligence has become one of the most influential technologies shaping the global economy. Advances in machine learning, natural language processing, computer vision, and generative AI have expanded the range of activities that can be performed with the assistance of intelligent systems. Unlike earlier waves of automation that were concentrated primarily in physical production, modern AI can increasingly perform cognitive and information-based tasks. The growing use of AI has generated an important economic debate. On one side, technological innovation can increase productivity, support economic growth, create new products and services, and improve the efficiency of organizations. On the other side, workers and policymakers are concerned that automation may reduce demand for certain occupations and increase labour-market inequality. The central question is therefore not simply whether AI will “take jobs.” A more relevant economic question is how AI will change the tasks performed by workers, the skills demanded by employers, and the structure of employment.

The International Labour Organization has emphasized that generative AI is more likely to transform many occupations than completely automate them. This perspective is particularly important because most occupations consist of multiple tasks, only some of which can be effectively automated.

This article examines the potential effects of AI on employment and the labour market and discusses the policies and skills needed to manage the transition.

Literature review

The relationship between technological change and employment has been studied for decades. Classical theories of technological development often suggest that innovation can simultaneously destroy existing jobs and create new employment opportunities. Autor, Levy, and Murnane (2003) demonstrated that computer technology tends to substitute for routine tasks while complementing workers who perform non-routine analytical and problem-solving activities. This framework remains relevant to contemporary AI because many modern systems are designed to automate or assist with information-processing tasks. Recent research has expanded this discussion to generative AI. The International Labour Organization (2023) found that clerical occupations have particularly high exposure to generative AI, while full job automation remains limited because many occupations still require human involvement.

The International Monetary Fund has also highlighted the potentially broad effects of AI on employment. According to its analysis, AI may affect a significant share of jobs worldwide, with advanced economies experiencing relatively high exposure because of their larger concentration of cognitive and knowledge-intensive occupations. The World Economic Forum's Future of Jobs Report 2025 similarly identifies AI, information processing, and technological literacy among the major forces expected to influence employment and skill requirements during the coming years. These studies suggest that AI should be understood as a technology



that changes the composition of labour demand rather than simply as a mechanism for mass unemployment.

Methodology

This article applies a qualitative analytical approach based on a review of international economic and labour-market literature. The analysis draws upon reports and research published by international organizations, including the International Labour Organization, International Monetary Fund, World Economic Forum, and Organisation for Economic Co-operation and Development.

- The study focuses on three interconnected dimensions:
- the potential of AI to replace or automate particular work tasks;
- the potential of AI to complement human labour and increase productivity; and the changing demand for skills and the implications for education and employment policy.

The purpose is not to predict a single future scenario but to identify major economic mechanisms through which AI can influence employment.

Results and Discussion

AI and job displacement: One of the most visible concerns surrounding AI is the possibility of job displacement. AI systems can perform many repetitive and predictable activities quickly and at relatively low marginal cost. Administrative data entry, basic customer support, routine document processing, simple content generation, and some forms of financial analysis are examples of activities that can increasingly be supported or automated by AI. However, it is important to distinguish between automating a task and eliminating an occupation. A profession usually contains a combination of technical, social, organizational, and decision-making activities. Even when AI can perform some of these tasks, human workers may remain necessary for supervision, communication, accountability, and complex decision-making. Therefore, the impact of AI is likely to differ significantly across occupations.

Creation of new employment opportunities :Technological transformation does not only eliminate certain forms of work. It can also create new occupations and industries. The expansion of AI has already increased demand for specialists in areas such as machine learning, data analysis, AI system development, cybersecurity, digital product management, and AI governance.

In addition, new roles may emerge around the implementation and supervision of AI systems. Organizations require employees who understand both technology and business processes and can determine where AI can be used effectively.

Historically, major technological transformations have generated new economic activities that were difficult to anticipate before the technology became widespread. The same process may occur with AI.



Type of work	Potential effect of AI	Main reason	Expected change in skills
Routine administrative work	High automation potential	Repetitive and predictable tasks	Digital literacy, AI supervision
Data entry and processing	High automation potential	Structured information can be processed automatically	Data management, analytical skills
Customer service	Partial automation	AI can handle routine inquiries	AI can handle routine inquiries
Financial analysis	Task transformation	AI can process large datasets rapidly	AI can process large datasets rapidly
Education	Human–AI collaboration	AI can support personalized learning	AI can support personalized learning
Healthcare	Human–AI collaboration	AI can assist with diagnosis and data analysis	AI can assist with diagnosis and data analysis
Software development	Task transformation	AI can support coding and testing	AI can support coding and testing
Creative professions	Limited/partial automation	Human context and originality remain important	Human context and originality remain important
Management	Human–AI collaboration	AI supports decision-making but does not replace leadership completely	AI supports decision-making but does not replace leadership completely

Table 1. Potential Effects of Artificial Intelligence on Different Types of Work. (Author's synthesis based on ILO (2023), OECD (2023), IMF (2024), and World Economic Forum (2025))

Table 1 illustrates that the impact of AI is likely to vary considerably across different types of work. While routine and predictable tasks have relatively high automation potential, occupations involving interpersonal interaction, professional judgment, creativity, and strategic



decision-making are more likely to experience human–AI collaboration. This distinction supports the argument that AI-driven labour-market transformation should be understood as a process of task restructuring rather than simple job elimination.

Productivity and economic growth

AI can potentially increase labour productivity by allowing workers to complete certain tasks faster and with greater access to information. For example, a researcher can use AI-assisted tools to organize large quantities of information, while a programmer can use AI-based systems to assist with routine coding tasks. In education, AI can support personalized learning and administrative processes.

Productivity gains can have broader economic consequences. If businesses use AI effectively, lower production costs and increased productivity may contribute to higher output, new investment, and the development of new products and services. However, productivity gains are not automatically distributed equally. The economic benefits may depend on workers' access to technology, firms' capacity to adopt AI, and government policies.

Changing skill requirements

One of the most significant consequences of AI is the changing structure of labour demand. Technical skills remain important, but they are increasingly accompanied by skills that are difficult to automate. These include: analytical thinking, creativity, communication, problem-solving, adaptability, leadership, collaboration, digital literacy.

This means that education systems face a major challenge. Traditional education models that focus primarily on memorizing information may be less sufficient in an economy where information can be generated and processed by intelligent systems.

Future workers will increasingly need to understand how to work with AI rather than simply compete against it.

AI and labour-market inequality

The benefits of AI may not be distributed equally across workers, firms, or countries. Highly skilled workers who can effectively use AI may experience productivity and income gains, while workers performing routine tasks may face greater pressure to change occupations or acquire new skills.

There may also be differences between large and small firms. Large organizations generally have greater financial and technological resources for implementing AI, while smaller enterprises may face barriers related to investment, infrastructure, skills, and access to data. At the international level, countries with stronger digital infrastructure and education systems may capture a larger share of the economic benefits associated with AI.

Consequently, AI policy should not focus only on technological adoption. It should also address access to education, digital infrastructure, and opportunities for reskilling.

The Role of Education and Reskilling



Education is likely to become one of the most important mechanisms for adapting to AI-driven economic transformation. Universities and vocational institutions need to provide students with a combination of technical and human-centred skills. Digital literacy should become a fundamental component of education across disciplines, including economics, business, law, healthcare, and the humanities.

Reskilling is equally important for existing workers. Employees whose routine tasks become automated may need opportunities to move into higher-value activities within the same organization or transition to new occupations.

Lifelong learning should therefore become an integral part of modern labour-market policy rather than an optional activity undertaken only by highly motivated individuals. Governments and employers can contribute through professional training programmes, subsidies, apprenticeships, digital-learning platforms, and partnerships between universities and businesses

Policy Implications

The transition toward an AI-intensive economy requires coordinated action from governments, educational institutions, businesses, and workers.

First, governments should strengthen education and vocational training systems so that workers can acquire relevant digital and analytical skills.

Second, labour-market institutions should improve mechanisms for identifying occupations and skills that are becoming more or less demanded.

Third, businesses should treat AI adoption as a workforce transformation process rather than simply a cost-reduction strategy. Employees should be given opportunities to learn how to use new technologies effectively.

Fourth, policymakers should pay attention to workers who are particularly vulnerable to technological displacement. Targeted training and employment-support programmes can reduce the social costs of technological change.

Finally, responsible AI governance is necessary to address issues related to transparency, privacy, workplace monitoring, algorithmic bias, and accountability.

Conclusion

Artificial intelligence is transforming the labour market by changing how work is organized, which tasks are automated, and which skills employers value. Its consequences are complex and cannot be adequately described as either purely positive or purely negative.

AI has the potential to increase productivity, create new occupations, improve services, and generate new economic opportunities. At the same time, it may reduce demand for certain routine tasks and increase adjustment pressures for workers whose skills become less valuable. The most important economic challenge is therefore not to prevent technological progress but to ensure that its benefits are broadly shared. The future of employment will likely depend on the relationship between human capabilities and intelligent technologies. Workers who combine



digital literacy with creativity, analytical thinking, communication, and adaptability may be better positioned to work alongside AI. At the same time, institutions will need to provide accessible opportunities for people to acquire these capabilities.

Ultimately, AI should be viewed not only as a technological development but also as a transformation of the economic relationship between technology, skills, and human labour. The quality of education, reskilling systems, labour-market institutions, and public policy will play a major role in determining whether AI contributes to inclusive and sustainable economic development.

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