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Generative Artificial Intelligence and Labour: Displacement and Augmentation at the Task Level

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Abstract. Generative artificial intelligence has extended automation from routine physical and computational activities to language-intensive cognitive tasks and other areas of human labour. From the perspective of task orientation, this paper examines changes in labour due to the above reasons and focuses on technological displacement and labour augmentation. Based on the above literature, recent theoretical and empirical studies have investigated occupational exposure, workplace productivity, employment adjustment, wage distribution and skill demand. Analysis shows that generative AI is unlikely to change all parts of a job in the same way. Standardised and codifiable tasks are more likely to be substituted; those that require contextual judgement, interpersonal communication, accountability and verification are more suitable for human labour. Evidence from professional writing and customer support indicates that AI-assisted work can increase efficiency for new employees at the company, but it is not ideal everywhere. The paper concludes that the first wave of labour-market changes will be task reallocation and employment redistribution, not universal occupational displacement. Effective adaptation therefore depends on training, institutional support, and access to complementary skills.

Keywords: Generative Artificial Intelligence, Labor Displacement, Labor Augmentation, Task-Based Approach

1. Introduction

Generative artificial intelligence has entered activities previously considered difficult to automate, including drafting, summarizing, coding support, information retrieval, and customer communication. Unlike earlier technologies that mainly automated routine manual or computational operations, large language models can produce flexible language-based outputs across many professional contexts. Task-level estimates show that these systems will affect a relatively large number of work activities, including tasks carried out by highly educated and well-paid people [1]. Exposure does not mean that a job will no longer exist. Therefore, some parts of the work can be carried out more quickly or in another way using artificial intelligence.

Therefore, given this, a task-based approach is more suitable than the job-by-job method. Occupations have several activities, and technology can replace some labour or enhance the efficiency of others. Acemoglu and Restrepo view automation as a displacement force, but they also point out productivity improvements and new tasks for labour that are advantageous [2]. This

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system shows that the same technology can reduce the demand for one type of labour and increase the value of another.

Based on the previous work of scholars, this paper studies the impact of task displacement and labour augmentation by generative artificial intelligence on employment, wages and skills. This paper offers a task-based view on the potential for generative AI to affect the demand for labor overall, not just to displace whole jobs. The results can help policymakers, workers and employers identify tasks that are susceptible to automation, as well as design suitable strategies for workforce adjustment and human-AI collaboration and skills training. Further, the framework offers a valuable guide for future studies on the impact of generative AI in various sectors, professions and groups of employees.

2. Task-based mechanisms of generative AI

2.1. Task displacement

Task-based learning separates the occupation from the activities within that occupation. A lawyer, teacher, programmer or customer-service agent all perform a combination of information processing, communication, problem-solving, monitoring and decision-making. Therefore, AI should be judged on its applicability to a particular problem rather than as a general-purpose technology. Felten, Raj and Seamans have created an occupational exposure index to link the level of AI application with human ability in various areas [3]. The scope of the jobs will be different, and therefore, people can investigate the impact of these jobs on the enterprise, industry and local labour market.

Generative AI is very good at handling tasks that are language-based, repetitive and have a certain pattern. The first draft, periodic summaries, standardised customer responses, document classification and simple code generation can all be realised automatically. When a firm can achieve the same output at a lower cost or in a shorter time, less labour is required for that task. This is the displacement effect in the task-based framework [2]. This may happen even if the total output is unchanged; that is, an increase in labour input is not required to achieve productivity growth.

Based on the data from the online job portal, changes at the firm level may have occurred first. Acemoglu, Autor, Hazell and Restrepo have found that the AI-exposed enterprises have increased the demand for AI talents and reduced the demand for non-AI talents [4]. There were no substantial aggregate effects on employment and wage growth in the exposed occupations and industries. Technology will change the content of work and employment patterns, but there will be no overall losses in jobs.

Displacement is also restricted. Generative systems can produce fluent answers but do not reliably grasp the institutional background, professional responsibility or error consequences. Many jobs require people skills, handling uncertainty and ethics, etc. Some of the activities will be centralised; therefore, less time will be spent on them. A likely short-term result is a new division of labour within the company, with fewer hours for routine production and more time for supervision, correction and decision-making.

2.2. Labour augmentation

Generative AI can help workers increase the amount or quality of the output produced in a given time. The system can offer a draft, recommendation, summary or possible solution for the worker to review and modify. Labour is still needed to apply professional knowledge, consider the

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circumstances and bear the legal consequences of inaccuracies. Therefore, technology will change the mode of production and expand the labour-saving range of workers.

Noy and Zhang randomly assigned 453 college-educated professionals to complete occupation-specific writing tasks with and without ChatGPT [5]. Access to the tool reduced the average completion time by 40% and increased the quality of assessed output by 18%. Performance was less uneven because the weaker participants improved first. According to the above, generative AI can pass on some good skills to less experienced staff. However, the experiment covered a small number of short-writing activities and could not achieve the same results for all occupations.

Brynjolfsson, Li and Raymond have studied a generative AI assistant for 5,172 customer-service agents [6]. On average, the tool increased the rate of problem-solving per hour by 15%, and this rise was relatively larger for inexperienced and less skilled employees. It helped the workers learn some good ways of communication. Experienced staff received a lower benefit package and some quality-of-life measures were reduced. Therefore, augmentation depends on what the worker already knows and how well the model recommendations fit the task environment.

AI use may also generate or expand tasks, such as formulating instructions, verifying claims, detecting inappropriate responses, documenting use, and deciding whether to escalate to a human operator. These activities may compensate for displacement, but their quality is not guaranteed. Verification is needed for complex cases, but for simple ones, employees have to redo the work due to errors in the unreliable output. Finally, the result will depend on technology, organisation design, training and worker choice.

3. Labor market consequences

3.1. Employment reallocation

The two mechanisms indicate that the employment effect of generative AI should be considered a redistribution among tasks, workers and organisations. Time in one's work is often taken up by not writing the first draft and routine research for review, analysis, relationship management and problem-solving. Job titles may not change even if the actual work differs greatly. The demand for employees will fall if their work is mainly automated; otherwise, workers who can use their domain knowledge and oversee AI-assisted operations will be in higher demand.

Reallocation may also occur among occupations and firms. Organizations using AI will expand work in data management, model evaluation, compliance and process redesign, and reduce some entry-level positions based on basic information production. Vacancy evidence shows that AI-adopting enterprises changed recruitment and reduced some non-AI hiring [4]. Therefore, there will be no immediate mass unemployment and adjustment is not harmless. Aggregate stability may be due to serious disruptions in some groups, areas or stages of life.

Entry-level work is relatively weak. Basic drafting, research, coding and customer communication traditionally allow new workers to learn by doing. If these activities were carried out by AI, fewer junior staff would be needed, and opportunities for learning would be reduced. On the other hand, according to writing and customer service data, AI can be used to support learning for these employees [5, 6]. Therefore, the employment outcome will depend on whether the organisation uses AI for developmental work or supports employees' development in conjunction with people.

Therefore, generative AI is more likely to change jobs unevenly rather than eliminating them uniformly. Some workers will face unemployment or reduced working hours and other unfavourable circumstances. Productivity growth will also increase the demand for services and products at a

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lower cost. The proportion of these will differ by sector and cannot be inferred from technology exposure.

3.2. Wage and skill disparity

Task reallocation results in a distribution of benefits as different workers are displaced or added. When technology performs tasks for which a group previously had a comparative advantage, labour demand and wages will fall. Acemoglu and Restrepo link historical automation to a lower relative wage for workers in routine occupations, and they find that task displacement accounts for a large part of the changes in the US wage structure between 1980 and 2016 [7]. Most research on automation does not focus specifically on generative AI, but has found that although productivity has increased, the wages of displaced workers have dropped.

Generative AI will likely create a more complex pattern of skill-biased technological change. Cognitive and highly educated occupations are relatively exposed because language models perform writing, analysis and coding tasks [1]. At the same time, studies in the workplace have shown that less experienced workers can achieve higher productivity gains than top performers [5, 6]. AI will reduce the performance difference between employees. However, the division of access to good tools, data, training and organisational support may also be uneven at the firm and worker levels in the labour market.

Skills required are also changing. Alekseeva, Azar, Giné, Samila and Taska reported the rapid growth of US vacancies for AI-related skills between 2010 and 2019 [8]. They found wage premiums for AI skills in firms and jobs, but their measurements mainly focus on specialist abilities rather than general applications of generative tools. The new, ideal workforce will likely have good AI literacy, strong domain knowledge, critical thinking and communication skills, and can identify unreliable results.

Skill development should also cover the ability to write quickly and operate software. Due to changes in the interface, judgment and domain knowledge are still required to evaluate the results. Workers who are both aware of the professional tasks and the deficiencies in the system are more likely to benefit from augmentation. Therefore, the distribution of training opportunities will affect whether generative AI reduces productivity gaps or creates new divisions between workers who can direct and verify the AI, and those whose work is more extensively altered by automated systems.

4. Implications for skills and workplace adaptation

Adaptation will allow employees to move from support roles to frontline positions and introduce new productivity technologies in the company. Accessible training is also to be implemented. Educational institutions and employers can teach people how to use AI in their work, check the results, find fake or biased information, protect private data, and think for themselves. There is now a demand for AI-related skills and a higher salary; therefore, employment is likely [8]. Training can, however, distinguish between specialist technical roles and the general AI literacy needed in ordinary work.

Second, provide support for employees during career changes. Workers engaged in highly automatable work may be selected for short courses, recognised qualifications, internal transfers and job-search support. Employer-led programmes can be used to address new-task requirements for the firm. Train people in advance of the forced relocation.

Organizations determine whether AI will be additive or replacement. Performance systems that only increase the workload after a productivity gain may reduce job quality and promote a

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superficial dependence on automated output. Build an exception workflow for employees that has a short verification period and can be handled by AI to improve learning and service quality. Employee feedback during the implementation may disclose responsibilities outside the scope of their official job descriptions. Therefore, a combination of skill training, career change support, rational organisation design, and consideration of different access channels for high-quality tools can be used.

5. Conclusion

This paper has examined the labor-market effects of generative artificial intelligence through a task-based perspective. It distinguishes between technological displacement and labour augmentation, and connects these mechanisms to employment reallocation, wage distribution and changes in skill requirements. Therefore, the main conclusion is that generative AI will likely restructure the content of work rather than eliminating all jobs in exposed occupations. Standardised and codifiable cognitive activities are more likely to be substituted; tasks involving contextual judgment, communication, verification and accountability are relatively labour-intensive.

The Results are not uniformly favourable or unfavourable. AI assistance can improve efficiency and help new employees learn by example; however, it may also reduce the demand for routine labour, weaken the entry-level career path, and create an access gap for tools and training. The reasons fall into categories: task attributes, workers' skills, organisation selection and product demands.

This paper is restricted to recent studies and has a small number of workplace settings with causal evidence. Present productivity results may not reflect extended employment outcomes. Later studies can consider other industries to explore all sorts of careers and jobs, and determine whether increased productivity results in higher wages, employment and organisational performance.

References

[1] Eloundou, T., et al. (2024, June). GPTs are GPTs: Labor market impact potential of LLMs. *Science, 384*(6702), 1306–1308. United States. https://doi.org/10.1126/science.adj0998

[2] Acemoglu, D., & Restrepo, P. (2019, April). Automation and new tasks: How technology displaces and reinstates labor. *The Journal of Economic Perspectives, 33*(2), 3–30. Nashville. https://doi.org/10.1257/jep.33.2.3

[3] Felten, E., et al. (2021, December). Occupational, industry, and geographic exposure to artificial intelligence: A novel dataset and its potential uses. *Strategic Management Journal, 42*(12), 2195–2217. Chichester, UK. https://doi.org/10.1002/smj.3286

[4] Acemoglu, D., et al. (2022, April). Artificial intelligence and jobs: Evidence from online vacancies. *Journal of Labor Economics, 40*(S1), 293–340. Chicago. https://doi.org/10.1086/718327

[5] Noy, S., & Zhang, W. (2023, July). Experimental evidence on the productivity effects of generative artificial intelligence. *Science, 381*(6654), 187–192. United States. https://doi.org/10.1126/science.adh2586

[6] Brynjolfsson, E., et al. (2025, May). Generative AI at work. *The Quarterly Journal of Economics, 140*(2), 889–942. Oxford. https://doi.org/10.1093/qje/qjae044

[7] Acemoglu, D., & Restrepo, P. (2022, September). Tasks, automation, and the rise in U.S. wage inequality. *Econometrica, 90*(5), 1973–2016. Evanston. https://doi.org/10.3982/ECTA19815

[8] Alekseeva, L., et al. (2021, August). The demand for AI skills in the labor market. *Labour Economics, 71*, Article 102002. https://doi.org/10.1016/j.labeco.2021.102002