

# The Impact of AI-Driven Automation on Semi and Unskilled Workers in Sub-Saharan Africa's Manufacturing Sector: A Socio-Economic Analysis and Policy Perspective

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## ABSTRACT

*The rapid growth of AI and automation offers Sub-Saharan Africa economic opportunities as well as labor market challenges. Even though the technologies are capable of raising productivity, they are a threat to semi- and unskilled jobs, particularly in manufacturing. The systematic review is employed in this study to analyze the impact of AI-driven automation on vulnerable workers and considers socio-economic implications. Results indicate rising job displacement, industrial change, and inequality. Unless targeted interventions occur—including inclusive education, vocational training, and labor reforms—AI may exacerbate poverty and joblessness. The research also identifies policy loopholes and unequal AI preparedness on the continent. It ends with strategic suggestions to foster inclusive growth and orchestrate disruption, contributing evidence-based insights to the future of work in Africa.*

## INTRODUCTION

Integration with AI is rapidly transforming industrial manufacturing and employment worldwide. High-income economies have enjoyed a fairly easy transition into the AI economy, but Sub-Saharan Africa faces more daunting challenges. The continent must upgrade manufacturing base while safeguarding the earnings of tens of millions of unskilled and semi-skilled workers. Artificial intelligence (AI) automation, including robotics and machine learning, is increasingly being adopted across Africa's industries. This

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adoption aims to boost productivity, lower operational costs, and strengthen competitiveness in global supply chains (World Bank, 2019). Indeed, AI technologies play an overwhelming role in structuring manufacturing systems worldwide but unevenly.

While AI and automation enhance productivity, they also pose significant labor market challenges in Sub-Saharan Africa, where most workers are semi- or unskilled (International Labour Organization, 2018; Gwagwa, et al., 2022; Giwa & Ngepah, 2024). These jobs, critical to many African economies, are especially vulnerable to replacement by intelligent machines (Choi, Dutz, & Usman, 2020). Some studies, including those by the World Economic Forum (World Economic Forum, 2018, 2020) and Autor (2015), predict that AI automation will create new jobs even as it displaces others, resulting in a net job gain. However, these new roles tend to favor high-skilled workers, while the majority of displaced jobs come from the low-skill segment.

In line with this argument, Danso and Hanson (2023) argue that some tasks and jobs will be replaced by AI automation, but new ones will be created, especially in digital and allied industries. Additionally, the World Economic Forum (World Economic Forum, 2025) emphasizes that AI and big data now constitute nearly 90% of in-demand skills in Sub-Saharan Africa, with strong growth also seen in flexibility, systems thinking, and creative problem-solving, underscoring the redirection from low-skill work to higher-order, adaptable, technical talent. According to United Nations Educational, Scientific and Cultural Organization (2020a), this presents a challenge for Sub-Saharan Africa, where the majority of low-skilled workers do not have formal education or training, making them unfit to transition to the shifting skills demands of the labor market.

As AI poses a key skills gap challenge, numerous studies suggest that Sub-Saharan Africa must close the gap through targeted education and training interventions to ensure inclusive development (Bolu et al., 2024; Mäkelä & Stephany, 2024; Caribou Digital & Genesis Analytics, 2025; Strouse, 2023; Robinson, 2021). But whether reskilling Sub-Saharan Africa's manufacturing sector workers, who are mostly illiterate and lacking formal education, is possible is unclear. This leaves the region's ability to mitigate economic exclusion expected to come with the rapid evolution of AI automation technologies in jeopardy.

Several reports, including those of Anakpo and Kollamparambil (2021) and Quinsou and Chabossou (2024), hypothesize that the technological shift has profound socio-economic consequences in Sub-Saharan Africa, reinforcing widespread inequalities. The “double-edged sword” effect of AI automation, being advantageous to business but with grave challenges, has profound implications in various sectors, including manufacturing. Policymakers must make these changes wisely. It is crucial to comprehend the implications of AI automation on labor segments to formulate policies that ensure inclusive growth and sustainable industrial development (Acemoglu & Restrepo, 2019b).

Few Sub-Saharan African countries have developed comprehensive policy frameworks to manage AI's risks, especially regarding low-skill job displacement, upskilling, and social protection (Ayana, 2024; Plantinga et al., 2023; Knowledge 4 All Foundation, 2024; Butcher et al., 2021). AI adoption is still in its infancy, and only eight nations have official AI policies as stated by Durokifa (2024). Furthermore, poor implementation erodes the performance of current policies, calling for bridging institutional and implementation gaps for effective transformation.

This chapter applies a systematic review methodology to explore the socio-economic impacts of AI automation on the unskilled and semi-skilled workforce in Sub-Saharan Africa. The review consolidates literature to study the interaction among automation, labor market structures, and policy, education, and ethics. The chapter also discusses the socio-economic effect of AI automation on low-skilled labor in displacement, skills deficit, regional disparities, and socio-

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