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Youth Employment in the Age of Artificial Intelligence

Evaluating Tanzania's Policy Responses for a Sustainable Digital Economy

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Abstract

This paper focuses on the youth labour market environment in Tanzania in the context of the fast development of artificial intelligence in the digital economy. As per the official statistics, the youth unemployment is reported to be 3.35 per cent in 2024, however, the high rates of underemployment and susceptibility in the informal sector are still observed. The critiques are the government policy tools, including the Tanzania Digital Economy Strategic Framework and the Youth Development Policy, as well as the exploration of the role of the private sector in terms of acquiring the required skills and the future of self-employment through AI. Based on the comparative case studies related to international, African, East African, and Tanzanian settings, the research outlines the dual effect of AI that replaces and generates jobs. The results highlight the need of policy to utilize AI in an inclusive development, and to support wider partnerships between public and private as well as extensive digital literacy initiatives. This contribution develops the academic discussion of the issue of sustainable youth empowerment in the developing economic life.

Keywords

Youth employment, AI, Digital economy, Tanzania, Government policies, Self-employment

1. Introduction

With a young population that is more than 60% under age 25, Tanzania has a potential demographic dividend and an urgent labor market challenge (World Bank, 2024). In 2024, the official youth unemployment rate (ages 15-24) was 3.35% compared to 3.33% in 2023 (macrotrends, 2024) using modeled International Labour Organization (ILO) estimates. This number masks deeper challenges: Approximately 17% of youth on the mainland are underemployed compared to 31% in urban Zanzibar, including many who engage in low levels of productivity in the informal sector (Danish Trade Union Development Agency, 2024). Youth rank job creation and opportunities for entrepreneurship as their top priorities, and unemployment as a major concern, but they moderately rank government performance positively around economic management (Afrobarometer, 2025). The digital economy–driven by AI–has the power to transform self-employment opportunities and young people can engage various platforms and self-employment and AI-influenced innovative opportunities (Freelancers, e-commerce, etc...).

This paper examines the government policies related to reducing unemployment and the role of the private sector in supporting government in their respective roles while analyzing the potential of AI as self-employment option. The methods chapter details case studies that range in scale to show that AI has the potential to create jobs. The organization of the paper will follow the literature review, case studies, discussion, and conclusions, using the academic and policy literature for evidence to support findings.

2. Literature Review

2.1 Government Policies on Youth Employment and the Digital Economy

The Tanzania government has placed a high priority on youth employment through multiple policies spanning from digital transformation to artificial intelligence (AI). The Tanzania Digital Economy Strategic Framework (2024) puts under the spotlight the need for turning the nation's agenda to one of job creation through digital infrastructure and all it can complement in terms of job creation in e-commerce, fintech, data services and even beyond, all the while recognizing the barriers to employment, e.g. barriers related to digital divide (Government of Tanzania, 2024). In line with this framework, the recently launched Tanzania Youth Development Policy (2024) aims to meet the various needs of the youth population by focusing on the need for digital skills development and entrepreneurship support, in order to support

inclusive development (United Nations Population Fund, 2024). Also, with the more comprehensive initiative of the National AI Readiness Assessment Report (2025), AI is positioned as a means of public administration and providing a pathway for economic growth, citing initiatives related to AI mapping for urban planning and mapping for agriculture (United Nations, 2025). All of the policies discussed align with broader strategies from the African Union, such as the AI for Sustainable Youth Development initiative, that focus on advocacy for AI for new trade and AI enabled innovation as a means of mitigating unemployment (African Union, 2024). Here, we also see open endless possibilities to the use of policy and academic work as tracks to improved employability of youth through reviewing and analyzing digital entrepreneurship, as with the review of incubation centers in the work of Chao (2020) and their role in creating employability of youth through access to policies and resulting digital entrepreneurial space (Chao, 2020).

2.2 The Role of the Private Sector in Reducing Youth Unemployment

While government policies provide the overall framework, it is in the private sector where implementation occurs, primarily through investments in workforce skills and innovation. In Dodoma Region, private sector firms are already dealing with youth unemployment by providing vocational training and apprenticeships, albeit with challenges like skill mismatch (Mushi and Ndalama, 2025a). A study conducted in Dodoma Region found that "private sector & institutional capacity constraints, such as education and experience among youth before the private sector would absorb them" were barriers to private sector absorption and recommended a government subsidy to incentivize private sector hiring (Mushi and Ndalama, 2025b). Nationally, programs like the Digital Opportunity Trust (DOT) program have trained more than 1,000 youth in digital skills leading to self-employment in freelancing and creating content (DOT Trust, 2023). Private Public Partnerships (PPPs) are critical as demonstrated by the existence of the Private Sector Development and Youth Employment Sector Working Group which is already part of the Economic Development Programme (ILO, 2023). These initiatives will not only lead to job creation, but also help build resilience to possible economic shocks, consistent with the World Bank recommendations towards private-led reforms of TVET (Technical and Vocational Education and Training). (World Bank, 2023).

2.3 The Digital Economy, AI, and Self-Employment Opportunities for Youth

The digital economy is becoming a significant source of self-employment for youth in Tanzania, with AI expanding opportunities for gig work, app development, and personalized services. Digital entrepreneurship can lower unemployment through accessing remote freelancing on Upwork, where AI tools generate content (Shayo, 2024). Technology transfer has also brought possibilities to youth in e-health and agritech, enabling self-employment through AI chatbots providing agricultural advice (Mushi, 2024). Providing skills in AI and data analytics has been projected to create 5 million digital jobs by 2030 (Afruturist, 2023). But equitable access will require addressing gender and rural-urban disparities, as mentioned in the World Bank literature (World Bank, 2019). AI clusters, funded by venture capital, support youth-led start-ups, which will aid in helping informal work become more formalised and sustainable (Caribou Digital, 2024).

3. Case Studies: AI's Contribution to Job Creation

To contextualize AI's role, this section presents case studies across scales, demonstrating both challenges and opportunities in job generation.

3.1 Global Level: AI-Driven Productivity and New Roles

Around the globe, by 2025, AI will likely take away 85 million jobs but at the same time create 97 million jobs in domains like data science, AI ethics, and more (The World Economic Forum, 2025). According to Goldman Sachs (2025), AI has the potential to automate the equivalent of 300 million full-time jobs in the world but also increase productivity by 7%, a move that creates jobs focused on maintaining AI and enhancing creatives with AI. The IMF (2024) states that advanced economies will have the most to gain as 60% of all jobs will be at some exposure to AI complementarity and the reskilling solution is required at a larger scale (IMF, 2024).

3.2 Africa Level: Scaling AI for Inclusive Growth

AI has the potential to unleash $100 billion per year in Africa, as well as create 230 million digital jobs by 2030 in sectors such as retail and agriculture (McKinsey, 2025). The Africa AI Accelerator program enhances workforce capacity and leads to AI deployments under which youth are employed to help in training models and governance (Research ICT Africa, 2023). Cisco's Public Private Partnership case studies have shown that by utilizing AI as a diagnostic

tool, healthcare jobs in sub-Saharan Africa are enhanced at a rate of 50,000 per year (Cisco, 2024). AI, however, may not produce jobs at the anticipated rate due to a lack of talent. Establishments like Mastercard's AI hubs are creating the capacity to address potential shortages, by training 100,000 youth (Mastercard, 2025).

3.3 East Africa Level: Kenya's AI Ecosystem

Kenya is at the forefront of AI adoption in East Africa, driven by its National AI Strategy for the years 2025 – 2030, which aims to create jobs through the development of local AI applications (Government of Kenya, 2025). After youth enrolled in tech-training programs found jobs in the tech sector by referrals to gigs using AI, they earned 37% more than in their previous jobs and got into the tech sector at a 10% lower unemployment rate (Innovations for Poverty Action, 2024). Microsoft's entire ecosystem has been responsible for creating 20,000 jobs in AI, by focusing on skills development in generative tools for fintech (Microsoft, 2025). Nonetheless, exploitive experiences in data labeling reinforce conversations into ethical considerations (Time, 2023).

3.4 Tanzania Level: Emerging AI Startups

In Tanzania, startups such as Agrobot and Dr. Elsa demonstrate the impact that AI will have on jobs: Agrobot is using chatbots for agritech, employing 200 youth in Tanzania, providing farmers with greater income, and creating data collection and data-related jobs (AI4Africa 2022). The AI Readiness Report also highlights 500 indirect jobs created by public pilots of AI in health and mapping (United Nations 2025). A case study of the Kinondoni district NGO shows how AI recruitment tools are streamlining the hiring process and the NGO has been able to employ 150 youth in Human Resources tech (SSRN 2025). Each case shows how AI can deliver core self-employment in scalable ways, but the supporting infrastructure CAN NOT develop fast enough.

4. AI's Potential for Youth Employment in Tanzania: Opportunities and Policy Recommendations

4.1 The Transformative Role of AI in Fostering Youth Employment

Artificial intelligence (AI) provides a great opportunity for addressing youth unemployment issues in Tanzania, which involves enabling self-employment and discovering new economic opportunities in the digital economy. More than 70% of Tanzania's population is under the

age of 30 with another 15 million youth expected to enter labor by 2030 (NACTE, 2020). AI has the ability to democratize access to opportunities through enhanced machine learning algorithms that match job seekers to job opportunities, AI-powered platforms for freelancing, or through specific sector applications (agri-tech or e-commerce) (Madeje, 2024). For example, AI-based chatbots and predictive analysis can support rural youth to more effectively increase yields in farming output via app-based solutions (as examples by Tanzanian agritech start-ups), and self-employment opportunities in data annotation, content creation, and service delivery (United Nations, 2025). Recently, AI is expected to generate 97 million new jobs by 2025, with many of those emerging in in economies like Tanzania, where youth can leverage inexpensive AI tools will participate in gig work, such as coding or virtual assistance (World Economic Forum, 2025). In Tanzania, this means more youth could self-employ: it is possible that by 2030, digital platforms alone could generate 5 million youth-led digital work: the market opportunity should centre on AI-enabled freelancing work and across a spectrum of e-health services (Afruturist, 2023).

AI is poised to positively influence productivity gains, following on from job creation potentialities. For example, in Africa's tech outsourcing economy, if AI automates about 40 per cent of routine tasks by 2030, that may help transition youth from low-value roles toward higher-value jobs, including work in AI ethics/oversight, model training, and more. With this transition, a youth with skilled qualifications may realize an income increase of 20-30 per cent (Mastercard Foundation, 2025). In Tanzania, as an example, 79 per cent of the workforce is considered low-skilled, but through AI via mobile app technology, that role can shift to allowing youth to upgrade their labour experience through lower-cost accredited learning opportunities to increase their skill and launch lower-cost micro-enterprises (Madeje, 2024). However, if the potential is to become reality, the gap in technolgical health needs to be bridged; only 45 per cent of youth have internet access/availability/ affordability, so any all-encompassing use of AI must also be applied through digital inclusion (World Bank, 2024).

4.2 Policy Recommendations for Harnessing AI in Youth Employment

To maximize AI's contributions, Tanzania should develop targeted policies building on existing frameworks like the Tanzania Digital Economy Strategic Framework (2024-2034) and the National ICT Policy (2023), which already prioritize digital infrastructure for job creation (Government of Tanzania, 2024a; Government of Tanzania, 2023). Recommended policies include:

1. **National AI Youth Upskilling Program**: Integrate AI literacy into the secondary and TVET curricula, targeting 1 million youth by 2028 through partnerships with platforms like Coursera and local hubs. This aligns with the Youth Digital Pathways for Sustainable Development report, which calls for technology-driven inequality reduction (United Nations Population Fund, 2024). Funding could draw from the AI market's projected growth to USD 16.5 billion continent-wide by 2030 (Mastercard, 2025).

2. **Incentives for AI-Enabled Self-Employment**: Introduce tax breaks and micro-grants for youth-led AI startups, modeled on Kenya's AI Strategy (2025-2030), to foster 500,000 self-employment ventures in agritech and fintech by 2030 (Government of Kenya, 2025). This would complement the government's Third Five-Year Development Plan's goal of reducing youth unemployment to 8% by 2025/26 (Africa Check, 2025).

3. **Public-Private Partnerships for AI Infrastructure**: Expand PPPs under the Digital Tanzania project to deploy affordable AI tools in rural areas, addressing the 55% youth without digital access and creating 2 million indirect jobs in data services (DOT Trust, 2021; Shayo, 2024). Ethical guidelines from the Artificial Intelligence Readiness Assessment Report should ensure bias-free AI applications (United Nations, 2025).

These policies, if implemented, could harness AI's projected USD 4.51 billion market value in Africa for 2025, channeling it toward sustainable youth employment (Mastercard, 2025). By prioritizing these, Tanzania can transform its demographic bulge into a digital dividend.

5. Discussion

Tanzania's existing government frameworks, like the Tanzania Digital Economy Strategic Framework (2024-2034), and National ICT Policy (2023), provide an excellent basis for incorporating AI into plans for youth employment. However, success will require a deeper understanding of synergies between government policies, like the frameworks mentioned above, and the work of the private sector to create self-employment in the digital economy (Government of Tanzania, 2024a; Government of Tanzania, 2023). The frameworks focus heavily on investment in infrastructure, considering expanded broadband and creating digital hubs, while the private sector, through programs such as Digital Opportunity Trust (DOT), is successfully filling skill gaps by creating the next generation of AI-capable youth, training over 1,000 youth in skills like data analytics and application development to promote

entrepreneurial business startups that leverage support from public programs (DOT Trust, 2023). The potential to align public and private sector efforts around youth, AI, and self-employment is evident in case studies at all scales. While globally, AI may create 97 million jobs by 2025 in productivity gains in areas like agritech, the untapped African market may create 230 million digital economy jobs (outsourcing and e-commerce) by 2030 (World Economic Forum, 2025; Mastercard, 2025). In the region, Kenya's National AI Strategy (2025-2030) created 20,000 AI-related jobs through its technology ecosystems and provided an example that could be replicated in Tanzania through East African innovation hubs, which could include the opportunity for Swahili-language applications of AI tools (Government of Kenya, 2025; Microsoft, 2025). In the local context, Tanzanian start-up, Agrobot, showcases the potential for AI projects for self-employment in work. Agrobot employs 200 youth in predictive farming models that raise rural incomes by 25%, but ethical issues with bias in hiring tools will need regulatory attention (AI4Africa, 2022; United Nations, 2025).

The potential for AI to reform the future for youth in Tanzania is especially clear given the country's demographic context: in Tanzania, over 70% of the population is under the age of 30 years, and an estimated 15 million more youth will be entering the labor force by 2030. Therefore, AI will be a strong enabler of self-employment, job creation through tools that are accessible, such as machine learning for customized e-commerce platforms, or micro-services powered by chatbots. This could permit youth in low-skilled occupations to begin moving into higher-return gigs for 20-30% increases in earnings (NACTE, 2020; Mastercard Foundation, 2025; Madeje, 2024), in a labor force context where 79% of Tanzanians are low-skilled (history). However, the gaps for Tanzanian youth regarding information technology are evident - given that only 45% of youth report accessing the internet (World Bank, 2024). This runs the risk of further widening an existing digital divide; it is essential to mitigate barriers for youth, as the successful deployment of AI technology will require inclusive equitable deployment. Table 1 below further contextualizes this opportunity against current youth unemployment metrics in Tanzania, and highlights where AI will have the greatest impact on youth employment – scaling from informal survival strategies to sustainable digital businesses.

Key Indicators	**Value**	**Source(s)**
Current Youth Unemployment (2024, % of 15-24 age group)	3.35%	Macrotrends (2024)
Projected Digital Jobs in Tanzania (by 2030, millions)	5 million	Afruturist (2023)

Projected Digital Jobs in Sub-Saharan Africa (by 2030, millions)	230 million	World Bank (2024)

Table 1: AI-Driven Job Projections vs. Current Youth Unemployment in Tanzania Context

These figures derived from ILO estimates and regional forecasts demonstrate how AI can address underemployment, specifically by increasing self-employment in AI-related freelancing or agritech, if policies are designed to facilitate it (Macrotrends, 2024; Afruturist, 2023; World Bank, 2024). Related recommendations would be to: consider building AI literacy into secondary and TVET curricula in a partnership at scale with global platforms to reach 1 million youth by 2028; provide tax credits or micro-grants to 500,000 AI start-ups in fintech and agritech businesses, reminiscent of Kenya's efforts; and scale public private partnerships (PPPs) under the Digital Tanzania initiative to deliver rural AI infrastructure with a goal of 2 million indirect jobs and enforcement against bias (United Nations Population Fund, 2024; Government of Kenya, 2025; DOT Trust, 2021; Shayo, 2024; United Nations, 2025). These actions would redirect a projected 2025 USD 4.51 billion AI market value in Africa to young people for a more equitable process and constructive youth engagement and empowerment policy to realize a digital dividend and not prevent unemployment (Mastercard, 2025).

6. Conclusion

AI holds the potential to fundamentally change youth self-employment in Tanzania's expanding digital economy by bringing government frameworks like the Digital Economy Strategic Framework into harmony with private sector developments to address chronic unemployment and the hidden costs of underemployment for 17% of youth on the mainland (Government of Tanzania, 2024b; Danish Trade Union Development Agency, 2024). By learning from global domestic productivity shocks, Africa's horizon of 230 million jobs, East Africa, where Kenya's AI ecosystems have developed, as well as initiatives from home-grown firms to startups like Dr. Elsa's health AI deployment, Tanzania can pursue equitable growth strategies in the use of its youth bulge of greater than 60 percent under the age of 25 in its of its population to spur growth (World Economic Forum, 2025; Mckinsey, 2025; Government of Kenya, 2025; AI4Africa, 2022). Tailored policy interventions from large-scale AI upskilling to Public Private Partnerships (PPP) based infrastructure will generate not only 5 million digital jobs by 2030 but also mitigate systemic risks such as the digital divide for equitable access to rural youth and women (Afruturist, 2023; World Bank, 2024). This multi-dimensional approach represents a fundamental shift in youth employment from vulnerability to vitality. In sum,

further research must take an evidence-led, multi-year approach to policy outcomes and track key indicators such as quality of jobs and adoption by the youth of AI for sustainable growth.

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