



Impact of artificial intelligence on employment– A double-edged sword

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Abstract

The rise of artificial intelligence (AI) is reshaping the global workforce, leading to both significant job losses and the creation of new opportunities. AI can do tasks automatically, help make better decisions, and create new types of jobs, which can boost the economy and make work more efficient (Russell & Norvig, 2020)^[18]. However, AI also brings problems like job loss, skill gaps, and more inequality. To handling these changes, it is need to understand both the good and bad impact of AI on jobs. This research article looks at the AI impact on employment and explains why it is important to train people for new jobs, make fair job rules, and use AI responsibly to create a fair job market for everyone.

Keywords: Artificial intelligence, employment, impact of AI, global technology, job roles, work force

Introduction

The AI's impact on employment is both good and bad depending upon various circumstances. It can do repetitive tasks, help in making better decisions, create new jobs in AI, and make customer service better (Frank, 2019)^[7]. But it can also take away jobs, make it hard for people to find work that matches their skills, increase the gap between rich and poor, and raise questions about fairness. Experts think, that by 2030 AI will change many jobs. Whether AI is helpful or harmful depends on things like how fast technology is advancing. As well as what policies are in place, and how society reacts. To make the most of AI while avoiding problems, it is need to train people for new kinds of jobs, make rules about jobs, and think about what's fair when using AI (Cockburn *et al.*, 2019)^[5].

Positive impact of artificial intelligence on employment

AI's integration into various industries has heralded a wave of transformative opportunities, creating new avenues for job creation and enhancing productivity. Here are some of the impacts of artificial intelligence on employment:

- **Automation of Repetitive Tasks:** One of the foremost benefits of AI or AI impact on employment is its ability to automate mundane and repetitive tasks. By delegating such responsibilities to machines, human workers can redirect their efforts toward more creative and value-added endeavors (Frank *et al.*, 2019)^[8].
- **Enhanced Decision-Making:** AI-powered analytics empower businesses to make data-driven decisions swiftly and accurately. This not only optimizes operations but also necessitates skilled professionals to interpret insights and devise strategies based on them (Gupta, & Mishra, 2022)^[9].
- **Job Creation in AI Development and Maintenance:** The AI impact on employment has led to the creation of new job roles, from AI engineers to data analysts. The burgeoning AI industry has spurred demand for skilled professionals proficient in machine learning, data science, and AI development (Acemoglu *et al.*, 2022)^[2].

- **Improved Customer Experience:** AI-driven technologies, such as chatbots and virtual assistants, enhance customer service by providing instant support and personalized recommendations. This elevates customer satisfaction levels and fosters loyalty, thereby sustaining employment in service-oriented sectors (Nyathani, 2023)^[15].

Negative impact of artificial intelligence on employment

Despite its transformative potential, AI's rapid advancement also engenders concerns regarding its adverse effects on employment. Here are some of the key challenges posed by AI:

- **Job Displacement:** Automation driven by AI has the potential to render certain job roles obsolete, particularly those involving routine tasks susceptible to mechanization. This AI impact on employment could lead to job displacement for workers in sectors such as manufacturing and clerical work (Acemoglu & Restrepo, 2018)^[1].
- **Skill Mismatch:** The integration of AI technologies necessitates a workforce equipped with relevant skills to operate and leverage these tools effectively. However, there exists a risk of a skill gap, wherein the skills demanded by emerging AI-driven roles may not align with those possessed by displaced workers, leading to unemployment or underemployment (Aydoğan *et al.*, 2021)^[4].
- **Economic Inequality:** The impact of AI on jobs is uneven, making economic inequality worse. Skilled workers may do well in an AI-driven economy. But low-skilled workers who lose their jobs might find it hard to adjust. This increases the gap between rich and poor (Hatzius *et al.*, 2023)^[10].
- **Ethical Concerns:** AI's autonomy in decision-making raises ethical questions regarding accountability and bias. Instances of algorithmic bias or unethical use of AI can have far-reaching consequences. This will impact trust in AI systems and potentially stifle their adoption, thereby limiting their potential to generate employment opportunities (OECD, 2023)^[16].

Challenges faced by the society in using the artificial intelligence

Artificial intelligence (AI) will change society and the future in many ways. It will help industries by doing tasks automatically, making better decisions, and working more efficiently, which will create new jobs and boost the economy. But AI will also cause problems like job loss, skill gaps, and more economic inequality. As AI gets better, it will affect everyone daily lives with smart homes, personalized services, and better healthcare. It is the need to manage ethical issues like privacy, security, and fairness in AI systems (Kate Crawford, 2016) ^[11]. Education and job training will be important to help people work in an AI-driven world. AI can benefit society a lot, but need to solve its challenges to make the future fair and balanced.

Type of jobs are most likely to be automated

Jobs that involve repetitive tasks, require minimal creativity, and rely heavily on manual labor or data processing are most likely to be automated. Some examples of the AI impact on employment include:

- **Manufacturing and Production Jobs:** Tasks on assembly lines and in factories, such as repetitive tasks in car manufacturing or electronics assembly, are increasingly being automated with robotics and machinery (Stephen E. Little, 1999) ^[21].
- **Retail Jobs:** Cashiers, stock clerks, and other roles in retail are being replaced by self-checkout systems, automated inventory management, and online shopping platforms.
- **Transportation and Delivery:** With the development of self-driving technology, jobs such as taxi drivers, truck drivers, and delivery drivers may become automated in the future (Mike Cooley, 1995) ^[12].
- **Data Entry and Processing:** Jobs that involve routine data entry, processing, and analysis can often be automated through software and algorithms (Ryan Calo & Alex Rosenblat, 2017) ^[20].
- **Customer Service:** Basic customer service roles, such as answering frequently asked questions or handling simple inquiries, are increasingly being automated with chatbots and automated phone systems (Ashok Jain, 2002) ^[3].
- **Food Service and Hospitality:** Jobs in fast food restaurants, such as burger flipping and order taking, are being automated with self-service kiosks and kitchen automation systems (Zelevnikow, 2021) ^[25].
- **Telemarketing and Sales:** Automated systems can handle tasks such as making cold calls, sending out marketing emails, and analyzing customer data to generate sales leads (Miwao Matsumoto, 1999) ^[14].

However, it is important to note that while automation may eliminate certain tasks within a job, it doesn't necessarily mean the entire job will disappear. Instead, AI's impact on employment often leads to a shift like work, with humans taking on more complex and creative tasks while mundane tasks are automated.

Impact of AI on Job Roles

The impact of AI on job roles is multifaceted, and it varies depending on the industry, specific job functions, and how organizations choose to integrate AI technologies.

AI excels at automating repetitive and routine tasks. Rather than completely replacing jobs, AI often transforms them. Roles may evolve to focus more on tasks that require creativity, strategic thinking, and emotional intelligence. There is growing demand for roles related to AI development and maintenance, such as data scientists, machine learning engineers, and AI ethicists. New positions are emerging in fields like AI integration and management. These roles focus on how to best implement and oversee AI systems in various business contexts (Mike Cooley, 1995) ^[13].

AI tools can analyze vast amounts of data quickly, helping professionals make more informed decisions. AI can automate administrative tasks, allowing employees to focus on higher-value work. This can lead to increased overall productivity and efficiency within organizations. There is a growing emphasis on technical skills, such as programming, data analysis, and familiarity with AI tools. Workers may need to upskill or reskill to remain relevant in their fields (Vrontis *et al.*, 2022) ^[22]. As AI handles more routine tasks, soft skills like creativity, emotional intelligence, and complex problem-solving become more valuable. Jobs that require interpersonal interaction, strategic oversight, and creative thinking are less likely to be automated (Radu, 2021) ^[17].

AI can take over mundane tasks, potentially improving work-life balance by reducing the burden of routine work. The impact on job satisfaction can be mixed. While some workers may find more meaningful work and greater job satisfaction, others might experience anxiety about job security and the need for continuous learning (Wamba-Taguimdje *et al.*, 2020) ^[23].

Impact of AI on Workforce

AI and automation are displacing certain types of jobs, particularly those involving routine, repetitive tasks. Conversely, AI is creating new job opportunities in fields like AI development, data science, robotics, and AI ethics. These roles often require advanced technical skills and can drive innovation and growth in new sectors. Many existing roles are transforming rather than disappearing. Employees may need to oversee AI systems, interpret AI-generated insights, and make decisions based on data. This shift often involves higher-level cognitive and managerial tasks (Davenport *et al.*, 2020) ^[6]. There is an increasing demand for technical skills related to AI, such as programming, machine learning, and data analysis. Workers need to be proficient with AI tools and technologies. Skills like creativity, critical thinking, emotional intelligence, and interpersonal communication are becoming more valuable as AI takes over more routine tasks. Jobs requiring human interaction and complex problem-solving are less likely to be automated. AI can automate repetitive tasks, leading to significant efficiency gains. This can reduce operational costs and improve overall productivity. AI tools can analyze large datasets and provide insights that support better decision-making. This capability allows workers to make more informed decisions and focus on strategic aspects of their roles (Russell, 2019) ^[19]. By automating routine tasks, AI can help improve work-life balance, allowing employees to focus on more engaging and meaningful work. This could lead to greater job satisfaction and reduced burnout.

Conclusion

The effect of Artificial Intelligence on employment is in many ways, offering various opportunities and challenges. AI can boost productivity, create new jobs, and improve customer service (Zamani *et al.*, 2023) ^[24]. However, AI impact on employment can also cause job loss, skill mismatches, and increased inequality. The future of work depends on how the people handles these changes. It is the need to train people for new jobs, make fair job policies, and use AI ethically. By doing this, AI can use for economic growth and make sure the job market is fair for everyone. This balanced approach is key to making the most of AI's benefits for all.

AI is reshaping the job roles and workforce by routine and automating tasks, creating new job opportunities, and transforming existing roles. While it offers significant potential for increased efficiency and productivity, it also presents challenges related to skill requirements, economic inequality, and ethical considerations. Adapting to these changes will require proactive strategies from both individuals and organizations.

References

1. Acemoglu D, Restrepo P. Artificial Intelligence, Automation and Work. NBER Working Paper 24196; 2018.
2. Acemoglu D, Autor D, Hazell J, Restrepo P. Artificial Intelligence and Jobs: Evidence from Online Vacancies. *J Labor Econ*, 2022, 40. Available from: <https://doi.org/10.1086/718327>
3. Jain A. Networks of Science and Technology in India: The Elite and the Subaltern Streams. *AI Soc*,2002:16(1-2):4-20.
4. Aydoğan R, Baarslag T, Gerding E. Artificial Intelligence Techniques for Conflict Resolution. *Group Decis Negot*,2021:30(4):879-83. Available from: <https://doi.org/10.1007/s10726-021-09738-x>
5. Cockburn I, Henderson R, Stern S. The Impact of Artificial Intelligence on Innovation: An Exploratory Analysis. In: Agrawal A, Gans JS, Goldfarb A, editors. *The Economics of Artificial Intelligence: An Agenda*. Chicago: University of Chicago Press, 2019, 115-46.
6. Davenport T, Guha A, Grewal D, Bressgott T. How artificial intelligence will change the future of marketing. *J Acad Mark Sci*,2020:48(1):24-42.
7. Frank MR. Toward understanding the impact of artificial intelligence on labor. *Proc Natl Acad Sci U S A*,2019:116(14):6531-9.
8. Frank MR, Autor D, Bessen JE, Brynjolfsson E. Toward Understanding the Impact of Artificial Intelligence on Labor. *Proc Natl Acad Sci U S A*,2019:116(14):6531-9.
9. Gupta A, Mishra M. Ethical Concerns While Using Artificial Intelligence in Recruitment of Employees. *Bus Ethics Lead*,2022:6(2):6-11.
10. Hatzius J, Lichtenfeld M, Stoeckel M, Zhang H. The Potentially Large Effects of Artificial Intelligence on Economic Growth. Goldman Sachs, 2023.
11. Crawford K. Artificial Intelligence's White Guy Problem. *The New York Times*, 2016.
12. Cooley M. The myth of the moral neutrality of technology. *AI Soc*,1995:9(1):10-7.
13. Cooley M. The myth of the moral neutrality of technology. *AI Soc*,1995:9(1):10-7.
14. Matsumoto M. The Japan problem. In science and technology and basic research as a culture. *AI Soc*,1999:13(1-2):4-21.
15. Nyathani R. AI in Performance Management: Redefining Performance Appraisals in the Digital Age. *J Artif Intell Cloud Comput*, 2023, 1-5.
16. OECD. *OECD Employment Outlook. Artificial Intelligence and the Labour Market*, 2023. Available from: <https://doi.org/10.1787/08785bba-en>
17. Radu R. Steering the governance of artificial intelligence: national strategies in perspective. *Policy Soc*,2021:40(2):178-93.
18. Russell SJ, Norvig P. *Artificial Intelligence: A Modern Approach*. 4th ed. London: Pearson, 2020.
19. Russell SJ. *Human Compatible: Artificial Intelligence and the Problem of Control*. New York: Viking, 2019.
20. Calo R, Rosenblat A. *The Taking Economy: Uber, Information, and Power*. *Colum Law Rev*,2017:117:1623-90.
21. Little SE. Science, technology and society in East Asia: Frameworks for the challenges of the next century. *AI Soc*,1999:13(3):247-62.
22. Vrontis D, Christofi M, Matzler K. Artificial intelligence, robotics, advanced technologies and human resource management: a systematic review. *Int J Hum Resour Manag*,2022:33(6):1237-66.
23. Wamba-Taguimdje S-L, Fokouo J, Nguegang M. Influence of artificial intelligence (AI) on firm performance: the business value of AI-based transformation projects. *Bus Process Manag J*,2020:26(7):1893-924.
24. Zamani ED, Vafaei N, Saidi-Mehrabad M, Naderpour S. Artificial intelligence and big data analytics for supply chain resilience: a systematic literature review. *Ann Oper Res*,2023:327(2):605-32.
25. Zeleznikow J. Using Artificial Intelligence to Provide Intelligent Dispute Resolution Support. *Group Decis Negot*,2021:30(4):789-812.