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## Asia's Factory Workers in an AI-Driven World

### insight

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Today in China, technology is removing the need for service staff in the most casual of experiences. Cameras equipped with facial recognition technology are being used in public toilets to ensure that there is “no abuse” of toilet paper. Smart cameras are being used to track and charge cars entering parking lots, eliminating the need for attendants and barriers.

Alibaba has announced [plans to spend US\\$15 billion](#) on research into AI, machine learning, and cloud computing. Tencent and Baidu are also spending big to ensure AI leadership. Global management consulting firms McKinsey and PwC have said that AI could add over [a percentage point of growth](#) to global GDP annually, boost [Chinese GDP by 26%](#) in 2030, and transform industries such as manufacturing, agriculture, retail, and finance.

### Benefiting Capital at the Expense of Labor?

These are exciting times for technologists, businesses, and investors. While robotics and automation are increasingly being used by manufacturers to replace humans in “doing,” AI is enabling computers to replace humans in “thinking.” As AI goes through its processes, it generates a treasure trove of data that helps improve goods and services. Automation and robotics allow factory owners to shrink their labor costs, reduce labor risk, and increase quality, efficiency, and capacity. A factory owner facing rising labor costs

and increasing demands for speed may look upon automation and digital manufacturing as a godsend.

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The effect of automation and AI on jobs is uneven. Some technologists point to previous technological breakthroughs where initial fears of job loss were overblown—such as the advent of the ATM machine, which took over some of tellers’ more tedious tasks. Today, tellers are fewer in number, and have a wider range of responsibilities and skills. Meanwhile, banks have created other jobs requiring completely different skill sets.

#### Asian Low-Skilled Jobs Most Exposed to Impact of Automation

More understanding of how technology drives shifts in employment is sorely needed in developing Asia, where labor-intensive export manufacturing supports millions of jobs that are low-skill and repetitive, and therefore at risk of automation. A recent [International Labor Organization report](#) estimated that 137 million jobs, or 56% of the total, in five Southeast Asian countries—Thailand, Vietnam, Cambodia, Indonesia, and the Philippines—are at risk of automation, with large portions of those coming from the garment and textile, electronics, and automotive industries.

These are the very industries that have provided developing Asia with a path out of poverty for the past 20 years. If industrialization in the future does not drive job creation, there will be a big gap in national poverty alleviation strategies.

For factory workers, automation, robotics, and AI represent a steep set of challenges, particularly at lower skill levels. First, there will be fewer jobs to go around, and second, the jobs that remain will require data and analytical skills that today’s factory workers are not likely to have. More young Asians than ever are going to school, but in some countries, achievement in the early years, primary, and secondary levels continue to lag behind global averages, and some Asian countries are still dealing with serious illiteracy problems. What happens to these workers when factories go digital? Will they have the skills to find alternative employment? Are we naïve to hope that they will be able to navigate the gig economy or engage in entrepreneurial ventures?

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These concerns are serious given that Asia is already suffering from worsening levels of income inequality. GDP per capita in both China and India may have risen dramatically on average, but at a granular level, the gains of growth have been disproportionately captured by the wealthiest. In India, for instance, from 1980 to 2014, the average growth in income was

187%, but the bottom 50% of the population had income growth of just 89%, whereas the top 1% experienced income growth of 750%, and the 0.1% at the very top experienced income growth of 1138%. China's figures are similarly skewed: incomes at the top grew 1534% while those in the bottom half experienced income growth of just 312%.

In the US, automation in manufacturing during the 1990s and early 2000s gave the economy a "net gain" through increased productivity. But it hit factory workers hard, contributing to the loss of millions of jobs and the hollowing out of the manufacturing sector. Today, given these experiences, and with the looming prospect of AI, Asian governments and businesses need to think carefully about how to create better paradigms for development, ones that will return upward mobility to the center of growth outcomes.

### Inventing Tomorrow's Safety Net

One obvious way to do this is to strengthen the social safety net, which can protect workers during periods of change. A social safety net measure could be something as simple as a direct cash transfer, school lunches or meals, or fee waivers (e.g. for government procedures); none of these costs very much, and may be temporary, but they give workers time to adapt and transition to another stage in their careers. The temporary loss of a job shouldn't permanently set a worker back and remove them from the workforce.

According to the World Bank, transition and developing economies spend, on average, 1.6% of their GDP on social safety net measures. But this figure drops to 1.2% when looking only at East Asia and the Pacific, and 0.8% when looking only at South Asia. If governments are willing to spend millions to attract and grow AI and digital manufacturing, it is not unreasonable to ask that they also increase funding for social safety net programs to help the poor navigate through the economic changes that these will bring.

We know that technology is bringing about massive and accelerating change in manufacturing worldwide; we should be actively preparing workers for the jobs of tomorrow, and enable them to keep learning as those jobs evolve. Many businesses are now reshaping their training and development processes, but we are only beginning to understand just what "continuous learning" looks like on a societal level.

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Although it's a truism, public services and public infrastructure are indeed critical to the quality of life of the majority of citizens in every country. When utilized well, they can help citizens advance their fortunes. One needs only to look at Jakarta's traffic congestion—which is said to cost the country

US\$2 billion per annum—to understand that ill-planned public infrastructure affects the poor and wealthy differently. The wealthy are more able to mitigate the impact of bad traffic on themselves, through having better cars and the ability to choose when they travel. The poor, on the other hand, are tied to public transportation. Similar situations exist with regard to public health services in Asia, which tend to be underfunded even while states invest heavily to support private hospitals to serve medical tourism.

In short, there is a range of straightforward, proven measures that governments and businesses can take to improve the prospects of low-income and less educated workers in navigating the emerging digital economy. Automation and AI are coming, but the benefits they bring should be enjoyed responsibly, with the societal good in mind, lest they exacerbate inequality.

The sooner we start building systems and institutions to help workers, the more chance Asia will have to create that new paradigm for technological and economic change.

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