Generative AI and Jobs: Policies to Manage the Transition

Research Brief based on ILO Working Paper 96

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Key points

► Advances in Generative AI (GenAI) have raised concerns over its potential effects on employment, particularly for white-collar and knowledge-based workers. ILO Working Paper 96 provides a comprehensive global analysis, focusing on the exposure of various occupations to GenAI, revealing potential impacts and shifts within labour markets.

► Not an employment apocalypse, but a shift: Calculated potential augmentation effects are higher than automation exposure in most countries and sectors. GenAI is likely to induce a transformation in task structures and occupational roles. Nevertheless, some jobs might be lost, which makes urgent the need for dedicated policies to manage transitions and mitigate the negative impacts of the transition, while seeking to harness the productivity benefits of the new technology.

► Varied impact across demographics and regions: GenAI technologies may affect a wide array of occupations. Tasks within clerical support work are particularly exposed to the risk of automation. The effects of automation and augmentation vary widely among countries at different levels of income, and regions. Given the greater representation of women in clerical jobs, the effects of automation will be greater for women.

► Harnessing political and social momentum: Capitalizing on the present interest on GenAI, policy actions should be both preventive (anticipating changes) and corrective (addressing concerns). Policies should be developed through collective multi-stakeholder engagement and strong, dialogue-based processes with a key role for governments and social partners.

► Implications for working conditions: While GenAI can enhance productivity, its incorporation may affect job quality and worker autonomy, necessitating policy regulation and oversight. Such policies should also address the working conditions of laborers in the AI development process and focus on the quality of jobs that will emerge as a consequence of this technological transition.

► International labour standards and collaboration: Policy action should ensure application of existing International Labour Standards to manage the transitions generated by advancements in AI, accompanied with an active engagement in the International Labour Conference 2025-2026 standard-setting discussion on “Decent work in the platform economy”.
Introduction

Advances in Artificial Intelligence, in particular Generative AI (GenAI), have shifted debates on automation away from manual work and routine tasks to concerns about the future of white-collar jobs and knowledge work. In ILO Working Paper 96, we add a global perspective to the debate on the labour markets and generative AI.

The focus of this new analysis is on the “exposure” of occupations to GenAI. The study relies on a combination of AI and human judgement to identify tasks within 436 internationally standardized ISCO-08 occupations that could potentially be affected by technologies with capabilities similar to GPT-4 in the coming years. It subsequently draws on the unique ILO repository of harmonized country-level microdata to estimate global, income-based and regional shares of employment that fall into the conceptual categories of automation potential (most tasks could be replaced by GenAI) and augmentation potential (only some tasks are automatable, leaving a clear need for a human role).

We stress that such potential does not imply full deployment and that, in practice, actual automation of tasks is likely to be lower than the top threshold estimated presented in the paper. Consequently, the main objective of the study is not to derive headline figures, but rather to analyse the direction of possible changes. Such insights are necessary for a proactive design of policies that can support orderly, fair, and consultative transitions. In addition to the quantitative effects, the study discusses the potential impact of GenAI on working conditions and job quality. The analysis reveals that the potential for augmentation is six times greater than it is for automation, meaning that many jobs will be transformed. As a result, workplace consultation and additional regulations are needed to develop safeguards on the appropriate use of technology at the workplace and on the creation of quality employment associated with AI’s development. The objective is to manage transitions so as to minimise the negative effects on individual workers and maximise the productivity benefits of these new technologies.

Occupational Exposure

Figure 1. Tasks with medium and high exposure to Generative AI, by occupational category

Note: Occupational categories at ISCO-08 1-digit level. Levels of exposure to potential automation by GenAI with capabilities similar to GPT-4 on 0-1 scale. “Medium exposure” for 0.5-0.75 scores and “high exposure” for scores greater than 0.75.
The study finds that clerical support workers are the most exposed occupational group: 24 per cent of the tasks in these jobs fall into high level of exposure to automation and another 58 per cent have medium-level exposure (Figure 1 above). Other occupational groups are less exposed, with only 1 to 4 per cent of tasks considered as having high automation potential, and medium-exposed tasks not exceeding 25 per cent. This means that, while certain tasks in these occupations could potentially be automated, most tasks still require human intervention. Such partial automation could enable efficiency gains, allowing humans spend more time on other areas of work, thus “augmenting” their work.

Figure 2. Distribution of task-level scores of automation potential: Managers and Clerical Support Workers
These differences between occupational groups are well illustrated in Figure 2 above, which compares the distribution of task-level scores of automation potential found in the occupational categories of managers and clerical support workers. For managers, most occupations have score distribution somewhere on both sides of the medium exposure line of 0.5, with more tasks falling into low-level exposure. In contrast, for clerical support workers, many occupations have an entire score distribution that falls to the right of the medium exposure threshold of 0.5.

To separate occupations with high automation and high augmentation potential, a simple classification rule is applied, as summarized in Table 1. Jobs with a high mean and a low standard deviation of task-level scores fall into the category of high automation potential, as most of their typical tasks have high exposure levels. Jobs with a high augmentation potential are at the other extreme of this definition: they have a low occupation-level mean score, but a high standard deviation of the task scores. These jobs are composed of some tasks that are difficult to automate, and others that can be automated more easily. In such cases, technology is likely to have an augmenting effect, taking away some of the more exposed tasks, but still requiring the human element for the overall performance.

<table>
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<th>Table 1: Grouping of occupations based on task-level scores¹</th>
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<td><strong>High SD</strong></td>
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<td>Augmentation potential</td>
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Figure 3 list such augmentation-prone jobs titles within two occupational groups where they are most frequent: Professionals and Technicians and Associate Professionals.

¹ For detailed definitions and calculations refer to ILO Working Paper 96, in particular its Section 4 and Appendix 1.
Exposed occupations as a share of employment

In the next stage, jobs inside the automation and augmentation classifications are linked to the occupational distributions across countries, using official ILO statistics. Relying on ILO’s database of harmonized microdata, the analysis uses advanced statistical methods to derive a global estimate that is representative of ILO’s 187 Member States, with further breakdowns by country income group, region (see data in Appendix 1) and gender.

Figure 2 shows jobs in augmentation (upper panel) and automation (lower panel) categories, calculated as a share of total employment at the global level and within country income groups. In global terms, the potential for augmentation is almost six times greater than it is for automation (13 per cent vs 2.3 per cent of total employment). High-income countries (HIC) are most exposed to automation risks: 5.1 per cent of their total employment is in this category, compared with 2.4 per cent in upper-middle-income countries (UMIC), 1.3 per cent in lower-income countries (LMIC) and 0.4 per cent in low-income countries. Across all income groups, women are more likely to be affected by automation than men.

Figure 2. Global estimates: jobs with augmentation and automation potential as share of total employment
This strongly gendered effect becomes more apparent if jobs with high automation and augmentation potential are disaggregated as a share of employment for each sex: in high-income countries, jobs with high automation potential constitute 8.5 per cent of female employment, compared to 3.9 per cent of male employment (Figure 3). On the other hand, the share of jobs with high augmentation potential is also visibly higher among women than among men in all income groups. This suggests that a badly managed transition could disproportionately harm women, while a positive transformation process could create important opportunities for women's empowerment.

Figure 3. Automation vs augmentation potential: shares of total employment for each sex (global estimate)

In addition to those potentially affected by automation or augmentation, some 9.1 percent of the global employment, corresponding to 299 million workers, are in occupations that do not fit into this binary classification, but nonetheless perform a range of tasks that have the potential to be affected by GenAI. This group, referred to as “The Big Unknown”, is primarily made up of professionals, technicians, and associate professionals. With high occupational automation scores but also wide variance across their component tasks, these jobs could either be transformed through GenAI-enabled augmentation or suffer significant displacement through automated substitution.
Conclusions

Our analysis shows that the most recent iteration of GenAI is unlikely to lead to the “end of work”. Nonetheless, it does suggest many important transformations, with ultimate outcomes highly dependent on policies that accompany the transition.

While the data on automation may seem alarming, especially when expressed in millions of jobs, it is important to note that potential exposure to GenAI is not equivalent to job loss. The occupational group with the highest share of tasks exposed to GenAI technology are the clerical jobs, and yet it is unlikely for all office jobs to disappear from one day to the next, as technological adoption in practice is a progressive process, rather than an immediate one. In many countries, adoption may be constrained by unreliable access to or high cost of broadband and electricity, lack of digital skills needed to work with GenAI, as well as the cost of AI systems themselves. Such infrastructure constraints reveal the disparate challenges faced across the world.

While in high-income countries, the risk of automation applies to a higher share of employment and disproportionately affects women, such countries are also better equipped to deal with the cost of the transitions, both in financial and institutional terms. In the low-income countries, the existing digital gap does offer a temporary shield from immediate exposure to automation, but it also creates a risk of missing out on the productivity benefits that generative AI has to offer.

As the potential share of global employment that could be “augmented” by GenAI is much greater, varying between 10-13 per cent across all country income groups, whether its effects on job quality are positive or negative hinges on the process of design and integration of AI systems at the workplace. While the technology could save human time for more engaging work, it can also be implemented in a way that worsens job quality. This would especially be the case if tools based on GenAI restrain worker autonomy, increase work intensity, or limit workers ability to provide feedback or discussion with management about the organization of their work.

Beyond the impact on existing employment, which is the focus of our study, new jobs are also likely to be created as a result of GenAI technology. While media discussions often focus on emerging, prestigious professions – such as prompt designers and AI content creators – it is essential that policies account for the most vulnerable workers in today’s supply chains of these AI systems. Creation of GenAI currently relies heavily on millions of human labourers who help develop the models through cleaning and tagging of their training data. Such workers often remain invisible, as the bulk of these assignments is conducted through crowdsourcing platforms, with workers hired as independent contractors, without the rights and benefits associated with an employment relationship. Ensuring that the new AI-related jobs are of good quality would help secure a potential source of positive employment opportunities for workers who may be displaced. Extending this focus on the entire supply chain of these GenAI systems would contribute to a more equal distribution of their benefits.
Policy Recommendations

Since the release of ChatGPT in November 2022, generative AI has captured public attention around the world. In many settings, it has brought new energy into policy discussions around the impact of technology on today’s societies. We believe that governments and social partners should aim to harness this political momentum. In ILO Working Paper 96, we made the following policy recommendations, aimed to minimize the potential negative effects of the transition, and geared towards the expansion of opportunities for productivity growth and promotion of decent work:

**Automation:**

- Prioritize redeployment and training over job loss, focus on the most exposed sectors. Where possible, engage with workers’ representatives and competent authorities to devise measures to avert or minimize terminations.
- In cases of displacement, ensure coverage of social protection and access to retraining for affected workers.
- Account for the strongly gendered dimension on the potential impact of generative AI on the current labour markets and design policies that address gender-specific needs in the transition process.
- Invest in sectors that are under-funded and which have the potential to be a source of good quality jobs, such as in the care or green economy.

**Augmentation:**

- The design and application of regulations is best crafted through tripartite systems, in which workers’, employers’ and governments representatives engage with equal voice.
- Involve workers in the design, implementation and use of technology at the workplace by building and strengthening mechanisms of workplace consultation.
- Strive for transparency and clear rules. Prohibit worker monitoring and data collection outside of work or in contexts where it poses risks to human dignity or the exercise of fundamental rights.
- Consider other regulatory safeguards such as requiring human oversight in decisions on dismissal.
- Ensure that workers have the digital skills to work with GenAI by investing in education and skills development.
- Support, through development cooperation, technology transfer, debt restructuring and debt alleviation, efforts by lower-income countries to invest in needed infrastructure that can allow countries to benefit from the productivity-enhancing potential of generative AI.
- Make new jobs part of policy discussions. Support efforts at the 2025-26 International Labour Conference to develop an international labour standard on «Decent work in the platform economy», as well as its eventual adoption into national legislation.

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Disclaimer: The views expressed herein are those of the authors and do not necessarily reflect the views of the International Labour Organization.
Appendix. Regional and Sub-regional Estimates

Figure A1. Regional estimates: jobs with augmentation and automation potential as share of total employment

Figure A2. Sub-regional estimates: jobs with augmentation and automation potential as share of total employment