How AI is depressing entry-level wages and hiring

As generative AI grows more sophisticated, salaries and demand for junior employees seem to suffer.

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As the use of generative artificial intelligence (GenAI) spreads, wages and demand for junior employees are coming under pressure, raising concerns about how new entrants to the workforce will acquire the skills and knowledge they need to progress up the career ladder.

While early research suggested that GenAI would help low-level employees the most — acting as a smart assistant in mundane tasks, flattening the abilities gap between the most junior and most senior employees — a different picture is beginning to emerge.

A working paper by IESE's Mireia Giné and José Azar, together with Javier Sanz-Espín of Toulouse School of Management and the University of Navarra, shows that GenAI is pushing down new hire wages in AI-exposed companies — especially for low-seniority employees. Those employees can be young entrants into the workforce or longer-term employees who have remained in lower-level positions.

Using a large-scale dataset of 138 million U.S. workers, the research shows starting wages in AI-exposed companies fell by 4.5% after the launch of ChatGPT, led by a 6.3% pay drop for junior positions. Starting salaries for mid-level positions declined 5.9%, while compensation for senior-level hires remained stable or even increased.

The findings highlight one of the defining traits of large language models (LLMs): their ability to automate standardized cognitive and reasoning tasks such as drafting, summarizing, coding and basic analysis. In most workplaces, these tasks are disproportionately

concentrated in low-seniority roles.

How AI is changing corporate structures

It's not just pay levels that are being shaken up. AI is also altering the mix of junior, mid-level and senior employees in some companies, changes which over time may upend traditional hierarchies in how firms are organized.

Firms in AI-exposed sectors — think IT, consulting and financial services — reduced the share of new junior positions by 4% and increased the share of mid-level employees by approximately the same amount, the research found. The fact that the mid-level headcount rose amid falling wages suggests that, as AI automates entry-level tasks, displaced junior employees seek promotions and mid-level roles. The supply of candidates for mid-level positions outstrips demand for them, pushing wages downward.

The low-seniority impact may be linked to the increasing autonomy of AI. Research by Enrique Ide and Eduard Talamás published in the *Journal of Political Economy* finds that as AI gains autonomy, the least knowledgeable workers are the most vulnerable to substitution by AI. Autonomous AI agents can potentially be given tasks that take hours, days or weeks to complete, and then can go off and do those tasks in the way a smart employee would.

At the other end of the experience ladder, senior employees always benefit from GenAI, the Ide and Talamás research finds. With autonomous AI, the most knowledgeable workers move into specialized problem-solving and use AI as an autonomous agent.

This is consistent with earlier research showing that demand for managers increased in companies that adopted AI systems. Managers play a crucial role in guiding AI's integration into workflows and crafting strategies that leverage AI's potential, while safeguarding against its limitations. Human judgment and strategic vision become even more valuable in an AI world.

How AI is changing the knowledge and skills pipeline

All of this has implications not only for how tough the job market may be for new entrants, but also for how people just starting off in their careers will learn and advance. In most professions the grunt work of entry-level positions is a crucial phase of learning and training.

Without that skills pipeline, it's difficult to imagine how employees will develop the expertise needed to take on senior positions.

"One of the key challenges is how junior people learn," says professor Sampsa Samila, director of IESE's Artificial Intelligence and the Future of Management Initiative. In a context in which entry-level employees are either relying heavily on AI or potentially replaced by it, "Where do you get the experts?"

In the Giné and Azar research, the changes in wages and seniority were accompanied by a systematic lowering of education levels at the bottom and middle of the job hierarchy.

In AI-exposed firms, the average education of junior and especially mid-level new positions declined over time, while education requirements for senior roles remained broadly unchanged. This suggests that firms respond not only by shifting hiring toward mid-level titles, but also by redefining what those titles mean.

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