International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

The Impact of Automation on Employment in Developing Economies

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Abstract
Automation is bringing about development and uncertainty with it as it increasingly transforms industries. While technology development promotes productivity and economic progress, they also pose a danger to traditional job markets, particularly in emerging economies. This paper explains how automation is changing the nature of work, the hardest-hit industries, and how steps can be taken to make the transition from human labor to automation a fair and sustainable one.

Keywords: Automation, Economic Growth, Job Market, Developing Economies

Introduction

Automation is leading this technological revolution, which is taking place at a faster pace than ever. Automation promises as well as poses challenges in the majority of emerging economies where labor-intensive jobs form the core of the economy. Apart from improving efficiency, it has the potential to displace millions of jobs. The purpose of this paper is to examine how automation impacts jobs in various countries and present ways of mitigating its drawbacks while optimizing its benefits. Emerging markets can ready their workforce for the new world of work and make automation a driver of economic expansion and not an originator of mass job uncertainty.

2. Literature Review

Research shows that automation has both positive and negative impacts on employment. According to the World Economic Forum (2020), automation will displace some jobs in specific industries but introduce new jobs in the fields of technology. Acemoglu and Restrepo (2020) note that rich countries adapt well to automation, but poor nations have it harder to adapt to automation since they lack widespread access to training and education. Nations with good STEM education and vocational training centers are in a good position to adapt to the impacts of automation. The World Bank (2021) notes that automation has an impact on poor employees, leading to heightened income inequality. To counteract this, policymakers can implement reskilling programs and safety nets to support the affected individuals.

3. Impact of Automation on Employment

3.1 Job Displacement in Traditional Sectors: Automation is transforming industries that rely on human labor, with robotics, AI, and machinery performing repetitive tasks.

- **Manufacturing:** Robots and advanced machinery are now replacing human labor in manufacturing industries like textiles, car-making, and electronics, leading to job loss, especially in unskilled jobs.

- **Agriculture:** AI, drones, and auto-irrigation systems are making production more efficient but reducing the need for labor, affecting rural employment.
- **Service Sector:** AI technologies like chatbots, ATMs, and self-service kiosks are reducing the demand for support workers in industries like banking, customer service, and logistics.

3.2 Job Creation and Transformation: While automation is replacing some jobs, it is also creating new ones, particularly in the technology and innovation industries.

- **Tech-Driven Professionals:** The growing presence of AI and automation is generating a need for skilled professionals in domains like AI, cybersecurity, robotics, and software development, highlighting the value of technical skills.
- **Green Economy:** Automation is generating green industries with AI-based energy management and minimization of waste, creating new opportunities in the green economy.
- **Entrepreneurship and Innovation:** Automation enables small businesses to save money and compete with larger businesses. AI-based marketing tools, logistics, and customer service enable entrepreneurs to promote innovation and jobs, especially in developing economies.

4. The Wage and Skill Gap

Automation has widened wage and skills inequality, with contrasts between employees which are able to keep up with technological change and those that fall behind.

- **Shift in Demand for Skills:** While the old skills are being displaced by digital literacy, the demand for AI, robotics, and data analytics experts has increased manyfold, setting low-skilled workers against each other in a battle for secure jobs.
- **Income Inequalities:** The computerized economy rewards technical experts with advanced technical skills more salaries, which makes them wealthier, while low-skilled workers have stagnant or declining wages, raising economic inequality, especially in developing economies.
- **Educational Issues:** To bridge the skills gap, a priority should be laid on STEM education, vocational training, and digital competence studies backed by governments, schools, and businesses with obligatory training provisions.

5. Policy Recommendations

There must be collective action by policymakers to shift to an automated economy and ensure that job displacement is reduced to the minimum.

- **Reskilling and Upskilling:** Reskilling programs should be supported by the government so that the workers can join new disciplines by providing them technological education to reshape them into a job-ready worker.
- **Local Business Support:** Tax breaks, financial support, and digital transformation initiatives should be provided to small and medium-sized enterprises (SMEs) so that they can adopt automation without laying off workers.
- **Industry-Government Cooperation:** Industry, government, and the academies must pool their resources together and frame ways to balance workers' security against automation in such a manner that the dividends from automation are distributed in society.

6. Conclusion

Automation is a mixed blessing for the developing world. On one hand, it offers chances of growth and

efficiency on the other hand, it threatens mass job displacement. The solution lies in adjustment—developing countries need to strive towards education, skills formation, and policies to empower if automation has to be a catalyst of development and not a retardant. This way, countries can establish a future where technology progress and manpower can exist harmoniously alongside.

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