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Impact of Artificial Intelligence Shaping Jobs in Emerging and Developing Economies

Dr Harshitha K S

Lecturer, Department of Commerce and Management, University College of Arts, Tumkur.

Manjuladevi H S

Lecturer, Department of Commerce and Management, University College of Arts, Tumkur.

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ABSTRACT

Artificial intelligence (AI) has the potential to significantly reshape businesses, industries, labor markets, and society as a whole. While its adoption brings optimism about boosting productivity, it also raises concerns over widespread job displacement. To better assess AI's impact on labor markets, this analysis introduces a complementary measure that captures broader occupation-specific factors influencing the likelihood of benefiting from AI. IMF staff evaluated the AI readiness of 125 countries and found that wealthier nations—particularly advanced and some emerging market economies—are generally better prepared for AI adoption than low-income countries, though notable differences exist across regions. In many emerging and developing economies, immediate exposure to AI-related risks may be lower. Nevertheless, establishing robust legal and regulatory frameworks to encourage digital innovation while managing the risks of AI adoption remains critical, especially for advanced economies.

Introduction (Rewritten):

Artificial Intelligence (AI), particularly generative AI, is rapidly reshaping the global economy and transforming the nature of work. As a key driver of digital transformation, AI holds the potential to revolutionize industries, redefine job roles, and enhance productivity across sectors. While its

implementation presents new opportunities—such as optimizing processes, supporting decision-making, and maintaining competitive advantage—it also raises critical concerns around job displacement, inequality, and workforce readiness.

In this evolving landscape, it is essential for employers to gain a strategic understanding of AI's implications for labour markets. This report aims to synthesize the latest research on AI's impact on work and employment, offering practical insights and guidance for decision-makers. While the relationship between technology and labour is complex and dynamic, a growing body of evidence can help employers navigate the challenges and opportunities posed by AI adoption.

The report begins by examining the fundamental characteristics of AI technologies and the recent rise of generative AI. Section III explores key global trends and questions related to AI's implications for employment. Section IV focuses on how AI is currently being used in workforce management, highlighting both the potential benefits and the associated risks. Section V evaluates the existing policy landscape and presents recommendations for employers and policymakers on responsible AI development and implementation.

A central framework used to assess AI's labour market impact is the "task-based approach," which views occupations as collections of tasks, some of which AI can perform—such as text analysis, coding, or data processing. While useful in identifying jobs with high AI exposure, this framework alone does not reveal whether AI will ultimately complement workers or displace them.

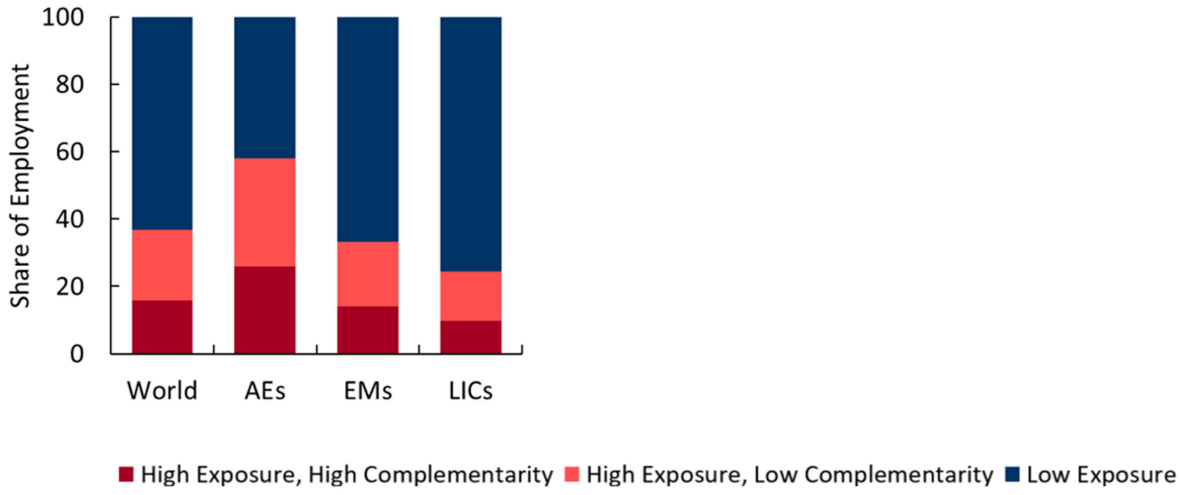
To address this gap, recent research introduces an additional concept: **AI complementarity**. This index estimates the likelihood that AI will augment rather than replace workers by considering factors such as responsibility for others' well-being, decision-making autonomy, in-person interaction, and required technical training. Occupations are thus categorized into three groups:

- **High Exposure, Low Complementarity (HELC):** at risk of substitution,
- **High Exposure, High Complementarity (HEHC):** likely to benefit from AI, and
- **Low Exposure (LE):** relatively unaffected.

Globally, around 40% of jobs are exposed to AI, though the extent and effects vary significantly by region. In advanced economies, nearly 60% of jobs could be impacted, with an even split between risk and opportunity. In contrast, emerging and low-income economies show lower levels of exposure—40% and 26% respectively—suggesting a more limited but still significant impact.

Understanding these dynamics is essential for shaping inclusive and forward-looking employment strategies. This report provides the tools and insights employers need to make informed decisions as AI continues to transform the world of work.

Figure 1: Employment shares by AI exposure and complementarity



Note: Country labels use International Organization for Standardization (ISO) country code

ISCO refers to the *International Standard Classification of Occupations.* **AEs** = advanced economies; **EMs** = emerging markets; **LICs** = low-income countries; **World** = all countries in the dataset.

Employment shares within each country group are calculated as the working-age-population–weighted average (Cazzaniga et al., 2024).

A major reason behind differences in AI exposure across countries is the variation in economic structure and job composition (Figure 2). Advanced economies—like the UK—have a larger share of workers in professional, managerial, and technical jobs that face higher levels of AI exposure. These jobs split into two categories: those that can benefit from AI support (e.g., managers and professionals) and those at risk of being replaced (e.g., clerical staff and technicians).

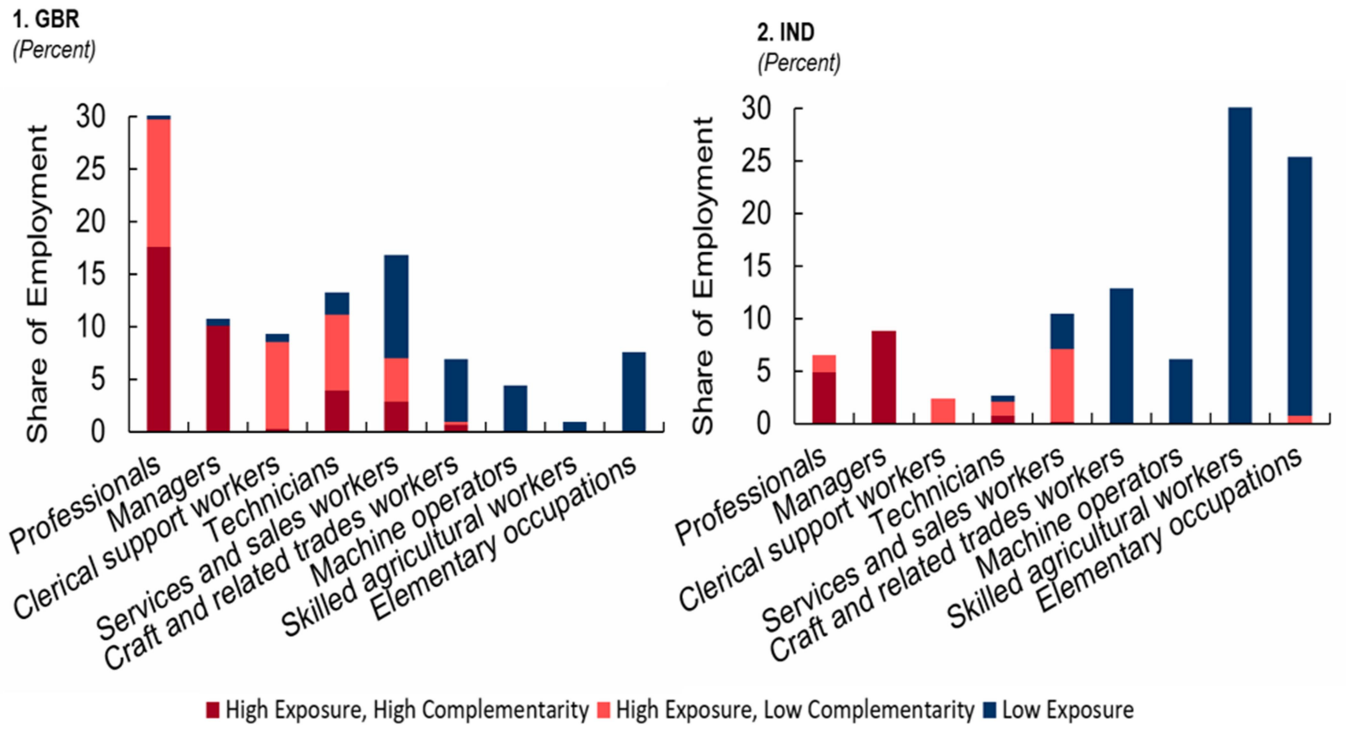
In contrast, many developing economies—such as India—still employ a larger share of workers in manual labor and agriculture, where AI exposure is limited. This creates two key challenges for developing countries:

1. They face higher barriers to reaping AI's benefits, even if the short-term risks are smaller.

2. They risk falling further behind if AI adoption continues to widen productivity and income gaps across nations.

If high-income economies capture most AI-driven productivity gains, global inequality could worsen.

Figure 2. Employment shares by AI exposure and complementarity



(Country labels use ISO codes. Sources: Cazzaniga et al., 2024)

While many developing countries remain less directly affected by AI, the impact is already visible in early-adopting economies. Evidence from the US shows that AI adoption is reshaping labor demand—especially in lower-skill jobs. Using US Census Bureau data from 2018, researchers found that regions with higher AI adoption saw slower growth in job vacancies for *high-exposure, low-complementarity* (HELC) roles, such as clerical work. By contrast, *high-exposure, high-complementarity* (HEHC) jobs, such as professional roles, remained stable or even grew.

For example, a one-standard-deviation increase in AI adoption in 2019 (around 0.18 percentage points—the difference between Boston, MA, and Portland, OR) was linked to a 0.4 percentage-point drop in

HELC job vacancies by 2023. This shows that AI adoption mainly reduces demand for lower-complementarity roles, while leaving higher-complementarity jobs relatively secure or strengthened.

The need for AI preparedness

Businesses worldwide face growing pressure to integrate AI into production and services. To make this transition inclusive and worker-friendly, governments need coordinated policy action—expanding infrastructure, improving investment conditions, updating regulations, and strengthening workforce skills. While this requires long-term planning, policymakers must also set clear short-term priorities suited to their countries.

To guide them, the IMF has created an **AI Preparedness Index** (Cazzaniga et al., 2024). This index measures readiness across four areas:

- **Digital infrastructure**
- **Human capital and labor-market policies**
- **Innovation and economic integration**
- **Regulation and ethics**

For human capital, for example, the index looks at schooling, job mobility, and access to social safety nets. The regulatory and ethics component evaluates how well a country's legal system adapts to digital business models and ensures effective governance.

The IMF assessed 125 countries and found that richer nations—especially advanced and some emerging economies—are generally better prepared for AI than low-income countries. Still, there is wide variation. Singapore, the US, and Denmark scored the highest overall. Among emerging markets, China and Malaysia led the rankings.

Policy priorities by country type

- **Advanced economies:** Should focus on driving AI innovation and integration, while building strong regulatory frameworks to maintain safety, trust, and fairness.
- **Emerging and developing economies:** Should concentrate on building core digital infrastructure and training a digitally skilled workforce. AI can also support inclusive growth in these countries by improving education and healthcare delivery.

Policy implications for global labor markets

AI is reshaping jobs worldwide, but not evenly. The extent to which countries benefit depends on how prepared they are for broad adoption of AI technologies.

- In advanced economies, strong legal and regulatory frameworks are essential to balance innovation with managing risks.
- In emerging and developing economies, where AI risks are currently lower, governments should prioritize infrastructure investments and skills training—especially for younger workers entering the job market.

If handled well, AI has the potential to enhance productivity and support inclusive growth. If not, it risks deepening inequality both within and between countries.

AI and Jobs in Emerging & Developing Economies

AI is set to reshape the job landscape in emerging and developing economies, offering opportunities for higher productivity and economic growth while also posing risks such as job displacement and a deepening digital divide. Routine tasks are increasingly vulnerable to automation, yet AI is also driving demand for new roles in fields like data science and AI development—requiring workers to acquire stronger digital skills. To fully capture AI's benefits while managing its risks, countries must adopt comprehensive AI strategies, build strong regulatory frameworks, and invest heavily in workforce reskilling and upskilling.

Impact on Jobs

- **Automation of Routine Tasks:**AI is expected to automate repetitive roles, potentially displacing workers in sectors such as agriculture, manufacturing, and consumer goods.
- **Redefinition and Augmentation of Jobs:** Rather than eliminating jobs entirely, AI often reshapes them. Employees will increasingly work alongside AI tools, enabling them to focus on more complex, creative, and strategic activities.
- **Creation of New Roles:** The rise of AI generates demand for specialized expertise in data science, machine learning, and AI systems management, creating fresh job opportunities.

Economic & Societal Implications

- **Leapfrogging Development:** AI can help emerging economies bypass traditional growth stages by modernizing agriculture, healthcare, education, and public services.
- **Boost in Productivity:** AI enhances efficiency and supports smarter decision-making by harnessing data more effectively.
- **Risk of Inequality:** Without adequate infrastructure and skilled workers, AI adoption may widen income gaps and economic disparities.
- **Widening Digital Divide:** Unequal access to technology could intensify the divide between those who can leverage AI and those who cannot.

Recommendations for Emerging Economies

- **Strategic Implementation:** Governments and businesses should design and execute comprehensive AI strategies that facilitate smooth workforce transitions.
- **Regulatory Frameworks:** Strong regulatory systems are vital to address the ethical and social challenges of AI, ensuring its responsible and fair use.
- **Upskilling and Retraining:** Continuous investment in reskilling and upskilling initiatives is essential to prepare workers with the competencies required in an AI-driven economy.
- **Infrastructure Development:** Substantial investment in digital infrastructure is crucial to help emerging economies fully leverage AI opportunities and prevent digital exclusion.

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