

Automation in Sub-Saharan Africa: Is the Future of Work at Risk?

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Automation is leading to a profound transformation of economies worldwide. Yet, the rapid advancement of technology is only part of the story of what many are calling the ‘second machine age’. In order to unlock potential solutions for maximizing the benefits and minimizing the risks for the future of work, it is crucial to illuminate the factors that are driving or inhibiting the automation revolution.

The second machine age

Due to astonishing technological advancements, many countries are entering into an era defined by the increasing automation technology.

This technology assists humans, or acts autonomously, in the production, maintenance, or delivery of products or services. This encompasses a large number of uses, from robots programmed to do manual tasks to software capable of complex cognitive tasks. Yet, it is erroneous to assume that technological advances alone are driving automation.

Automation is not simply a consequence of technological availability, rather, it is the social, regulatory, economic, and infrastructure and capital factors that drive or inhibit automation.

Social factors: Population growth and education at odds

Sub-Saharan African countries have a young and growing population. At the same time, growth in employment is not developing fast enough. This translates into a labor glut, greater competition for existing jobs and lower wages across Sub-Saharan Africa – conditions that inhibit automation uptake.

The level of education, on the other hand, acts as a driver for greater automation given the

comparatively poor quality of education accessible to the majority of young Africans. As a result, too few people develop the more advanced skills needed in the economy. This, together with emigration of educated workers, translates into skills shortages.

Where job seekers lack the necessary skills or where wages are high, automation offers an alternative. Low wages, in turn, affect the cost-effectiveness calculations of automation and make large-scale automation unlikely in sectors with labor abundance and low wages.

Regulatory factors: Competing effects from labor market regulation and industrial policies

Labor market policies such as minimum wage and worker protection laws are generally conducive to greater automation as they can act as a disincentive for firms to hire workers. As automation becomes cheaper, the cost-benefit calculation for replacing workers with automated labor becomes more attractive. Moreover, organizations can avoid costly litigation and compliance measures of worker protection laws by substituting automated replacements for humans in the future. To date no African country has an official industrial policy that promotes the use of automation.

Capital and infrastructure factors: Constraining automation uptake

Deficiencies in the availability of capital and infrastructure inhibit automation in Sub-Saharan Africa. The financial system in Sub-Saharan Africa is largely underdeveloped and access to finance is among the lowest in the world. Where capital is available, interest rates are extremely high and most African small and medium-sized companies have neither the financial means nor the access to capital.

Furthermore, automation hinges on a reliable infrastructure. Yet, electricity supply remains unstable across much of Sub-Saharan Africa and digital infrastructure, in particular (high speed) internet access, remains severely limited.

Economic factors: Automation only viable for some

Low wages favor workers over costly automation technology, and we can reasonably expect little uptake across Sub-Saharan Africa in sectors where labor remains cheap in the long term such as in small-scale agriculture and the informal sector.

At the same time, there is greater economic viability of automation in segments of Sub-Saharan

African economies that feature high individual salaries or high market competition. Further, where policies do not insulate African companies from foreign competition, firms will need to increase their competitiveness and productivity, for example through automation, in order to survive in a global market.

Looking ahead

Widespread automation across Sub-Saharan Africa is unlikely in the short- to medium-term given the high percentage of workers in small-scale agriculture and the informal economy. However, areas of economic activity exist where automation is more likely. Under appropriate conditions, the expansion of this technology will strongly affect Sub-Saharan Africa's growing middle class employed in the formal economy.

Thus, it is important that debates on the future of Sub-Saharan Africa's jobs include a more detailed assessment of the drivers and inhibitors of automation in respective economic sectors and countries. A deeper level of engagement by African researchers, activists, and politicians is needed to ensure that Sub-Saharan Africa keeps its agency in an era of automation.

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