

IS ETHIOPIA'S SCIENCE, TECHNOLOGY, AND INNOVATION POLICY LANDSCAPE EFFECTIVELY CREATING JOBS AND FOSTERING SKILLS FOR THE YOUTH?

Nicholas Ozor
Alfred Nyambane
Wentland Muhatiah

African Technology Policy Studies Network (ATPS)



The African Technology Policy Studies Network (ATPS) is a transdisciplinary network of researchers, policymakers, private sector actors and the civil society promoting the generation, dissemination, use and mastery of Science, Technology and Innovations (STI) for African development, environmental sustainability and global inclusion. In collaboration with like-minded institutions, ATPS provides platforms for regional and international research and knowledge sharing in order to build Africa’s capabilities in STI policy research, policymaking and implementation for sustainable development.



Published by the African Technology
Policy Studies Network (ATPS)
P. O. Box 10081, 00100- GPO,
Nairobi, Kenya
©2024
ISBN: 978-9966-124-73-9

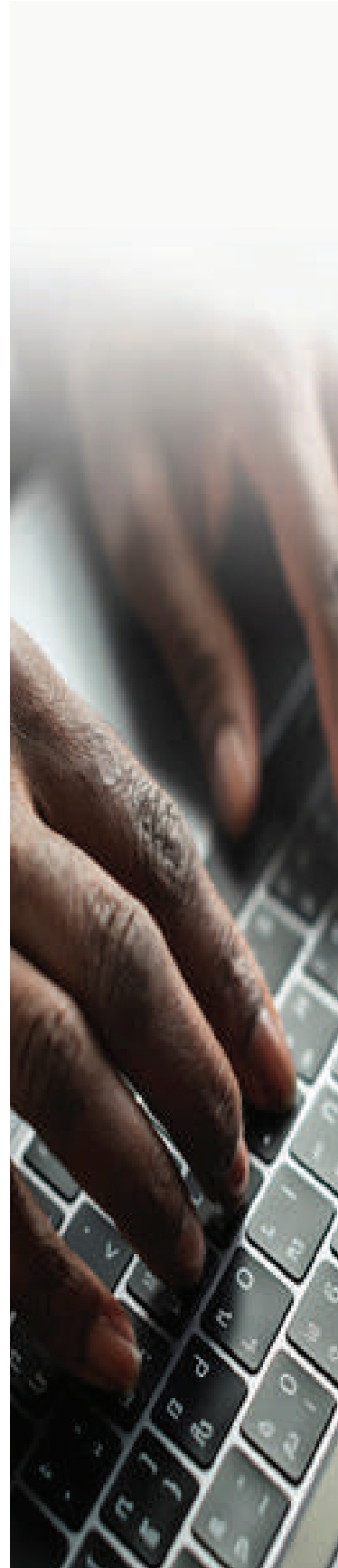


Table of Contents

About the Project	iv
About Africa Technology Policy Studies Network (ATPS).....	v
Acknowledgement.....	vi
Key Messages.....	vii
1. Introduction	1
2. Rationale for STI application in Youth Employment	2
3. Methodology	3
4. Major Findings.....	4
4.1 STI Policies and Programmes for Youth Employment in Ethiopia.....	4
4.2 Key Institutions and Stakeholders Promoting Youth Employment in Ethiopia	5
4.3 Challenges and Opportunities for Youth Employment in Ethiopia	7
4.4 Best Practices and Impacts for Youth Employment in Ethiopia	11
5. Conclusion.....	17
6. Policy Recommendations.....	18
References.....	21
ATPS TechnoPolicy Briefs Series.....	22

About the Project

This project was launched amid Africa’s burgeoning youth population, offering immense potential for productivity and inclusive economic growth. However, a significant portion of this demographic faces unemployment challenges exacerbated by the COVID-19 pandemic, necessitating sustainable solutions through effective policy interventions and institutional strengthening. Focusing on Ethiopia, Ghana, Kenya, Nigeria, Rwanda, Senegal, Uganda, and Zimbabwe, the initiative reviews Science, Technology, and Innovation (STI) policies to understand the current landscape, identify successes and failures, and provide evidence-based insights for decision-making in critical sectors for youth employment and wealth creation. Aligned with continental strategies such as the Agenda 2063 and initiatives such as the Mastercard Foundation’s Young Africa Works Strategy and the Afreximbank’s campaign for young people’s participation in the implementation of the African Continental Free Trade Area (AfCFTA) and youth mainstreaming in policy engagements and cross-regional dialogues among others, the project aims to inform policymaking and foster stronger linkages among stakeholders to address youth unemployment, skills development, and entrepreneurship. Through rigorous research and stakeholder engagements, the project is catalyzing evidence-based policy discussions and contributing to the formulation of effective strategies for job creation and youth empowerment across Africa.

About Africa Technology Policy Studies Network (ATPS)

The African Technology Policy Studies Network (ATPS) is a transdisciplinary network of researchers, policymakers, private sector actors and civil society promoting the generation, dissemination, use and mastery of Science, Technology and Innovations (STI) for African development, environmental sustainability and global inclusion. ATPS has over 5,000 members and 3000 stakeholders in over 51 countries in 5 continents with institutional partnerships worldwide. We implement our programs through members in national chapters established in 30 countries (27 in Africa and 3 Diaspora chapters in Australia, the United States of America, and the United Kingdom). In collaboration with like-minded institutions, ATPS provides platforms for regional and international research and knowledge sharing in order to build Africa's capabilities in STI policy research, policymaking and implementation for sustainable development.

Acknowledgement

The African Technology Policy Studies Network (ATPS) takes this special opportunity to thank the Mastercard Foundation, Afreximbank, and other national partners for partnering with us and supporting this study. The ATPS and partners also wish to appreciate all the respondents led by the ATPS National Chapter Coordinator for Ethiopia for their contributions to this study.

Key Messages

- The Ethiopian government recognises the key role of Science, Technology, and Innovation (STI) in the development of technologies, skills, youth employment, and entrepreneurship in the country. It has therefore enacted various STI policies over the years and established institutions, strategies, and programmes across the key priority sectors to provide opportunities for the youth as well as encourage economic growth. However, Ethiopia spends about 0.51% of its Gross Domestic Product (GDP) on STI which is below the African Union's (AU) recommended target of 1% for STI spending.
- Several stakeholders participate in the STI ecosystem in Ethiopia, with the nature of participation ranging from policy development, regulation and implementation of STI programmes, initiatives, plans and projects. The different stakeholders have different mandates and exert different levels of power and influence across the STI landscape.
- Implementation of some programmes and initiatives has been successful leading to increased opportunities for the youth and the marginalised groups. The Empower Youth for Work (EYW) Initiative, for instance, used various innovative strategies to ensure compliance amongst the youth beneficiaries by ensuring that youth groups were organised and developed their technical and soft skills before accessing funds.
- The private sector's contribution to skills development and youth employment in Ethiopia is still very low due to the uncondusive enabling environment. Only 10% of employers in Ethiopia provide training to their employees according to the Ethiopian Development Research Institute. This is significantly lower than the average of 30% for sub-Saharan Africa (SSA). This is exacerbated by the fact that the economy is largely reliant on the agriculture sector hence limiting the job opportunities available for the youth but offering new opportunities for the application of STI in the development of the sector. In 2020, private sector financing accounted for only 8% of total STI spending which is also significantly lower than the average of 25% for SSA.

1. Introduction

Youth unemployment is a significant challenge in Ethiopia. Data from Non-governmental Organisations (NGOs) estimate that youth unemployment, in rural areas in particular, is significantly higher. The youth unemployment rate for 2021 was 5.72%, a 0.78% increase from 2020 (World Bank, 2023). Ethiopia's economy is still largely agricultural based (70%), with the service sector (20%) and industry (10%) making up the next largest portions. Agriculture constitutes over 50% of the Gross Domestic Product (GDP), accounts for over 85% of the labour force and earns over 90% of the foreign exchange. According to the Ethiopian Central Statistical¹ Agency, 54.8% of young people aged 15-35 worked in the agricultural sector in 2018.

Ethiopia has designed and implemented a number of STI policies to enhance technological innovation, job creation, skills development, and entrepreneurship across different priority sectors. The agriculture sector is dominated by small-scale farmers who practice rain-fed mixed farming, employing traditional technology and adopting a low-input and low-output production system. Further, the country still lags behind in the introduction and utilization of digital technologies such as e-commerce to be competitive internationally. Ethiopia needs to take advantage of STI to fully unlock its potential in creating and availing decent jobs for the youth by engaging different stakeholders to invest in and support its development. However, this is hampered by low investment in STI.

Ethiopia's gross domestic expenditure on research and development (GERD) as a percentage of GDP was 0.27% in 2017 and increased to 0.51% in 2018 (UNESCO, 2021). At present, there is low adoption of e-commerce across the key sectors and fully-fledged e-commerce has not yet been achieved (Gelata et al, 2022). NGO-led programs to teach specific skills can support informal employment but do not come with formal credentials and recognition (World University Service of Canada, 2019). The launch of the 10-Year Perspective Plan (2020-

¹ Ethiopian Central Statistical Agency's (CSA) 2018 Ethiopian Labour Force Survey

2030) was a key statement from the government to support efforts towards creating employment opportunities for the youth. It solely focuses on industries such as mining, tourism, urban development and innovation and technology hence offering opportunities to enhance entrepreneurship and create employment for the many youths in the country. The government also revised the STI Policy in March 2022 to focus on creating a favourable ecosystem that enhances the role of STI in wealth creation, employment generation and the growth of GDP.

2. Rationale for STI application in Youth Employment

Estimates suggest that more than 2 million youth are entering the labour market in Ethiopia every year. There is a need to create 14 million jobs between 2020 and 2025 to absorb the new entrants to the labour market and the current backlog of unemployed². Women and youth face particular structural challenges when transitioning to work and tend to suffer from a systemic and persistent gap in accessing the labour market when compared with men and adults. In January 2020, unemployment among urban youth (15–29) was estimated at 25.7%, and 31.7% among urban women, compared with 18.8% among young urban men above the age of 30³. The economy, however, is unable to meet the demand. In Sub-Saharan Africa, it is generally estimated that around 96% of youth are affected by informal labour practices and unstable incomes (ILO, 2020). The Ethiopian labour market is no different. It is characterized by high levels of subsistence employment, widespread (and minimally productive) self-employment, and very low levels of wage employment. Given that Ethiopia's economy is predominantly agricultural, there are only limited job opportunities in non-agricultural sectors (ILO, 2017).

The issue of skills mismatch is very pronounced, whereby young people lack the necessary skills and training to participate in the modern job market. In 2020, there were over one million students enrolled in Science Technology Engineering and Mathematics (STEM) programs at all levels of education in Ethiopia. Of these students, over 500,000 were enrolled in STEM programs at the tertiary level. The number of students enrolled in STEM programs is increasing at a rate of over 10% per year. Unfortunately, this is not enough. Ethiopia's youth unemployment rate is high, with many young people

² Job Creation Commission, Plan of Action for Job Creation (2020–2025), 2020.

³ The Federal Democratic Republic of Ethiopia, Central Statistical Agency, Key Findings on the 2020 Urban Employment Unemployment Survey, 2020.

still struggling to find work despite their qualifications. The skills of the youth need to be developed in order to engage in other sectors such as manufacturing, tourism, digital economy etc. For instance, manufacturing contributed 5% of jobs in Ethiopia in 2020 and scaling this to 15% by 2030, the sector will add 5 million new job opportunities for young people. To address these challenges facing youth employment, STI has been touted by various sources to provide viable solutions so long as there is a significant investment in it.

3. Methodology

This policy brief was developed from a comprehensive study that delved into STI policies, institutions, stakeholder mapping, and an analysis of youth employment within the realm of technological innovation, skill enhancement, and entrepreneurship development. The study was conducted across seven Sub-Saharan African (SSA) countries, namely **Ethiopia**, Ghana, Kenya, Nigeria, Rwanda, Senegal, and Uganda. The study adopted a mixed-methods approach, which enabled the collection of both qualitative and quantitative data. The data-gathering process commenced with thorough desk studies of existing literature and secondary data. Subsequently, key informant interviews (KIIs) were conducted, involving 20 carefully selected respondents, to obtain primary data that encompassed both qualitative and quantitative aspects. To further enrich the dataset and cross-verify information obtained through other methods, focus group discussions (FGD) were carried out.

The study engaged participants from a diverse range of stakeholder categories, including government officials and policymakers, representatives from the private sector and industry, members of civil society and non-governmental organizations (NGOs), researchers, development partners, and individuals from the media. Special attention was given to ensuring inclusivity and gender balance in the selection of respondents, with a particular focus on representing the voices of youth and other marginalized groups.

4. Major Findings

The key findings of the study are presented in the following sections highlighting policies, plans and programmes as well as the efforts made by different stakeholders in implementing them. Best practices, challenges, and opportunities for STI implementation to enhance skills development, technological innovation, youth employment and entrepreneurship are also highlighted.

4.1 STI Policies and Programmes for Youth Employment in Ethiopia

The STI policy landscape in Ethiopia has evolved since 2009. The latest revised STI Policy of 2022 focuses on creating a favourable ecosystem that enhances the application of STI in wealth creation, youth employment generation and GDP growth. The STI policies recognize the importance of entrepreneurship and encourage the creation of new businesses that can provide job opportunities for young people. The policy aims to increase investment in STI from 0.51% of GDP in 2018 to 1% of GDP by 2030. This will be done through a combination of public and private sector investments. It also aims at improving the quality of education and training, enhancing research and development (R&D) capacity, and creating an enabling environment for innovation and entrepreneurship.

The impact of these policies has been significant, with a growing number of technology-based startups and young entrepreneurs in the country. Other support policies include the 2022 Education and Training policy that targets 70% enrolment in STEM by 2030. It is designed to address the growing demand for STEM skills in Ethiopia. The new policy aims to address the shortage by increasing the number of students enrolled in STEM programs and by improving the quality of STEM education. The Technical and Vocational Education and Training (TVET) Proclamation of 2004 directs how junior, middle level and basic vocational training programs provide citizens with relevant training considering the country's development strategy and the local needs for trained manpower. The Patent Regulations of 1997

⁵ <https://mastercardfdn.org/ethiopia/>

has the sole mandate of regulating inventions, minor inventions, utility models and industrial designs originating from the country.

In recognition of this worldwide, and more specifically continental digital economy development trend, the government of Ethiopia approved a national digital transformation strategy in June 2020. Aligned with home-grown economic reform agenda, including the Ten-Year Development Plan (2020-2030), as well as some international commitments such as Sustainable Development Goals and the African Union’s Continental Digital Strategy, the “Digital Ethiopia 2025- A Digital Strategy for Ethiopia Inclusive Prosperity” lays out an inclusive digital economy approach that catalyses the realization of Ethiopia’s broader development vision. The government of Ethiopia has set an ambitious goal of creating 14 million jobs over five years⁴. Out of those, 300,000 jobs are expected to be digital. While the ICT sector has yet to contribute more to creating jobs, as a result, the digital strategy recognizes that this requires a skilled workforce, efficient labour market facilitation and an enabling business environment.

Through the Digital Ethiopia Strategy 2025, the Ethiopian government has acknowledged the importance of ensuring basic digital literacy for its citizens. It has also taken steps to equip the workforce, especially young people, with advanced skills to prepare for future jobs. The Ministry of Innovation and Technology (MIInT) has already established a separate directorate, the Technology and Knowledge Expansion and Management Directorate, tasked with introducing digital programs and aiding more Ethiopians to become digitally literate by 2025. Other key STI-related policies and programmes that support skills development and employment for the youth are highlighted in Table 1.

4.2 Key Institutions and Stakeholders Promoting Youth Employment in Ethiopia

Several actors in the STI ecosystem play various roles in the regulation and implementation of STI programmes, initiatives, plans

⁴ Job Creation Commission, Plan of Action for Job Creation (2020–2025), 2020

and projects. These are meant to address the youth's employment and entrepreneurship, low access to quality education and training limiting their opportunities, lack of access to finance for young entrepreneurs to start and grow their businesses, lack of market linkages to sell their products and services and lack of a culture of innovation and entrepreneurship. The National Science, Technology and Innovation Council (NSTIC) under the Prime Minister's office is the regulatory body for Ethiopia's STI policy and action plan. It establishes and coordinates the general strategy and framework for developing STI in the country. NSTIC is supported by key ministries, departments, and agencies (MDAs). The Council monitors and evaluates the performance of STI activities across the country. These MDAs closely work with public research institutions and think tanks in assessing the policies created by NSTIC. The ministries also act as key funding agencies for public research institutions and intermediaries in the national research framework while other funding is sourced from international donors who mainly fund research activities in universities, private research institutes, private think tanks, and international research institutes in the country. The research input and outcome affect employment, especially amongst the youths and women, either directly or indirectly.

The Ethiopian Job Creation Commission (JCC) was formed in 2018 and is aligned with the government's Plan of Action for Job Creation (PAJC), which aims to create 14 million jobs by 2025. The PAJC identifies STI as a key sector for job creation, and the JCC is playing a leading role in implementing the PAJC's STI-related interventions. The JCC's work is also aligned with the Mastercard Foundation's Young Africa Works strategy which targets to create 10 million jobs by 2030 in Ethiopia⁵. JCC has partnered with the Mastercard Foundation in "Enabling Ethiopia Project," which is creating jobs and economic opportunities for about 50,000 women and young people over the next five years. The JCC has a number of programs that provide financial and technical assistance to youth and women who are interested in starting or growing STI businesses. These programs include the Youth Revolving Fund (YRF) and the Women and STI

⁶ <https://kflip.info/2023/01/14/digital-literacy-in-ethiopia/>

Entrepreneurship Support Program (WESSIP). It has also partnered with the private sector and CSOs in many other initiatives aimed at advocating for policies that support youth and women in STI and the creation of job opportunities. JCC is actively participating in identifying and addressing the challenges that youth and women face in accessing STI education and employment; promoting public-private partnerships to support STI innovation and entrepreneurship and building the capacity of government officials and other stakeholders to support youth and women in STI.

Other key stakeholders such as civil society and NGOs also play various roles in the ecosystem ranging from knowledge dissemination, skills development, and advocacy among other roles as mandated. They have different levels of power and influence thus, impacting differently in the overall performance of the STI ecosystem. Some of these key institutions in Ethiopia are described in Table 2.

4.3 Challenges and Opportunities for Youth Employment in Ethiopia

The main challenges to youth employment in Ethiopia are high unemployment rates, poor infrastructural development especially in rural areas, underutilization of skills due to lack of relevant employment opportunities especially among the youth, limited access to education and skills training, rural-urban migration, inadequate diversification of the economy and overdependence on agriculture and gender inequities especially in the rural areas. However, there are also significant opportunities to address these challenges and improve youth employment outcomes. These opportunities include investing in education and skills training, fostering entrepreneurship, advancing agribusiness and rural development, engaging with the private sector, and promoting digital literacy and tech competencies. Addressing these can unlock a more favourable environment for youth employment and empower its youth to reach their full potential. Several variables indicate that there have been improvements that have led to a considerable number of young people gaining employment. According to the United Nations, Ethiopia's median age is 19.7 years. This suggests that a large number of young individuals are joining the labour force.

The government has established several STI institutes and is investing in STI as part of its Growth and Transformation Plan. The country's economy is rapidly developing, creating a demand for skilled individuals in a variety of industries, including manufacturing, agriculture, and information and communications technology. The Ethiopian Innovation Network and the Youth Innovation and Entrepreneurship Council are two programs that are working to encourage STI and entrepreneurship among Ethiopian youth. As a result, the advancements in the STI landscape may help a large number of Ethiopian youth. However, it is crucial to recognize that there are a lot of obstacles that could prevent young people from finding dignified and meaningful jobs in this field. These include a lack of sufficient capital to fund R&D and new ideas, a lack of technical help and mentorship, and a lack of facilities to enable technology development. Some efforts have been made to solve some of the difficulties, such as the establishment of start-up incubators including the Blue Moon- a business start-up incubation centre founded in 2017. The hub provides a venue for young people to create new business concepts.

The incubator strategy entails experienced entrepreneurs and consultants coaching and mentoring entrepreneurs. The strategy facilitates learning and idea exchange among peer groups and corporate networks. The providence of a convenient workspace equipped with ICTs, continuous coaching and mentorship, and networking and interaction with peers and investors for six months greatly help the beneficiaries. Established business incubation centres (BICs) are mostly owned by the Ministry of Innovation and Technology (MInT) and public universities. However, only one out of the five incubation centres owned by MInT is reportedly active. Addis Ababa, Hawasa and Bahir Dar universities are the only ones to have BICs. There is also a growing presence of private BICs in the country. Apart from BlueMoon, the other major ones are Iceaddis, xHub, IBA Ethiopia, GrowthAfrica, and iCogs Lab. Privately owned BICs have not been able to spread very far outside the capital and often rely on donors for funding.

Although it is challenging to find national figures for the state of digital literacy in Ethiopia, experts indicate that it is relatively low. While the literacy rate is below 60%, that of digital literacy is much lower at 9.9% according to the Global Digital Skills Index 2021 by the International Telecommunication Union (ITU). One of the main challenges facing Ethiopia in terms of digital literacy is the need for more infrastructure. With a relatively nascent digital economy, the Proclamations, or pieces of legislation that regulate businesses in the country do not have specific provisions for digital companies. Digital platforms are often faced with regulatory provisions that do not fit their operational structures and models.

Taxation and licensing issues present challenges since there is uncertainty around the application of existing tax laws to the digital economy. Licensing has also stood out as a key challenge for firms in the space, with companies having to find various sectors they fit into instead of being classified as strictly digital platforms. Labour laws do not account for workers who rely on digital platforms for income, leaving them without mandatory social benefits such as healthcare and pensions. Poor access to affordable credit is reiterated by all stakeholders as a predominant impediment to the growth of the digital economy. Young people lack understanding about the data they create and matters of privacy, security, and how to search for information.

Although the ITU-led Digital Capability Coalition (DCC), launched in 2020, assists countries in developing digital capabilities and bridging the digital divide, more needs to be done to reach marginalised groups, particularly in Ethiopia's rural areas. The DCC proposes bringing together government, private sector entities, and NGOs/CSOs to work on programmes that promote digital inclusion and skill development. To satisfy the job needs of a digital economy, embrace innovation, and maintain a competitive edge, current and future workers (in particular the youth) must possess digital skills. This is a difficulty for Ethiopia, which is ranked 137th in ICT adoption and 100th in digital skills among 141 countries in the World Economic

Forum's 2019 Global Competitiveness Report⁶. The country's digital economic hub, Addis Ababa, is currently experiencing a surge in demand for digital personnel. In general, job creation in the ICT sector has been slow, however, it has increased in recent years. According to interviews with local private businesses, the most common way of hiring IT staff is through referrals from within the organisation or network members. A digital economy is built on robust connectivity and affordable internet access. Historically, these obstacles have impeded Ethiopia's digital progress. Only 44% of the population currently has access to electricity, with a goal of reaching 100% by 2025.

The Ethiopian telecom sector is presently dominated by a single state-owned carrier, and internet access is limited and relatively expensive. Internet access is especially scarce, expensive, and of poor quality among socially disadvantaged groups such as children and the elderly, women, the disabled, low-income earners, and rural communities. However, in 2021, the Ethiopian government moved to liberalise the telecom sector, awarding a new telecom licence to a coalition of private firms. Mobile banking is a major opportunity for enhancing youth employment and is rapidly evolving, with banks providing mobile wallet solutions to approximately one million previously unbanked customers. There are still substantial barriers in this area, including low internet penetration, high data prices, poor mobile penetration, limited access to formal financial services, a lack of understanding of existing digital financial services, and a Fintech industry in its early stages of development. However, digitisation has also had a significant effect on jobs, especially for untrained or unskilled youth.

E-commerce activities in the country are very limited due to the aforementioned challenges but this is gradually changing as the country is actively investing in the necessary infrastructure and human resource capacity. To give access to data and cloud services, some public and commercial enterprises have constructed in-house data centres. However, a lack of data centre regulation and certification

⁶ <https://kflip.info/2023/01/14/digital-literacy-in-ethiopia/>

institutions leads to inadequate management, notably in terms of physical security, which ensures that data is protected from theft or damage caused by natural disasters and environmental variables.

The country is becoming more cognizant of the importance of the innovation systems approach as a policy tool for knowledge-based development. The creation of a national education and research system, as well as the strengthening of the business sector, is seen as a key tool for knowledge accumulation and development. However, the formation of a network among these innovators has come to a halt. Collaboration and links between universities and industries are banned. As a result, there is a misalignment between the knowledge and abilities of university graduates and the knowledge and skills required by the private sector. Because of this issue, as well as low academic staff quality and restricted educational facilities, low-quality graduates with low employability have resulted. Because university research is not centred on industry demands, the results cannot be applied to industrial operations. Aside from a lack of college connections, the industrial sector faces a variety of other challenges and constraints.

Micro and small enterprises (MSEs) confront a range of innovation hurdles that limit their ability to create and market new items, services, or processes. Limited access to funding and an underdeveloped entrepreneurial culture are among the reasons limiting the country's MSEs' creative performance.

Table 1 lists some of the important policies, programs, and organizations that are promoting skill development, youth employment, and entrepreneurship.

4.4 Best Practices and Impacts for Youth Employment in Ethiopia

The STI policies and institutional landscape have set the stage for Ethiopia to contribute more as far as skills development, youth employment and entrepreneurship are concerned. For instance, the Growth and Transformation Plan II (GTP II), which was launched in 2015, set a target of increasing STI spending to 1% of GDP by 2025, while the establishment of the Ethiopian Innovation and Entrepreneurship

Council (IEC) in 2018, is coordinating and promoting innovation and entrepreneurship in the country. Further, the government set up the Ethiopian Technology Startup Fund, which was launched in 2019 to provide funding to technology startups. The enhanced cooperation between the public and private sectors is helping policymakers come up with robust plans that are all-inclusive.

For instance, MInT announced its Start-up Strategy centred on the “2222 plan” from a robust interaction with the private sector and was able to come up with a sustainable plan that can seed 2000 new technology-based start-ups that will be able to create over 20,000 jobs across the country within two years countrywide (UNCTAD, 2020). Evaluation of the impact of this programme to establish its impacts on youth employment has not yet been done. Some programmes and initiatives have emerged leading to increased opportunities for the youth and marginalised groups.

The Empower Youth for Work (EYW) used various innovative strategies to ensure compliance amongst the youth beneficiaries. For instance, the project ensured that youth groups were organised and developed their technical and soft skills afterwards. These preparations made the beneficiaries ready to be linked with financial institutions that facilitated their business start-ups. The capacities of youths were developed to increase access to funds in the Youth Revolving Fund. They were trained in business management, record keeping, and entrepreneurship; thereby averting the risk of them spending the funds received on non-related ventures. The program also incorporated and effectively used local authorities and religious leaders to reach the beneficiaries.

The government and private sector are working together to provide technical and vocational training, as well as university education in STEM fields, to help equip the country’s workforce with the necessary skills for the job market. Ethiopia has been developing entrepreneurship as part of its effort to support economic growth and reduce poverty. The government has put in place various programs and policies to help entrepreneurs access finance, training, and other resources they need to start and grow their businesses.

This includes establishing a regulatory framework that makes it easier to start and register a business in the country.

Development partners and private Foundations have also been playing a vital role in creating opportunities for the Ethiopian youth. Strengthening Ethiopia's innovation and entrepreneurial ecosystem, for example, has been UNDP's strategy for transforming and creating an inclusive economy. The private sector's ability to become an engine of economic growth and offer job opportunities for the country's young and expanding population is critical to establishing the revolutionary change required to accomplish the country's development goals. The UNDP began its ecosystem support in 2015 with the formation of the Entrepreneurship Development Center and has since expanded to provide direct assistance to startups and SMEs in the digital ecosystem⁷.

The UNDP's support for Digital Entrepreneurship corresponds to its larger focus on supporting homegrown solutions and enhancing their contribution to the Digital Ethiopia 2025 Strategy. Also, the work done by the Mastercard Foundation as mentioned before, in partnership with the government, the private sector, academic institutions, and young people, together with the JCC is expected to have a great impact on job creation in Ethiopia. So far, the Foundation has made an initial USD 300 million five-year commitment to implement this strategy in Ethiopia.

⁷ <https://www.undp.org/ethiopia/blog/startup-marketplace-reflecting-ethiopias-digital-innovation-ecosystem>

Table 1: A summary of key STI Policies and Programmes enhancing youth employment in Ethiopia

STI Policies and Programmes	Roles in skills development and youth employment	Impact on youth employment	Remarks
<p>Revised STI Policy of 2022</p>	<p>Has the mission of creating a favourable ecosystem that enhances the role of STI in wealth creation, youth employment generation and GDP growth. Recognizes the importance of entrepreneurship and encourages the creation of new businesses that can provide job opportunities for young people.</p>	<p>Has started streamlining the implementation of STI across all priority sectors. Its full impacts are yet to be measured or felt.</p>	<p>Building the capacity of the implementing institutions and providing the necessary tools and equipment for the institutions will highly improve implementation. There is a grave implementation gap across public institutions either because of capacity constraints or misallocation of resources.</p>
<p>The Education and Training Policy of 1993</p>	<p>Recognizes that there should be an appropriate nexus between education, training, research, and development through coordinated participation among the relevant actors. The policy emphasizes on making higher education research-oriented and enabling students to become problem-solving professional leaders in their fields of study and in relation to overall societal needs.</p>	<p>The policy emphasized the need to address gender disparities in education and promote gender equality. As a result, the enrolment of girls in primary schools increased from 35% in 1993 to 50% in 2020. The number of children enrolled in primary schools increased from 5 million in 1993 to 24 million in 2020.</p>	<p>Prioritize efforts to improve the quality of education, including teacher training, curriculum development, and assessment practice as well as promote equitable distribution of educational resources, particularly in rural areas and among disadvantaged groups.</p>

<p>National Entrepreneurship Strategy (NES) of 2019</p>	<p>-NES is a government-led initiative established in 2019 aimed at promoting entrepreneurship and supporting the growth of small and medium-sized enterprises (SMEs) in the country.</p> <p>-The NES focuses on five key pillars: policy and regulatory reform, access to finance, business development services, market access, and entrepreneurship education and training.</p>	<p>The NES has facilitated the development of a range of financial instruments, including loans, equity financing, and venture capital, to support the growth of SMEs.</p> <p>As a result, the number of SMEs accessing finance has increased, and more entrepreneurs have been able to start and grow their businesses.</p>	<p>Efforts to increase access to finance should be prioritized, including the development of new financial products and services tailored to the needs of entrepreneurs and SMEs.</p>
<p>The Ethiopian Youth Innovation and Entrepreneurship Program (EYIEP) of 2019</p>	<p>Supports the development of innovative and entrepreneurial skills among young people by providing training, mentorship, and financial support.</p>	<p>-EYIEP has contributed to the creation of new jobs through the support of young entrepreneurs and innovators, creating over 2,500 jobs in its first year.</p> <p>-Has supported the development of innovative solutions in sectors such as agriculture, healthcare, and renewable energy and provision of funds.</p>	<p>Developing new financial products and services tailored to the needs of young entrepreneurs and facilitating market access, through the development of value chains and market linkages, e-commerce and other digital platforms will greatly increase opportunities for the youth.</p>

Table 2: Summary of key STI institutions, their roles and impact on youth employment and youth development in Ethiopia

STI Institutions	Roles in skills development and youth employment	Impacts on skills development and youth employment
<p>Government Actors: Ministries, Departments and Agencies (MDAs)</p>		
<p>Ministry of Innovation and Technology (MinT)</p>	<p>Enhances the participation and role of the private sector in the development of innovation and technology sector and creates a conducive environment for the implementation. Establishes and implements a system for the grant of awards and incentives to individuals and institutions contributing to the advancement of innovation and technological development works.</p>	<ul style="list-style-type: none"> - The ministry has played a critical role in driving the country's technological transformation and economic growth. - Since its establishment in 2018, created EYIEP that has supported over 2,000 young entrepreneurs and has created over 5,000 jobs. - In addition to EYIEP, MinT has also supported the development of other youth-focused programs and initiatives, including the Ethiopia Jobs Compact, which aims to create job opportunities for young people in the textile and garment industry, and the Tech-Preneurship program, which provides training and mentorship to young people in the technology sector.
<p>Ministry of Labour and Skills</p>	<p>Establishes a system for technical and vocational training, labour, employment and skill development. Responsible for creating policies and programs aimed at improving the country's labour market and reducing unemployment, particularly among young people.</p>	<p>Promoted youth entrepreneurship as a means of creating new job opportunities for young people. Established the Youth Entrepreneurship Fund, which provides financial support to young entrepreneurs to start or expand their businesses. As of 2021, the fund has supported over 5,000 young entrepreneurs. Working to improve the enforcement of labour laws, particularly in the informal sector, where many young people are employed.</p>

National Science, Technology and Innovation Council (NSTIC)	Established in 2012 to coordinate and promote STI in the country. The council is responsible for setting policies and strategies for the development of STI, as well as coordinating and monitoring the implementation of these policies.	The council has contributed to policy formulation, coordination of STI activities, promotion of research and development, capacity building, and economic development.
Institute of Ethiopian Standards (IES)	Develops national standards for local products and services so as to make them internationally competitive. Private Sector	While the IES does not have a direct focus on youth employment, its activities have had some positive impacts on young people in Ethiopia, particularly in the areas of skill development, quality assurance, and export competitiveness.
Private Sector		
IceAddis	It also encourages a collaborative mindset, to realise the potential of its young technology community and enable active participation in changing their local environment and gaining economic empowerment.	Since its establishment in 2011, IceAddis has supported more than 150 startups in Ethiopia, many of which have gone on to create jobs. In 2019, IceAddis was recognized as the top startup incubator in Ethiopia by Startup Grind, a global startup community.
Growth Africa	Provides experience and expertise in designing and delivering activities and programmes for Ethiopian entrepreneurs.	Has supported more than 140 businesses which have gone on to create over 3,000 jobs, with many of these jobs being held by young people
Civil Society Organizations (CSOs) /Non-Governmental Organisations (NGOs)		
Entrepreneurship Development Institute	Facilitates the realization of the entrepreneurship development goals of the government through building the institutional capacity of government and private sector institutions which have a stake in entrepreneurship and private sector development and youth empowerment to help them improve the business environment for enterprise and private sector development.	Supported the creation of new job opportunities by providing training and financial support to entrepreneurs and SMEs. According to data from EDI, the organization has helped create over 6,000 jobs in Ethiopia since its establishment in 1999.

5. Conclusion

This study aimed at flagging areas of intervention for the Ethiopian government and other critical stakeholders in Ethiopia in addressing youth unemployment through STI. This was done through a systematic and comprehensive methodology. The findings reveal that the Ethiopian government has attempted to enhance its STI sector to drive economic growth and development by encouraging technical innovation, youth employment, and entrepreneurship. This includes investing in R&D, building technology parks, and encouraging the formation of startups and new businesses. There has been some success in the STI sector, particularly in software development and ICT. However, the country continues to struggle to develop enough high-skilled jobs to fulfil the demands of its fast-growing population. Improving Ethiopia's economy requires the development of skills for youth employability. Many challenges remain for the government and other ecosystem actors such as academia, international development partners, and entrepreneurial support organizations to address.

6. Policy Recommendations

To enhance skills development, youth employment and entrepreneurship in Ethiopia, the following recommendations are proffered:

Recommendation 1: Support infrastructure development and enabling environment for STI especially in the rural areas of Ethiopia: In addition to having the country increase investments in R&D in line with the recommendations of the African Union and UNESCO of up to 1% of GDP, stakeholders need to invest in infrastructure development to stimulate technological innovation and job creation for the youth. This will improve the competitiveness of Ethiopia's industries considering the overreliance on agriculture as the major economic activity. This will likely lead to the creation of R&D centres or the promotion of collaborations between industry, academia, and government in order to advance the development of new technologies.

The government can also in collaboration with all stakeholders work towards enacting and implementing more effective policies to support and encourage investment in entrepreneurship, such as by providing increased access to financial resources, training, and mentorship programs. This could also be done by encouraging the various actors in the ecosystem to open up access to infrastructure such as laboratories, data and equipment that young researchers and entrepreneurs can utilise to develop their technologies and innovations. It is also critical that the government reduces the regulatory burden on small businesses because they make it difficult for young people to start their own businesses. This can be done by streamlining licensing requirements and simplifying tax procedures. While it might not be possible to resolve all infrastructure issues at once, collective effort can create opportunities for further progress. By fostering initiatives that encourage collaboration, business models can be established to set up infrastructure in areas that currently lack it. The government should incentivize individuals and private

organizations to be more involved in creating innovative solutions that can tackle these issues.

Recommendation 2: Stakeholders should focus more on capacity building for young entrepreneurs: Although efforts are being made to build the capacity of young people to be more entrepreneurial, more needs to be done to fill the huge gap in starting and running businesses among the youth in Ethiopia. This may be in the line of improving the ease of doing business among the youth, reducing bureaucratic processes and requirements for registration of businesses as well as providing tax incentives for businesses that create opportunities for the youth. The government should encourage the creation of more opportunities for public-private partnerships and collaborations that will enhance the capacity building of young entrepreneurs to increase their chances of success in their new ventures. Other stakeholders such as the private sector, civil society organizations, and development partners could commit more to the provision of capacity building in the STI for the youth. This will include specialised training and mentorship as well as the provision of much-needed infrastructure. For instance, initiatives such as the Blue Moon, a private sector initiative have managed to support many youths and led to the development of successful businesses. One initiative that should be emulated is the Digitruck project⁸, implemented by iCog Labs. This mobile technology lab travels to different locations in Ethiopia to provide free coding and robotics sessions to students. The program aims to enhance digital literacy skills and prepare students for careers in technology, focusing mainly on granting access to technology and education to underserved communities in Ethiopia. With enough skills, the youth will require resources to establish businesses.

Recommendation 3: Increase opportunities for access to credit among young entrepreneurs: Given the fact that there is a huge gap in financing the youth, especially in rural areas, it is critical to develop strategies to bridge this gap. Access to capital for funding start-ups

⁸ <https://shega.co/post/digitruck-ethiopia-to-equip-ethiopian-students-in-remote-areas-with-21-first-century-skills/>

can significantly transform the youth employment landscape as already trained/educated youth in Ethiopia are finding it difficult to get jobs, especially in the formal sector. The government can improve access to credit by providing microfinance loans and by working with banks and other financial institutions to offer more favourable terms to young entrepreneurs.

Recommendation 4: Create all-inclusive Policies that enhance stronger linkages among stakeholders to bridge the disconnect between the different actors in the ecosystem: Policies need to be created that align the different already existing platforms for engagement into one central platform. This will significantly enhance better communication amongst stakeholders and provide an avenue to air out concerns that can be looked at collectively and find solutions that will have lasting effects on youth employability. More often, the government is usually accused of developing policies that sometimes do not auger well with the private sector or civil society hence causing undesired effects during implementation. A collaborative and interactive platform can eliminate such issues and lead to the development of favourable policies for all actors and support in implementation through the development of implementation plans with solid monitoring and evaluation frameworks to measure implementation and the effectiveness of the STI policies and programmes. An example of such a platform is the EdTech Mondays, launched by the Mastercard Foundation, and Shega Media & Technology, which facilitates critical conversations on using technology for teaching and learning in Ethiopia.

Information collected through these processes can be used to make improvements and adjustments as needed. The public sector's role cannot be underestimated in developing a thriving innovation ecosystem. The sector's mindset and understanding of the creation of youth employment is crucial to designing the regulations and services that address their need. There must be horizontal collaboration and public-private partnerships at the centre of the ecosystem which does not currently exist.

Recommendation 5: Encourage economic diversification through fostering private sector partnerships: Considering the over-reliance on the agriculture sector, the government needs to open up the economy to venture into other more productive sectors. This will require a significant shift in strategy and financing of ventures which may adversely affect resources available for other competing priority areas such as infrastructure development and health. This therefore calls for the provision of policy incentives that would encourage private sector investment to unlock opportunities for the youth. In 2020, private sector financing accounted for only 8% of total STI spending which is also significantly lower than the average of 25% for SSA. This needs to change in order to expand the base for resources available in setting up other productive sectors.

References

- Gelata, F. T, Gemada, S. C, and Han, J. (2022). Review on the E-commerce Business Models in Ethiopia. *European Journal of Applied Sciences*, 10(5). 48-58.
- International Labour Organization. (2017). Ethiopia. <https://www.ilo.org/africa/countries-covered/ethiopia/lang--en/index.htm>
- ILO (2020). Global Employment Trends for Youth 2020: Technology and the Future of Jobs. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_737657.pdf
- United Nations Educational, Scientific and Cultural Organization [UNESCO], (2021). UNESCO Science Report: The Race Against Time for Smarter Development. S. Schneegans, T. Straza and J. Lewis (eds.). UNESCO Publishing: Paris. <https://unesdoc.unesco.org/ark:/48223/pf0000377433>
- United Nations Conference on Trade and Development [UNCTAD]. (2020). Ethiopia science, technology and innovation policy review. Published by the United Nations, New York.
- World Bank (2023). Ethiopia Youth Unemployment Rate 1991-2023. <https://www.macrotrends.net/countries/ETH/ethiopia/youth-unemployment-rate#:~:text=Youth%20unemployment%20refers%20to%20the,a%200.78%25%20increase%20from%202020.>
- World University Service of Canada (2019). A bridge to the future: From Higher Education to Employment for Displaced Youth in Africa. Mastercard Foundation.

ATPS TechnoPolicy Briefs Series

- University-Led Ecosystems for Sustained Innovation and Entrepreneurship Development in Kenya (ATPS TechnoPolicy Brief No. 62)
- Eco-innovation Policies for Sustainable Development in Africa (ATPS TechnoPolicy Brief No. 61)
- Institutional Landscape for Eco-innovation Development in Africa (ATPS TechnoPolicy Brief No. 60)
- Policy and Institutional Framework for Ecological Organic Agriculture in Benin (ATPS TechnoPolicy Brief No. 59)
- Institutional Framework for Ecological Organic Agriculture in Kenya (ATPS TechnoPolicy Brief No. 58)
- Policy and Institutional Framework for Ecological Organic Agriculture in Senegal (ATPS TechnoPolicy Brief No. 57)
- Advancing Ecological Organic Agriculture in Nigeria (ATPS TechnoPolicy Brief No. 56)
- Policy and Institutional Framework for Ecological Organic Agriculture in Rwanda (ATPS TechnoPolicy Brief No. 55)
- Bridging Climate Information Gaps to Strengthen Capacities for Climate Informed Decision (ATPS TechnoPolicy Brief No. 54)
- Embracing Open Contracting in Africa (ATPS TechnoPolicy Brief No. 53)
- The Digital Revolution, Open Science, and Innovation for Open Science Development in Sub-Saharan Africa (ATPS TechnoPolicy Brief No. 52)
- Nouvelles approches de financement de la recherche et de l'innovation en Afrique (ATPS TechnoPolicy Brief No. 51)
- New Approaches for Funding Research and Innovation in Africa (ATPS TechnoPolicy Brief No. 50)
- Towards Effective Public-Private Partnerships in Research and Innovation: A Perspective for African Science Granting Councils (ATPS TechnoPolicy Brief No. 49)
- Innovative Practices and Policies for Promoting Biodiversity Informatics in Sub-Saharan Africa (ATPS TechnoPolicy Brief No. 48)

- Improving the Relevance of University Training to Labour Market Demands in Africa (ATPS TechnoPolicy Brief No. 47)
- Developing Policies for Biodiversity Informatics in sub-Saharan Africa (ATPS TechnoPolicy Brief No. 46)
- ICTs role in Agricultural Development: Prospects of Land Potential Knowledge System (LandPKS) (ATPS TechnoPolicy Brief No. 45)
- Mainstreaming Gender in the National Science, Technology and Innovation (STI) Policy of Kenya (ATPS TechnoPolicy Brief No. 44)
- Social Innovation: An Untapped Resource for Inclusive Green Growth (ATPS TechnoPolicy Brief No. 43)
- Policy Axes that can uphold Agricultural Innovations for Climate Change Adaptation and Food Security in Central Africa: Case of Cameroon, Equatorial Guinea and Central African Republic (ATPS TechnoPolicy Brief No. 42)
- Frameworks for Intellectual Property Protection of Traditional Knowledge in Tanzania (ATPS TechnoPolicy Brief No. 41)
- Assessment of Possible Intellectual Property Protection Options of Traditional Knowledge System in Ethiopia (ATPS TechnoPolicy Brief No. 40)
- Towards influencing National Legislation, Policies, Strategies and Programmes for appropriate Protection and Benefit-Sharing of Traditional Knowledge (TK) with and by Traditional Herbalists in Uganda. (ATPS TechnoPolicy Brief No 39)
- Traditional Healers and their Provision of Mental Health Services in Cosmopolitan Informal Settlements in Nairobi, Kenya. (ATPS TechnoPolicy Brief No. 38)
- Policy Implications for Intellectual Property Systems for Traditional Healers in Lesotho. (ATPS TechnoPolicy Brief No. 37)
- Incidence of Indigeneous and Innovative Climate Change Adaptation Practices for Smallholder Framers' Livelihood Security in Chikhwawa District, Southern Malawi. (ATPS TechnoPolicy Brief No.36)
- Machobane Farming System and its Relevance to Climate Change Policy in Lesotho. (ATPS TechnoPolicy Brief No. 35)



The African Technology Policy Studies Network (ATPS) is a transdisciplinary network of researchers, policymakers, private sector actors and the civil society promoting the generation, dissemination, use and mastery of Science, Technology and Innovations (STI) for African development, environmental sustainability and global inclusion. In collaboration with like-minded institutions, ATPS provides platforms for regional and international research and knowledge sharing in order to build Africa's capabilities in STI policy research, policymaking and implementation for sustainable development.

African Technology Policy Studies Network (ATPS)
Contact Executive Director:
executivedirector@atpsnet.org
8th Floor Chancery Building,
Valley Road
P.O. Box 10081-00100 Nairobi
Tel: +254 (020) 2714092
www.atpsnet.org

Science, Technology and Innovation for African Development

ISBN: 978-9966-124-73-9

