



EMERGING TRENDS & PRIVATE SECTOR OPPORTUNITIES IN THE DIGITAL WORK ECOSYSTEM REPORT 2025

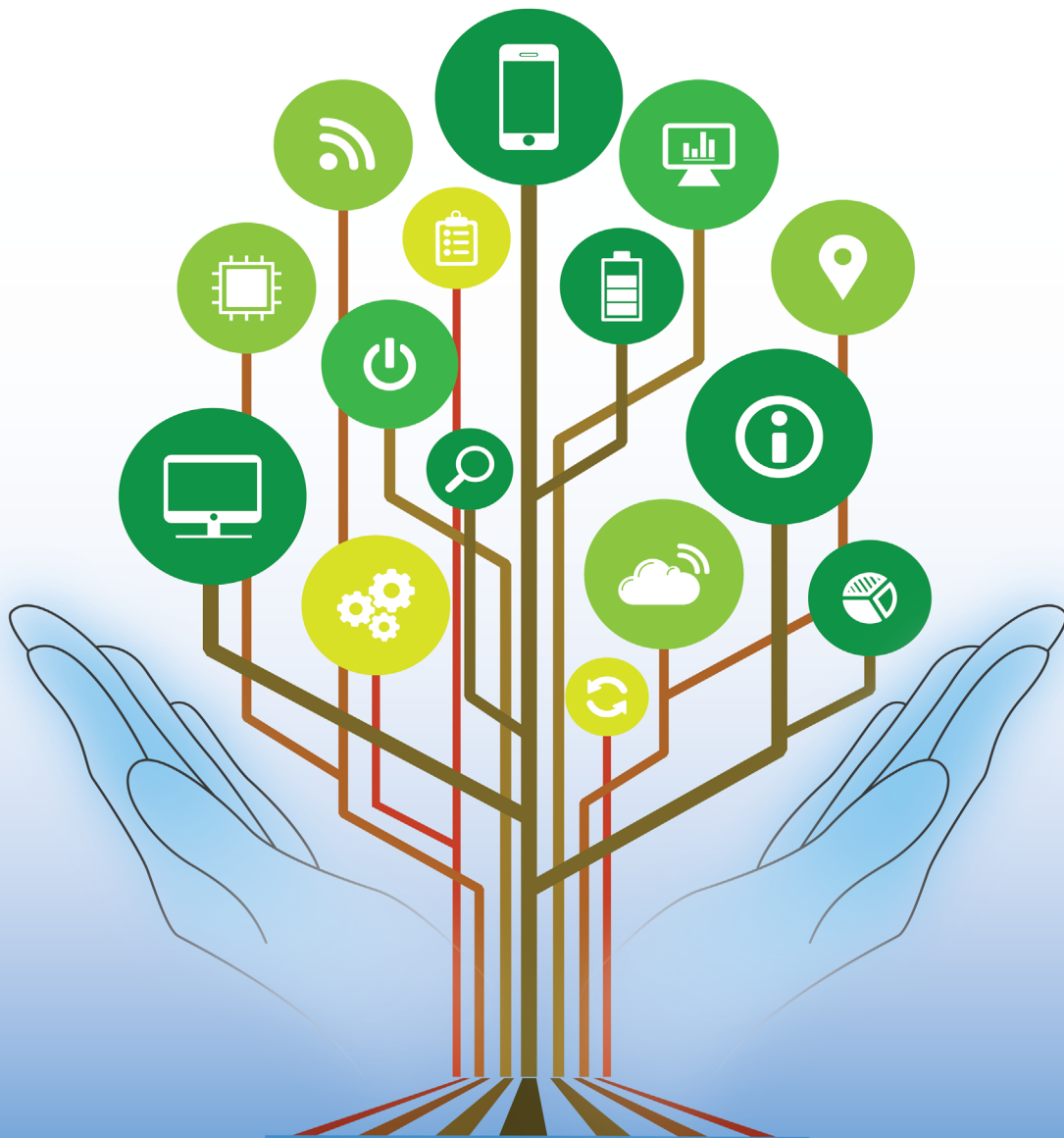


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LIST OF ABBREVIATIONS

AI	Artificial Intelligence
AR	Augmented Reality
AWS	Amazon Web Services
BPO	Business Process Outsourcing
CA	Communications Authority of Kenya
CCNA	Cisco Certified Network Associate
CEH	Certified Ethical Hacker
CISA	Certified Information Systems Auditor
CISSP	Certified Information Systems Security Professional
DevOps	Development and Operations
GDP	Gross Domestic Product
ICT	Information and Communication Technology
ILO	International Labour Organization
IoT	Internet of Things
KEPSA	Kenya Private Sector Alliance
ML	Machine Learning
M&E	Monitoring and Evaluation
NLP	Natural Language Processing
PWD	Persons with Disabilities
PPP	Public–Private Partnerships
RPA	Robotic Process Automation
SoC	System-on-Chip
TOC	Theory of Change
TVET	Technical and Vocational Education and Training
UNHCR	United Nations High Commissioner for Refugees
VR	Virtual Reality
WEF	World Economic Forum
ZIP	ZipRecruiter (Job Platform)

FOREWORD

Kenya stands at a turning point in its journey towards becoming an emerging competitive digital economy in the world. I am privileged, being the Cabinet Secretary for the Ministry of Information, Communication and the Digital Economy, to launch this historic report on Emerging Trends and Private Sector Opportunities in the Digital Work Ecosystem, 2025. This report illustrates our deep commitment to the fulfillment of a digitally empowered country as well as enhancing digital and digitally enabled work opportunities for a dignified livelihood of our young people in Kenya.

The world shift towards digitally empowered work is one that cannot be reversed and is one that will redefine the future. With the rapid uptake of innovation such as artificial intelligence, cloud computing, and platform-based gig economy, Kenya's youthful, tech-savvy nation is best positioned to lead the digital revolution of the continent. However, for us to realize this opportunity in its entirety, we must address such persistent issues as skills-industry mismatch, limited access to globally recognized certification, digital infrastructure shortfalls, and disparities in access to opportunities for the marginalized groups including women, persons with disabilities, and other underserved groups.

This report provides an evidence-based guide to building Kenya's digital skills, unlocking private sector collaboration, and fueling inclusive job creation. It draws on rigorous data science methods, extensive primary research, and intense stakeholder engagement offering a valuable resource for policymakers, educators, development partners, and business leaders.

I would like to congratulate the Ministry's Ajira Digital Program team and the Mastercard Foundation, Kenya Private Sector Alliance (KEPSA) and eMobilis Institute of Technology together with all other partners and stakeholders who lent their support towards this critical agenda. The findings here reinforce the necessity of rethinking how we train, certify, and support our youth for high-valued digital occupations regionally and internationally. It is now our collective responsibility as government, private sector, academia, the youth and civil society to take these results and make them a reality.

Together, we can develop a future in which Kenya is not just a consumer of international digital innovations but a creator, exporter, and driver of the digital economy.



H.E Hon. William Kabogo Gitau

Cabinet Secretary

Ministry of Information, Communication and the Digital Economy

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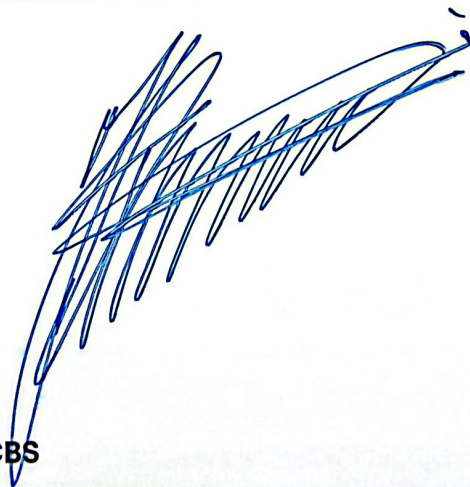
The smooth publication and debut of the “Emerging Trends and Private Sector Opportunities in the Digital Work Ecosystem” report would never have been realized without the shared vision, collaboration, and experience of various parties who are bound by a common determination to shape Kenya's digital future.

I begin by thanking sincerely the Ministry's Ajira Digital Program team and the research consortium for leading the way in undertaking this nation-wide critical research. Their dedication to intensive data collection, consultative forums, and innovative analysis has made possible this timely and groundbreaking report.

Special thanks are due to the hundreds of youth, digital and digitally enabled work participants, employers, business process outsourcing firms, and digital labour platforms who took the time to voluntarily share their perceptions, experiences, and hopes. We will not forget the academia, industry players, organizations and individuals in tech, and community innovators who made this possible. Your voices have given life to this report, drawn from the experience and hope of Kenya's workers in the digital economy.

We also thank the Ministry of Information, Communication, and the Digital Economy team for strategic direction and oversight. Our sincere gratitude goes to our development partners, in particular the Mastercard Foundation through their Young Africa Works strategy for their continued collaboration with the Ministry for their dedication to eradicating youth unemployment in Kenya through the creation of dignified and fulfilling digital work opportunities.

This report is not just a report but a necessity. Let's walk further along the journey of a stronger, more inclusive, and more competitive digital economy, benefiting generations now and in the immediate future.



Eng. John Tanui, CBS

Principal Secretary,

State Department for ICT and the Digital Economy

EXECUTIVE SUMMARY

The digital economy is rapidly transforming the global workforce, creating new opportunities while reshaping traditional employment structures. As businesses increasingly rely on digital solutions, the demand for skilled digital workers continues to rise. This report analyzes Kenya's position within this evolving landscape, assessing the demand for digital jobs, employer expectations, freelancer earnings, and the challenges faced by local professionals in accessing high-value opportunities. By leveraging insights from global reports, industry data, and digital job platforms, this study provides a comprehensive overview of the current trends shaping Kenya's digital labor market.

By 2030, an estimated 230 million new digital jobs will be created across Sub-Saharan Africa, with global demand for artificial intelligence (AI) specialists, data analysts, cloud engineers, and cybersecurity experts growing rapidly. The gig economy is projected to grow by 25%, with digital jobs expanding from 73 million in 2024 to 92 million by 2030. This presents a significant opportunity for Kenyan professionals to secure high-paying remote and international roles, provided they develop in-demand skills and obtain globally recognized certifications. Without these advancements, accessing high-value international opportunities will remain a challenge. Addressing these barriers through targeted upskilling, strategic industry collaborations, and enhanced global recognition is essential for unlocking the full potential of Kenya's digital workforce.

It is against this background that a study aimed at analyzing Kenya's digital job market in relation to global trends, identifying in-demand roles, employer expectations, skill gaps, and income disparities. The study sought to provide data-driven insights and recommendations to enhance Kenya's workforce competitiveness through upskilling, certification access, and increased participation in high-value global digital opportunities.

This study utilized a mixed-methods approach, incorporating both desk research and primary data collection. As part of the desk research, data science techniques were employed to analyze online digital job postings from job boards and freelancer platforms, alongside a review of published reports. Surveys and key informant interviews were conducted with key stakeholders, including digital workers, employers, and skilling institutions, to understand job market trends, skill gaps, and digital job experiences. Data analysis utilized descriptive statistics to identify trends, visualize insights, and structure actionable recommendations for digital employment strategies.

The conceptual framework guiding this study emphasizes the ecosystem of demand, supply, and enablers for digital work.

- **Demand for Digital Jobs:** Global and local companies seek diverse digital skills, with increasing demand for AI, cybersecurity, and data science roles.
- **Intermediaries:** Platforms like (Upwork, Fiverr) and Business Process Outsourcing companies (BPOs) link job seekers to opportunities globally and locally.
- **Supply of Workers:** Kenya's workforce consists predominantly of individuals with intermediate digital skills, necessitating upskilling for advanced roles.
- **Supporting Measures:** Key enablers include partnerships between government, academia, and industry to promote training, access to certifications, mentorship programs, and infrastructure.

KEY FINDINGS

Key Global Trends Influencing Digital Jobs

The global labor market is shaped by various transformative forces, including technological disruption, economic changes, and the influence of major tech companies.

- **Economic and Job Market Shifts:** Digital platforms, freelancing, and remote work are becoming central to employment worldwide. The gig economy is projected to grow by 25%, with digital jobs expanding from 73 million in 2024 to 92 million by 2030.
- **Technological Disruption and Adaptation:** Emerging technologies such as AI¹, automation, and robotics are reshaping job roles globally. AI alone is expected to create 11 million jobs by 2030 but also displace 9 million, particularly in roles involving repetitive tasks (e.g., customer service and data entry). Creativity-driven and strategic roles are on the rise.
- **Influence of Big Tech:** Technology giants² are driving demand for specialized skills in AI, cloud computing, and cybersecurity. Their investments in AI hardware, automation tools, and global research collaborations significantly influence workforce trends.

Global Demand for Digital Jobs

The demand for digital roles is booming, with countries like the USA, India, Germany, and France leading in job creation.

- **High-Demand Roles:** The demand is particularly strong in the following sectors:
 - **IT Services:** Cloud computing, software engineering, and Development and Operations (DevOps) roles drive innovation and operational efficiency.
 - **E-commerce:** Digital marketing specialists and data analysts optimize customer engagement and sales performance.
 - **Finance:** Cybersecurity analysts and blockchain developers safeguard data and enhance financial infrastructure.
 - **Healthcare:** AI-driven diagnostics and health data analysis are creating new opportunities for health data specialists and machine learning experts.
- **Specialization and Global Certification:** Employers increasingly emphasize deep technical expertise and globally recognized certifications as key differentiators in hiring for advanced digital roles. Certifications from reputable institutions, such as Amazon Web Services (AWS), Microsoft, and Google, serve as strong indicators of technical proficiency and industry readiness. This demand underscores the necessity for targeted skill development, particularly in specialized fields like blockchain development, AI engineering, and cybersecurity.
 - **Certification as a Competitive Advantage:** Candidates with certifications such as AWS Certified Solutions Architect, Microsoft Azure Artificial Intelligence Engineer, or Certified Blockchain Expert (CBE) are preferred for their validated competencies.

² Google, Microsoft, Tesla, Amazon Web Services, Meta, Apple, IBM, NVIDIA, X Corp (formerly Twitter), AMD (Advanced Micro Devices), Neuralink, Samsung, SpaceX

- **Demand for Niche Expertise:** As industries integrate AI, Web 3.0³, and cloud solutions, specialized skills like DevOps, Internet of Things (IoT) security, AR (Augmented Reality), and VR (Virtual Reality) development are seeing heightened demand.
- **Employer Expectations:** More than 60% of employers require candidates to hold domain-specific certifications, while 50% favor additional credentials beyond a bachelor's degree, emphasizing continuous learning as a prerequisite for career growth.
- **Competency Expectations:** As the digital job market becomes more competitive, a combination of formal education and hands-on experience is increasingly essential for employability. Employers are not only looking for academic credentials but also tangible proof of applied skills in real-world scenarios.
 - **Educational Requirements:** Around 70% of job postings specify a bachelor's degree as a prerequisite, particularly in fields like computer science, data science, and engineering. While advanced degrees may provide an edge, practical skills remain the primary determinant of success.
 - Experience-Based Learning:** Certifications alone are no longer sufficient to secure employment. Employers expect candidates to demonstrate their expertise through completed projects, internships, open-source contributions, or participation in coding competition platforms such as LeetCode, Kaggle, or GitHub portfolios as proof of competency.

Pay Differentials and Challenges for Kenyans

Despite Kenya's growing presence in the global digital economy, freelancers continue to face significant earnings disparities compared to their international counterparts. Data science analysis from Fiverr shows that Kenyan freelancers earn an average of \$43 per project, significantly lower than their counterparts in developed countries like Canada (\$198/hour) and Germany (\$165/hour). This earnings gap is primarily driven by differences in **specialization, experience, and globally recognized certifications**. Countries like India maintain competitive earnings despite lower rates by offering diverse, specialized services. Kenyan freelancers, however, encounter challenges in increasing their rates due to **skill gaps, limited access to advanced certifications, and lower global visibility** in specialized digital domains.

Challenges and Gaps in Kenya's Workforce

Kenya's workforce exhibits a notable skills gap compared to global standards, limiting access to high-paying digital opportunities. While many professionals have intermediate skills in fields such as digital marketing and social media management, a shortage of advanced expertise in areas like AI, cybersecurity, blockchain, and cloud computing remains a significant barrier. Below are the key factors contributing to this issue;

- **Limited Access to Advanced Training:** Many workers lack opportunities for targeted upskilling due to the high cost of global certifications and limited access to structured mentorship programs.

³ Web 3.0 is a decentralized internet powered by blockchain, smart contracts, and user-controlled data.

- **Mismatch Between Skills and Market Demand:** The demand for highly specialized roles such as machine learning engineers, DevOps professionals, and cybersecurity analysts outpaces the available talent pool, reducing Kenya's competitiveness in the global job market.
- **Barriers to High-Value Roles:** Without affordable access to globally recognized certifications (e.g., AWS (Amazon Web Services), PMP (Project Management Professional), and CISA (Certified Information Systems Auditor)). Kenyan freelancers and job seekers struggle to qualify for premium international projects and full-time remote roles.

Inclusivity and Workforce Participation

Inclusivity remains a challenge in Kenya's digital job ecosystem.

- **Gender Representation:**
Women account for 43% of the digital workforce but face challenges such as lower pay and limited access to advanced roles.
- **Regional Disparities:**
Nairobi and the Rift Valley dominate digital participation, while regions like North Eastern Kenya are underrepresented.
- **Refugee Participation:**
Initiatives like Ajira Digital and Digital Inclusion programs are providing refugees with access to remote work and freelancing opportunities, promoting economic empowerment.
- **People with Disabilities (PWDs):**
Several initiatives focus on equipping PWDs with digital skills literacy and job placement, such as Next Step Foundation, Team4Tech, GSMA, Tunapanda Institute, among others. However, PWDs in Kenya face numerous barriers to accessing digital skills training and employment opportunities. These challenges are rooted in structural, technological, and societal factors that continue to exclude PWDs from the digital economy.

RECOMMENDATIONS

Demand for Digital Jobs

Programmatic Focus: Equip workers with technical skills aligned with global and local job market needs.

Kenya's growing digital economy provides significant opportunities for local talent to access high-demand global roles. However, to compete effectively, Kenyan workers must prioritize both practical experience and globally recognized certifications.

Certification Pathways

Certifications serve as validation of expertise and are often used by employers to filter candidates in a competitive market. Kenyan workers must prioritize certifications that align with global job demands.

- **Targeted Certifications:** Certifications in cloud computing (AWS Solutions Architect), data science (Google Data Analytics), and cybersecurity (Certified Information Systems Security Professional-CISSP), CEH (Certified Ethical Hacker) are highly valued across industries. These credentials improve credibility and open doors to advanced roles in globally connected markets.
- **Affordable Access:** Partnerships between local training institutions and international certification providers can reduce costs for Kenyan learners. Programs like Ajira Digital, in collaboration with platforms such as Coursera and AWS Academy, should provide subsidized certification tracks.
- **Stackable Certifications:** Kenyan professionals can build expertise incrementally by earning certifications that progress from foundational to advanced levels. For example, workers may begin with entry-level cloud certifications before pursuing more specialized credentials like DevOps or AI.

Building Experience Pathways

Practical experience is vital for demonstrating job readiness. Kenyan workers can enhance their employability by actively participating in hands-on projects and global competitions.

- **Internship and Apprenticeship Programs:** Collaborations between local industries, BPOs, and global tech firms can offer structured internships in high-demand fields like AI, cybersecurity, and software development. These experiences provide critical exposure to workplace dynamics, tools, and technologies.
- **Coding Competitions and Platforms:** Platforms like LeetCode, HackerRank, and Kaggle offer problem-solving challenges that mirror real-world tasks. High performance on these platforms can attract global recruiters and increase visibility for Kenyan talent.
- **Portfolio Development on GitHub:** Kenyan digital workers should actively engage in open-source projects, creating repositories that showcase their skills to potential employers. Contributions to global collaborative projects improve coding expertise, teamwork skills, and international exposure.
- **Freelancing Projects:** Platforms like Upwork and Fiverr provide Kenyan professionals with opportunities to work on international projects. By consistently delivering quality work, freelancers can build a reputation and access higher-paying roles over time.

Combining Experience and Certification for Competitiveness

The strongest candidates in global job markets are those who combine practical experience with recognized certifications. Kenyan workers should strategically develop both through the following initiatives:

- **Project-Based Learning:** Programs should emphasize real-world problem-solving where certifications and experience are earned concurrently through tasks like developing AI models or building secure cloud infrastructure.
- **Mentorship and Networking:** Kenyan professionals can benefit from mentors who guide them in aligning experience with certification goals. Industry connections can also provide access to job referrals and skill-specific projects.
- **Skill Showcases:** Initiatives like hackathons and coding challenges allow Kenyan workers to demonstrate both technical and soft skills, boosting their visibility to global employers.

Strengthening Intermediaries

Programmatic Focus: Strengthen the role of platforms and BPOs in linking job seekers to opportunities.

1. Promoting Kenyan Talent Globally:

- Launch a digital talent branding campaign that showcases success stories and testimonials on platforms like Upwork and LinkedIn.
- Create a digital showcase portal where Kenyan freelancers can highlight projects, portfolios, and accomplishments.

2. BPO Expansion Programs:

- Encourage local BPOs to diversify services by integrating advanced digital services (e.g. AI Operations (AIOps) and AI-Powered Process Automation, data analytics outsourcing).
- Offer incentives to global BPOs to establish operations in Kenya, focusing on job creation and skills transfer.

Supporting Measures

Programmatic Focus: Develop infrastructure, partnerships, and inclusive policies to support digital workforce growth.

1. ICT Infrastructure Development:

- Expand ICT hubs in counties with limited access to digital resources.
- Provide affordable internet packages to students and early-career professionals through telecom partnerships.

2. Digital Inclusion Programs:

- Launch targeted programs for women, PWDs (Persons with Disabilities), and refugees to provide access to digital tools and training.
- Offer scholarships and device grants to marginalized groups, ensuring participation in digital work opportunities.

3. Public-Private Partnerships (PPP) Development:

- Convene annual stakeholder forums involving government, academia, and industry to design and fund national skilling initiatives.
- Collaborate with development partners to secure long-term investments in training infrastructure and talent development.

4. **Academic-Industry Collaboration:**

- Create university-led centers of excellence for emerging technologies such as AI, cybersecurity, and blockchain.
- Develop internship programs where students work on real-world projects for tech companies, BPOs, and public sector entities.

5. **Monitoring and Evaluation (M&E):**

- Implement a centralized system to track skilling program outcomes, job placement rates, and certification attainment.
- Regularly update curricula and training content based on M&E data and global job market trends.

Practical Programmatic Activities for The First 12 Months

Below is a prioritized plan for key activities across all categories within the first 12 months.

Demand for Digital Jobs

Goal: Equip workers with high-demand technical expertise to compete for roles globally.

Months 1-6:

• **Launch foundational training programs:**

- Initiate partnerships with AWS, Microsoft, and Google to co-develop AI, cybersecurity, and cloud computing courses.
- Deliver at least three boot camps for high-demand digital skills like blockchain and data science.

• **Identify certification providers:**

- Collaborate with platforms like Coursera and edX to offer globally recognized certifications at discounted rates.

Months 7-12:

• **Certification and Recognition:**

- Develop nationally recognized coding certification programs based on performance on LeetCode and GitHub contributions.
- Align these certifications with the needs of local BPOs, tech companies, and global job markets.

Months 7-12:

• **Roll out certification subsidy program:**

- Provide financial aid for the first cohort of learners to pursue certifications (e.g., AWS Solutions Architect).
- Conduct awareness campaigns to highlight the importance of certifications for employability.

• **Pilot industry-focused specialization tracks:**

- Start a blockchain specialization track for finance professionals and AI-based analytics track for healthcare data specialists.

- **Launch mentorship programs:**

- Pair at least 200 young professionals with experienced mentors in high-demand fields like AI, cybersecurity, and digital marketing.

Months 7-12:

- **Establish internship pipelines:**

- Secure partnerships with 20 companies to provide internship opportunities for participants in skilling programs.
- Initiate an apprenticeship program targeting 100 trainees in collaboration with BPOs and digital platforms.

- **Expand soft skills training:**

- Conduct quarterly workshops on leadership, client management, and communication skills for digital workers.

Intermediaries

Goal: Strengthen the role of platforms and BPOs in linking job seekers to opportunities.

Months 1-6:

- **Organize a national digital job summit:**

- Bring together platforms like Upwork, Fiverr, and BPOs to showcase digital job opportunities and offer support sessions for freelancers.

- **Develop partnerships with platforms:**

- Negotiate agreements with Upwork, Fiverr, and Freelancer to provide exclusive training and job listings for Kenyan workers.

Months 7-12:

- **Launch a global talent branding campaign:**

- Collaborate with LinkedIn to feature success stories of Kenyan digital professionals.
- Develop a national talent showcase website that highlights certified freelancers.

- **Support BPO growth:**

- Offer tax incentives and funding for local BPOs to diversify services, such as AI-driven data labeling and software development outsourcing.

Supporting Measures

Goal: Ensure infrastructure and partnerships support workforce growth.

Months 1-6:

- **Expand ICT infrastructure:**

- Open 10 new ICT hubs under the Ajira Digital program in underserved counties.
- Partner with telecom providers to offer affordable internet packages targeting students and freelancers.

- **Establish multi-stakeholder steering committee:**
 - Include representatives from government, academia, industry, and development partners to coordinate workforce initiatives.
- **Roll out digital inclusion program:**
 - Provide device grants and scholarships to 500 women, refugees, PWDs, and rural youth for participation in skilling programs.

Months 7-12:

- **Initiate public-private partnerships:**
 - Convene a national forum to secure commitments from global tech firms for funding and resource sharing.
 - Launch university-industry collaboration projects focused on emerging
 - Develop partnerships with local colleges and TVETs to deliver in-person and online course
- **Implement a centralized monitoring system:**
 - Develop an online platform to track training outcomes, certification progress, and job placements.
 - Collect feedback from participants and employers to refine training programs.

1. INTRODUCTION

1.1 BACKGROUND INFORMATION

Kenya has positioned itself as a continental leader in harnessing the opportunities of the digital economy. The widespread integration of information and communication technologies has reshaped traditional work models, creating a dynamic and thriving digital employment ecosystem. From freelancing and remote work to platform-based gig opportunities, the Kenyan workforce is increasingly influenced by these transformations. Recognizing the transformative potential of the digital economy, the Government of Kenya launched the Ajira Digital Program in 2016 through the Ministry of Communication, Information, and the Digital Economy. The overall objective of the Ajira Digital program is to empower over one million young people in Kenya to access digital work opportunities and to position Kenya as a leading labor destination and Business Process Outsourcing hub for multinational companies. Structured around four key pillars—access to dignified work, infrastructure, training and mentorship, and awareness creation—the program serves as a catalyst for equipping Kenya’s youth with the skills and resources needed to thrive in the global digital marketplace. Backed by the Mastercard Foundation’s Young Africa Works Initiative and implemented by KEPSA, the program has undertaken numerous efforts to expand access to digital and digitally enabled work opportunities and drive long-term impact.

Findings from the Ajira Digital Program studies show how Kenya's digital gig economy has grown exponentially, finding its place on the global digital map. The numbers have risen fourfold, from 638,400 in 2019 to over 2.4 million in 2023, within four years, as rapid adoption of technology, supportive policies, digital platforms, and opportunities for remote work accelerated. The rising profile is employed in everything from simple data entry to more complex high-level digital services.

However, even as this phenomenal growth reports, findings also unveil critical challenges that hamper Kenyan digital workers from fully capitalizing on higher-paying opportunities in intermediate and advanced digital roles, especially at the global level. Gaps in skills, inadequate access to relevant training, and infrastructure remain big barriers to upward mobility in the digital career. Therefore, strategic measures should be put in place to address such a challenge to Kenya's sustained momentum in developing information and communication technology, pursuing inclusive economic growth, and bringing forth a workforce that is effective globally.

The 2024 study builds on these transformative insights, offering a comprehensive analysis of the critical skill gaps that hinder Kenyan digital workers from fully participating in the global digital economy. It outlines structured, actionable pathways to equip young professionals with the intermediate and advanced digital skills, industry-relevant certifications, and practical experience needed to thrive in an increasingly competitive international market. The study emphasizes the importance of aligning training programs with global standards, fostering partnerships with leading tech institutions, and integrating innovative learning models to bridge these gaps effectively.

1.2 STUDY OBJECTIVES

The overall objective of this study is to create a comprehensive framework of the digital job ecosystem in Kenya and globally, pinpoint strategic skill gaps, and build structured pathways that provide Kenyan youth with intermediate to advanced digital skills capabilities, certifications, as well as international (onsite and online) employment opportunities. The report will also look at what is needed to support interoperability, increase collaboration across sectors, and create long-term sustainability for the digital economy in Kenya.

Specific Objectives

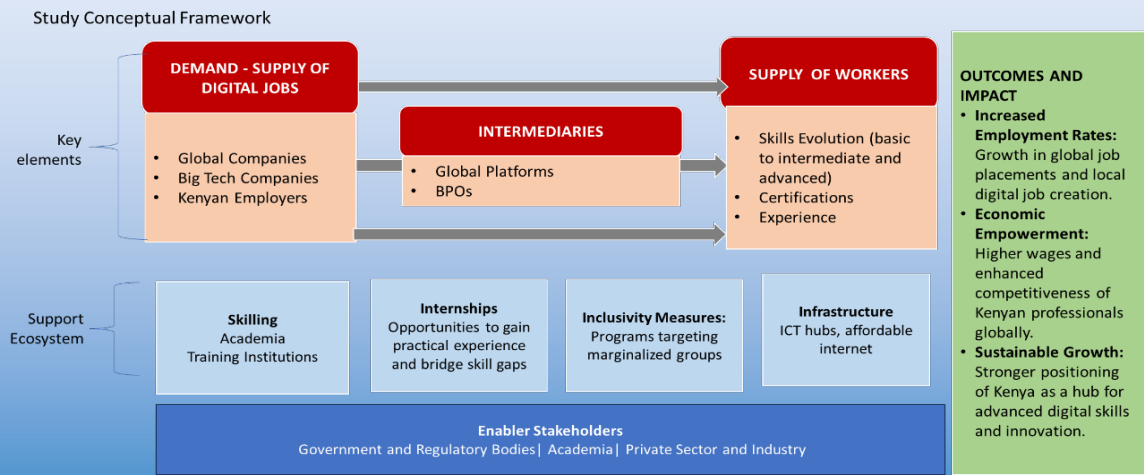
The specific objectives fall into eight broad categories as summarized below;

- 1) **Mapping the Job Landscape Industry Demand and Skills Gaps:** Identify the most sought-after intermediate and advanced digital skills locally and globally.
- 2) **Identifying High-Demand Sectors:** Highlight sectors experiencing significant growth in digital transformation.
- 3) **Pathways to Advanced Digital Jobs:** Outline strategies for transitioning youth from entry-level to advanced roles.
- 4) **Certification and Accreditation Programs:** Evaluate the impact of global certifications like AWS, Microsoft Azure, and CCNA (Cisco Certified Network Associate).
- 5) **Overcoming Barriers:** Address financial, logistical, and systemic obstacles to skill development and inclusivity.
- 6) **Sustainability and Impact Measurement:** Develop metrics to evaluate long-term program success and sustainability.
- 7) **Enhancing Collaboration and Interoperability:** Identify strategies to foster cross-sector collaboration, promote interoperability across digital platforms, and establish frameworks that ensure the long-term sustainability of Kenya’s digital economy.

1.3 CONCEPTUAL FRAMEWORK

The conceptual framework illustrates the ecosystem driving digital job creation and economic inclusion in Kenya. It highlights the interaction between demand for digital jobs, intermediaries, worker supply, and key stakeholder roles.

Figure 1: Conceptual Framework



- ❑ **Demand for Digital Jobs:** Digital job opportunities originate from global companies, big tech firms, and Kenyan employers, reflecting a need for diverse digital skills at various expertise levels.
- ❑ **Intermediaries:** Platforms such as global freelancing platforms and BPOs play a crucial role in linking job seekers to employers by facilitating access to both remote and in-country digital work opportunities.
- ❑ **Supply of Workers:** The workforce supply consists of individuals with skills ranging from basic to advanced levels, supported by certifications and experience. Continuous skill evolution is vital to meet the growing demand for specialized digital roles.
- ❑ **Supporting Measures:** Key enablers of digital workforce development include Skilling Programs: Provided by academic and training institutions to enhance technical capabilities. Internships: Offering practical experience to bridge skill gaps. Inclusivity Measures: Initiatives that target marginalized groups to promote equitable access to digital work. Infrastructure: Investment in ICT hubs and affordable internet to ensure access to digital resources.
- ❑ **Stakeholder Collaboration:** The framework emphasizes the role of government, academia, and industry associations in implementing policies, training programs, and infrastructure improvements to support the digital economy.

This framework underscores the importance of a multi-stakeholder approach to foster skill development, inclusivity, and sustainable digital job creation.

1.4 METHODOLOGY

The two methods, desk research and primary data collection, complemented each other to provide a comprehensive and well-rounded research process. This blend of methodologies provided a strong foundation for actionable recommendations tailored to the Kenyan digital workforce.

- ❑ **Desk Research:** This method involved gathering secondary data from credible online sources, such as reports, articles, and databases. It provided foundational insights into the research topic by identifying trends, benchmarks, and existing studies.
- ❑ **Primary Data Collection:** This involved gathering first-hand information through interviews, surveys, or observations. It allowed the researcher to validate insights from web research and explore issues that secondary data may not fully address.

1.4.1 Desk Research

Desk research consisted of a thorough review and synthesis of global and local insights to create a strong analytical framework for the study. This integrated some important findings from global reports, including those from WEF, World Bank, and ILO, among others, in their attempts to capture emerging trends in digital skills, employment patterns, and the future of work in the constantly evolving digital economy.

At the national level, the study conducted a comprehensive review of critical reports shaping Kenya's digital landscape. These included:

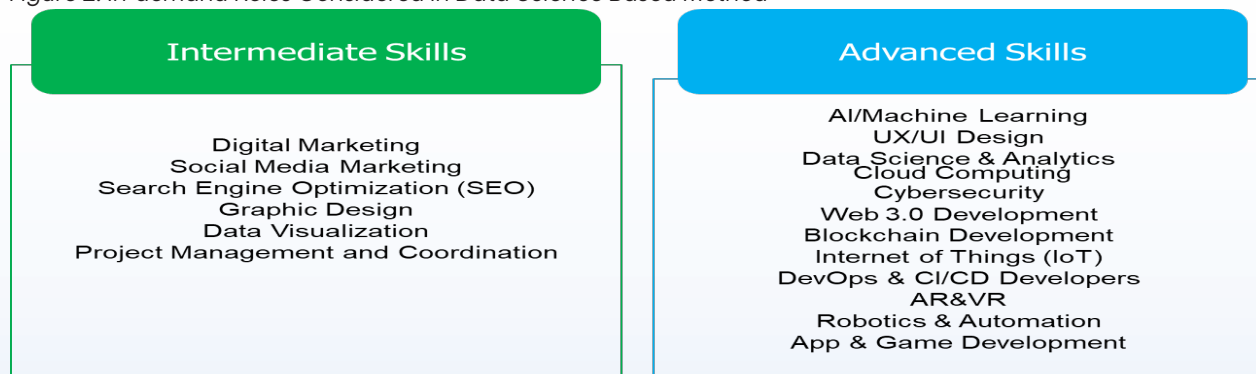
- 1) Microsoft's Reports on the Digital Economy, offering insights into technological advancements and digital transformation.

- 2) KEPSA Private Sector Outsourcing Surveys, which provided an in-depth understanding of outsourcing practices and demand for digital talent.
- 3) KEPSA BPO Industry Survey and KEPSA National Surveys highlight the growth, opportunities, and challenges of Kenya's Business Process Outsourcing (BPO) sector.
- 4) Genetics Analytics' Report on Unlocking Current and Future Employment for ICT Profiles in Kenya, which offered a detailed analysis of ICT-related employment opportunities and emerging skill demands.
- 5) Communications Authority of Kenya (CA) Reports, presenting key data on ICT infrastructure, internet penetration, and digital adoption trends across the country.
- 6) UNHCR 2023 Report on Improving Digital Livelihood Opportunities for Refugees.

According to the WEF's 2023 Future of Jobs Report, intermediate and advanced digital skills are no longer optional but essential for individuals and economies aiming to remain competitive in the dynamic global marketplace. These skills are pivotal in driving productivity, fostering innovation, and enhancing employability in digital and digitally enabled sectors.

The study prioritized the following digital skill sets, identified as critical for navigating and excelling in today's digital economy:

Figure 2: In-demand Roles Considered in Data Science Based Method



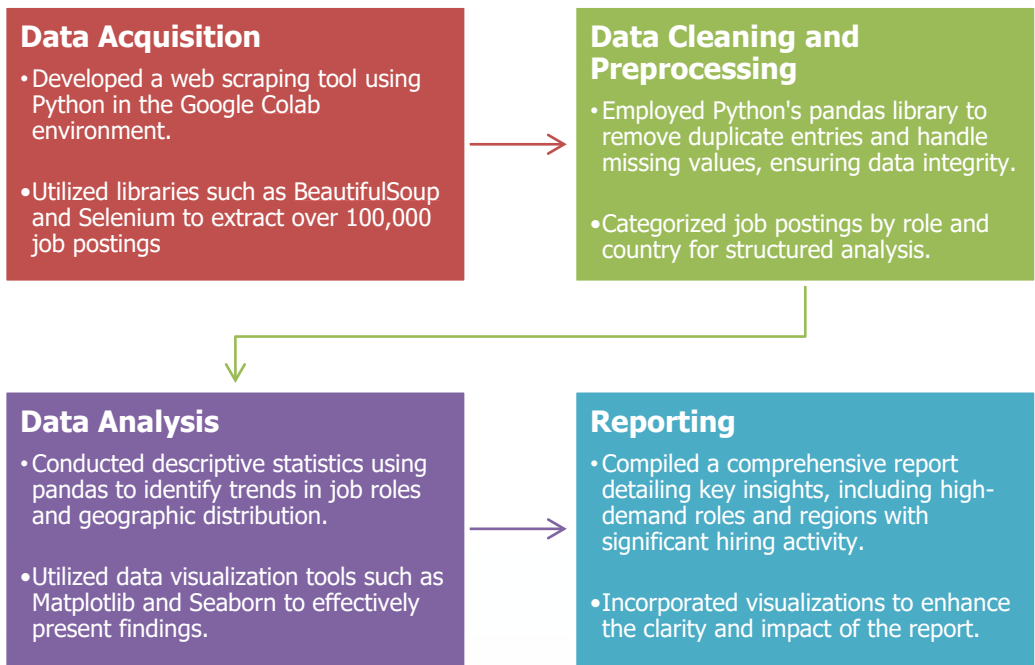
1.4.2 Data Science-Based Methods

In labor market studies, data science serves as a powerful tool for collecting real-time information on job postings, industry trends, and emerging skills at scale. Respected institutions and researchers, including those involved in academic studies and organizations like the World Bank, often utilize this approach to compile extensive job market data. The data collection and analysis processes adhere to ethical and legal standards, such as avoiding the collection of sensitive or restricted data, respecting website terms of service, and anonymizing data to protect privacy.

For this study, data science methods aggregated job postings from leading platforms, including Indeed, LinkedIn, ZipRecruiter, and Google Jobs, as well as freelancing platforms like Upwork and Fiverr. These methods involved automated data extraction to collect large volumes of job listings efficiently, followed by data cleaning and normalization processes to ensure accuracy and consistency. Analytical techniques were then applied to categorize and structure the data, enabling deeper insights into industry trends, job demand, and emerging skills. These platforms

were chosen for their global reach, comprehensive job listings, and ability to reflect current market dynamics accurately.

Figure 3: Desk Research – Data Science



These platforms were selected based on their global reach, comprehensive job listings, and ability to reflect current market dynamics. Below is an overview of the platforms;

Table 1: Overview of Platforms

Platform	Description	Key Findings
Indeed	▪ One of the world’s largest and most comprehensive job search engines, Indeed aggregates millions of job postings from a wide range of sources, including company websites, job boards, and recruitment agencies.	▪ Provides a holistic view of the global job market, highlighting demand across industries, job functions, and geographic regions. It also offers trend analysis on emerging roles and evolving skill requirements.
LinkedIn	▪ A premier professional networking platform with over 900 million users globally. LinkedIn not only connects professionals but also serves as a dynamic job marketplace, offering real-time insights into industry trends, employer demands, and evolving career pathways.	▪ Delivers deep insights into professional profiles, recruitment trends, talent mobility, and in-demand skills across sectors. It also highlights emerging industries and growth opportunities within specific job markets.

Platform	Description	Key Findings
ZipRecruiter	▪ A leading online employment marketplace renowned for its AI-powered matching technology, which enhances job visibility by distributing postings to over 100 partner sites. Its smart algorithms streamline the recruitment process for both employers and job seekers.	▪ A critical source for analyzing recruitment patterns, talent acquisition strategies, and the shifting landscape of employer preferences. Offers data-driven insights into high-demand roles and sectors.
Google for Jobs	▪ Utilizes Google’s powerful search algorithms to aggregate job listings from various job boards, company websites, and career pages, offering job seekers an intuitive and comprehensive job discovery experience.	▪ Provides a broad-spectrum view of labor market dynamics, capturing job demand trends across industries, geographic regions, and skill sets. Highlights the impact of digital transformation on job availability.
Upwork	▪ A leading global freelancing platform that connects businesses with independent professionals across diverse categories, including technology, marketing, design, and writing. Upwork reflects the rapid growth of the gig economy and remote work trends.	▪ Offers valuable insights into the global gig economy, showcasing trends in freelance work, remote job opportunities, evolving skill demands, and the rise of specialized digital talent in the marketplace.
Fiverr	▪ A specialized freelancing marketplace focused on project-based, short-term contracts. Fiverr allows professionals to market their services globally, with a strong emphasis on digital marketing, creative industries, and tech-driven solutions.	▪ Provides data on emerging freelance niches, creative and technical service demands, and short-term contract work trends. Highlights the increasing demand for specialized skills in digital content, tech, and innovation sectors.

By obtaining data using data science methods from widely recognized platforms like those mentioned above, the study ensured a diverse and accurate representation of the digital job landscape. This approach provided valuable insights into employer preferences, regional hiring trends, and skill requirements, forming a solid foundation for workforce development recommendations.

1.4.3 Primary Research

Qualitative Research

Key informant interviews were conducted with 65 participants from diverse sectors to gather qualitative insights. These included 30 representatives from large, medium, and small enterprises; 2 global BPOs; 11 executives from multinational and local technology firms; and 10 representatives from skilling and training companies specializing in digital skills. Additionally, interviews were conducted with 9 distributors of technology focusing on software, hardware, and digital tools, as well as 3 members from the KEPSA Ajira and eMobilis implementation team, including project managers and technical leads. This comprehensive approach ensured a well-rounded understanding of the digital skills ecosystem.

Table 2: Key Informants Sample Structure

Description	Proposed Sample	Achieved Sample	% achieved
Corporate stakeholders are broken down as follows; Large companies, Medium companies, MSME	30	30	100%
Global BPOs	3	2	67%
Big Technology Companies in Kenya	10	11	110%
Distributors of technology in Kenya	10	9	90%
Skilling /training companies	10	10	100%
KEPSA Ajira and eMobilis Implementation Team	3	3	100%
Total	66	65	98%

Quantitative Research

Quantitative data was gathered through a combination of telephonic and face-to-face interviews reaching 301 digital workers, encompassing both current beneficiaries and non-beneficiaries of digital work programs such as Ajira Digital. This approach was designed to capture a detailed understanding of the digital work ecosystem from multiple perspectives. The data collection focused on exploring participants' experiences, perceptions, and aspirations, while also delving into the challenges they face and the opportunities they have encountered within both the local and global digital work landscapes. These quantitative provided valuable deductions into the effectiveness of digital work programs, the evolving nature of digital employment, and the critical factors influencing the success and sustainability of digital careers.

1.4.4 Study Challenges

The integrated methodology, which combined web research, internet document collaboration, and primary data collection, provided a comprehensive approach to capturing variant study insights. However, it also presented several challenges ranging from issues of data credibility, information overload, and limited access to real-time data during web research, to slow response rates in primary data collection that impacted the research process and outcomes. The below table presents challenges experienced at mitigation measures adopted.

Table 3: Study Challenges

Category	Challenges	Mitigation Strategies
Web Research Challenges	Data Credibility: Difficulty in verifying the reliability and accuracy of online sources due to unverified, outdated, or biased content.	Focused on reputable job boards, official reports, and authoritative platforms to enhance data reliability and ensure credible information was incorporated.
	Information Overload: The overwhelming volume of online information made it challenging to filter relevant data and prioritize trustworthy sources.	Applied strict selection criteria, cross-referenced data, and utilized advanced search techniques to ensure the relevance and accuracy of the collected information.
Primary Data Collection Challenges	Slow Response Rates: Challenges in securing sufficient responses from survey participants and interviewees, leading to delays in data collection.	Addressed through persistent follow-ups, flexible interview scheduling, and the use of participation incentives to improve response rates and data quality.

2. DETAILED FINDINGS

2.1 GLOBAL CONTEXT: TRENDS INFLUENCING DIGITAL JOBS

Section Overview
This section examines global trends influencing digital jobs, highlighting technological advancements, shifting employer demands, and the evolving digital economy. Insights from the World Bank and World Economic Forum reveal key trends shaping digital job creation and future skill requirements.
Key Takeaways (findings that are most critical or actionable)
1. Technological Disruption & Workforce Adaptation: AI, automation, and emerging technologies are reshaping job roles, requiring continuous upskilling, adaptability, and AI integration to remain competitive. While AI is projected to create new jobs by 2030, it may displace many existing roles, underscoring the urgent need for targeted training and globally recognized certifications. 2. Shifts in Labor Market & Job Creation: Employers prioritize specialized digital skills like AI, cybersecurity, and cloud computing over traditional roles, with AI expected to create 11 million jobs but displace 9 million by 2030. Consequently, continuous reskilling and targeted training initiatives are essential to equip the workforce with the specialized expertise needed to thrive in this evolving landscape. 3. Global Economic & Digital Job Growth: The online gig economy is set to grow by 25%, expanding digital jobs from 73 million (2024) to 92 million (2030). The surge is driven by widespread digital transformation and the rising popularity of freelance platforms. By empowering youth with flexible career opportunities and targeted upskilling initiatives, they will be well-equipped to thrive and compete in a rapidly evolving global digital marketplace. 4. Green Economy & Sustainability Jobs: The shift to sustainability is driving demand for roles in renewable energy, environmental management, and green technology development, as seen through increased green job postings and specialized training initiatives. Global policy support and subsidies further boost innovation and secure long-term employment opportunities in the sustainability sector. 5. Big Tech's Influence on Workforce Development: Big Tech companies like Microsoft, Google, and Tesla are driving the demand for AI specialists, cybersecurity experts, and cloud engineers through investments in education and workforce training partnerships. These initiatives not only address current skill gaps but also set benchmarks for future workforce development, ensuring that workers gain essential, industry-recognized certifications and combat the digital skills shortage.

Recommendations

- 1. Align Workforce Training with Global Trends:** Conduct a gap analysis of current training modules against global best practices, update curricula in collaboration with international experts, and pilot the revised programs to gather feedback for continuous improvement.
- 2. Leverage partnerships with Big Techs:** Identify and formalize partnerships with leading tech companies (e.g., AWS, Microsoft, Google), tier 2 and 3 tech companies to co-develop training content, integrate their digital tools into the curriculum, and set up mentorship programs that lead to industry-recognized certifications for the youth.
Invest in Green & Sustainable Technology Skills: Work with environmental experts to design green technology courses, launch innovation challenges and hackathons that drive local sustainable solutions, and secure public-private partnerships to fund these green skilling initiatives.
- 3. Strengthen Digital Infrastructure:** Collaborate with telecom providers and government bodies to enhance digital connectivity in underserved regions, incorporate AI-powered personalized learning platforms, and monitor progress through a centralized digital dashboard that tracks training outcomes.
- 4. Enhance Workforce Mobility:** Develop specialized remote work readiness modules (covering digital portfolio creation and virtual collaboration), create linkages with international job platforms and employers for real-world exposure, and implement performance tracking systems to refine remote work training initiatives.

2.1.1 Key Trends Shaping the Future of Work

The global digital economy is evolving rapidly, driven by technological advancements and the growing integration of digital work platforms. Big tech companies and emerging technologies like AI and cloud computing are reshaping the skills landscape, creating new opportunities while shifting employer demands (World Bank)⁴. The global labor market is undergoing significant transformations driven by interconnected macro trends that redefine job creation, skill requirements, and industry dynamics. Below are the five key trends shaping the workforce globally in 2025⁵:

- 1) **Economic Uncertainty and Cost of Living:** Economic instability and rising costs of living highlight the need for resilience and agility in the workforce. Employers are prioritizing adaptive skill sets and innovative problem-solving abilities to navigate uncertain economic landscapes. This trend is leading to a shift away from roles in clerical and administrative functions towards those requiring specialized, creative capabilities.
- 2) **Climate-Change Mitigation and Adaptation:** The transition to a green economy is creating significant opportunities in renewable energy, sustainability, and environmental management. Roles like renewable energy engineers, environmental specialists, and green technology developers are on the rise, demanding new skill sets aligned with sustainability goals.
- 3) **Demographic Shifts:** High-income economies are experiencing aging and shrinking working-age populations, while lower-income countries like Kenya have expanding youth populations. This demographic contrast creates opportunities for countries with younger populations to provide skilled labor and benefit from a demographic dividend, provided they invest in workforce development.
- 4) **Geo-economic Fragmentation:** Rising geopolitical tensions and trade restrictions are reshaping global supply chains and labor markets. This has led to increased demand for skills in cybersecurity, logistics management, and resilience planning. Businesses are also focusing on reshoring operations and sourcing talent locally to navigate these challenges.
- 5) **Technological Advancements:** The rapid advancement of emerging technologies is significantly reshaping job roles across industries. Innovations in Artificial Intelligence (AI), Machine Learning (ML), Cybersecurity, Cloud Computing, and Blockchain are driving the creation of new digital jobs while transforming existing ones. The increasing adoption of these technologies is also redefining skill requirements, necessitating continuous upskilling, and adaptation among the workforce.

⁴ World Bank, *Working Without Borders: The Promise and Peril of Online Gig Work*, 2023

⁵ World Economic Forum (WEF), *Future of Jobs Report 2025*

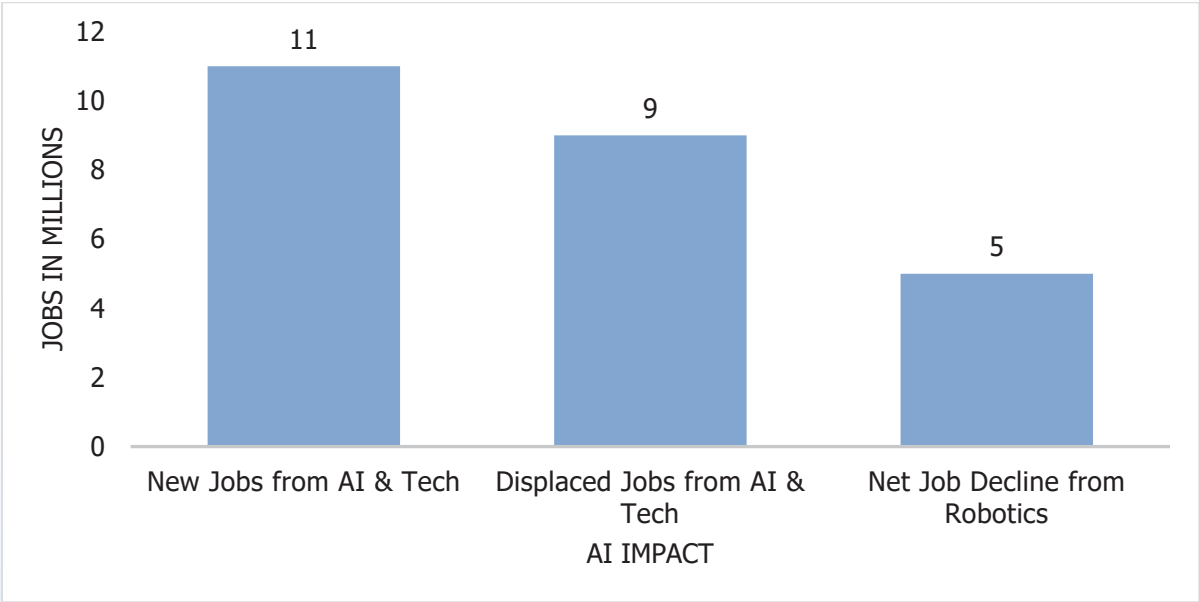
2.1.2 Technological Advancements: AI and Automation Impacts

According to the World Economic Forum (WEF) 2025, AI and automation are transforming job markets by reshaping tasks across skilled and less specialized roles. AI is enhancing productivity, reducing operational barriers, redefining job functions, and resulting in job displacement (WEF, 2025).

Impact on Creating New Jobs and Job Displacement

Innovations in AI, information processing, robotics, and autonomous systems are expected to generate 11 million new jobs but also displace 9 million others by 2030. Robotics and autonomous systems are projected to cause a net decline of 5 million jobs, representing the largest impact on job displacement (WEF, 2025)⁶.

Figure 4: AI Impact on Jobs by 2030



Source: World Economic Forum Report 2025

The transformative potential of the generative AI labor market will lead to significant changes in knowledge-based jobs, affecting the nature of work, required skills, and outputs (Microsoft, 2024). Overall, roles with routine and repetitive tasks are declining due to automation, while those requiring creativity, strategy, and advanced technical skills are in higher demand. Many jobs in customer service, data entry, content writing, telemarketing, paralegal work, and routine programming will be impacted by AI automation and advancements, where less human intervention will be required.

⁶ World Economic Forum (WEF), Future of Jobs Report 2025

Growing and Declining Jobs Due to AI Impact

According to the WEF Future of Jobs Report 2025, technology-driven roles are projected to grow significantly as AI becomes increasingly integrated into business processes. In particular, roles such as AI and Machine Learning Specialists, Big Data Specialists, Software and Applications Developers, and Data Analysts and Scientists are expected to expand, reflecting growing demand for advanced technical and data-driven expertise. In addition, related fields like Robotics Engineering (where AI is a key component), FinTech Engineering, and digital transformation roles are also among those forecasted to grow due to the expanding capabilities and adoption of AI.

Conversely, the report highlights that many routine and administrative roles are vulnerable to automation by AI. Jobs that involve repetitive tasks and low levels of complexity such as Data Entry Clerks, Bank Tellers, Postal Service Clerks, and Telemarketers, as well as various clerical and secretarial positions (for example, Administrative Assistants, Executive Secretaries, Cashiers, and Ticket Clerks) are expected to decline as businesses streamline operations through AI and related technologies. These projections underscore a broader trend: as AI and information processing technologies drive productivity and innovation, high-skill, technology-intensive jobs will expand while roles characterized by routine, manual, or repetitive tasks face significant downward pressure.

According to survey results from “The State of Freelance Writing as of May 2023” (Gregory J., 2023), 61.7% of freelance writers reported that their income had remained stable or increased, with 38% noting an income boost. Additionally, 81% of writers surveyed in mid-2023 stated they had not yet lost clients to AI tools like ChatGPT⁷. However, many foresee a long-term transformation in content production, as companies may increasingly adopt hybrid workflows leveraging AI to generate initial drafts while relying on writers for refinement, creativity, and strategy⁸. Despite AI's capabilities, it struggles to replicate human creativity, nuance, and specialized expertise, essential for producing high-value content such as thought leadership, in-depth analysis, and storytelling. As a result, demand for skilled writers who can deliver unique and strategic content remains strong, even in an AI-influenced market. This aligns with market growth projections indicating continued opportunities in the global freelance sector.

Impact on Work Productivity

Generative AI holds the potential to enhance labor productivity by up to 0.6% annually through 2040, contingent to factors such as adoption rates, workforce adaptability, and the pace of technological integration (Microsoft, 2024).⁹ This productivity surge is driven by AI's ability to automate repetitive tasks, optimize workflows, and facilitate data-driven decision-making, freeing up human capital to focus on strategic, creative, and high-value activities.;

⁷ ChatGPT is an AI language model by OpenAI for text generation and assistance.

⁸ Gregory, J. (2023, June 6). Survey results: The state of freelance writing as of May 2023. Retrieved from <https://www.jennifergregorywriter.com>

⁹ Microsoft, *AI and the Future of Work in Africa*, 2024, Microsoft White Paper.

- **Doctors and Engineers:** AI diagnostic tools, such as IBM Watson Health, use big data from medical records, imaging scans, and clinical trials to facilitate quicker, more accurate diagnoses. For example, AI can identify abnormalities in radiology images, like early-stage cancers, with a degree of precision equal to or surpassing that of human radiologists. In pharmacy, AI is used for drug discovery by predicting the interaction of molecules, hence reducing research timelines by a great extent.
- **Electricians and Technicians:** AI-integrated predictive maintenance systems are transforming technical roles by forecasting equipment failures before they occur. For example, smart grids powered by AI optimize electricity distribution, allowing electricians to preemptively address potential issues, reducing downtime and improving efficiency. Technicians in industries like telecommunications use AI for real-time diagnostics, improving service delivery speed.
- **Data Scientists and AI Specialists:** While AI automates basic data analysis, it has amplified the demand for advanced data science roles. Data scientists now focus on refining machine learning models, interpreting complex insights, and developing ethical AI frameworks. Companies like Google and Amazon leverage AI for real-time customer analytics, fraud detection, and personalized marketing strategies, requiring specialized expertise to manage these systems.
- **Administrative Roles (Accounting Clerks, Human Resource Specialists):** AI has redefined administrative work by automating tasks such as invoice processing, payroll management, and financial reconciliation. Tools like QuickBooks with AI integration streamline bookkeeping, while AI-driven human resource platforms handle recruitment processes, from screening resumes to conducting initial candidate assessments. This shift enables professionals to concentrate on strategic planning, employee engagement, and talent development.
- **Education Sector (Teachers, Teaching Assistants, Curriculum Developers):** AI-powered platforms assist educators in lesson planning, grading assignments, and providing personalized learning experiences. AI can analyze student performance data to identify learning gaps, enabling teachers to tailor instruction for better outcomes. Additionally, virtual teaching assistants powered by AI support administrative tasks, freeing educators to focus on interactive teaching.
- **Logistics and Customer Service (Delivery Drivers, Customer Support Representatives):** In logistics, AI enhances route optimization through real-time traffic analysis, reducing delivery times and fuel consumption. Companies like FedEx and DHL use AI to predict delivery delays and suggest alternative routes. In customer service, AI-powered chatbots and virtual assistants like ChatGPT or Zendesk AI handle common queries, enabling human agents to manage complex customer issues with greater efficiency.

Workforce Transition Strategies in the AI Era

As AI continues to reshape industries, the global workforce faces both unprecedented opportunities and significant challenges. The rise of automation, machine learning, and generative AI is transforming traditional roles while creating new ones, requiring a proactive approach to workforce development. According to the World Economic Forum (WEF), successful workforce transition strategies must focus on bridging skill gaps, fostering adaptability, and leveraging AI as a tool to augment human potential rather than replace it.

Here are key strategies to support the workforce in navigating the AI-driven future:

- **Upskilling and Reskilling:** With automation threatening routine-based roles, upskilling and reskilling have become critical. Workers in vulnerable sectors, such as manufacturing, administrative support, and basic data entry, can pivot to growth industries by acquiring new competencies.
 - **Technical Skills in Demand:** Training in AI systems management, data analytics, machine learning algorithms, and robotic process automation (RPA) opens pathways to roles like AI specialists, cybersecurity analysts, and data engineers. e.g. A factory worker whose tasks are automated by robotics can transition to a role as a robotics maintenance technician through targeted technical training, learning how to program, operate, and troubleshoot automated systems.
 - **Government and Corporate Initiatives:** Countries like Singapore have launched programs like Skills Future, which funds reskilling initiatives to help workers move into tech-driven roles. Similarly, companies like Amazon have invested in upskilling over 100,000 employees through their Upskilling 2025 program.
- **Focus on Soft Skills:** While AI excels in data processing and automation, it lacks distinctly human traits like emotional intelligence, creativity, and complex problem-solving. To remain competitive, workers must cultivate these essential soft skills:
 - **Critical Thinking and Creativity:** As AI handles routine tasks, human workers will focus on strategy development, innovative problem-solving, and creative design. For instance, marketing professionals will rely on AI for data insights but will need creative thinking to design compelling campaigns.
 - **Resilience and Adaptability:** In industries where change is constant, such as tech and finance, employees who demonstrate the ability to learn new tools quickly and adapt to shifting environments will thrive.
 - **Leadership and Collaboration:** Even in tech-heavy environments, human leadership remains irreplaceable. Project managers, for example, must lead diverse teams, navigate organizational dynamics, and make ethical decisions in areas where AI has limitations. For example, in education, while AI can personalize learning content, teachers with strong interpersonal and leadership skills remain vital for mentoring, fostering critical thinking, and supporting emotional development.

Integrating AI into Workforce Development: Organizations must shift from viewing AI as a replacement to recognizing it as a collaborative partner that enhances human capabilities. Effective integration involves both technological investment and a human-centric approach to workforce development:

- **AI as an Enabler:** AI should be deployed to handle repetitive tasks, allowing employees to focus on high-value activities. For example, AI-powered legal software can review contracts for errors, freeing lawyers to concentrate on complex legal strategies and client relations.
- **Targeted Training Programs:** Companies should create AI literacy programs to help employees understand AI's potential and limitations. Training should cover topics like ethical AI use, data privacy, and how to work alongside AI tools effectively.
- **Policy and Ethical Considerations:** Governments and organizations must develop policies that support fair AI adoption, protect workers from displacement, and promote inclusive

growth. The European Union’s AI Act is an example of regulatory efforts to balance innovation with ethical considerations. E.g. In healthcare, AI algorithms assist in diagnosing diseases from medical images, but human doctors interpret results, provide patient care, and make final decisions. This human-AI partnership improves diagnostic accuracy and patient outcomes.

Key Risks and Ethical Concerns in AI-Driven Digital Work

As artificial intelligence (AI) continues to transform digital work, it brings with it several key risks and ethical concerns that could impact workers, organizations, and society at large. These issues span across economic, social, and technological dimensions, necessitating proactive strategies to ensure fairness, equity, and accountability in the evolving digital landscape.

Table 4: Key Risks and Ethical Concerns in AI-Driven Digital Work

Risk/Ethical Concern	Description	Example	Mitigation Strategy
Job Displacement & Economic Inequality	Automation replacing routine jobs, increasing unemployment and inequality.	AI chatbots replacing call center agents, leaving workers without alternative jobs.	Upskilling and reskilling programs for vulnerable workers.
AI Bias & Discrimination	AI systems reinforce societal biases in hiring, credit scoring, etc.	AI recruitment tool favoring male candidates due to biased historical data.	Regular bias audits, diverse datasets, fairness checks.
Privacy & Data Security	Increased data collection risks breaches and unethical surveillance.	AI tracking user behavior for targeted ads without explicit consent.	Strong data protection regulations, encryption, and privacy policies.
Over-Reliance on AI & Deskilling	Workers lose critical thinking skills due to dependency on AI tools.	Financial analysts are overly reliant on AI reports, reducing data interpretation skills.	Hybrid work models, continuous professional development.
Ethical Concerns in AI-Generated Content	Challenges around authorship, misinformation, and content accountability.	AI-generated news spreading misinformation without clear human oversight.	Transparent AI usage policies, content labeling, accountability.
Digital Divide & Inequitable Access	Limited technology access deepening inequality, excluding rural communities.	Remote work opportunities excluding rural workers due to poor internet connectivity.	Infrastructure investment, affordable internet, digital literacy programs.
Poor Working Conditions & Algorithmic Management	AI-driven performance tracking causing stress and unrealistic targets.	Delivery drivers under constant surveillance with strict AI-determined deadlines.	Ethical AI governance, fair productivity expectations, worker protection policies.

Kenya's Preparedness for Green Economy Digital Jobs

Kenya's green economy initiatives are projected to create a substantial number of jobs in the coming years. A 2024 report by FSD Africa and Shortlist forecasts that Kenya could generate between 40,000 and 240,000 new green jobs by 2030, with the solar energy sector leading this growth, potentially adding approximately 111,000 jobs¹⁰. Although Kenya has made significant progress toward embracing the green economy through initiatives in renewable energy, conservation, and sustainable agriculture. However, preparation for the digital aspects of these green jobs remains uneven. Here are key considerations:

- **Digital Skills Development:** Many roles in the green economy, such as renewable energy system management, sustainable logistics, and smart agriculture, require advanced digital skills like data analysis, IoT management, and automation. However, there is a lack of specialized digital training programs for green economy jobs may hinder the workforce's ability to adapt quickly. More efforts are required to offer more tailored skills that will lead towards green technology and sustainability-focused careers.
- **Digital Infrastructure:** Digital infrastructure, including internet access and smart technology platforms, is critical for supporting green economy sectors like energy monitoring, precision farming, and waste management. While Kenya has invested in ICT infrastructure, rural and underserved areas, key hubs for green initiatives like agriculture, still face connectivity challenges. Expanding digital infrastructure to rural areas can accelerate the integration of green and digital technologies.
- **Innovation and Start-up Ecosystem:** Kenya's growing tech ecosystem has the potential to drive green innovation, particularly in sectors like solar energy and climate-smart agriculture. However, access to funding, digital tools, and research support for green-tech start-ups remains limited. Enhanced funding and incentives for tech innovation in the green sector could encourage the development of solutions tailored to Kenya's needs.
- **Public Awareness and Education:** Many citizens may not fully understand the potential of digital jobs in the green economy, leading to low uptake of training and job opportunities in this sector. Awareness campaigns highlighting the digital opportunities in green jobs, such as those in renewable energy and sustainable logistics, can attract talent.

While Kenya has a strong foundation in both digital and green economy initiatives, there is a need for greater alignment between the two. Investments in digital infrastructure, targeted training programs, and policies that integrate digital technology with sustainability efforts are critical for ensuring that Kenya is adequately prepared to harness future green economy job opportunities.

¹⁰ <https://fsdafrica.org/publication/forecasting-green-jobs-in-africa/>

Insights:

- ❑ **Support the Green Economy:** Invest in training for renewable energy and sustainability-related roles to align with global climate priorities.
- ❑ **AI-driven training programs,** Kenya can prepare its workforce for roles in data science, AI application development, and system automation.
- ❑ **Collaboration with global tech companies** to provide accessible AI training and tools can help Kenyan workers compete in the global digital economy.
- ❑ **Encouraging the adoption of AI** in sectors like agriculture, logistics, and healthcare can improve productivity and create new job opportunities.

2.1.3 Global Growth Projections for Digital Jobs

According to the World Bank 2023 report, online gig work now constitutes a growing and non-negligible part of the labor market, accounting for 4.4 to 12.5 percent of the global labor force.¹¹ Further, projections by the World Economic Forum 2023 show that the number of remote digital jobs will increase from 73 million in 2024 to approximately 92 million by 2030, representing a 25% growth. As a result, the digital economy is set to become a key driver of global economic growth, with estimates indicating that it could contribute up to 30% of the world's GDP by 2030.

The WEF 2025 report also projects 20 million new jobs created by 2030 and unprecedented demand for technology and GenAI (generative AI) skills.¹² As a result, the demand for online gig workers will rise faster in developing countries than in industrialized nations. For instance, in Sub-Saharan Africa, job postings on major digital platforms grew by 130%, compared to a 14% increase in North America in 2023 (World Bank, 2023). Importantly, factors such as advancements in AI, fintech innovations, and cloud-based solutions are fueling this expansion. By 2030, the working-age population will increase by 20 million. Out of these, it is anticipated that 60% of the global working population will reside in lower-income countries.¹³

The ILO's Global Employment Trends for Youth 2022 projects that by 2030, developments in broadband coverage could generate 24 million new jobs globally, with a majority of these jobs benefiting young people.¹⁴ This projection demonstrates the transformative impact of digital infrastructure on job creation, particularly for youth, emphasizing the need for strategic investments in broadband expansion. Strengthening digital access can bridge employment gaps, fostering inclusive economic growth and workforce development in an increasingly digital world.

Implication:

- ❑ Therefore, the rise in global digital jobs presents an opportunity for developing nations to leverage their growing, youthful, and educated workforce to fill remote digital roles, addressing the looming labor shortages in these regions.
- ❑ This will be achieved by equipping youth with skills, certifications and resources to access digital jobs.

¹¹ World Bank, *Working Without Borders: The Promise and Peril of Online Gig Work*, 2023

¹² World Economic Forum, *Future of Jobs Report*, 2025.

¹³ https://www3.weforum.org/docs/WEF_The_Rise_of_Global_Digital_Jobs_2024.pdf

¹⁴ International Labour Organization (ILO), *Global Employment Trends for Youth 2022*. ILO, 2022.

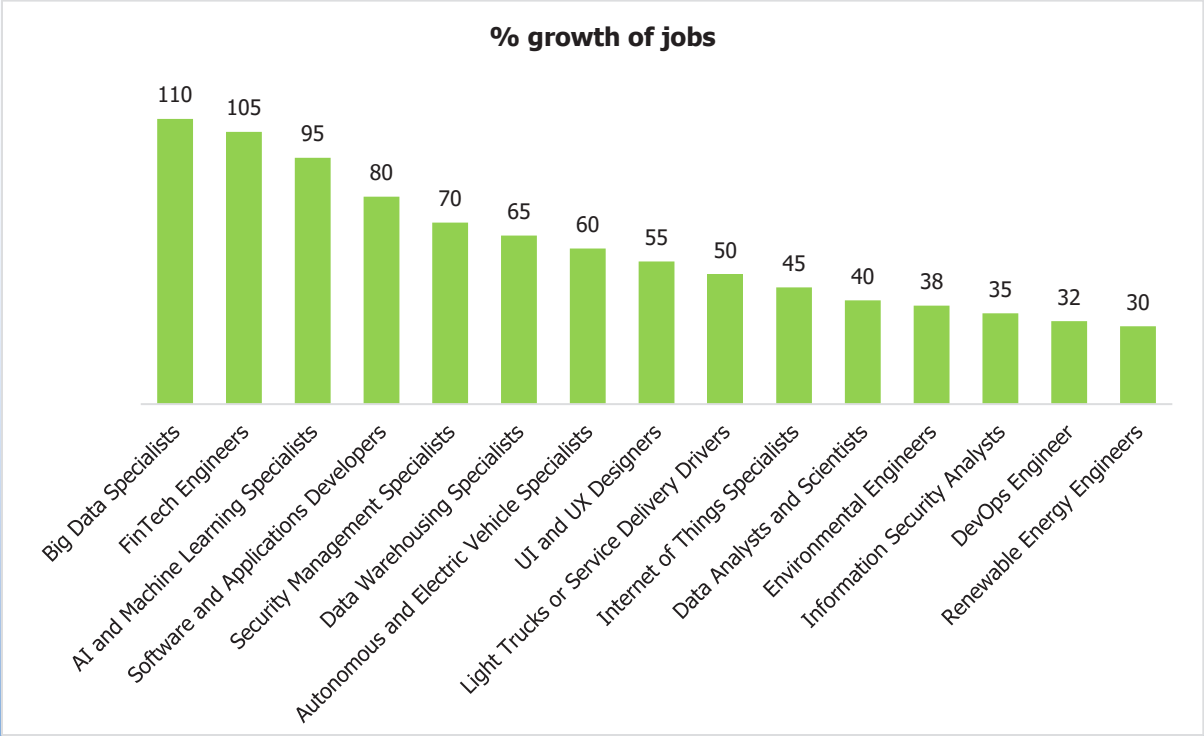
2.1.4 Fastest Growing Job Roles

The fastest-growing careers are predominantly tech-based and digital, with Big Data Specialists, FinTech Engineers, and AI & Machine Learning Specialists leading the demand due to advancements in automation and data-driven decision-making. While technology-related roles dominate, fields like Renewable Energy Engineering and DevOps are also expanding, though at a comparatively slower pace.

Key Projections for Year 2030

- ❑ Digital economy to contribute to 30% of the world's GDP by 2030.
- ❑ Digital jobs to grow 73million in 2024 to 92 million in 2030
- ❑ Working population to increase by 20million % 60% of these to live in lower income countries
- ❑ AI to generate 11 million jobs and displace 9 million jobs
- ❑ Robotics to cause a net decline of 5 million jobs

Figure 5: Fastest-growing Jobs in 2025-2030 in Percentage



Source: World Economic Forum, 2025 ¹⁵

¹⁵ https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf

According to Upwork's 2025 report on in-demand jobs and skills, the freelance market is experiencing a significant surge in demand for professionals skilled in artificial intelligence (AI), machine learning (ML), and data analytics.¹⁶ Key areas of growth include generative AI modeling, AI data annotation, and knowledge representation, reflecting businesses' increasing reliance on advanced technologies. Beyond tech, there's a notable demand for expertise in training and consulting, particularly in executive and career coaching, as organizations seek to upskill their workforce. Finance and business operations roles, such as accounting and financial modeling, remain essential, while coding and web development skills, especially in scripting, automation, and UX/UI design, continue to be highly sought after. Additionally, creative fields like video production, pattern design, and 3D animation are experiencing growth, alongside sales and marketing roles focusing on email marketing, campaign management, and SEO. This trend underscores the importance of both technical and soft skills in the evolving freelance landscape.

2.1.5 Big Tech Companies' Initiatives and Their Impact on Skills Demand

Big-tech companies are at the forefront of global technological advancements and these cutting-edge developments are reshaping industries, driving the creation of new job opportunities while simultaneously elevating the demand for specialized digital skills. By analyzing these initiatives, it becomes evident that understanding the trajectory of Big Tech is essential for aligning Kenya's workforce with global market demands.

The review below provides valuable insights for Kenya to strategically design its training and workforce development programs. By addressing these skill gaps and aligning with the trajectories set by Big Tech, Kenyans can capitalize on opportunities within an increasingly tech-driven global economy, ensuring they are well-positioned to meet both current and future industry demands.

¹⁶ <https://www.upwork.com/resources/in-demand-jobs-and-skills>

Table 5: Emerging Technology from Big Tech Companies' Initiatives, Jobs Created, and Skills Required

Big Tech Company	Initiative	Remote Jobs Required	Required Skills
Microsoft	Copilot Integration Integration of AI capabilities into Microsoft products to enhance user productivity. YourStory.com	- AI Developer - Machine Learning Engineer - Data Scientist	- Python - Azure development - Natural Language Processing (NLP)
X Corp (parent company of what was formerly Twitter)	X: The Everything App Elon Musk's vision to transform Twitter into an all-encompassing platform, integrating social media, messaging, payments, and more, similar to China's WeChat. arstechnica.com	- Full-Stack Developer - Mobile Application Developer - Payment Systems Analyst	- JavaScript - React Native - Mobile Payment Integration - API Development - AI Integration and Automation
Meta (formerly Facebook)	Orion Smart Glasses Development of augmented reality glasses to create a new computing platform integrating AI and AR technologies. PYMNTS.com	- AR/VR Developer - Embedded Systems Engineer - Software Developer	- C++ - Augmented Reality (AR) development - Hardware-Software Integration
AMD (Advanced Micro Devices)	MI300 AI Chip Introduction of advanced AI chips designed to enhance high-performance computing capabilities. IBM - United States	- Hardware Design Engineer - AI Hardware Specialist - Semiconductor Engineer	- VHDL/Verilog - AI Hardware Acceleration - Semiconductor Fabrication Processes
Amazon, Microsoft, and Google	AI Research Resource Partnership Collaboration with the National Science Foundation to develop a national artificial intelligence research resource. Yahoo Finance	- Cloud Infrastructure Engineer - Data Center Engineer - Sustainability Analyst	- Energy Systems Engineering - Data Center Infrastructure Management - Cloud Services
Automotive Industry	Transition to Electric and Automated Vehicles Shift towards electric and automated vehicle technologies, necessitating workforce retooling.	- Autonomous Vehicle Software Engineer - Battery Technology Specialist	- Electrical Engineering - Autonomous Vehicle Software Development - Digital Diagnostics

Big Tech Company	Initiative	Remote Jobs Required	Required Skills
	PYMNTS.com	Digital Diagnostics Engineer	
Nvidia (technology company renowned for its innovations in graphics processing units (GPUs))	AI Hardware Leadership Significant contributions to AI hardware, particularly in developing GPUs that power various AI applications. IBM - United States	- GPU Programmer - Deep Learning Engineer - High-Performance Computing Specialist	- CUDA Programming - GPU Architecture - Deep Learning Model Optimization
IBM	Quantum Computing Advancements Development of systems aiming to solve complex problems beyond the capabilities of classical computers. IBM - United States	- Quantum Computing Researcher - Quantum Algorithm Developer - Quantum Software Engineer	- Quantum Programming Languages (e.g., Qiskit) - Quantum Algorithms - Cryogenic Systems
OpenAI	Generative AI Models Advancements in developing generative AI models, contributing significantly to the field of artificial intelligence. IBM - United States	- AI Research Scientist - Machine Learning Engineer - Data Scientist	- Machine Learning - Model Training and Fine-Tuning - Python - PyTorch
SpaceX	Starship Development Development of the Starship spacecraft, aiming to revolutionize space travel and exploration. PYMNTS.com	- Aerospace Software Engineer - Avionics Engineer - Control Systems Engineer	- Aerospace Engineering - Rocket Propulsion Systems - Avionics and Control Systems
Neuralink	Telepathy Implant Development of implantable brain-machine interfaces to enhance human capabilities. Wikipedia	- Embedded Systems Engineer - Firmware Developer - Signal Processing Engineer	- Embedded Systems Development - Firmware Development - Signal Processing

Big Tech Company	Initiative	Remote Jobs Required	Required Skills
Samsung	Foldable Display Technology Introduction of foldable display technology in smartphones, showcasing innovation in mobile device form factors. PYMNTS.com	- Materials Scientist - Flexible Display Engineer ▪ - Product Durability Tester	- Material Science - Flexible Display Engineering ▪ - Product Durability Testing
Apple	M4 Pro Chip Development Transition to custom silicon for improved performance and efficiency in Mac lineup. PYMNTS.com	- Chip Design Engineer - ARM Architect ▪ - SoC Integration Engineer	- Chip Design - ARM Architecture ▪ - System-on-Chip (SoC) Integration
Google	Tensor Processing Units (TPUs) Development of TPUs to accelerate machine learning workloads, enhancing AI capabilities. PYMNTS.com	- Hardware Accelerator Engineer - Machine Learning Hardware Engineer ▪ - Data Center Optimization Specialist	- Hardware Acceleration - Machine Learning ▪ - Data Center Optimization
Microsoft	Azure Quantum Launch of Azure Quantum, providing cloud access to quantum computing resources. PYMNTS.com	- Quantum Cloud Engineer - Quantum Software Developer ▪ - Algorithm Developer	- Quantum Computing - Cloud Services ▪ - Algorithm Development
Tesla	Full Self-Driving Technology Advancement in autonomous driving capabilities, aiming for fully self-driving vehicles. PYMNTS.com	- Computer Vision Engineer - Real-Time Data Processing Specialist ▪ - Automotive Software Developer	- Computer Vision - Real-Time Data Processing ▪ - Automotive Software Development
IBM	AI-Powered Customer Service Platforms Development of platforms utilizing AI to enhance customer service interactions. IBM - United States	- Chatbot Developer - NLP Engineer ▪ - AI Solutions Architect	- Natural Language Processing (NLP) - Chatbot Development - Python ▪ - Machine Learning Frameworks

Big Tech Company	Initiative	Remote Jobs Required	Required Skills
Google	AI-Based Health Diagnostics Introduction of AI technologies to assist in medical diagnostics and healthcare services. PYMNTS.com	- Medical Imaging Specialist - AI Model Developer ▪ - Data Analyst	- Medical Imaging - AI Model Development ▪ - Data Analysis and Interpretation
Amazon	Autonomous Drone Delivery Services Expansion of drone delivery services utilizing autonomous flight technologies. PYMNTS.com	- Robotics Engineer - Flight Control Systems Developer ▪ - Logistics Software Engineer	- Robotics - Flight Control Systems ▪ - Logistics and Supply Chain Management

Source: Data science-based methods

2.1.6 Companies Actively Hiring Globally for AI Roles

As AI continues to reshape industries worldwide, there is a growing demand for skilled professionals across various AI-related fields. Data obtained from five leading job boards Indeed, LinkedIn, ZipRecruiter, Google Jobs, and others in November 2024 through data science-based methods provides valuable insights into global tech companies advertising AI roles that Kenyans can apply for. This data-driven approach highlights specific AI positions, the skills required, and the organizations actively seeking AI talent. To ensure a comprehensive analysis, this section includes not only major industry leaders like Microsoft and Google but also tier 2 and tier 3 companies that are expanding in AI globally. By showcasing a range of hiring organizations, we offer a well-rounded view of global AI job opportunities available to Kenyan professionals. Table 6 presents a breakdown that categorizes AI roles by company, country, and required skills, helping job seekers identify potential opportunities and align their expertise with industry demands.

Table 6: Companies Actively Hiring Globally for AI Roles

Country of origin	Company	Specific AI Role
Australia	Atlassian	AI Research Scientist, Natural Language Processing Engineer, Machine Learning Engineer, AI Product Manager, NLP Engineer
	Canva	Machine Learning Engineer, AI Research Scientist
	Telstra	AI Ethics Specialist, AI Research Scientist Machine Learning Engineer
	Xanandu AI	Quantum AI Engineer
Brazil	Nubank	AI Ethics Specialist, NLP Engineer, Machine Learning Engineer

Country of origin	Company	Specific AI Role
	Xandros	NLP Engineer, AI Research Scientist, AI Product Manager
	Xiaomi	Computer Vision Engineer, AI Research Scientist, NLP Engineer
	Xendy Inc.	AI Product Manager, AI Ethics Specialist
	Databricks	Senior Data Scientist
	H2O.ai	Machine Learning Engineer
	Walmart Labs	AI Research Scientist
	Xendata	AI Product Manager
	Xpand	Natural Language Processing Engineer, AI Research Scientist
Canada	Element AI	NLP Engineer, AI Research Scientist
China	Meituan-Dianping	Computer Vision Engineer
Ethiopia	Safaricom	AI Research Scientist
France	Alain Afflelou	NLP Research Scientist
	Dassault Systems	AI Research Scientist
	STELLAR	Natural Language Processing Engineer
	Xiaomi	Computer Vision Engineer
India	Byju's	Machine Learning Engineer
Kenya	Andela	Machine Learning Engineer
	Google	Machine Learning Engineer
	IBM	Machine Learning Engineer
	IBM Research Africa	Machine Learning Engineer
	Kenyan AI Hub	AI Research Scientist
	Kopo	Machine Learning Engineer
	M-KOPA	Machine Learning Engineer
	Safaricom	AI Research Scientist
	Twiga Foods	AI Product Manager
New Zealand	Atlassian	AI Research Scientist
	CD Projekt	AI Research Scientist
Poland	Aptiv	Machine Learning Engineer
	CD Projekt	AI Research Scientist, Computer Vision Engineer
	Enea SA	AI Research Scientist
	GetJar	AI Ethics Specialist
	Wirtualna Polska	NLP Engineer
Singapore	Grab	AI Research Scientist
South Africa	Xendy	AI Product Manager
South Korea	LG U+	AI Solutions Architect
Spain	Telefónica	AI Ethics Specialist

Country of origin	Company	Specific AI Role
United States of America	Amazon	AI Ethics Specialist NLP Engineer Natural Language Processing Engineer MLOps Engineer NLP Researcher Natural Language Processing Engineer Natural Language Processing Engineer
	Atlassian	Machine Learning Engineer
	Google	Natural Language Processing Engineer Generative AI Engineer AI Product Manager Natural Language Processing Engineer Machine Learning Engineer
	Palantir	MLOps ¹⁷ Engineer
	Tesla	Natural Language Processing Engineer Computer Vision Engineer AI Ethics Specialist Machine Learning Engineer Computer Vision Engineer Senior Machine Learning Engineer
United Arab Emirates	Dubai Electricity and Water Authority	AI Research Scientist
	Dubai Holding	AI Research Scientist NLP Engineer

Source: Data science-based methods

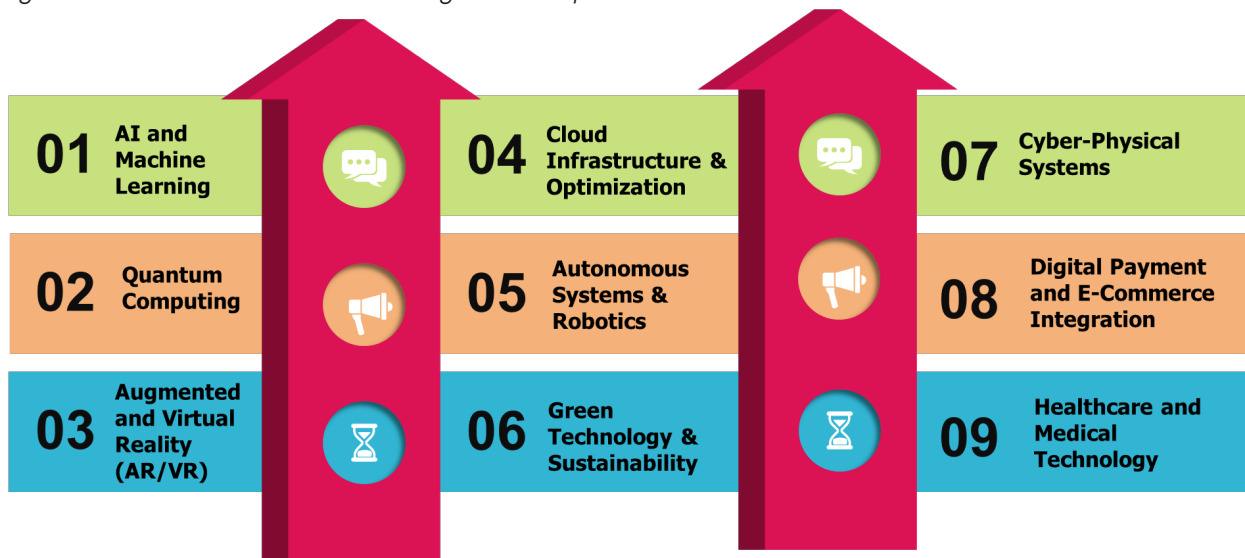
Kenya is emerging as an AI hub in Africa, with Google, IBM, and Safaricom investing in machine learning, AI strategy, and cloud computing. Meanwhile, the UAE is accelerating its AI-powered smart city initiatives, with companies like Dubai Holding and DEWA seeking AI Research Scientists and NLP Engineers specializing in Arabic language AI and Generative AI. Across all regions, there is a rising need for AI Ethics Specialists, Natural Language Processing (NLP) Engineer, and Machine Learning Engineers, highlighting the global shift towards responsible and scalable AI development.

Potential Skills Demand from Big Tech Companies

The initiatives from leading tech companies underscore a surge in demand for specialized digital skills across various cutting-edge domains. Based on the above information, below are the key trends and skills required to support the evolving digital ecosystem:

¹⁷ Machine Learning Operations (MLOps)

Figure 6: Potential Skills Demand from Big Tech Companies



With technology evolving at a fast pace, the emerging fields of Artificial Intelligence, Quantum Computing, Augmented and Virtual Reality, and Green Technology mark a change in the face of industries and redefine the demand for the workforce. The global shift toward digital transformation has created an unprecedented surge in demand for specialized skills that bridge the gap between technology and real-world applications. Organized structures such as Microsoft, Tesla, Meta, and Neuralink have been leading the way of this revolution by bringing innovations that call for a new generation of professionals ready to introduce technical expertise with adaptive problem-solving skills.

This table highlights the key technology areas, critical skills required, in-demand roles, and real-world industry applications. It acts as a guideline for individuals and organizations to succeed in the dynamic landscape of the workforce of the future, with the core emphasis on continuous learning, cross-disciplinary knowledge, and technological adaptability.

Table 6: Potential Skills Demand from Big Tech Companies

Technology Area	Key Skills Required	In-Demand Roles	Industry Applications/Examples
AI and Machine Learning	Python, PyTorch, machine learning frameworks, NLP, model fine-tuning	AI Developers, Machine Learning Engineers, Data Scientists	Microsoft’s Copilot AI, OpenAI’s ChatGPT, Google’s Bard AI
Quantum Computing	Quantum programming languages (Qiskit), quantum algorithm development, quantum cryptography	Quantum Researchers, Quantum Cloud Engineers	IBM Quantum Systems, Microsoft Azure Quantum

Technology Area	Key Skills Required	In-Demand Roles	Industry Applications/Examples
Augmented & Virtual Reality (AR/VR)	AR/VR development, 3D modeling, hardware-software integration, Unity, Unreal Engine	AR/VR Developers, Embedded Systems Engineers	Meta's Orion Smart Glasses, Apple Vision Pro
Cloud Infrastructure & Optimization	Cloud services (AWS, Azure), data center management, DevOps, hardware acceleration, Kubernetes	Cloud Architects, Infrastructure Engineers, DevOps Specialists	Amazon Web Services (AWS), Google Cloud, Microsoft Azure
Autonomous Systems & Robotics	Robotics programming, real-time data processing, autonomous vehicle software, IoT integration	Robotics Engineers, Autonomous Vehicle Developers, IoT Specialists	Tesla's Self-Driving Technology, Amazon Prime Air Drone Deliveries
Green Technology & Sustainability	Energy systems engineering, renewable energy technologies, sustainability analytics, carbon footprint modeling	Sustainability Analysts, Renewable Energy Engineers, Environmental Data Scientists	Tesla's Solar Roof, Siemens Smart Grids, Global Climate Initiatives
Cyber-Physical Systems	Material science, embedded systems, flexible displays, neural interface technology, signal processing	Embedded Systems Engineers, Hardware Developers, Neurotechnology Specialists	Samsung's Flexible Displays, Neuralink's Brain-Computer Interfaces
Digital Payment & E-Commerce Integration	Mobile payment platforms, API development, fintech integration, e-commerce logistics	Fintech Developers, Payment Systems Analysts, E-commerce Platform Managers	X's (formerly Twitter) "Everything App," Stripe, PayPal
Healthcare & Medical Technology	AI-based diagnostics, medical imaging, health data analysis, bioinformatics, AI model development	Medical Technology Specialists, Health Data Analysts, AI Healthcare Engineers	IBM Watson Health, AI-driven Radiology Imaging, Telemedicine Platforms

Source: Data science-based methods

Insight:

The analysis of digital skills in demand due to Big Tech rollout initiatives presents several key implications for Kenya as discussed below:

- ❑ **Alignment with Global Skill Trends:** Kenya must align its workforce training programs with global trends, focusing on high-demand skills. Establishing partnerships with leading tech firms like Microsoft, Google, and Nvidia can facilitate access to specialized training, certifications, and resources for Kenyan youth.
- ❑ **Development of Specialized Training Programs:** The demand for quantum computing, AI, and AR/VR suggests a need for targeted educational initiatives. Universities and training institutions in Kenya should incorporate emerging technologies into their curricula, offering practical, hands-on experience in areas like GPU programming, quantum algorithms, and cloud services. Promoting global certifications, such as AWS, Azure, and Python-based machine learning, will make Kenyan talent more competitive internationally.
- ❑ **Opportunities in Green and Sustainable Technologies:** As Big Tech embraces green technologies and energy transition roles; Kenya can position itself as a hub for sustainability innovation by leveraging its renewable energy resources. Programs focused on training professionals in green technology and energy systems engineering can create new job opportunities in sectors like renewable energy and electric vehicle development.
- ❑ **Building Local and Global Collaboration:** To maximize opportunities, Kenya should foster collaboration between government, private sector, and international partners. Engaging Big Tech companies in capacity-building initiatives can bring global expertise and investment into the local ecosystem.

2.2 EMPLOYERS: DEMAND FOR DIGITAL WORKERS

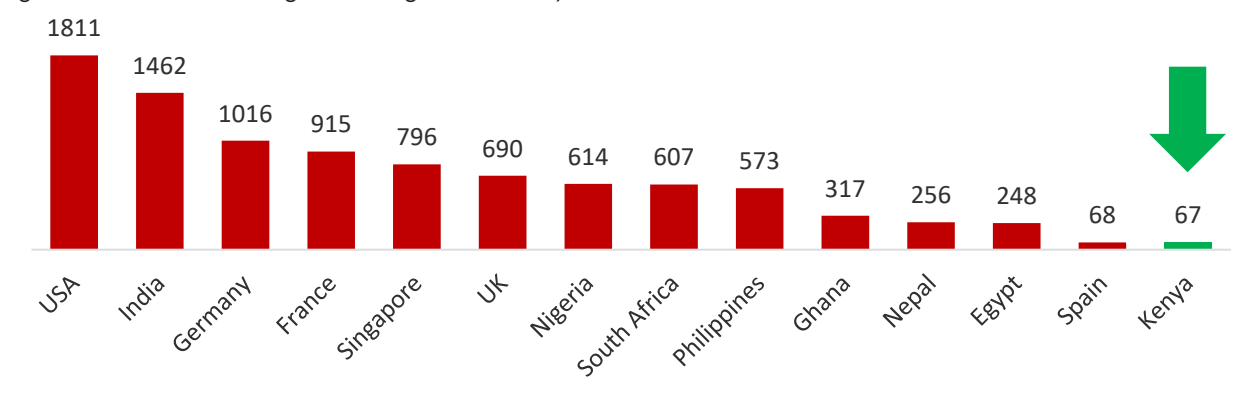
Section Overview
This section of the report focuses on the demand from global employers in terms of the skills, certifications, experience and competencies
Key Takeaways (findings that are most critical or actionable)
1. Global Trend: Advanced digital roles dominate in U.S., India, and Germany, showing a shift toward AI, machine learning, and cybersecurity. 2. Kenya’s Market Gap: Kenya’s digital job demand focuses on intermediate skills, limiting access to higher-paying international opportunities requiring advanced skills 3. Employer Priorities: Globally, AWS, Microsoft Azure, cybersecurity, and DevOps certifications are highly valued. Soft skills like adaptability, problem-solving, and communication remain critical. 4. Outsourcing Growth in Kenya: 52% of Kenyan businesses outsource digitally, with trust in digital platforms at 72%. Satisfaction with digital freelancers is at 65%, signaling growing acceptance of remote work and online jobs but highlights the need for stronger quality assurance, fraud prevention, and regulatory frameworks to address the remaining trust gap. 5. Sector-Specific Demand: Manufacturing, ICT, finance, healthcare, and e-commerce are the top sectors driving demand for digital skills in Kenya.
Recommendations
1. Expand Kenya’s Digital Job Market Globally: Strengthen Kenya’s presence in international job postings by create a global talent database, establish direct employer partnerships, align training with international job demands, promote certifications in high-demand areas to align with global employer expectations, and promote Kenyan youth increase international job placements. 2. Enhance Digital Workforce Training & Certifications: Expand certification programs, embed AI and DevOps training, partner with tech giants, introduce work-simulated learning, and build a job-matching platform to equip Kenyan with globally competitive digital skills. 3. Improve Digital Work Governance & Quality Assurance: Set quality benchmarks, develop a freelancer rating system, offer soft skills training, conduct performance audits, and establish a dispute resolution mechanism to boost trust in Kenyan digital freelancers. 4. Promote Sector-Specific Digital Skill Development: Develop specialized industry training, form direct employment partnerships, create internship programs, organize sector-based hackathons, and support public-sector digital transformation to match skills with market needs 5. Leverage Remote Work & Employment Models: Train youth in remote work tools, secure BPO contracts, advocate for better cross-border payments, establish a freelancer cooperative, and launch branding campaigns to position Kenya as a top digital outsourcing destination.

2.2.1 Employers: Global Demand

2.2.1.1 Top Countries with Highest Demand for Digital Jobs

The United States leads with the highest demand, posting 1,811 digital job opportunities, indicating its position as a global tech hub. India follows with 1,462 postings, reflecting its thriving IT sector and outsourcing industry. Germany and France, with 1,016 and 915 postings respectively, underscore Europe's growing emphasis on advanced digital technologies. Kenya and other African nations are not yet prominently featured in these global statistics, indicating a need to strengthen their presence in the international digital job market.

Figure 7: Number of Job Digital Postings Per Country

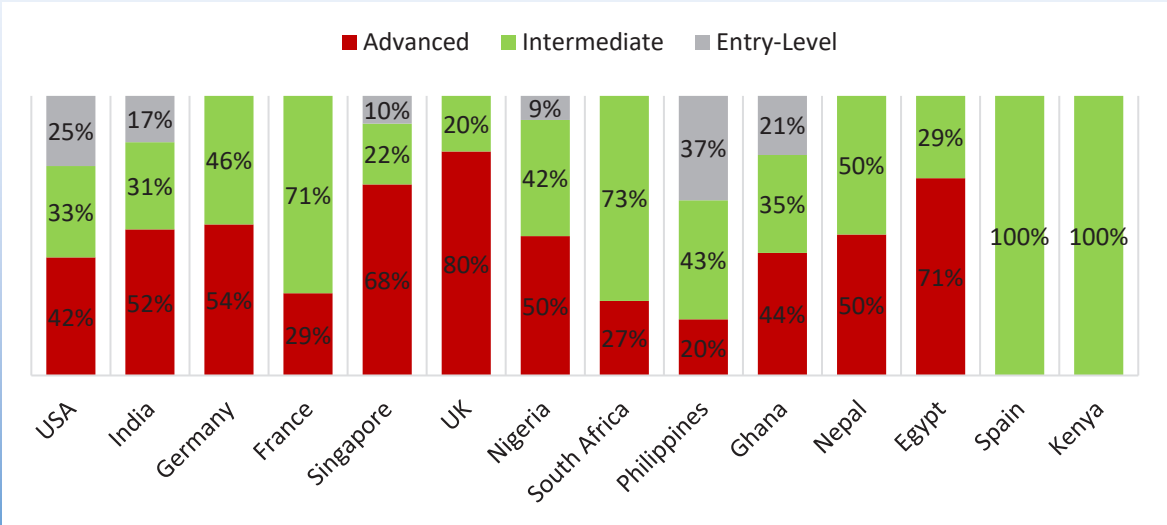


Source: Data Science Analysis from Job Platforms (from Indeed, LinkedIn, ZipRecruiter, Google Jobs) - November 2024

2.2.1.2 Country-Specific In-Demand Digital Roles in the Global Job Market

Countries like the USA, Germany, and the UK show strong demand for advanced digital skills, reflecting their mature digital economies. Kenya's demand is focused entirely on intermediate-level skills, indicating a lag in opportunities for advanced roles. Entry-level roles are minimal in most regions, suggesting the demand for higher qualifications and experience.

Figure 8: Number of Job Postings by Digital Skills Level



Source:

Data Science Analysis from Job Platforms (from Indeed, LinkedIn, ZipRecruiter, Google Jobs) - November 2024

Insight:

- ❑ Advanced roles dominate high-demand countries, signaling the importance of specialized skills for global competitiveness. Kenyan workers currently cater to a narrow segment of the job market (intermediate level), limiting their potential to tap into higher-paying advanced roles abroad.

The demand for digital skills is growing rapidly across global job markets, with different countries prioritizing specific tech roles based on their economic and technological needs. This table highlights most in-demand digital roles across various countries.

Table 7: Country Specific in Demand Roles for the Digital Job Market

Country	In demand roles
USA	Software Developer, Data Specialists and Digital Marketing Specialists
India	IT Support Specialists, Advanced Graphic Designers, Software Developer
Germany	Cybersecurity Analysts, Cloud Computing Engineers, Blockchain Developers
France	Mobile App Developers, SEO Specialists, UX/UI Designers
Nigeria	UX/UI Designers, Digital Financial Analysts
Singapore	Blockchain Developers, Artificial Intelligence Specialists, Digital Product Managers
South Africa	E-commerce Managers, Advanced Graphic Designers, Data Specialists
United Kingdom	Data Scientists, Cybersecurity Consultants, Digital Project Managers
Egypt	Web Developers, IT Support Specialists, Digital Marketing Coordinators

Source: Data Science Analysis from Job Platforms (from Indeed, LinkedIn, ZipRecruiter, Google Jobs) - November 2024

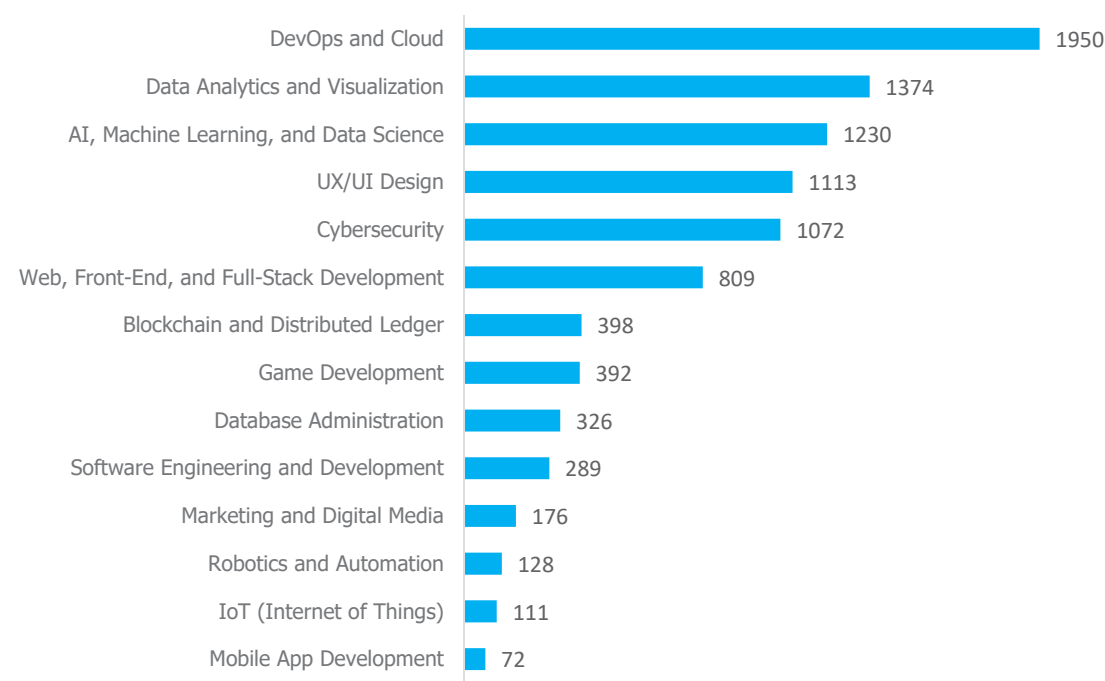
2.2.1.3 Employers: Global Employers’ Expectations for Digital Workers

In the digital job market, a combination of formal education, practical experience, and globally recognized certifications is essential for securing competitive roles and advancing career opportunities, while soft skills such as communication, adaptability, and problem-solving remain highly valued by employers.

Certifications

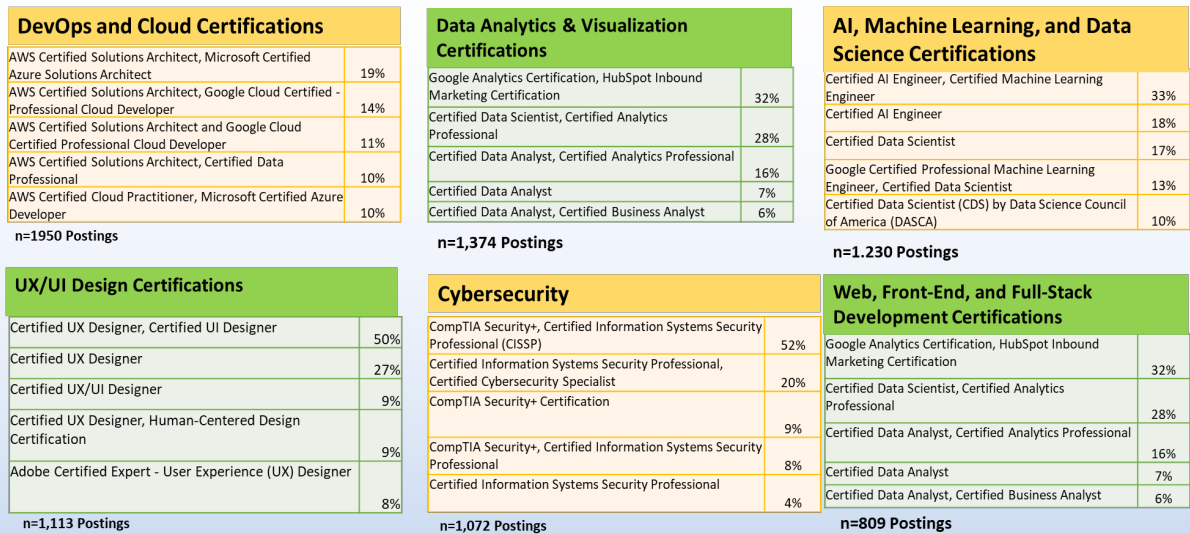
Cloud platforms, such as AWS, Microsoft Azure, and Google Cloud, are in high demand as organizations prioritize scalable, efficient, and flexible infrastructure solutions. Meanwhile, cybersecurity frameworks have become increasingly critical to safeguard systems against the rising threat of cyberattacks and data breaches. Additionally, the demand for professionals skilled in DevOps highlights the need for seamless collaboration between development and IT operations, enabling faster and more reliable software delivery. The emerging focus on blockchain, IoT, and robotics further reflects the industry's interest in disruptive technologies that promise transformative solutions across various sectors.

Figure 9: Certifications on Demand for Digital Job Roles



Source: Data Science Analysis from Job Platforms (from Indeed, LinkedIn, ZipRecruiter, Google Jobs) - November 2024

Figure 10: In-Demand Certifications Based on Job Postings



Source: Data Science Analysis from Job Platforms (from Indeed, LinkedIn, ZipRecruiter, Google Jobs) - November 2024

Based on data science analysis on in-demand certifications, the key insights include:

- **Cloud Infrastructure Expertise is Essential:** The high demand for cloud and DevOps certifications underscores the critical role of cloud technologies in modern IT operations, making expertise in platforms like AWS, Microsoft Azure, and Google Cloud a foundational requirement for competitiveness in the global digital economy.

- **Data-Driven Decision Making is Dominant:** The reliance on data analytics and visualization highlights the increasing importance of professionals equipped with certifications like Google Analytics and Certified Data Scientist. This trend reflects a global shift toward data-centric operations across industries.
- **AI and Machine Learning are Rapidly Growing Fields:** Certifications in AI and machine learning, such as Certified AI Engineer, indicate the rising need for advanced technical skills to develop intelligent systems. This growth signifies a pivotal area for future-focused career development.
- **Cybersecurity and Design Skills are Critical Pillars:** The prominence of certifications like CISSP and Certified UX Designer reflects dual priorities in the digital economy: safeguarding digital assets and enhancing user experience. These areas remain central to building secure and user-friendly digital ecosystems.

Formal Education (Academic Qualifications)

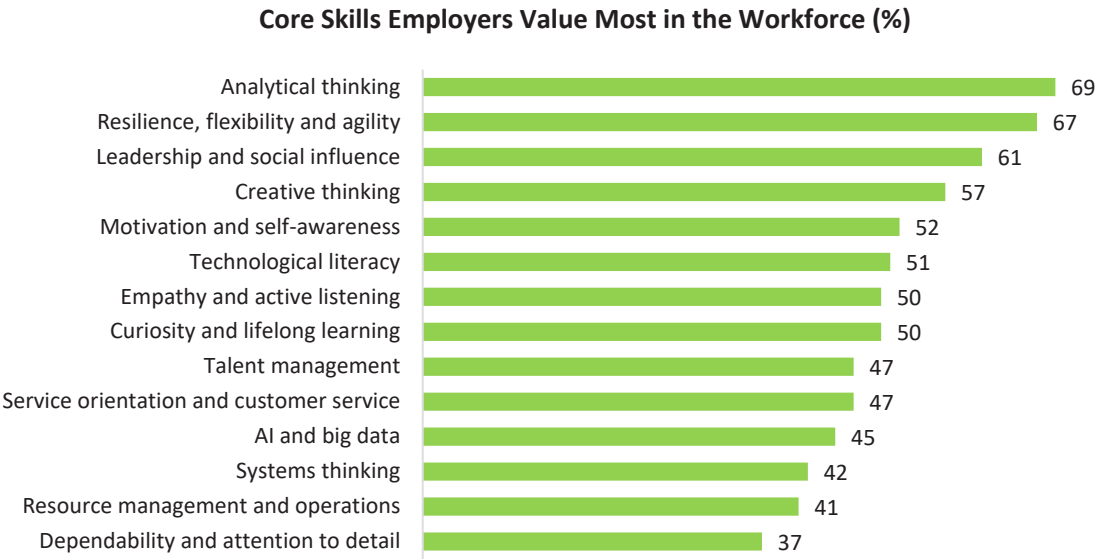
Based on the data science analysis from leading job boards, it is important to note that 70% of job postings require at least a bachelor's degree for intermediate and advanced roles, underscoring the value of formal education in the digital job market. A bachelor's degree is required for most intermediate and advanced roles, while hands-on experience through internships or projects is highly valued for entry-level positions.

Soft Skills

In the 2025 World Economic Forum report, employers were asked to identify the core skills they value most in the workforce, highlighting the evolving demands of the modern job market and the increasing importance of digital, analytical, and interpersonal competencies. The chart highlights the rising importance of soft skills in the workforce. Employers value analytical thinking (69%), resilience and flexibility (67%), and leadership (61%) the most. Creative thinking, empathy, active listening, and curiosity are also key, as well as adaptability and emotional intelligence. While technical skills like AI and tech literacy remain relevant, employers now prioritize interpersonal, problem-solving, and self-management skills to handle complex work environments.

There is a significant shift in employer priorities, with soft skills like resilience, adaptability, emotional intelligence, and self-management emerging as essential in the digital workforce. Mental health is foundational to all these abilities. Workers who are mentally well are more likely to remain focused, flexible, and emotionally balanced. These traits are crucial for navigating the fast-paced and often isolating nature of digital work. As the demand for remote and freelance roles grows, individuals must manage their workload independently while maintaining motivation and personal well-being.

Figure 11: Core Skills Employees Value Most in The Workforce



Source: WEF Report, 2025

Work Experience

Entry-level roles generally require 1–2 years of experience, particularly in fields like digital marketing and data analytics, with internships and project-based work highly valued for practical exposure. Advanced positions, however, demand 3–5 years of experience, especially in high-demand areas such as AI, cybersecurity, and cloud computing, where managing complex projects or leading teams showcases strategic thinking and leadership. This highlights the importance of hands-on experience for digital workers, emphasizing the need for continuous skill development to stay competitive in evolving tech-driven industries.

Working/Employment Models Preferred by Employers

The table presents the results of web data extraction and aggregation of 9,440 job listings across four major job platforms. It highlights the demand for different employment models, including Contract-Based, Full-Time, Hybrid, Part-Time, and Remote opportunities.

Table 8: Employment Models in Demand

Source	Contract-Based	Full-Time	Hybrid	Part-Time	Remote	Total
Glassdoor	571	376	155	274	1296	2672
Google Jobs	119	23	13	260	710	1125
Indeed	699	452	97	153	2049	3450
LinkedIn	94	137	266	0	1696	2193
Total	1483	988	531	687	5751	9440

Source: Data Science Analysis from Job Platforms (from Indeed, LinkedIn, ZipRecruiter, Google Jobs) - November 2024

The key insights on employment models in demand include:

- **Remote jobs are in high demand:** Across all job boards, remote work shows a significant presence, indicating that companies are increasingly offering remote roles, likely driven by the ongoing shift to digital and hybrid workplaces.
- **LinkedIn and Indeed have strong job postings:** Among individual job boards, Indeed and LinkedIn show higher job postings, reflecting their strong presence in professional and tech hiring.
- **Contract-based and hybrid roles** have relatively smaller shares compared to full-time and remote positions. This could indicate that while hybrid work is gaining traction, it has not fully overtaken traditional full-time or remote models.

Insights:

- ❑ **Certifications Enhance Global Employability** - Certifications play a critical role in bridging skill gaps and providing globally recognized validation of expertise, making professionals more attractive to international employers.
- ❑ **Technical Specialization is Key** - The demand for certifications in cloud technologies, AI, machine learning, and cybersecurity emphasizes the need for professionals to develop specialized technical skills to remain competitive in the global digital economy.
- ❑ **Data and AI Dominate Future Demand** - The strong focus on certifications in data analytics, AI, and machine learning indicates a growing reliance on data-driven decision-making and intelligent systems, signaling these fields as pivotal for future career growth.
- ❑ **User-Centric and Secure Digital Solutions are Prioritized** - The prominence of UX/UI design and cybersecurity certifications highlights the dual importance of creating secure digital platforms and improving user experiences, both of which are essential for global competitiveness.
- ❑ **Specific Niche Industries** - Specific industries that training institutions should focus on to ensure youth are better aligned with market needs include AI and machine learning, cybersecurity and ethical hacking, blockchain, mobile app development, agritech & smart farming, climate tech like solar energy technology, carbon credit markets, and climate adaptation AI. Manufacturing, ICT, finance, healthcare, and e-commerce are the top sectors driving demand for digital skills in Kenya.

2.2.2 Employers: Demand in Kenya

Kenya's ICT sector has grown at an annual rate of 10.8% since 2014, contributing 9.24% to the GDP.¹⁸ Kenya's digital economy is expanding, with local sectors such as ICT, e-commerce, and financial services driving demand for skilled workers. According to a World Bank report titled Demand for Digital Workers in Sub-Saharan Africa, by 2030 50%-55% of all jobs in Kenya will require digital skills, driven by a thriving ICT sector and start-up ecosystem resulting in strong growth in the demand for digital skills across the country.¹⁹ Equally, over 230 million new jobs will be created in Sub-Saharan

¹⁸ Genesis Analytics, *Unlocking Current and Future Employment for ICT Professionals in Kenya*, 2024. <https://genesis.imgix.net/uploads/files/Unlocking-current-and-future-employment-for-ICT-professionals-in-Kenya-1.pdf>

¹⁹ World Bank Group, *Demand for Digital Skills in Sub-Saharan Africa*, 2024. <https://documents1.worldbank.org/curated/en/099614312152318607/pdf/IDU0b36e9e030767f0417e0afb806e2ffdf1e8bf.pdf>

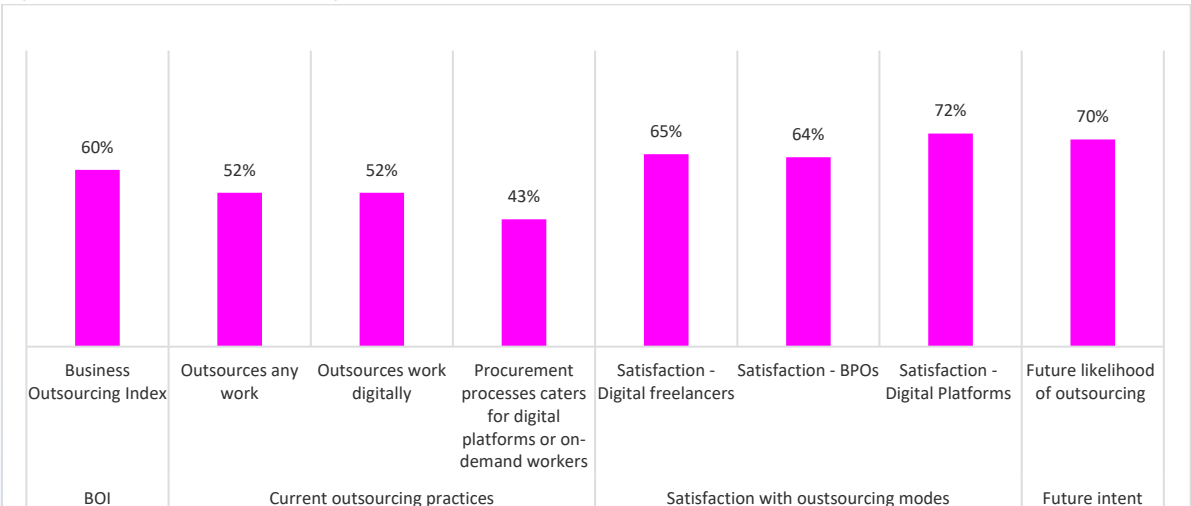
Africa which will require ICT skills. The latest GSMA 2024 report, Driving Digital Transformation of the Economy in Kenya, projects that Kenya’s digital economy will contribute Ksh. 662 billion to GDP by 2028. This growth, driven by strategic policy reforms, will accelerate digitalization in critical sectors such as agriculture, manufacturing, transport, and trade. In addition to these advancements, the report forecasts the creation of 300,000 new jobs and an increase in tax revenues by KSH 150 billion.²⁰ Employers prioritize certifications and practical experience to fill gaps in the workforce. This section explores key insights from private sector reports, including trends in the outsourcing business, sector-specific skill demands, and employer expectations.

2.2.2.1 Private Sector Business Outsourcing

Business Outsourcing Index (BOI)

The BOI measures trends and performance in business outsourcing. High satisfaction levels with digital freelancers, BPOs, and platforms highlight the growing acceptance of diverse outsourcing models in Kenya's private sector.

Figure 12: Business Outsourcing Index for 2023

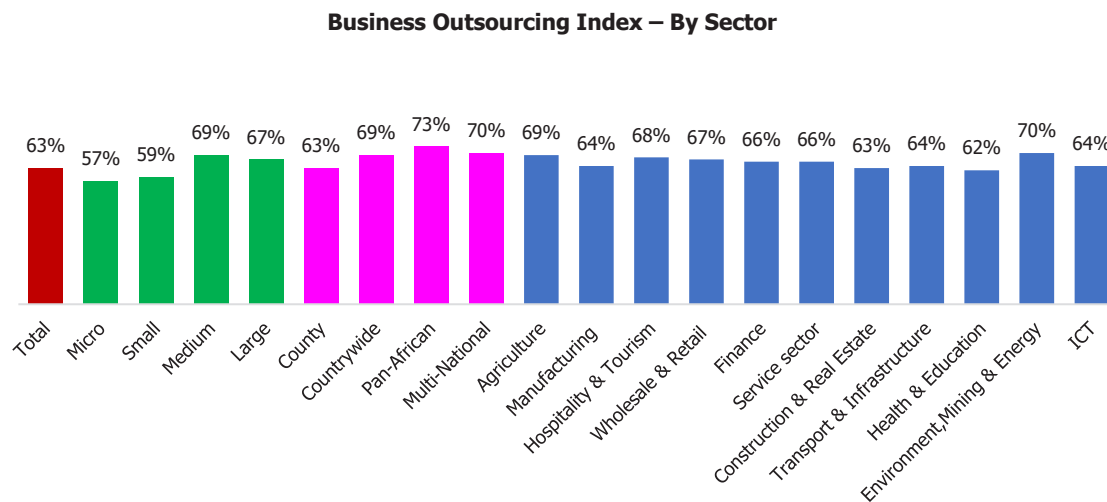


Source: KEPSA Private Sector Outsourcing Survey, 2023

²⁰ GSMA. Driving digital transformation of the economy in Kenya. GSMA, 2024. <https://www.ca.go.ke/kenyas-digital-economy-contribute-over-ksh-600-billion-gdp-2028-gsma-report-shows>

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Figure 13: BOI by Size and Sector of Company



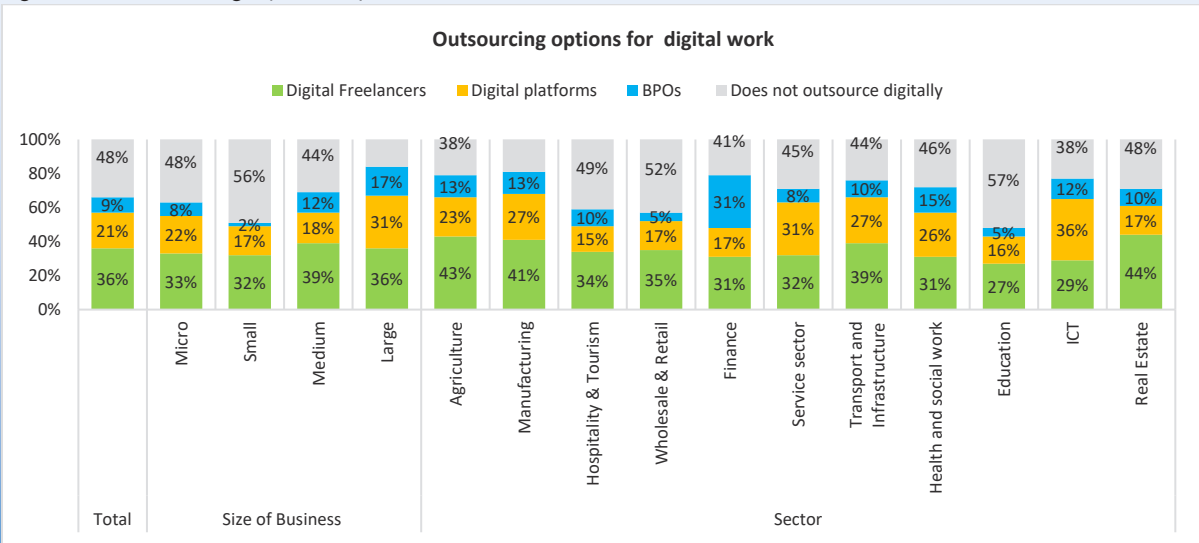
Source: KEPSA Private Sector Outsourcing Survey, 2023

The BOI by sector shows high outsourcing rates in medium (69%) and larger businesses (67%) compared to small and micro enterprises. Pan-African businesses (73%) are also highest in outsourcing compared to countrywide and multinationals. Environment, Mining & Natural Resources (70%) and agriculture (69%) sectors lead in outsourcing, indicating a high reliance on external expertise, while Health & Education (62%) has the lowest outsourcing rate.

Mode of Outsourcing

Kenyan businesses across different sizes and sectors are increasingly leveraging digital outsourcing options. In terms of business size, large businesses outsource the most digitally, outsourcing the most from digital freelancers. The manufacturing sector (81%) outsources digitally the most, relying primarily on digital freelancers (41%) as the outsourcing platform for digital work. The ICT sector (62%) outsources significantly, relying primarily on digital platforms (36%).

Figure 14: Outsourcing Options by the Private Sector

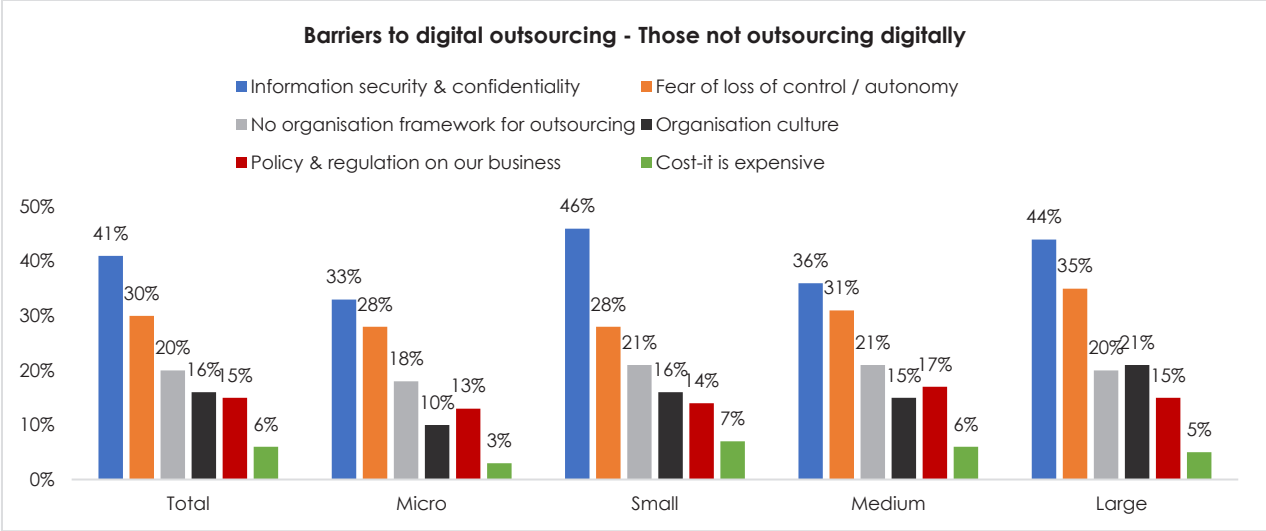


Source: KEPSA Private Sector Outsourcing Practices in Kenya Report, 2023

Barriers to digital outsourcing in Kenya

Digital outsourcing offers private companies significant opportunities to access new talent, technologies, and cost efficiencies; however, the journey toward successful digital outsourcing is not without challenges. Companies not outsourcing digitally encounter notable barriers, with primary concerns including information security (41%), fear of loss of control (30%), lack of organizational outsourcing frameworks (20%), organizational culture (16%), and policy and regulatory challenges (15%).

Figure 15: Barriers to digital outsourcing – Those not outsourcing digitally



Source: KEPSA Private Sector Outsourcing Practices in Kenya Report, 2023

2.2.2.2 Sectors Experiencing the Highest Demand for Digital Skills in Kenya

Insights from Key Informant Interviews (KIIs) highlight the growing demand for digital skills across various sectors, driven by technological advancements and innovation. The demand for digital skills is rising across sectors, driven by technological advancements. Healthcare relies on digital tools for research, management, and care, while finance and banking focus on mobile banking, fintech, and automation. Education is embracing digital platforms, though public schools face adoption challenges. Manufacturing integrates robotics and digital systems, requiring upskilling, and government services use e-portals to enhance efficiency. Transportation and logistics leverage automation to boost productivity. Other sectors like telecommunication and media thrive on digital marketing and content creation. Agriculture adopts digital tools for process management, and e-commerce grows through customer interaction technologies. IT services demand expertise in AI and machine learning, while creative occupations benefit from youth-driven innovation and technical skills.

Table 9: Sectors Experiencing the Highest Demand for Digital Skills in Kenya

Technology-Driven Transformation	Financial and Operational Automation
Industries are increasingly adopting cutting-edge technologies to enhance operations and efficiency. Healthcare: Digital tools for research, management, and patient care are central to advancements in the sector.	Automation and digitalization are redefining traditional processes: Finance and Banking: Mobile banking, fintech, and automation are revolutionizing how financial institutions operate.

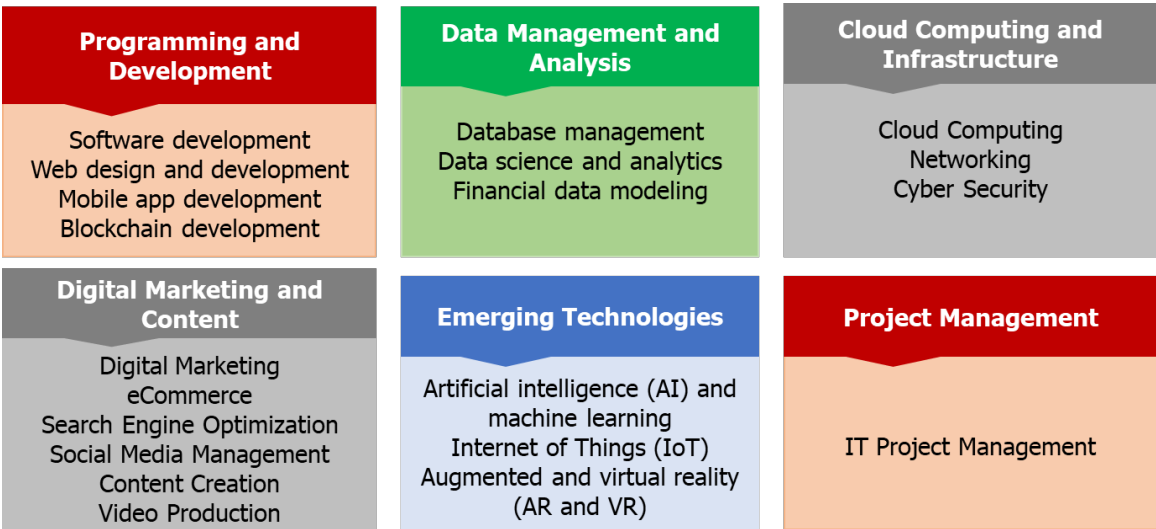
• IT and Technology Services: Core fields like AI, machine learning, and natural language processing dominate the demand for digital innovation.	• Manufacturing: Robotics and digital systems are driving efficiency, requiring upskilling to manage these technologies.
Educational and Knowledge-Based Platforms	Enhancing Accessibility and Service Delivery
Digital platforms are enhancing learning and creativity: • Education and EdTech: Private institutions are embracing digital teaching platforms. • Creative and Technical Occupations: Young professionals are leveraging digital tools to innovate and thrive in creative industries.	Digital skills are improving access to essential services and public goods: • Government and Public Services: E-portals and online platforms are streamlining public service delivery. • Transportation and Logistics: Automation is reducing manual work while enhancing efficiency across the sector.
Market Expansion and Customer-Centric Innovations	
Digital technologies are fueling growth and innovation across market-oriented industries: • Telecommunication and Media: Growth in digital marketing and content creation is transforming communication. • E-commerce and Retail: Customer interaction technologies and retail innovations are at the forefront of this sector. • Agriculture and Forestry: Digital platforms optimize processes such as monitoring and resource management.	

Source: Key Informant Interviews

2.2.2.3 In-Demand Skills in Kenya

Key Informant Interviews (KIIs) reveal that the most in-demand digital skills in Kenya include software development and programming, web design and development, mobile app development, and blockchain development. Other sought-after skills are database management, artificial intelligence (AI) and machine learning, data science and analytics, financial data modeling, cloud computing, networking, and cybersecurity. Additionally, there is significant demand for expertise in digital marketing, eCommerce, search engine optimization (SEO), social media management, content creation, video production, augmented and virtual reality (AR and VR), Internet of Things (IoT), and IT project management.

Figure 16: Skills in Demand in Kenya



Source: Key Informant Interview

2.3 INTERMEDIARIES: PLATFORMS AND BPOS

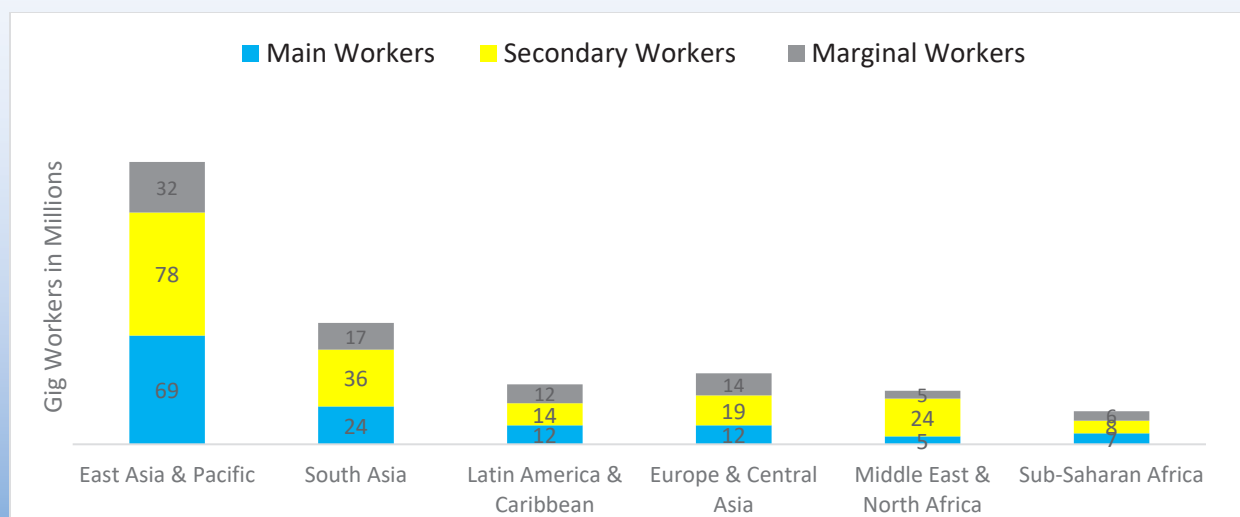
Section Overview
Intermediaries like BPOs and digital platforms play a crucial role in connecting digital workers to global opportunities. Platforms like Upwork and Fiverr enable remote work for millions, while BPOs offer scalable digital services. This section explores the role of intermediaries in facilitating access to global digital job markets. Kenya's BPO sector is expanding, driven by technological advancements and increasing demand for outsourced services, while freelance platforms are growing as key work enablers. This section explores the role of BPOs and digital platforms in job creation, outsourcing trends, and market access for Kenyan digital worker.
Key Takeaways (findings that are most critical or actionable)
BPOs are expanding but face regulatory hurdles, requiring better policies, tax incentives, and infrastructure improvements to remain competitive. Technology and client demand are driving BPO growth, with AI, cloud computing, and automation reshaping operations and job roles. Kenyan BPOs are shifting towards international clients, increasing the need for upskilling and compliance with global outsourcing standards. Freelance platforms like Upwork and Fiverr are key to job access, but Kenyan freelancers need specialized skills to compete with global talent. Outsourcing trends are evolving, with businesses reducing IT and marketing outsourcing while increasing demand for finance, branding, and business support services.
Recommendations
Improve Digital Freelancer Market Positioning: Upskill Kenyan freelancers in high-demand fields like AI, blockchain, and cybersecurity, provide subsidized global certifications, and offer project-based learning opportunities to increase competitiveness in the global digital job market.

- 2. Expand Kenya's Digital Work Access through Platforms:** Partner with global freelancing platforms for priority listings, lobby for local gig marketplaces to reduce reliance on international sites, implement AI-driven job-matching tools, and launch visibility campaigns to position Kenyan freelancers as top-tier digital professionals.
- 3. Leverage Outsourcing Trends to Diversify Work Opportunities:** Educate Kenyan businesses on the benefits of digital outsourcing, create a local digital work hub, advocate for tax incentives for local outsourcing, develop sector-specific digital solutions, and encourage government procurement from local freelancers and BPOs.
- 4. Address BPO Regulatory & Infrastructure Challenges:** Fast-track SEZ and EPZ licensing for BPO startups, lobby for broadband access in rural areas, advocate for tax incentives to attract investors, promote AI-driven customer support centers, and establish digital co-working spaces to enhance Kenya's BPO ecosystem.
- 5. Strengthen Kenya's BPO Sector for Global Competitiveness:** Expand BPO policy reforms to include nationwide SEZ incentives and faster license approvals, increase investment in AI, cloud computing, and cybersecurity training to align with BPO workforce needs.

2.3.1 Global Platforms and Online Gig Workers Population

Although online gig work is rapidly growing, there are no reliable data sources to estimate its size. However, according to World Bank (2023), we estimate that there are between 154 million and 435 million gig workers globally, which means that the share of online gig workers in the global labor force ranges between 4.4% and 12.5%. The total number of online gig workers (excluding North America) is 412.5 million, with other estimates suggesting a global figure of 435 million. The East Asia and Pacific region account for 51% of online gig workers, followed by South Asia and Sub-Saharan Africa. Secondary and marginal gig workers make up 42% and 26% of the workforce, respectively.

Figure 17: Estimated Number of Online Gig Workers by Category



Source: World Bank, 2023

- **Main online gig workers:** Individuals who rely on gig work as their primary source of income and engage in it full-time.
- **Secondary online gig workers:** Those who participate in gig work alongside another main job, using it as a supplementary income source.
- **Marginal online gig workers:** Individuals who engage in gig work occasionally or irregularly, often for extra income or flexibility rather than as a stable job

2.3.2 Platform Case Study: Upwork and Fiverr

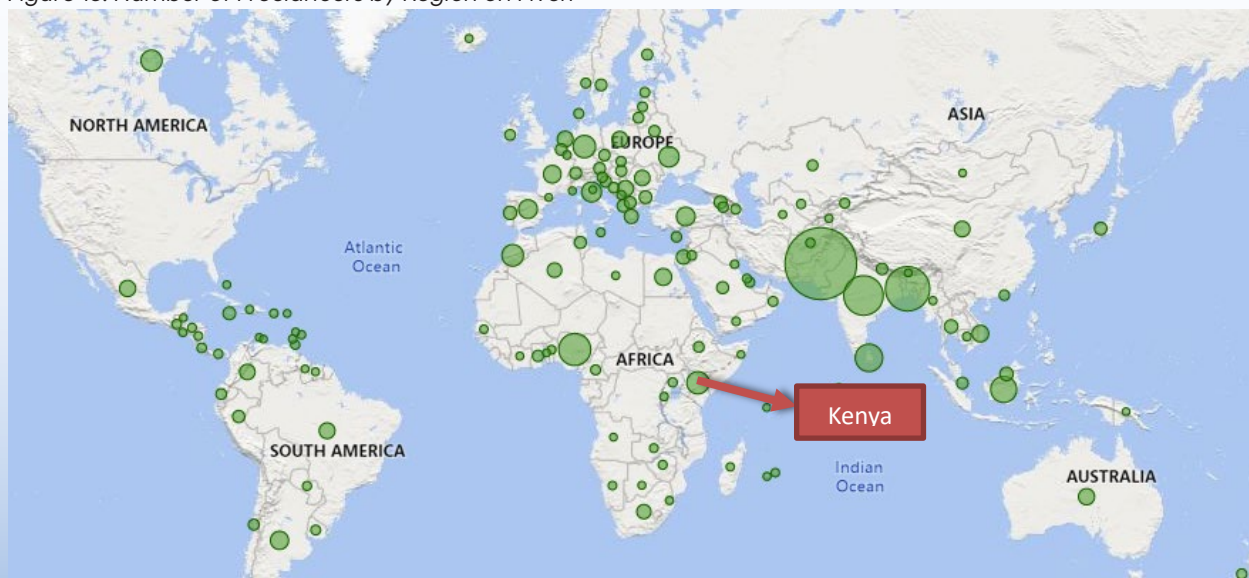
Digital platforms are vital for creating access to gig work globally, particularly for Kenyan workers. This section analyzes data from platforms like Upwork and Fiverr, showing their role in regional worker distribution and job creation.

2.3.2.1 Concentration of Workers by Region

The maps visualize the distribution of digital workers of Fiverr and Upwork, using bubble of varying sizes to represent the density levels.

Fiverr: Regions like Europe, North America, and Asia seem to dominate in terms of seller presence - suggesting established networks of freelancers and sellers. Australia also shows notable activity relative to its population size. The larger bubbles in India and neighboring countries may reflect a higher participation of freelancers or digital workers in these regions. Emerging markets, such as those in Africa and Southeast Asia, have smaller circles, indicating lower but growing participation. The relatively smaller circles in Africa and South America might indicate potential areas for growth and investment in digital work infrastructure and training.

Figure 18: Number of Freelancers by Region on Fiverr

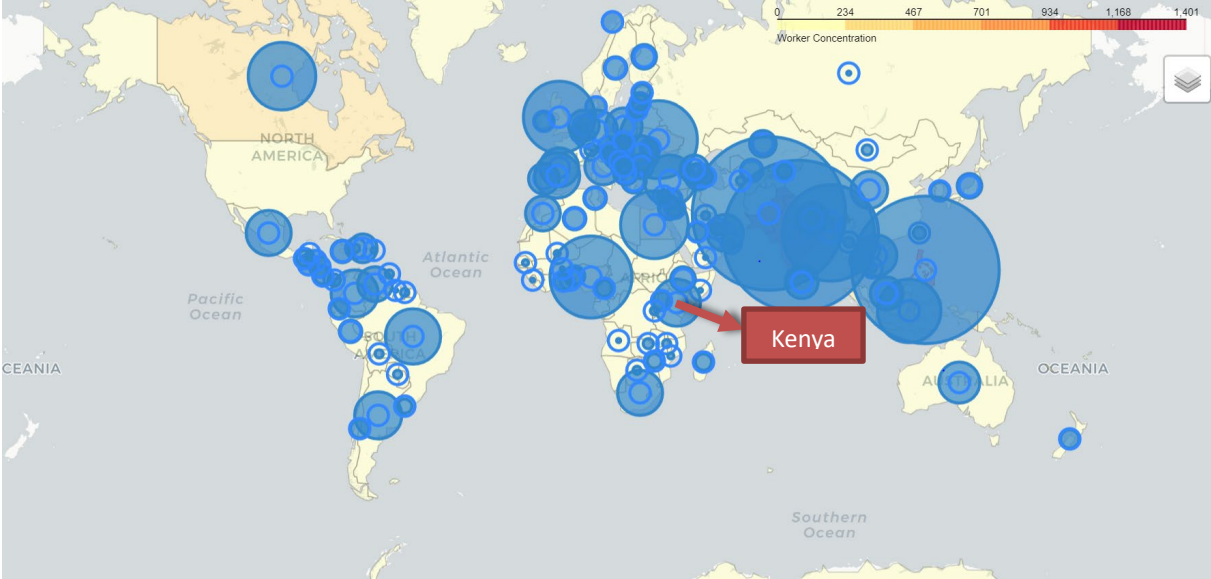


Note: The size of each green circle indicates the number of sellers in that specific country. Larger circles correspond to a higher number of workers selling skills.

Source: Fiverr

Upwork: Data extracted using data science-based methods from the Upwork website in November 2024 shows that South and Southeast Asia, particularly India, the Philippines, and Bangladesh, have the highest freelancer concentrations, driven by outsourcing, IT services, and digital marketing.

Figure 19: Number of Freelancers by Region on Upwork



Source: Upwork

Africa, with key hubs in Kenya, Nigeria, and South Africa, is expanding due to government initiatives and rising internet access. Europe and North America show moderate freelancer activity, as many prefer full-time remote jobs. South America, especially Brazil and Argentina, is growing due to economic challenges. Australia and Oceania have lower densities, likely due to stronger job markets.

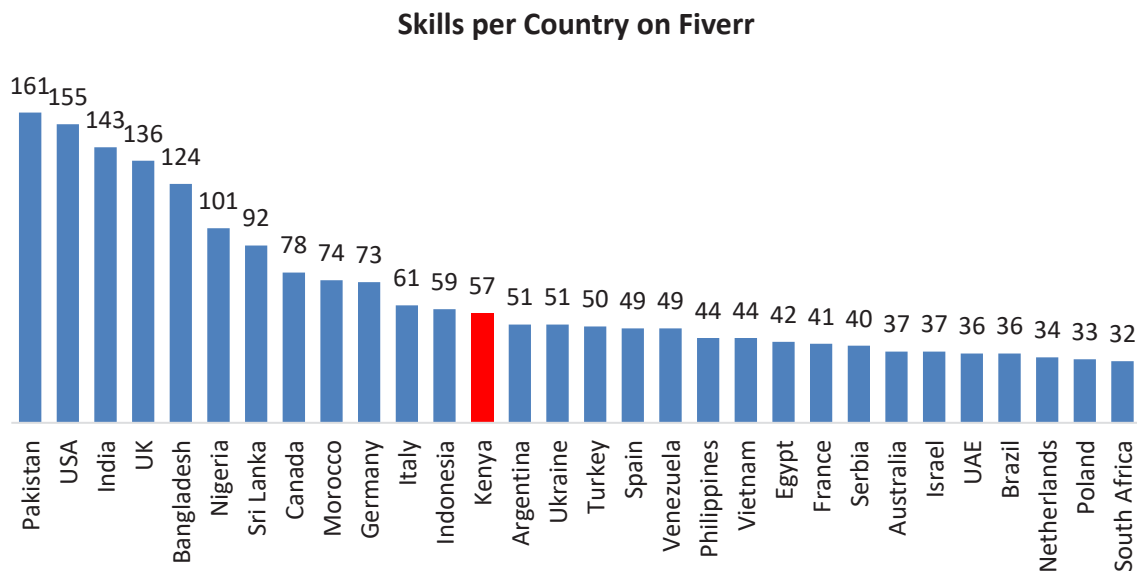
2.3.2.2 Distinct Skills

The distinction in skills between freelancers from different countries on platforms like Fiverr and Upwork often depends on specialization **volume, recognition, and market positioning**, rather than whether individuals from another country possess the same skills. While Kenyan freelancers may have expertise in many of the areas listed for Indian freelancers, but platforms may classify a skill as distinct for a country based on the sheer number of successful freelancers offering that service and dominating the global market in that category.

On platforms like Fiverr and Upwork, distinct skills may be determined by search trends, client preferences, and country-specific specialization data. If a skill is not frequently searched for or associated with a particular country, it may not appear in the "distinct skills" classification.

Findings obtained through data-driven analysis reveal that Fiverr in November 2024 showed Pakistan (161 skills) leading in distinct digital skills, followed by the United States (155 skills) and India (143 skills), reflecting a highly diverse digital workforce. Asian countries (Pakistan, India, Bangladesh, Sri Lanka) dominate, showcasing strong digital capabilities, while Western nations (U.S., U.K., Canada) remain key players due to established tech hubs. Kenya, with 57 distinct digital skills, ranks in the middle tier globally, ahead of several African nations, highlighting growing digital expertise and potential for expansion in the freelance economy.

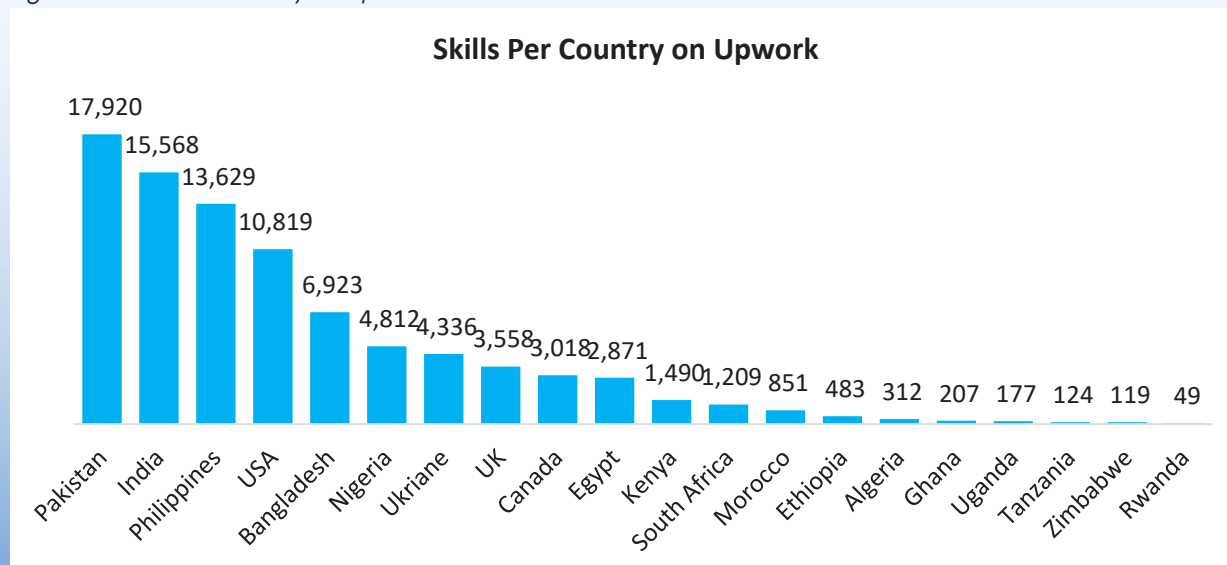
Figure 20: Skills Per Country on Fiverr



Source: Fiverr

Upwork: India (15,568 skills) is a global leader in digital skills, benefiting from a strong outsourcing industry, while Kenya (1,490 skills) ranks mid-tier globally but is among Africa's top performers. However, Kenya lags Nigeria (4,812) and Egypt (2,971), highlighting the need for greater investment in digital skills. The dominance of Asian countries (India, Pakistan, Philippines, Bangladesh) reflects their established digital ecosystems, whereas Kenya's growing participation signals potential for expansion.

Figure 21: Skills Per Country on Upwork

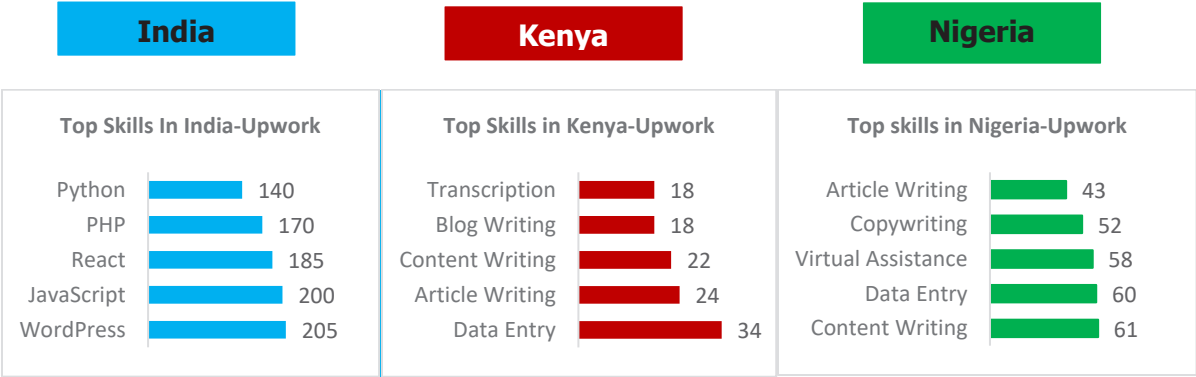


Source: Upwork

Top Skills Kenya, India, and Nigeria on Upwork

A comparison of the top skills in Kenya, India, and Nigeria on Upwork reveals key differences in digital work preferences and market strengths.

Figure 22 Comparison of top skills in India, Kenya, and Nigeria



Source: Upwork

A comparison of the top skills on Upwork among the three countries reveals the following insights:

- **India Leads in Technical Skills:** India dominates with WordPress, JavaScript, React, PHP, and Python, reflecting a strong focus on software development and IT services, which aligns with its global outsourcing leadership.
- **Kenya Specializes in Writing and Transcription:** Kenya’s most in-demand skills are Data Entry, Article Writing, Content Writing, Blog Writing, and General Transcription, indicating a strong focus on content-related and clerical tasks.
- **India Shows Higher Skill Proficiency:** India leads with advanced digital and IT skills, Nigeria is strong in intermediate-level business support and content, while Kenya excels in basic digital services but has room to grow into more specialized and higher-paying fields.
- **Kenya and Nigeria Have Potential for Skill Diversification:** While India excels in high-tech fields, Kenya and Nigeria have an opportunity to expand into IT, programming, and AI-driven services to compete globally.

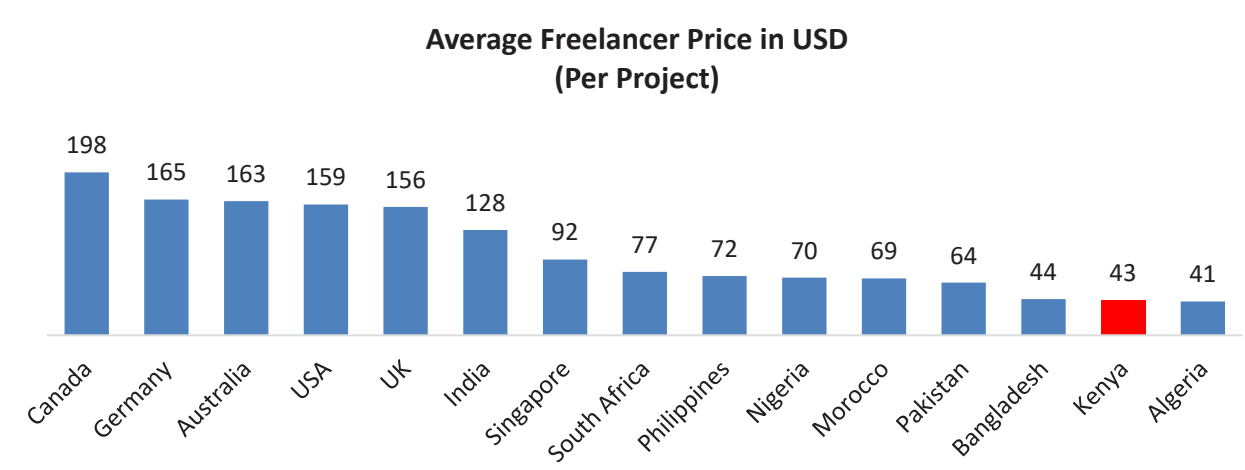
Insights:

- ❑ Kenyan freelancers should focus on building strong portfolios in high-demand fields, participate in global competitions, and leverage platforms that highlight their unique capabilities.

2.3.2.3 Average Price Charged by Country

Fiverr: Data from Fiverr shows that Kenya has an average freelancer price of \$43 per project, placing it among the lower-tier pricing markets. Kenyan freelancers are priced lower compared to countries like Canada (\$198), and Germany (\$165), India (\$128), and South Africa (\$77).

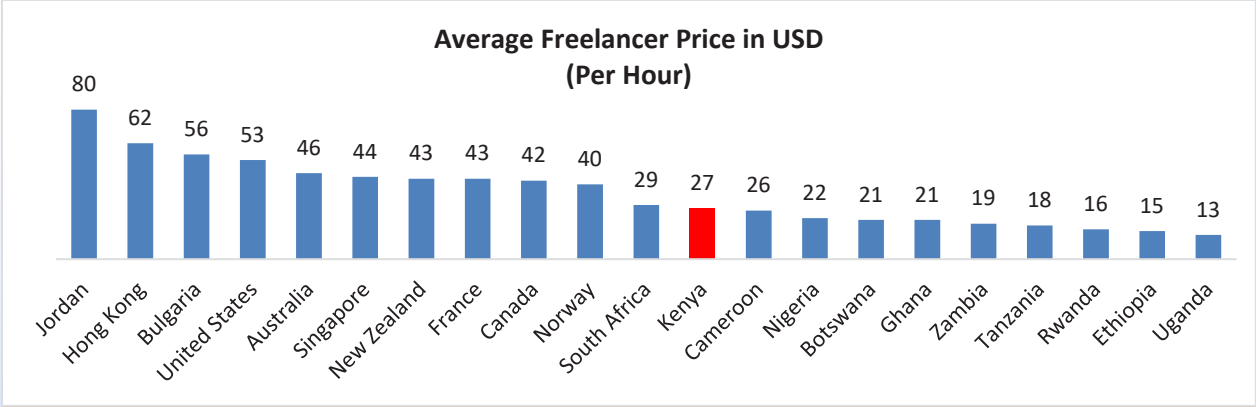
Figure 23: Average Price Per Project by Country on Fiverr



Source: Fiverr

Upwork: Data from Upwork platform shows Kenya's average hourly rate (\$27) is among the highest in Africa, second only to South Africa (\$29) but higher than Nigeria (\$22) and other African nations like Ghana (\$21), Zambia (\$19), and Uganda (\$13). This suggests Kenyan freelancers command competitive rates, likely due to a growing digital economy, skilled workforce, and strong participation in global outsourcing platforms. However, Kenya still lags behind developed markets like the U.S. (\$53), Australia (\$46), and Hong Kong (\$62), indicating room for growth in high-value digital services and specialized skills to increase earnings.

Figure 24: Average Price Per Hour by Country on Upwork



Source: Upwork

Kenya offers cost-effective services, making it attractive for outsourcing and global clients looking for affordable talent. However, the lower average pricing suggests reduced earning potential per freelancer, which may limit the ability to invest in upskilling or advanced certifications. It reflects the need **for specialization** in high-demand skills.

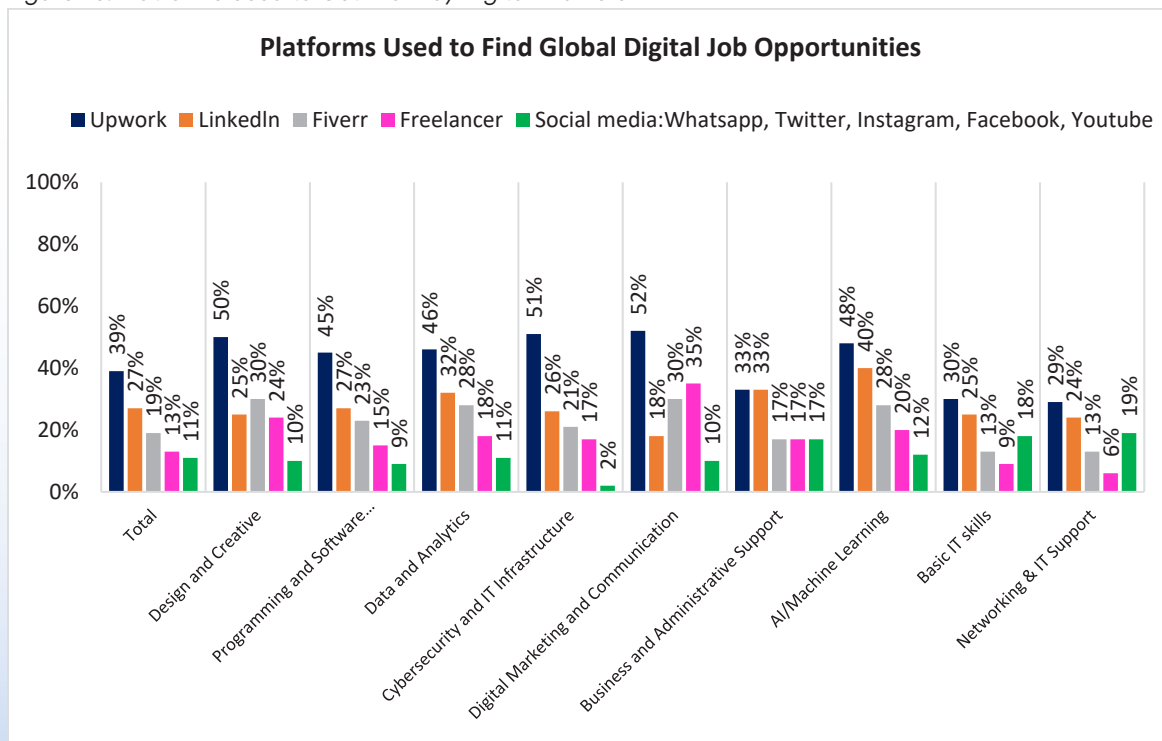
Insights:

- **Training and Upskilling:** Introduce certification programs focused on high-paying tech sectors.
- **Diversify Offerings:** Encourage specialization in premium services like data analytics, AI solutions, and cybersecurity consulting.

2.3.2.4 Platforms Kenyan Workers Use to Get Work vs Top-Ranked

Based on the findings of the Kenyan digital workers' survey, the majority of digital workers rely on Upwork (39%), followed by LinkedIn (27%), Fiverr (19%) and freelancer (13%). Upwork is the most commonly used platform across all categories, with consistent dominance in fields like Digital Marketing and Communication (52%), Cybersecurity and Infrastructure (51%), and Design and Creative (50%). LinkedIn is particularly popular in professional fields such as AI/Machine Learning (40%) and Business and Administrative Support (33%), emphasizing its role in networking and connecting with employers. Fiverr is widely utilized for both Design and Creative (30%) and Digital Marketing and Communication (30%), reflecting its strong position in gig-based and project-specific roles.

Figure 25: Platforms Used to Get Work by Digital Workers



Source: Primary Research with digital workers in Kenya, 2023

The above mirrors global trends, where these platforms are also among the most popular for freelancers. Globally, Upwork stands as one of the largest freelance platforms, showcasing a comparable Play Store rating of 4.5 and emphasizing global reach. LinkedIn connects professionals worldwide, facilitating job opportunities across various industries. Additionally, Fiverr serves as a significant global marketplace for freelance services with a high Play Store rating of 4.6, demonstrating its strong user base and user satisfaction while Freelancer is among the top freelancing platforms globally, enabling freelancers to find work and clients to hire for various services.

In addition to well-known platforms like Fiverr and Upwork, there are several other global online work platforms that connect gig workers with digital opportunities. These include Freelancer, Toptal, PeoplePerHour, Guru, and Workana among others. These platforms collectively contribute to the growing global population of online gig workers by offering diverse job categories ranging from tech and design to writing, marketing, and administrative support.

Table 10 Online Platforms for Gig Work

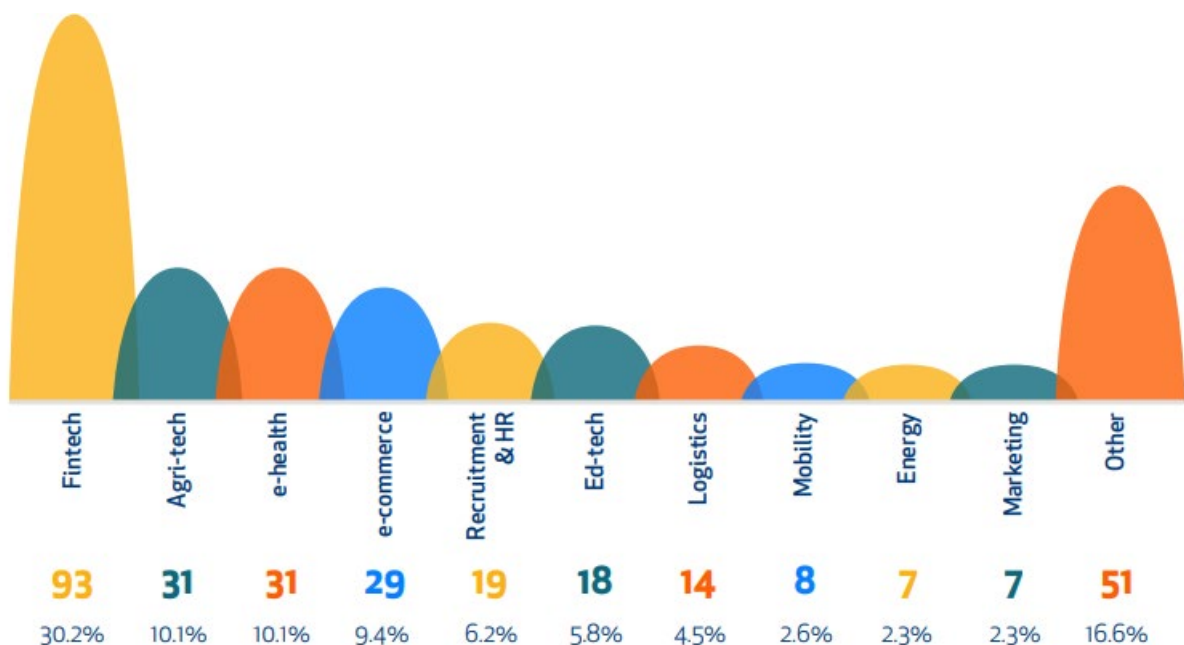
Platform	Type of Work	Specialty Skill Areas	Payment Model
Freelancer	Freelance bidding platform	Software development, writing, engineering, data entry	Hourly or task-based
PeoplePerHour	Freelance projects	SEO, marketing, web development, design	Task-based or hourly
Toptal	Elite freelance network	Software development, finance, project management	Hourly or project-based
Guru	Freelance projects	Programming, writing, admin, legal services	Hourly, task-based, or recurring
Workana	Latin America-focused freelancing	IT, writing, translation, marketing	Task-based or hourly
Clickworker	Microtasking and crowdsourcing	Data entry, writing, AI training tasks, research	Task-based (per microtask)
UserTesting	Usability testing	Website/app testing, user feedback	Task-based (per test)
Trymata (formerly TryMyUI)	Usability testing	Website/app testing, UX reviews	Task-based (per test)
RentAFriend	Talking to lonely people (virtual friendship)	Conversation, companionship, virtual hangouts	Hourly or session-based
ChatOperatorJobs	Talking to lonely people (chat operator)	Chat-based companionship	Hourly or per message
ModSquad	Content moderation and engagement	Moderation, customer support, community management	Hourly or project-based
The Chat Shop	Content moderation and live chat	Chat support, content moderation	Hourly
Capterra (Write a Review)	Product review writing	Software/product reviews	Task-based (per review)
Influenster	Product review writing (consumer goods)	Product testing and reviewing	Task-based (gifts or cash)

Platform	Type of Work	Specialty Skill Areas	Payment Model
Cambly	Online tutoring (English)	English tutoring/conversation	Task-based (per minute)
Preply	Online tutoring	Academic subjects, languages	Hourly
Remotasks	Data entry, AI training	Data annotation, image tagging, labeling	Task-based (per task)
BELAY	Virtual assistant services	Admin support, bookkeeping, social media management	Hourly
Zirtual	Virtual assistant services	Admin tasks, research, calendar management	Hourly
Rev	Captioning and transcription	Transcription, captioning, subtitling	Task-based (per minute of audio)
GoTranscript	Captioning and transcription	Transcription, captioning	Task-based (per minute of audio)
Sama	AI training jobs	Data annotation, AI training data tasks	Task-based or hourly
Voice123	Voiceover tasks	Voice acting, recording voiceovers	Project-based
Voices.com	Voiceover tasks	Voice acting, narration, commercials	Project-based
TTEC	Remote customer support	Customer service, technical support	Hourly
SupportNinja	Remote customer support	Customer support, back-office support	Hourly

2.3.2.5 Digital Work Platforms in Kenya

The Kenyan Startup Ecosystem Report comprehensively tracks the evolution of Kenya's tech startup landscape since 2015. Tech startups (usually platforms) are often at the forefront of innovation, and tracking them provides insights into emerging trends and breakthroughs, contributing to a better understanding of the evolving technological landscape. Notably, a substantial portion of the featured companies in this report operate as platform enterprises, exemplified by names like Twiga, Lipa Later, Pezeshu, Sendy, iProcure, Wowzi, Kidato, Fuzu, Wasoko, Tanza, and MarketForce, among others. In this report, Fintech stands out as the leading sub-sector within the Kenyan startup space, constituting 30.2% of the startups tracked. Other notable sub-sectors include agri-tech and e-health, each accounting for 10.1% of Kenyan startups, while e-commerce and retail-tech, recruitment and HR, and ed-tech follow closely.

Figure 26: Kenyan tech startups (platforms) by sub-sector



Source: The Kenyan Startup Ecosystem Report 2022

2.3.3 Business Processing Outsourcing (BPOs)

2.3.3.1 Global BPO Market

In 2022, the global business process outsourcing (BPO) market exhibited a valuation of USD 245.9 billion, with projections indicating robust growth to reach USD 544.8 billion by 2032. This anticipated trajectory reflects an estimated compound annual growth rate (CAGR) ranging from 8.5% to 9.4% between 2023 and 2032²¹.

The 2024 global BPO rankings position **India**, **Philippines**, **Poland**, **Mexico**, and **Brazil** as the top five outsourcing destinations. In this list, **India** remains the leading destination for BPO services, excelling in IT and tech support with a highly skilled workforce and a strong infrastructure. The **Philippines** ranks second due to its large English-speaking population and strength in customer support services. **Poland** holds the third spot as a major outsourcing hub in Europe, driven by an educated workforce and favorable investment conditions. **Mexico** ranks fourth, becoming a key nearshore destination for North American firms with its bilingual professionals and cost advantages. **Brazil**, in the fifth position, is recognized for its expanding IT sector and expertise in software development and application support. In Asia, **Vietnam** and **China** are also emerging outsourcing leaders, holding significant rankings due to their tech-savvy workforces and strong government support for digital industries. In Europe, **Ukraine** is fast becoming a tech outsourcing hub with a reputation for high-quality IT talent. In Africa, **South Africa** ranks among the top global BPO destinations, offering a robust outsourcing infrastructure and favorable time zones for

²¹ <https://www.grandviewresearch.com/industry-analysis/business-process-outsourcing-bpo-market>

European and US-based clients. The rankings reflect each country's competitive advantage in cost, expertise, and service diversity in the global BPO sector²².

South Africa is ahead of Kenya in the BPO sector due to several strategic, economic, and policy-driven factors. These include favorable business conditions, advanced infrastructure, and a strong reputation for outsourcing services, particularly to global markets. South Africa has positioned itself as a leading outsourcing hub, particularly for English-speaking services, serving clients in Europe, North America, and Australia. Africa's government provides strong incentives for investment in the outsourcing industry, including tax rebates, training subsidies, and other initiatives to attract foreign investment. The government collaborates with industry bodies to promote BPO services through organizations such as Business Process Enabling South Africa (BPESA).

As of 2024, Kenya is emerging as a significant player in Africa's Business Process Outsourcing (BPO) sector. While Kenya's BPO industry is experiencing rapid growth, it has not yet reached the scale of leading global BPO destinations like India or the Philippines.

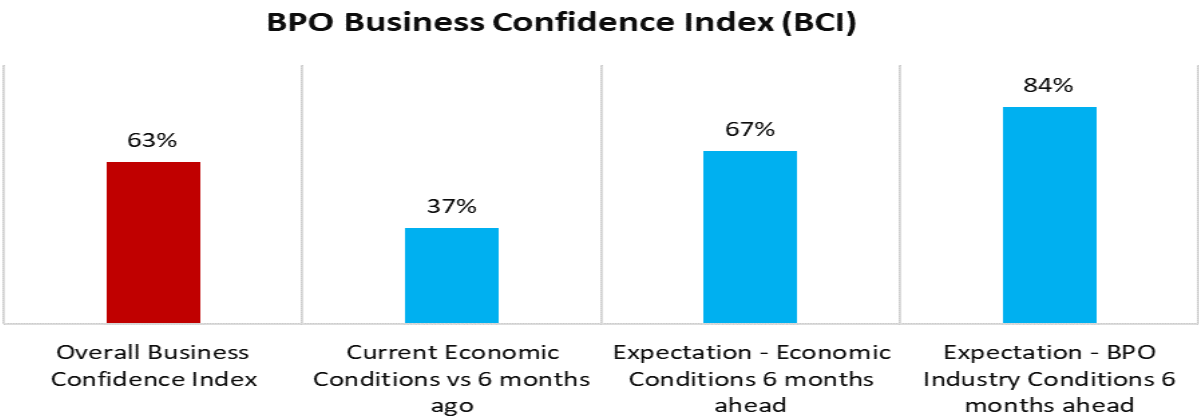
2.3.3.2 Kenya BPOs Outlook

BPO Business Confidence Index

Confidence index surveys are crucial for gauging the outlook and sentiments of businesses regarding economic conditions, sector performance, and future opportunities. They provide valuable insights that help stakeholders, including investors, policymakers, and business leaders, make informed decisions by identifying trends and potential risks. The BPO Business Confidence Index (BCI) currently stands at 63%, indicating moderate confidence in the current business environment. Additionally, 67% of businesses expect economic improvement, while 84% predict industry growth, signaling robust future opportunities in outsourcing. These results suggest a positive outlook for the BPO sector, with businesses preparing for increased demand and expansion. With 84% of businesses predicting industry growth, there will likely be a rise in outsourcing needs.

²² Outsource Accelerator. (2024). *Best countries for outsourcing*. Retrieved from <https://www.outsourceaccelerator.com/articles/best-countries-for-outsourcing/>
Super Staff. (2024). *Global BPO hubs: Call center services*. Retrieved from <https://www.superstaff.com/blog/global-bpo-hubs-call-center-services/>
Gear Inc. (2024). *Top outsourcing countries*. Retrieved from <https://gearinc.com/top-outsourcing-countries/>

Figure 27: Kenya BPO Business Confidence Index

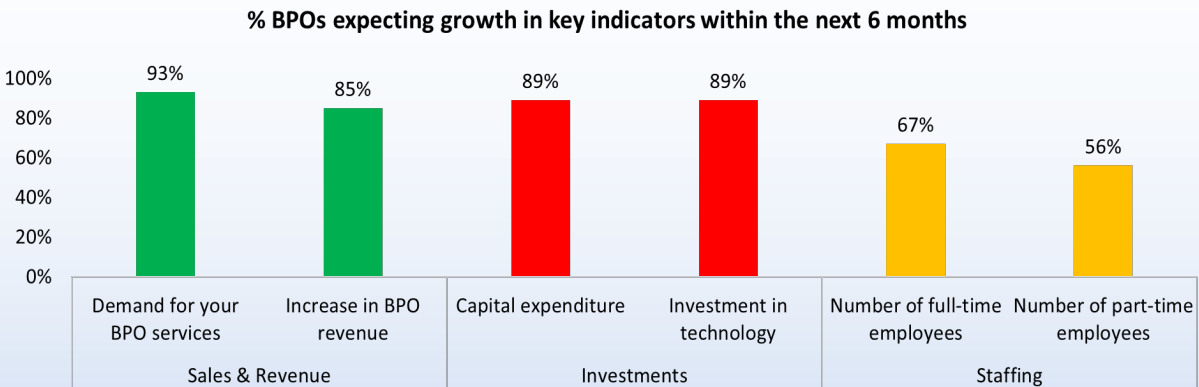


Source: KEPSA BPO Industry Survey Report, 2023

BPO Sector Outlook: Driving Optimism Projected Growth

The Business Process Outsourcing (BPO) sector is in a growth trajectory, marked by increasing demand, sales, and workforce expansion. Over 70% of firms report heightened demand and sales, signaling robust outsourcing opportunities across various industries. However, despite these opportunities, 60% of organizations face persistent challenges related to rising costs and regulatory hurdles. Workforce expansion within the BPO sector is growing at a rate of 45%. To remain competitive in the global marketplace, continuous upskilling and investment in digital capabilities are becoming essential priorities for BPO firms.

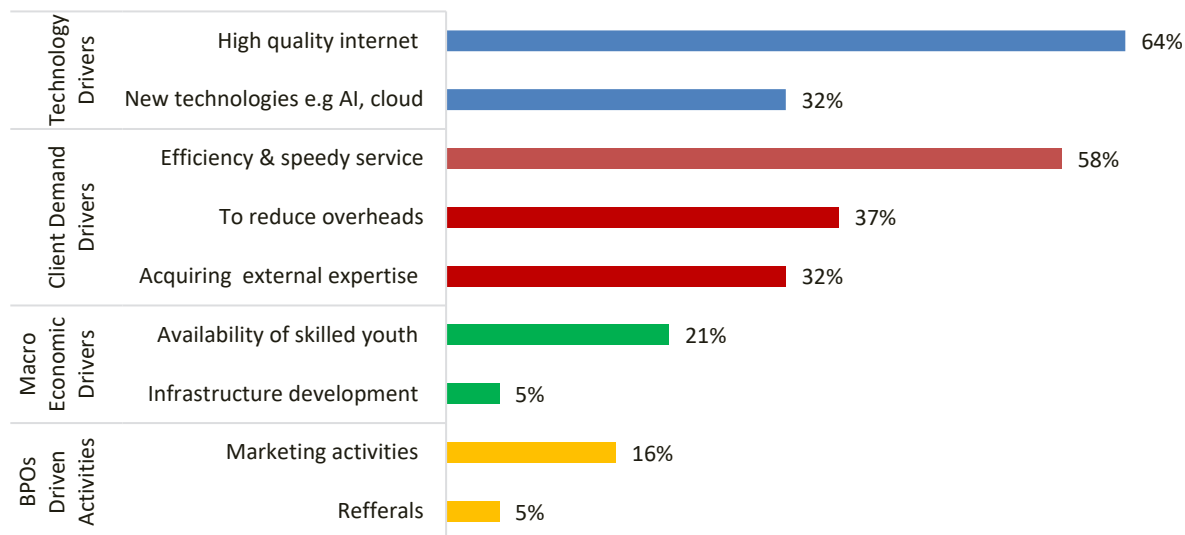
Figure 28: BPOs Sector Outlook: Key Business Indicators Expected to Grow



Source: KEPSA BPO Industry Survey Report, 2023

The BPO sector is growing due to technology and client demand, with high-quality internet (64%) being the most important factor. AI and cloud computing (32%) are transforming operations, while clients prioritize efficiency (58%), cost savings (37%), and specialized skills (32%). This shows a rising dependence on digital solutions and the need for skilled workers to meet changing business needs.

Figure 29: Driving Forces in BPO Sector Growth



Source: KEPSA BPO Industry Survey Report, 2023

2.3.3.3 Key Insights from BPO Interviews on Digital Job Creation and Trends

Rising Global Outsourcing and Competitive Advantages

Kenyan BPOs are increasingly attracting international clients, particularly from the U.S. and Europe. This trend is driven by two primary factors: cost-efficiency and a growing pool of digitally skilled workers. Digital transformation in global industries is accelerating this shift, with Kenyan firms positioned as strategic partners capable of handling diverse tasks in areas such as IT support, digital marketing, and data analytics. Despite regulatory and cost challenges faced by 60% of firms, demand continues to grow, fostering opportunities for digital job creation.

“We have seen a shift where global businesses prefer outsourcing to Kenyan firms due to cost-effectiveness and talent availability.” – Key Informant, Global BPOs

Soft Skills: The New Differentiator in AI-Automated Workflows

While technical expertise remains important, the rise of automation in the BPO industry has elevated the value of soft skills like empathy, problem-solving, and effective communication. These skills are critical for roles that require human interaction and emotional intelligence, such as customer service and relationship management. AI can efficiently handle routine tasks, but businesses increasingly rely on human workers to provide personalized and empathetic engagement with clients.

“Soft skills, especially sympathy and empathy, are crucial in AI-driven roles where robots interact with people. AI cannot predict when someone feels lonely, frustrated, or stressed, so human interaction is essential.” – Key Informant, Global BPOs

Emphasis on Practical Experience Over Formal Certifications

Kenyan BPO employers prioritize candidates with proven experience, such as completed projects, freelance work, and strong portfolios, over traditional certifications. This trend reflects a broader industry shift where hands-on expertise and problem-solving capabilities are seen as more valuable than formal education credentials. Workers with a history of successfully completed projects are better equipped to meet client expectations, making experience-based learning a key driver of employability and career advancement in the sector.

“Most employers ask, ‘What have you done before? Show us your portfolio.’ You can have good papers, but if you don’t have the skill, it doesn’t help.” – Key Informant, Global BPOs

Insight:

Kenyan digital workers, including freelancers, developers, and customer support agents, are positioned to benefit from increased job opportunities as global businesses continue expanding their operations.

- ❑ However, to sustain this momentum and enhance competitiveness in a rapidly digitizing global economy, continuous investment in workforce development is essential. Both BPO firms and digital workers must prioritize upskilling in areas such as AI, cloud computing, and cybersecurity.
- ❑ Furthermore, the growing demand for human-centric roles emphasizes the importance of developing soft skills—such as empathy, communication, and problem-solving—which are crucial in AI-driven work environments.

2.4 SUPPLY OF DIGITAL WORKERS

Section Overview

This section delves into the supply side of Kenya's digital workforce, examining key aspects such as the population of digital workers, their skills profile, and barriers they face. It explores Kenya's standing in the global digital economy, particularly in areas such as English proficiency and access to certifications, which are critical for global competitiveness. Finally, the section highlights the support needed for Kenyan digital workers to overcome these challenges and align their skills with global standards. Through a comparative lens, it evaluates Kenya's progress and opportunities to bridge the gap between local talent and international market demands.

Summary Findings

- 1. An increase in population of Kenyan digital workers:** Over the past two years, the digital workforce in Kenya has grown significantly. By 2023, 9% of the adult population, over 2.4 million individuals were engaged in digital work.
- 2. Kenyan digital workers exhibit basic and intermediate skills:** Kenyan digital workers primarily exhibit foundational and intermediate skills. Basic skills, such as data entry and transcription, dominate the workforce, while intermediate skills like digital marketing and content writing are gaining traction, largely driven by training programs like Ajira Digital.
- 3. Competing globally is the top key barrier facing digital workers:** Key challenges include difficulty competing globally (29%), lack of certifications (27%), and limited international experience (27%). Other barriers, such as high application costs, lack of awareness, and cyber risks, further limit participation in global markets.
- 4. Barriers to Recognized Certifications:** High costs (70%) are the most critical barrier to accessing certifications, followed by time constraints (18%) and limited access to reliable internet (13%).

Recommendations

- 1. Expand Access to Advanced Skills and Certifications:** Collaborate with global and local tech partners to provide subsidized certifications, introduce scholarship funds for high-potential individuals, and expand advanced training programs in AI, cloud computing, and cybersecurity to enhance global employability
- 2. Develop Global Work Readiness Programs:** Implement mentorship programs, project-based training, and international internships, establish direct partnerships with global freelancing platforms and remote job providers, and equip Kenyan youths with the soft skills and technical expertise needed to compete in global markets.

2.4.1 Kenya's Digital Workforce

2.4.1.1 Population of Kenyan Digital Workers

Over the past two years, Kenya's digital workforce has experienced remarkable growth, underscoring the country's evolving position in the digital economy. In 2023, the percentage of digital workers climbed even further to 9%, representing over 2.4 million adults engaged in digital work. This growth marked a significant milestone, driven by the increasing adoption of remote work and digital platforms, as well as national initiatives such as the Ajira Digital Program.

Table 11: Population of Digital Workers

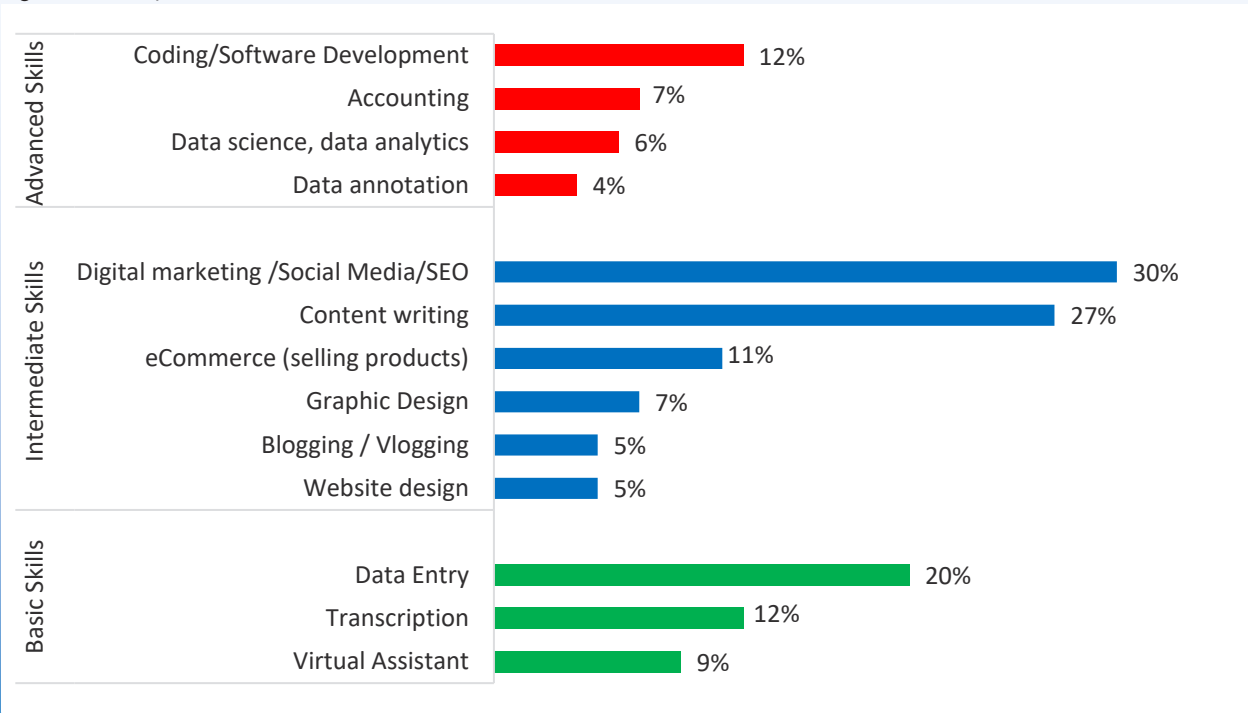
Year	% digital workers in Kenya	Projected population aged 18+ years
2019	3%	638,400
2020	3%	677,961
2021	5%	1,209,506
2022	7.1%	1,933,011
2023	9%	2,406,573

Source: KEPSA National Survey Report, 2023

2.4.1.2 Skills Profile of Kenyan Online Workers

Kenyan online workers largely possess intermediate skills like digital marketing and content writing or basic skills such as data entry and transcription, often developed through programs like Ajira Digital. However, there is a notable shortage of advanced technical skills in areas like software development, highlighting the need for targeted upskilling to unlock higher-paying digital opportunities.

Figure 30: Kenyan Online Workers Skillset



2.4.1.3 Kenya's English Proficiency Ranking and Its Impact on Digital Workers



Kenya

#19

Ranked no. 19 out of 113 countries

EF EPI score: 584

Global average score: 493

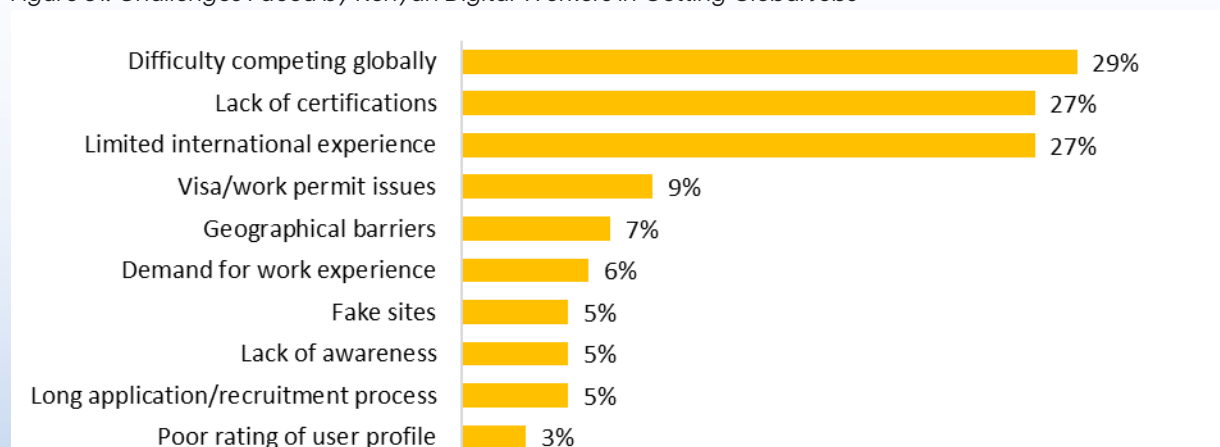
Position in Africa: 2 of 23

Kenya ranks 19th globally out of 113 countries in the EF English Proficiency Index (EPI), with a score of 584²³. This achievement places Kenya significantly above the global average score of 493 and 2nd in Africa out of 23 countries evaluated. This high proficiency in English provides Kenyan digital workers with a competitive edge in the global digital economy. It enhances their ability to work with international clients, particularly in roles such as customer support, content writing, and digital marketing, where strong communication skills are essential. Furthermore, high English proficiency facilitates access to learning resources, international collaborations, and job opportunities on global freelance platforms. Maintaining and further improving this skill will help Kenyan workers continue to excel in the rapidly growing digital outsourcing market.

2.4.1.4 Securing global digital roles: Challenges Faced by Kenyan Digital Workers

Difficulty competing on a global scale (29%) emerges as the most significant barrier. This likely stems from intense competition with highly skilled workers from other countries, many of whom have advanced technical expertise and certifications. The absence of globally recognized certifications is a major obstacle, tying with limited international experience (27%). Certifications such as AWS, CISSP, or Google Analytics are critical for validating technical competencies and increasing employability.

Figure 31: Challenges Faced by Kenyan Digital Workers in Getting Global Jobs



Q. What were the barriers to securing global digital roles?

Base: 150 (Those who have not been successful in getting a global digital job)

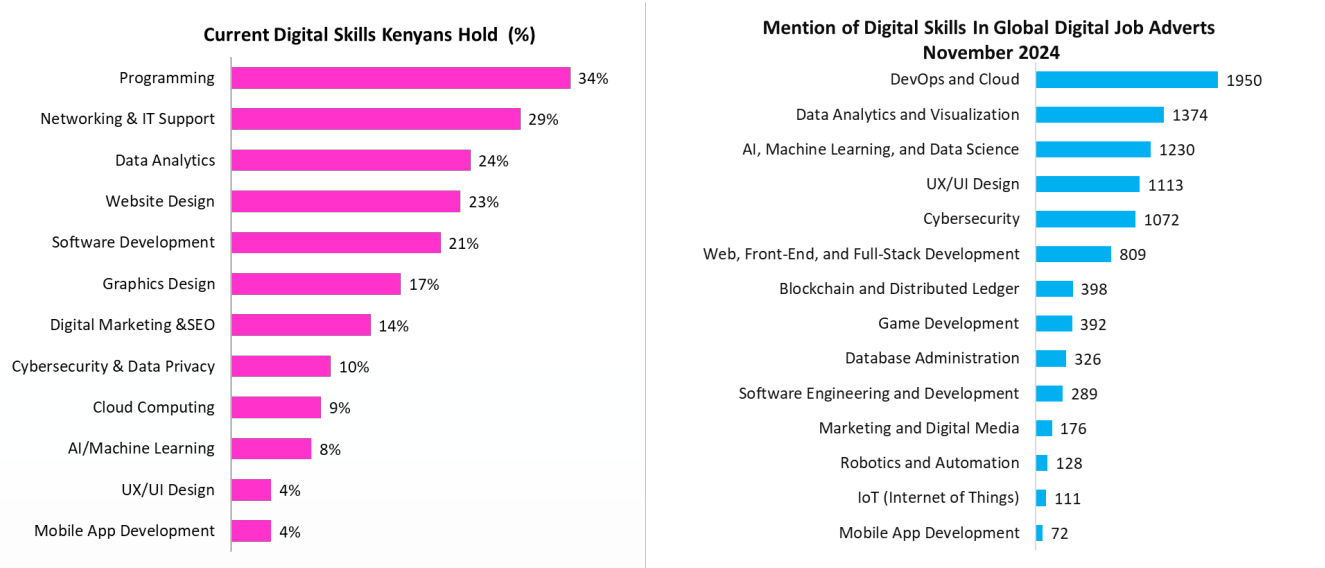
Source: Primary Research with Digital Workers in Kenya, 2024

²³ **EF English Proficiency Index (EPI)** is an annual ranking by **Education First (EF)**. This index evaluates and compares the English language proficiency of non-native speakers across various countries. EF EPI scores are based on test data collected from individuals who have taken EF's English tests, including free placement tests and standardized English exams.

2.4.1.5 Kenyan Workers' Skills vs. Global Jobs Skills Demand

The comparison between Kenyan workers' current digital skills and the certifications in demand for global digital job roles reveals key insights into skill gaps and opportunities for improvement. There is a significant gap between the skills possessed by many Kenyan workers and the global demand for advanced digital skills such as DevOps, cloud infrastructure, AI, and data analytics. This indicates the need for targeted upskilling initiatives.

Figure 32: Current ICT skills among Digital Workers in Kenya vs Certifications on Demand



Q. What ICT skills do you currently have?

Base: 301 (All respondents)

Source: Primary Research with digital workers in Kenya

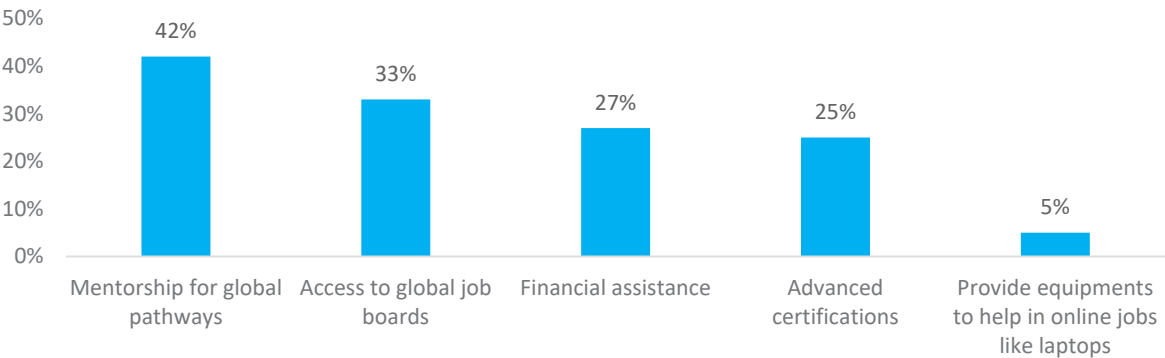
Insight

- ❑ Workers proficient in basic and intermediate skills may benefit from transitioning to high-demand areas by building expertise through certification and real-world projects.
- ❑ However, addressing the gap in advanced skills is crucial for accessing higher-paying, long-term roles.

2.4.1.6 Support Needs for Kenyan Digital Workers

Kenyan digital workers highlight three key areas of support for career growth: mentorship for global career pathways (42%), access to global job boards (33%), and financial assistance (27%). Certifications, while still important, rank lower at 25%, indicating that many workers prioritize guidance and access to opportunities over formal qualifications. This emphasizes the need for structured support programs that provide career mentorship, affordable and accessible certifications, and improved visibility of international job opportunities.

Figure 33: Supporting Kenyan Workers to Compete Globally



What support do you need to be able to compete for global digital roles?

Base: 301 (All respondents)

Source: Primary Research with digital workers in Kenya, 2024

Insight:

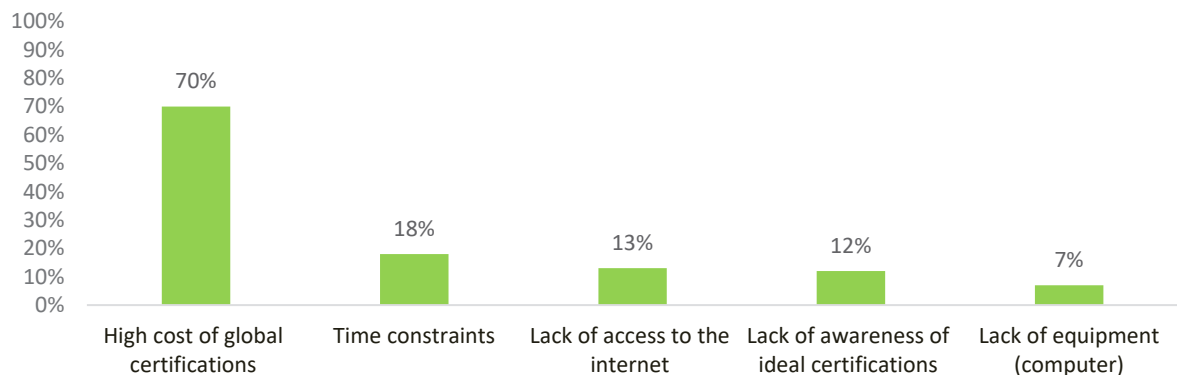
To support Kenyan digital workers in accessing global opportunities, stakeholders should develop a comprehensive career advancement initiative. This initiative should include:

- **Mentorship Programs** connecting workers with experienced professionals who can guide them on global career pathways.
- **Global Job Board Access** through partnerships with international platforms.
- **Financial Assistance and Subsidized Certification Programs** to help workers acquire critical technical and soft skills.

2.4.1.7 Challenges in Obtaining Recognized Certifications

Kenyan youth face significant challenges in obtaining globally recognized certifications, with high costs (70%) emerging as the most critical barrier, highlighting the financial inaccessibility of certification programs for many. Other challenges include time constraints (18%), reflecting the difficulty of balancing studies, work, or other commitments, which makes it hard to complete certification requirements. Additionally, lack of access to reliable internet and VPNs (13%) points to digital infrastructure gaps that hinder participation in online training and exams.

Figure 34: Challenges in Obtaining Recognized Certifications



Q. What challenges do you face in obtaining certifications that are recognized globally?

Base: 301 (All respondents)

Source: Primary Research with digital workers in Kenya

2.5 SUPPORT ECOSYSTEM

Section Overview
A robust support ecosystem is critical for preparing workers and enabling access to digital opportunities. Investments in ICT hubs, training institutions, and affordable internet can empower workers to compete in global markets. This section highlights the infrastructure and systems supporting digital work.
Summary Findings
1. Role of Key Actors: Organizations such as Google, Microsoft, Huawei, and Ajira Digital Program play a crucial role in providing digital training and certifications, fostering a more competitive workforce. Public-private partnerships and innovation hubs contribute significantly to skilling initiatives, especially for underserved populations. 2. Importance of Academia and Industry Collaboration: Aligning curricula with industry needs and integrating certifications like AWS and Cisco enhance employability and global competitiveness. Universities and institutions like Moringa School and Andela emphasize advanced skills training, bridging the gap between education and market demands. 3. Platforms for Practical Learning: Platforms like LeetCode, GitHub, HackerRank, and Kaggle provide real-world project experience, enhancing learners' problem-solving and technical skills. These platforms also enable workers to showcase their expertise through publicly visible portfolios, valued by employers globally. 4. Challenges in Accessing Internships: Limited opportunities and lack of experience are the most reported challenges for digital workers, alongside financial barriers and inadequate mentorship. Addressing these challenges through virtual internships, mentorship programs, and tailored opportunities for marginalized groups is vital. 5. Infrastructure and Tools: Initiatives like the Ajira Digital Program's 101 digital hubs and the rise of satellite internet services are enhancing access to digital tools and connectivity. With 46.4% of individuals owning laptops or desktops and 42.8% using these devices to access the internet, there is a growing reliance on advanced tools for professional tasks.

Recommendations

- 1. Expand ICT Hubs & Affordable Internet for Digital Workers:** Promote Ajira ICT hubs, partner with ISPs to offer affordable internet packages, and introduce subsidized laptop financing to increase accessibility. Dedicated women-focused and rural outreach programs should be launched to ensure equitable participation in digital work.
- 2. Strengthen Public-Private Partnerships for Advanced Digital Training:** Partner with global tech firms to expand subsidized certification programs in AI, cybersecurity, and cloud computing. Collaboration with universities and TVETs should integrate industry-relevant skills, while structured apprenticeship programs should provide real-world training with private sector employers.
- 3. Enhance Access to Practical Learning & Internship Opportunities:** Partner with freelancing platforms, BPO firms, and tech companies to offer virtual and in-person internships focused on high-demand skills. Structured mentorship programs should connect trainees with industry experts, while stipends for interns should remove financial barriers.
- 4. Improve Digital Freelancer Market Positioning & Global Visibility:** Develop a national freelancer certification system, partner with global digital work platforms to boost Kenyan freelancer visibility and launch a global marketing campaign branding Kenya as a top remote work destination.
- 5. Strengthen Kenya's Position as a Global Remote Work & BPO Hub:** Lobby for fast-tracking BPO licensing, expanded SEZ incentives, and tax breaks for outsourcing firms. AI-powered BPO solutions and a centralized BPO talent pool should be developed to enhance Kenya's global competitiveness in digital outsourcing.

Support System Components Overview

A comprehensive support system is essential to foster a thriving digital job ecosystem. The key components of this system include skilling, where academia and training institutions equip individuals with relevant digital and technical expertise. Additionally, practical experience opportunities help bridge skill gaps by providing real-world exposure. Inclusivity initiatives target marginalized groups, ensuring equal access to digital opportunities, while robust infrastructure, such as ICT hubs and affordable internet, forms the foundation for sustained digital growth. Together, these components create an environment that promotes skill development, innovation, and access to digital careers.

Skilling
Academia
Training Institutions

Practical Experience
Opportunities to
gain practical
experience and
bridge skill gaps

Inclusivity
Programs targeting
marginalized groups

Infrastructure
ICT hubs,
affordable internet

2.5.1 Skilling

Skilling Programs offered by academic institutions and training organizations play a crucial role in equipping individuals with the technical capabilities needed to thrive in the digital economy. These programs cover a range of competencies, from foundational IT skills to advanced digital specialties like AI, cloud computing, and cybersecurity.

2.5.2.1 Key Actors in Skilling

The key actors in skilling in Kenya encompass government agencies, private sector players, academic institutions, non-governmental organizations (NGOs), development partners, and innovation hubs. For example, the Ajira Digital Program works with partners like Google, Safaricom, and Mastercard Foundation to provide comprehensive digital skills training and employment opportunities. Below is an overview:

Table 12: Key Actors in Skilling

Government of Kenya	Ajira Digital Program	This initiative seeks to introduce young people to online work by providing training and mentorship. It collaborates with institutions like eMobilis Technology Institute to offer courses ranging from beginner to advanced levels in web design, web development, mobile development, and game development
	Finya Computer Itoe Dollar	The initiative is a free online training program launched by the Kenyan government in February 2024, aiming to equip young Kenyans with essential digital skills to participate in the gig and freelancing economy.
	Huduma Kenya and NITA	Providing basic and specialized skills training through public service hubs
Big Tech Companies in Kenya	Amazon Web Services (AWS)	In 2024, AWS introduced the 'AI Ready' initiative in Kenya, offering free artificial intelligence (AI) skills training. This program aims to equip individuals with AI knowledge to enhance their competitiveness in the job market.
	Google	Running training programs in digital literacy and technology e.g. Google Digital Skills for Africa programs
	Microsoft	Offering certifications and partnerships for advanced skills development such as Microsoft Skills Lab
	Huawei ICT Academy	The Huawei ICT Academy is a global initiative that collaborates with universities and educational institutions to cultivate ICT talent. Trains university students and professionals in networking, AI, and 5G technologies.
Academic and Training Institutions	Various Universities and TVETs	Offering formal education in technical and digital fields
	Moringa School	A premier coding and software development bootcamp offering intensive training in in-demand digital skills.
	eMobilis	Training of digital workers under the Ajira Digital Programme
	TVET Institutions (KTTC, RVTTI)	Hands-on training in ICT and technical skills
	ADMI and AkiraChix	Providing industry-focused, specialized programs in coding and design. AkiraChix focuses on training women
	ACWICT	implements programs aimed at enhancing the employability of young people by providing them with

		market-driven technical IT skills, life skills, and entrepreneurship training.
Online Platforms and Digital Initiatives	Ajira Digital Program	Providing accessible online training in in-demand digital skills
	Andela	Training developers and connecting them to global markets
	Coursera, Udemy, and EdX	Offering affordable courses for individuals seeking tech careers
Non-Governmental Organizations (NGOs)	DOT Kenya	Empowering marginalized groups with digital and entrepreneurial skills
	RefuSHE	Providing training for refugee women in freelancing and e-commerce
	Afrilabs	Supporting innovation hubs and digital skills training across Africa
Development Partners and International Organizations	World Bank	Funding large-scale skilling and infrastructure projects
	UNDP	Enhancing digital education through partnerships targeting youth and women
	GIZ (Make-IT in Africa)	Building capacity for tech entrepreneurs and SMEs
	Mastercard Foundation	Supporting youth-focused initiatives under its Young Africa Works strategy.
Innovation Hubs and Incubators	iHub	Providing incubation and mentorship for startups
	Gearbox	Fostering innovation in hardware and tech solutions
	Nailab	Supporting tech entrepreneurship with funding and guidance
	Chandaria Business Innovation and Incubation Centre (KU)	Focusing on equipping university students with entrepreneurial and digital skills
Private-Public Partnerships (PPPs)	KEPSA	Mobilizing resources for nationwide skilling initiatives

2.5.2.2 Strategies to Ensure Digital Trainers Stay Up-To-Date With Latest Trends and Technologies

To maintain instructional relevance in a rapidly evolving digital landscape, institutions must adopt dynamic strategies to ensure digital trainers stay current with emerging technologies. strategies to adopt include:

- **Regular Tech Forums and Hackathon Participation:** Engaging in tech forums and hackathons allows trainers to interact with industry experts, learn about emerging technologies, and apply innovative solutions in real-world scenarios. eMobilis has always supported the annual National Digital Summit and Connected Summits.
- **Weekly Tech Updates:** Trainers receive regular updates on advancements in fields like AI, blockchain, and cybersecurity, ensuring they incorporate the latest knowledge into their teaching.
- **International Tech Summit Participation by Senior Management:** By attending global tech summits, trainers gain insights into international trends and best practices, which are then cascaded into classroom teachings to ensure the curriculum remains globally relevant.

- **Cascading Global Tech Trends to Classrooms:** Trainers are tasked with translating global tech trends into practical, locally applicable lessons, ensuring Kenyan youth are equipped with skills that meet international standards.

To ensure trainers are equipped with the latest digital skills, institutions should implement regular training-of-trainers (ToT) programs in partnership with industry leaders. By leveraging real-time labor market information (LMI), institutions can track skill demand trends and adjust curricula accordingly. Additionally, mentorship and peer learning models should be integrated to foster continuous professional development and ensure trainers remain aligned with emerging technologies.

2.5.2.3 Role of Academia and Training Institutions in Bridging Skill Gaps

Academic and training institutions are at the forefront of addressing skill gaps, particularly in dynamic and rapidly evolving industries. By aligning curricula with market needs, integrating emerging technologies, and collaborating with industry stakeholders, these institutions play a vital role in equipping learners with the skills needed to succeed in today's global economy.

Market-Oriented Curriculum Development:

One of the primary strategies employed by academic institutions is the development of market-oriented curricula. This involves engaging partners, organizations, and key stakeholders to identify the most relevant skills required in the industry. By conducting market projections, institutions ensure their programs are tailored to address immediate skill gaps while aligning with labor market requirements.

Research on Immediate Needs:

Academic institutions actively engage in research to understand the specific needs of employers, private sector organizations, SMEs, and other stakeholders. This approach allows institutions to identify and address immediate skill gaps effectively.

Industry Analysis and Trend Monitoring:

To ensure their programs remain relevant, institutions perform in-depth industry analyses and monitor emerging trends. This involves forecasting future needs: Academic institutions anticipate skills that will be necessary in the next five to ten years by analyzing technological advancements and global market shifts. Additionally, incorporating emerging technologies such as generative AI, blockchain, and platform literacy (e.g., Zoom and Teams) are proactively integrated into curricula to keep learners competitive.

Collaboration with Industry Stakeholders:

Continuous collaboration with industry stakeholders ensures that academic programs are aligned with real-world requirements. Institutions consult government employers, private sector organizations, BPOs, and SMEs to gather feedback and update their offerings.

Integration of International Certifications:

Aligning programs with globally recognized certifications ensures students gain credentials that validate their competencies on a global scale. Certifications such as AWS (Amazon Web Services) and Cisco enhance employability and provide students with a competitive edge in the job market.

Consultation with Industry Experts:

Collaborating with professionals actively working in the field ensures that curricula are aligned with advancements gaining traction in the industry. This includes insights from experts in both large organizations like Google and Microsoft, as well as smaller enterprises.

2.5.2.4 Academic Institutions' Role In Developing Intermediate and Advanced Skills

Academic institutions are key drivers in developing intermediate and advanced skills, and their active collaboration with industry is essential to align training with current and future labor market needs. Below are the key roles:

Programs that Integrate Real-World Practice & Practical Environment:

Academic institutions can collaborate with industries to provide practical learning environments, such as internships, industrial attachments, and project-based courses. This approach helps prevent skills from becoming obsolete and keeps learners competitive in the global job market. Universities like JKUAT and Strathmore integrate real-world projects into their curricula, ensuring students are exposed to industry standards.

Self-Learning and Certification Programs:

While self-teaching through platforms like YouTube is beneficial, formal certification programs provide a standardized validation of skills. Programs in data science and software development that incorporate widely recognized certifications, such as AWS (Amazon Web Services), ensure that skills are validated and recognized globally. Academic institutions like Moringa School already incorporate certification programs in software development and data science.

Focusing on Industry-Recognized Certifications:

Partnering with global certification providers like AWS, Cisco, and Microsoft ensures students gain certifications that make them employable internationally such as New York and London. These certifications standardize skill levels and make it easier for employers to gauge competency. Institutions such as Andela and Moringa already emphasize certifications that align with global market demands.

Current & Up-to-Date Curriculums:

Regularly updated curricula are essential to keeping up with the fast-evolving tech and professional environments. This ensures that learners are always equipped with the latest knowledge and skills required by the market. Institutions like eMobilis and Strathmore's iLabAfrica ensure curriculum updates based on industry feedback.

Integration of International Standards

Aligning local training programs with international certifications and standards helps Kenyan professionals compete globally. Kenyan universities such as the University of Nairobi partner with IBM and Huawei to offer certifications in cloud computing and cybersecurity.

Programs That Integrate Comprehensive Skill Development:

Advanced curricula that include not just coding languages like Python but also frameworks like React, Node.js, and AI tools help students stay relevant. Institutions like Moringa and Andela emphasize advanced skills training, including modern technologies and frameworks.

2.5.2.5 Collaboration Between Academia and Industry to Align Curricula with Market Needs

The alignment of academic curricula with industry demands is crucial for bridging the gap between education and employability. In today's dynamic job market, fostering a strong partnership between academia and industry ensures that graduates are equipped with the skills and knowledge required to thrive in their careers. Collaborative efforts in curriculum development, practical exposure, and innovation can significantly enhance workforce readiness.

Involvement of Industry in Curriculum Development:

Academic institutions must actively engage industry players in the curriculum design process. This collaboration ensures that educational programs are up-to-date with market trends and address specific skill requirements. By co-creating syllabi and participating in advisory committees, industries can guide universities toward creating programs that are both relevant and forward-looking.

"Academia should be involved as stakeholders in curriculum development. When writing the curriculum, it's important to include input from companies that are already offering jobs in Kenya, as they have a clear understanding of the skills required for future job projections. "

Big Tech Company

Practical Exposure for Students:

Internships, industrial attachments, and exposure to real-world work environments are integral in preparing students for employment. Through partnerships, industries can provide students with opportunities to gain hands-on experience and understand workplace dynamics. This practical approach bridges theoretical knowledge with application.

"There are advanced virtual labs that can provide skill sets or a sense of what is happening in the industry. Additionally, there should be workshops and seminars where industry professionals, like us, can interact with the youth. "

Corporate

Feedback Mechanisms:

Establishing a two-way communication channel between academia and industry is essential for continual improvement. Regular feedback from industry stakeholders helps educational institutions adapt their programs to emerging technologies, skill gaps, and evolving business needs.

"There is zero feedback from the industry to the institutions... The only time I have interacted with lecturers is when they come here to supervise the students. "

Corporate

Collaborative Innovation and Research:

Industry-academia partnerships can drive innovation by fostering research initiatives that address real-world problems. Joint ventures in research, technology incubation, and pilot projects can result in groundbreaking solutions that benefit both parties.

Leveraging Technology and Global Trends:

With rapid technological advancements, industries play a pivotal role in integrating cutting-edge tools and methodologies into the learning process. Universities, in turn, can offer theoretical insights while industries ensure the practical relevance of these technologies.

By working together, academia and industry can create a robust talent pipeline that addresses the needs of the economy while empowering students with the skills to succeed. These collaborations not only enhance the quality of education but also contribute to economic growth and innovation.

2.5.2 Platforms Offering Practical Experience and Employer Recognition

Practical experience and internships provide workers with hands-on learning and global exposure. Platforms offering project experience and internship pipelines help bridge the gap between training and employment.

Platforms that provide practical experience and are recognized by employers have revolutionized the way learners acquire and demonstrate skills. These platforms enable learners to build, practice, and validate their abilities in real-world scenarios, making them highly valuable to potential employers. Below are key platforms and their contributions:

LeetCode: LeetCode is a platform designed to prepare individuals for technical interviews by offering coding challenges and competitions. It features an extensive library of algorithm and data structure problems, mock interview environments, and peer-reviewed solutions for best practices. Recognized by top companies like Google, Facebook, and Amazon, it helps learners enhance problem-solving skills, build confidence for interviews, and create a portfolio of solved problems to showcase their expertise.

GitHub: It is a collaborative platform for hosting, sharing, and managing code repositories. It allows learners to work on open-source projects, showcase projects via GitHub Pages, and utilize workflows for software development automation. Recruiters often assess GitHub repositories to evaluate coding standards and contributions. The platform helps learners build a public portfolio, demonstrating their collaboration and technical skills.

HackerRank: This is a coding platform designed to enhance coding skills and facilitate participation in coding competitions. It covers a range of domains, including algorithms, databases, and artificial intelligence, and offers employer-branded challenges linked to job opportunities. Many companies integrate HackerRank's testing environments into their hiring processes. The platform provides real-time challenges and performance analytics to boost employability and technical proficiency.

Coursera and edX: They offer specialized courses with practical assignments to bridge the gap between theoretical knowledge and real-world application. These platforms feature industry-aligned projects and courses developed in collaboration with companies like IBM, Google, and Microsoft. Certifications from these platforms are recognized by employers as evidence of expertise, equipping learners with job-ready skills and practical problem-solving abilities.

Kaggle: This is a platform for data science and machine learning enthusiasts to participate in competitions and showcase their skills. It provides access to real-world datasets for experimentation and community forums for networking and learning. Top performers in Kaggle competitions are often scouted by leading tech firms. The platform enables learners to gain hands-on experience in data analysis, predictive modeling, and advanced machine learning techniques.

Recommendation for Kenyan Digital Workers

Kenyan digital workers should actively leverage platforms that offer **practical experience** and **employer recognition** to enhance their technical expertise and visibility in the global job market. Platforms like **LeetCode**, **GitHub**, **HackerRank**, **Coursera**, **edX**, and **Kaggle** provide opportunities to:

1. **Build a Strong Portfolio:**
Participate in coding challenges, open-source projects, and industry-aligned courses to showcase your technical skills. This will improve your credibility and appeal to employers who value hands-on experience.
2. **Gain Global Exposure:**
Engage in competitions and projects that provide international visibility. Platforms such as **Kaggle** and **HackerRank** often attract global recruiters and tech companies looking for top performers.
3. **Develop Job-Ready Skills:**
Utilize practical assignments and projects from platforms like **Coursera** and **edX** to gain real-world problem-solving experience in fields such as data science, AI, and cloud computing.

4. Network and Collaborate:

Platforms like **GitHub** offer opportunities to collaborate with global teams on open-source projects, helping you develop teamwork and communication skills while expanding your professional network.

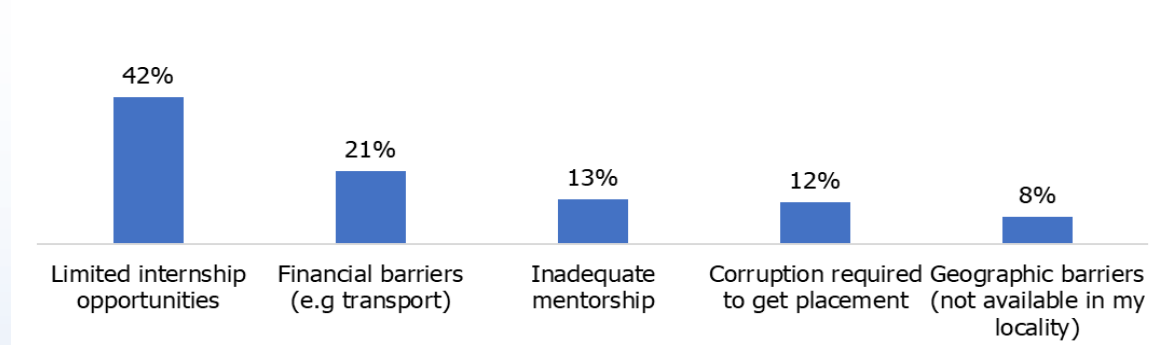
By utilizing these platforms strategically, Kenyan digital workers can enhance their skills, increase employability, and access better-paying opportunities in both local and international markets.

2.5.3 Internships

2.5.4.1 Challenges Digital Workers Face in Accessing Internships

Accessing internships is a crucial step for ICT-skilled youth in transitioning from academic learning to professional careers. Internships provide practical experience, industry exposure, and opportunities to develop advanced skills. However, ICT-skilled youth face significant obstacles that hinder their ability to secure these opportunities, affecting their career progression and contribution to the digital economy. Across all categories, the most significant challenge reported is limited opportunities, affecting 42% of digital workers. This is followed by financial barriers (21%). Inadequate mentorship (13%) and corruption in the employment industry (12%) also play a notable role, though to a lesser extent.

Figure 35: Challenges Digital Workers Face in Accessing Internships



Q. What challenges do ICT skilled youth face in accessing ICT Internships

Base: 301 (All respondents)

Source: Primary Research with digital workers in Kenya

2.5.4.2 Challenges Digital Workers Face in Accessing Internships

Internships are essential for young people to gain practical experience, yet numerous challenges make it difficult for employers to effectively provide these opportunities. Below is an exploration of the challenges faced from an employer's viewpoint.

Oversupply of Talented Youth vs. Limited Opportunities: Employers are often overwhelmed by the sheer number of internship applications they receive. This is particularly challenging for small and medium-sized businesses, which may lack the capacity to absorb the growing pool of talented youth seeking internships. The demand for internships far exceeds the available positions, creating a highly competitive environment that leaves many young people without opportunities, despite their qualifications and enthusiasm.

Recession Impact: Economic slowdowns have a significant impact on hiring trends. Employers facing financial constraints are forced to scale back or halt their internship programs altogether. This creates a challenging environment where even well-qualified candidates are unable to secure internships, as businesses prioritize sustaining their existing workforce over onboarding interns.

“For the last four years, it's been like a slowdown. So, there were fewer companies hiring. Some companies had to let go of people. “

Skilling Company

Mismatch Between Skill Levels and Job Market Requirements: Employers frequently encounter a mismatch between the skills possessed by young candidates and the requirements of the job market. Many internships require intermediate to advanced skills, leaving beginner-level candidates at a disadvantage. Companies are hesitant to invest time and resources in training these candidates, as it may not align with their immediate business needs.

Lack of Digital Infrastructure and Resources: Access to essential digital tools such as laptops and smartphones is a barrier for many young people. Employers may find it challenging to onboard interns who lack these resources, especially in industries where digital literacy is a prerequisite. This technological divide restricts the pool of eligible candidates and limits the inclusivity of internship programs.

Insufficient Institutional Support and Mentorship: Employers often notice gaps in institutional support for youth. The absence of structured mentorship programs, alumni networks, and career guidance makes it harder for young candidates to transition into professional environments. Without this support, employers bear the additional burden of providing mentorship and guidance, which can be resource-intensive.

Profiling and Bias in Selection Processes: Employers acknowledge that bias and profiling during selection processes hinder the equitable access of youth to internships. This may include discrimination based on socioeconomic background, educational institution, or cultural factors. Such biases not only deprive talented individuals of opportunities but also limit diversity and innovation within organizations.

“Sometimes Kenyans are profiled and they automatically get disqualified even before they can actually showcase what they can do. The companies are more interested in the soft skills. They're willing to train the person.”

Skilling Company

Lack of Alignment Between Educational Institutions and Market Needs: Employers have raised concerns about the misalignment between educational curricula and market demands. Some educational programs do not adequately prepare students for the practical requirements of internships. This results in a gap between what students are taught and what employers need, making it difficult to integrate interns into existing workflows effectively.

Government and Policy-Related Barriers: Unfavorable government policies and actions can deter investors and businesses from hiring interns. This further reduces the number of internship opportunities available to Kenyan youth, exacerbating the unemployment problem.

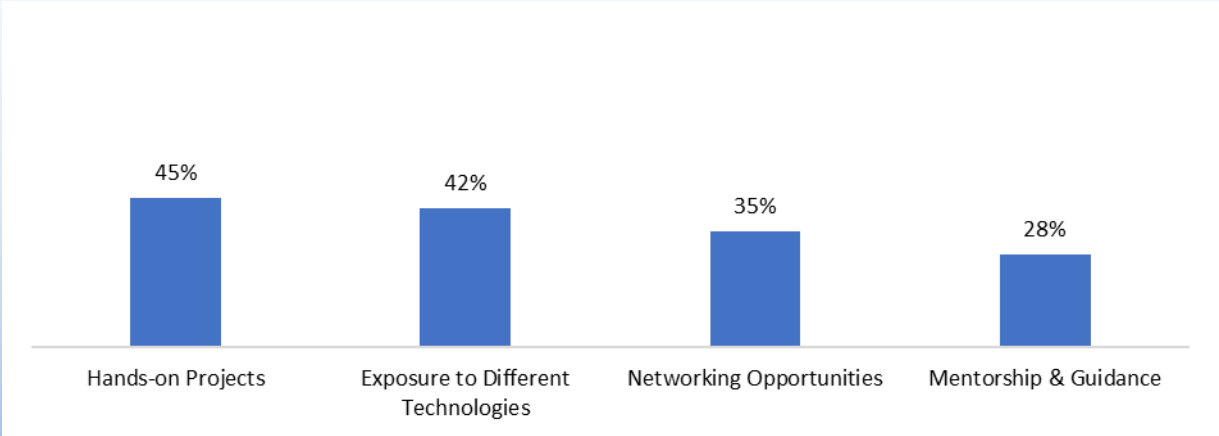
Insight:
The challenges Kenyan youth face in accessing internships exacerbate unemployment, widen the skills gap, perpetuate social inequality, contribute to brain drain, hinder SME growth and economic development, limit innovation and competitiveness, increase dependency on government support, and risk social unrest, ultimately undermining the country’s potential for sustainable growth and prosperity.

2.5.4.3 Recommendations to Improve Internship Practical Experience

Hands-on projects are the most valued internship experience across all categories, cited by nearly half of respondents. Exposure to diverse technologies ranks second, with 42% of respondents emphasizing its importance followed by networking opportunities, cited by 28% of respondents.

Practical, real-world tasks allow interns to apply their theoretical knowledge, build confidence, and develop critical problem-solving skills. This preference is particularly prominent in fields like AI/Machine Learning (52%), Digital Marketing and Communication (50%), and Business and Administrative Support (50%).

Figure 36: Recommendations to Improve Internship Practical Experience

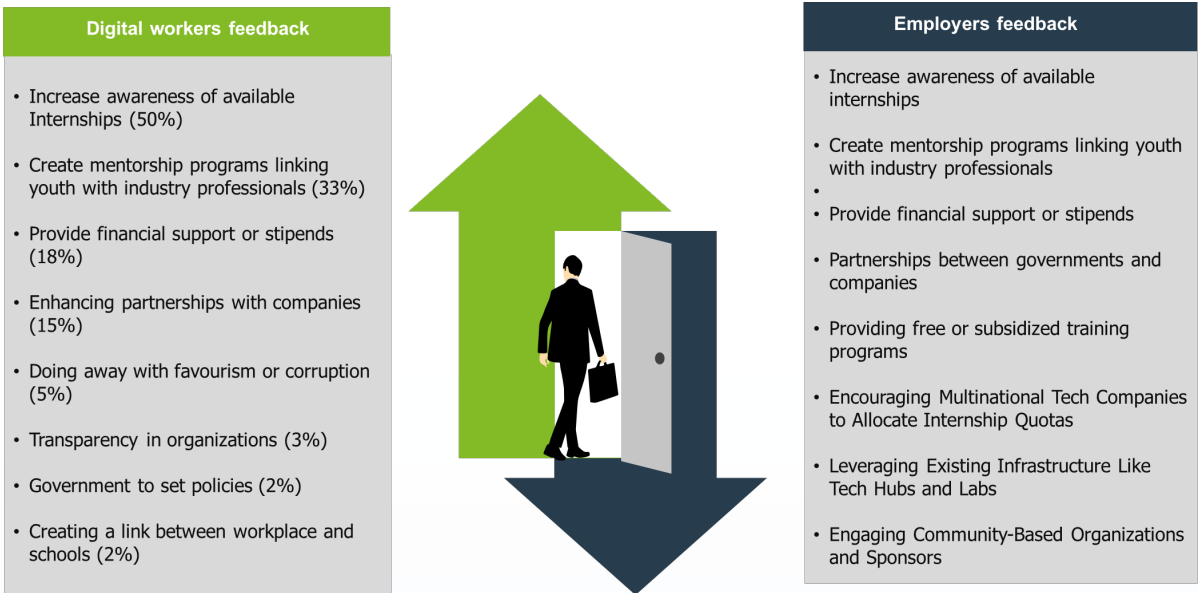


Q. What type of internship experience do you find most valuable for future job applications?
Base: 301 (All respondents)
Source: Primary Research with digital workers in Kenya

2.5.4.4 Recommendations for Expanding Internship Programs to Reach More Youth

Employers have a critical role to play in expanding internship programs to bridge the gap between young talent and the professional world. Addressing existing barriers and creating opportunities, businesses can build a more inclusive and skilled workforce while fostering long-term economic growth. The top three barriers were increasing awareness, creating mentorship programs and providing financial support

Figure 37: Recommendations for Expanding Internship Programs



Source: Primary Research with digital workers in Kenya
Source: Key Informant Interviews with Employers

For marginalized groups the below internship programs can address challenges:

- **Virtual Internships:** Virtual internships are highlighted as an effective way to reach marginalized groups, especially when logistical or physical access to internship locations is a challenge. They provide flexibility and broader accessibility, particularly for women or PWDs who may face mobility or geographical constraints.

"Creating virtual internship opportunities can facilitate participation for marginalized groups who face logistical challenges. "

Corporate

- **Tailored Internships for PWDs:** For persons with disabilities, internships should be tailored to their needs, including providing specialized tools such as accessible software or adaptive equipment.

"Persons with disabilities require special tools and accommodations, and internship programs should integrate affirmative action to support their inclusion. "

Distributor of Tech

2.5.4 Infrastructure: Enabling Access to Digital Resources

Investment in ICT infrastructure plays a pivotal role in driving digital workforce development by ensuring access to essential digital resources and platforms. Reliable access to digital resources ensures that individuals and communities can connect to learning opportunities, job platforms, and global markets, fostering widespread engagement in the digital economy. This includes the establishment of ICT hubs, community innovation hubs (CIHs), and the provision of affordable and reliable internet service

Table 13: Key Infrastructure and Access Indicators

Indicator	Total	Male	Female	18-34	35+
☐ % With access to the internet	97%	97%	97%	98%	93%
☐ % whose ability to use the internet is excellent/Good	84%	85%	83%	86%	77%
☐ % with access to a computer or laptop	22%	25%	18%	28%	16%
☐ % of that have used ICT hubs*	12%	14%	10%	13%	11%
☐ % of digital workers that have used ICT hubs Hubs*	23%	30%	15%	22%	29%

Source: KEPSA National Survey, 2023

* Base is the digital workers

Access to the Internet: While internet access is high at **97%**, only **22%** of individuals have access to a computer or laptop. This disparity suggests that digital participation is limited by device accessibility, particularly for women and rural populations. This statistic is supported by recent reports from the Communications Authority of Kenya (CA) indicating significant advancements in internet accessibility and affordability across the country. As of June 2024, fixed internet subscriptions also saw a notable rise, growing by 7.4% to a record 1.5 million

Good Internet Skills but Age-Related Gaps Exist: A majority (84%) of respondents report excellent or good internet usage skills. However, older individuals (35+) demonstrate lower proficiency (77%), indicating a need for targeted digital literacy programs to bridge generational skill gaps.

Gender Disparities in Digital Inclusion: Men have greater access to digital devices as compared to women, with **25%** of men owning laptops versus **18%** of women. The gender disparity in digital device ownership is driven majorly by traditional gender roles that limit women's access to digital devices compared to men. Additionally, income gaps and limited access to high-paying digital jobs, and lower participation in advanced digital skills training.

Underutilization of ICT Hubs: The Ajira Digital Program has significantly expanded its infrastructure to support youth in accessing digital job opportunities across Kenya. As of recent reports, the program has established 101 digital hubs. These hubs are equipped with free Wi-Fi and digital devices, providing safe working spaces for youth to engage in online work and innovation. These hubs serve as one-stop centers where young people can access internet facilities, receive ICT training, and find digital job opportunities through the Ajira Digital platform.

Only **10%** of women have used ICT hubs, compared to **14%** of men. Addressing these disparities is crucial to promoting gender equity in digital participation. Despite their potential to enhance digital

inclusion, ICT hubs are underutilized, with only **12%** of the total population and **23%** of digital workers having used them. This suggests a need to improve awareness, accessibility, and targeted outreach to ensure greater use of these resources. Among digital workers, older individuals (35+) report higher ICT hub usage (**29%**) than younger workers (**22%**), indicating that older users may depend more on these facilities due to limited access to personal devices.

2.6 INCLUSIVITY

Section Overview
Inclusivity in Kenya’s digital economy is fundamental to achieving equitable growth and opportunity. While digital platforms are opening doors for women, youth, refugees, and persons with disabilities (PWDs), structural and systemic barriers continue to limit full participation. This section explores key findings on the inclusiveness of Kenya’s digital workforce and provides strategic recommendations for enhancing digital equity.
Summary Findings
Demographic Trends: Kenya’s digital workforce is predominantly male (57%) and young, with 60% aged between 18–34 years. Regional concentration is skewed towards Nairobi (28%) and Rift Valley (21%), leaving regions like the Coast and Northeastern significantly underrepresented. Gender Disparities: While the gender gap in access to internet skills is narrowing, men still enjoy better infrastructure access and higher awareness of digital opportunities. Women are more likely to be confined to lower-paying, hourly-based work and underrepresented in high-value, task-based roles. Income Gaps: Gender pay disparities persist, particularly in high-paying fields such as IT and accounting. While women slightly outperform men in hourly rates, men dominate in higher-paying task-based jobs. This underscores the need for targeted training and mentorship to help women access high-value digital work. Refugee Inclusion: Refugees in Dadaab and Kakuma camps face challenges like limited infrastructure, financial barriers, and legal restrictions. However, initiatives such as the Ajira Digital Program, Dadaab Collective, and RESI are making strides in training and connecting refugees to digital jobs, promoting economic empowerment. Challenges for PWDs: Persons with disabilities face compounded barriers, including inaccessible platforms, lack of assistive technology, exclusionary training content, and discrimination. However, targeted efforts by Moringa School, iHub, the Xavier Project, and others are beginning to bridge the inclusion gap. Digital Access Inequities: Limited access to affordable devices, internet, and public digital spaces (e.g., Pasha Centers) continues to be a major hurdle for underrepresented groups, especially in rural and underserved areas.
Recommendations
Expand Access for Refugees and Underserved Regions: Scale digital job programs in refugee camps and marginalized areas by providing subsidized devices, mentorship, and internet access through public-private partnerships.

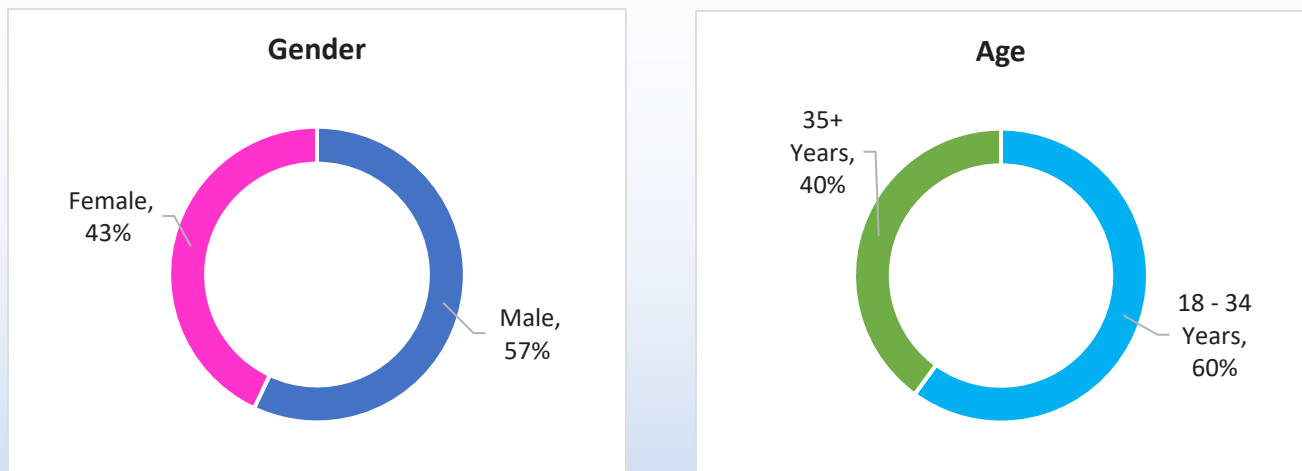
- 2. Promote Gender Equity in High-Value Work:** Launch specialized programs like “Women in High-Value Digital Work” to train and mentor women in fields like blockchain, AI, and digital marketing, along with negotiation and pricing workshops.
- 3. Enhance Inclusion of Persons with Disabilities:** Integrate accessibility in digital training platforms, expand assistive technology access, and promote inclusive hiring practices. Partner with disability advocacy organizations to increase outreach and effectiveness.
- 4. Support Infrastructure Development:** Expand free Wi-Fi zones, digital access centers, and public-private partnerships to reduce infrastructure gaps in low-income and rural communities.
- 5. Monitor and Track Progress:** Develop inclusive data collection systems to track participation by gender, region, age, refugee status, and disability. This will help inform policy, program design, and resource allocation for inclusive digital transformation.

2.6.1 Demographic Profile of Kenyan Digital Workers

2.6.1.1 Age and Gender Distribution of Gig Workers in Kenya

The profile of online and digital workers in Kenya reveals a dynamic and youthful demographic. The majority of these workers, approximately 57%, are male, while 43% are female, highlighting a slight gender disparity in the sector. The age distribution further emphasizes the youthful nature of this workforce, with a significant 60% falling within the 18–34 age bracket. In contrast, only 40% of the online workers are aged 35 and above.

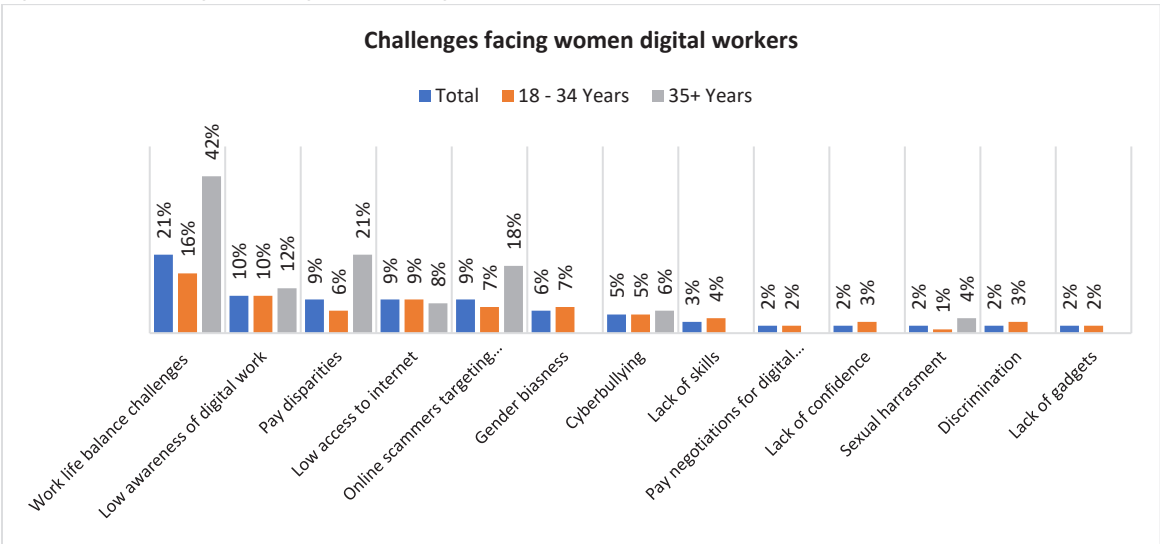
Figure 38: Age and Gender Distribution of Digital /Online Workers in Kenya



Source: KEPSA National Survey Report, 2023

Among all digital workers respondents, 21% indicated work-life balance is a challenge, with the older respondents (42%) having higher mentions than the younger respondents (16%). The second most challenge was low awareness of digital work (10%), followed by pay disparities (9%).

Figure 39: Challenges Facing Women Digital Workers



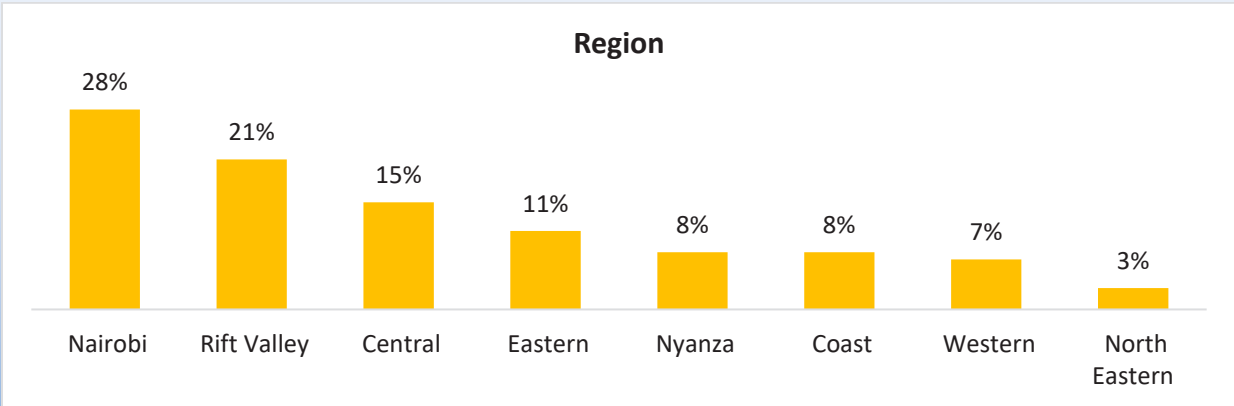
Source: KEPSA National Survey Report, 2023

The World Bank report suggests that increasing the participation of women in online work requires a proactive approach to recruitment to promote gender inclusivity. An example of such efforts is evident in SheWorks!, a Latin American platform actively encouraging female engagement in online gig work. This is achieved through its promotion of flexible working hours and strategic marketing, reflected in its name, which has successfully attracted a predominantly female user base, despite the platform not being exclusively designed for women.²⁴

2.6.1.2 Distribution of Workers by Region

Geographically, the workforce is concentrated in key regions of the country. Nairobi emerges as the dominant hub, hosting 28% of the online workforce, followed by the Rift Valley region with 21%. Central Kenya contributes 15% of the workers, while Eastern and Nyanza each account for 11% and 8% respectively. These findings underscore the central role of Nairobi and the Rift Valley in Kenya's digital economy.

Figure 40: Distribution of Workers by Region



Source: KEPSA National Survey Report, 2023

²⁴ World Bank, Working-Without-Boarders-Online-Gig-Work, Pg 87

Insights on Inclusivity in Kenya's Digital Workforce

- ❑ **Gender Disparity:** While the gender gap is present, it is relatively narrow. This indicates progress in women's participation in digital work, though more efforts may be needed to reach gender parity. Initiatives focused on empowering women through targeted training and mentorship could help close this gap further.
- ❑ **Youth-Centric Workforce:** The workforce is predominantly youthful, with 60% of workers aged 18–34. This demonstrates that young people are accessing and benefiting from digital opportunities. However, the lower participation of workers aged 35 and above (may indicate barriers such as skill gaps, technological unfamiliarity, or limited access to digital training for older populations. Inclusive strategies to engage older workers, including reskilling programs, can help balance age representation.
- ❑ **Inclusivity Opportunities:** While young and male workers dominate the space, there is room for greater inclusivity by promoting gender-equitable policies and expanding access to digital skills development across different age groups. Focused initiatives to address barriers faced by women and older workers could enhance diversity and foster a more inclusive digital economy.

2.6.2 Gender Disparities in Digital Access and Participation

The data reveals that while men have better access to infrastructure and greater awareness of the gig economy, both genders possess similar internet skills and face comparable challenges regarding device ownership and access to ICT hubs. Bridging these disparities, particularly in infrastructure access and awareness, could significantly enhance women's participation in the digital economy.

Table 14: Gender Disparities in Digital Access and Participation

Indicator	Total Sample	Male	Female	Significant Tests	Conclusion
Awareness of the gig economy	54%	58%	51%	0.042	Males are more aware than female
Ability to use the Internet	63%	62%	64%	0.601	Proportions are not significantly different
Access to internet infrastructure	65%	72%	59%	0.000	Males have more access than female
Owens a laptop/ computer	22%	25%	19%	0.184	Proportions are not significantly different
Access to ICT hubs/ CIHs (national population)	43%	47%	39%	0.194	Proportions are not significantly different

Source: KEPSA National Survey Report, 2023

2.6.2.1 Income Disparities by Gender

A study by the World Economic Forum (WEF) highlights that women working in the gig economy face a gender pay gap nearly three times wider than those in full-time jobs. The research indicates that men in the gig economy charge significantly more than women for equivalent work, particularly in specialties such as information technology (IT), accounting, and business analysis. This disparity is even more pronounced in specific roles within these sectors (WEF 2022).

In Kenya, survey data suggests an imbalance in pay structures based on the type of work performed. While women benefit from hourly pay, they may face limited access to high-value task-based roles. Addressing this disparity may involve promoting equitable access to better-paying tasks and offering training or mentorship for women to enter higher-paying digital fields.

Table 15: Income Disparities by Gender

Type of pay	Total Sample	Male	Female	Male	Female	Significant Tests	Conclusion
Hourly (KES)	1,259	1,205	1,312	28	30	0.027	Female earn more than male
Per task (KES)	9,692	12,249	5,530	110	72	0.031	Male earn more than female

Source: KEPSA National Survey Report, 2023

Insight

Programs aimed at reducing gender pay gaps should focus on providing women with access to high-paying task-based roles and enhancing their participation in specialized digital work. Additionally, measures to track and balance task allocation can help promote pay equity in the digital economy.

2.6.3 Refugees' Participation of in Digital Work

Kenya hosts a significant refugee population, with over 774,370 refugees and asylum-seekers as of 2024, primarily residing in the Dadaab and Kakuma camps. Dadaab, located in Garissa County, accommodates approximately 408,985 individuals, while Kakuma and the Kalobeyei Integrated Settlement in Turkana County host around 296,152 refugees.²⁵ These communities face challenges related to limited formal employment, which has historically hindered sustainable livelihoods. However, inclusivity-focused initiatives such as the **Dadaab Collective** and **Ajira Digital Program** are addressing these barriers by equipping refugees with the skills needed to participate in the digital economy.

The Dadaab Collective, supported by the Norwegian Refugee Council and the International Trade Centre, provides digital training under the Refugee Employment and Skills Initiative (RESI). This initiative offers refugees practical training in high-demand areas like graphic design, digital

²⁵ [https://www.worldbank.org/en/country/kenya/publication/building-evidence-to-enhance-the-welfare-of-refugees-and-host-communities-in-kenya?](https://www.worldbank.org/en/country/kenya/publication/building-evidence-to-enhance-the-welfare-of-refugees-and-host-communities-in-kenya?locations=KE)

marketing, and online journalism, alongside essential soft and business skills²⁶. Similarly, KEPSA's Ajira Digital Program, in collaboration with the Amahoro Coalition, provides free digital skills training, mentorship, and support for youth in both Kakuma and Dadaab camps, aiming to connect them with online work opportunities²⁷.

Together, these efforts are helping to create economic inclusion for refugees, enabling them to contribute meaningfully to Kenya's growing digital economy.

Insights:

- ❑ **Economic Empowerment:** Refugees are gaining access to income-generating opportunities through remote work, reducing dependency on humanitarian aid.
- ❑ **Skills Development:** Training programs focus on equipping refugees with both technical and soft skills, enhancing their competitiveness in the global digital market.
- ❑ **Integration into the Digital Economy:** By promoting refugee participation, these initiatives contribute to greater economic inclusion and social integration within Kenya's rapidly growing digital sector.

2.6.3.1 Barriers to Digital Jobs Access for Young Refugees and Host Communities in Kenya

The digital economy presents promising opportunities for youth in refugee and host communities in Kenya to build sustainable livelihoods. However, young refugees and host communities face access challenges that limit their participation in this sector. According to UNHCR's 2024 report, *Improving Digital Livelihood Opportunities for Refugees*, refugees in Kenya face several challenges in accessing digital work opportunities.²⁸ Key barriers identified include:

Limited Awareness of Online Earning Opportunities: Many refugees are unaware of the various ways to earn income online, hindering their participation in the digital economy.

Infrastructure Constraints: Refugees face significant challenges accessing digital work due to overcrowded and makeshift camp conditions, which strain infrastructure and limit access to stable electricity and reliable internet connectivity.

Training Gaps: Many training initiatives lack relevant content tailored to refugees' unique contexts, such as their displacement experiences, cultural backgrounds, language barriers, and varying levels of prior education and digital literacy, leading to difficulties in skill development and successful integration into the digital economy

Transitioning from Training to Employment: After acquiring skills, refugees frequently struggle to find clients, navigate digital platforms, and secure payment for completed work.

²⁶ Dadaab Collective Freelancing Agency, Upwork, <https://www.upwork.com/ag/dadaabcollectiveagency/>

²⁷ <https://kepsa.or.ke/kepsanews/ajira-digital-program-and-amahoro-coalition-collaborate-to-enable-online-work-for-refugees?>

²⁸ UNHCR. (2024). *Improving digital livelihood opportunities for refugees*. United Nations High Commissioner for Refugees. <https://www.unhcr.org/innovation/wp-content/uploads/2024/02/ImprovingDigitalLivelihoodOpportunitiesforRefugees.pdf>

Financial Barriers: The cost of necessary equipment, such as computers and smartphones, can be prohibitive. Additionally, lacking access to banking services complicates receiving payments.

Legal and Policy Restrictions: Government policies may restrict refugees' rights to work or limit their ability to obtain necessary identification documents, further impeding access to digital employment.

2.6.4 Programs/Initiatives Targeting Marginalized Groups (Youth, Women, Refugees)

Promoting digital access involves ensuring that individuals and communities can connect to and benefit from digital technologies regardless of their socioeconomic status, geographic location, or demographic profile. It is a critical step toward fostering inclusion in an increasingly digital world, where access to the internet, digital tools, and skills determines opportunities for education, employment, and social engagement. In developing countries like Kenya, promoting digital access has become a central focus to empower marginalized groups, such as youth, women, and refugees. Below are some of the initiatives focusing on marginalized groups in Kenya:

Ajira Digital Program in Partnership with Amahoro Coalition: This collaboration explores ways to enable Kenya's refugee population to work online and deliver business solutions for the private sector. It focuses on integrating refugees into the digital economy, providing them with opportunities to earn income through online platforms.

Digital Inclusion Program (DIP) by Jesuit Refugee Service (JRS) and Konexio: Launched in Kakuma Refugee Camp, this program offers digital and business skills training, along with job placement support, to refugees with limited income opportunities. It emphasizes inclusivity, ensuring equal access for all community members, particularly women and girls who often face significant barriers to education and employment.²⁹

Kenya Digital Economy Acceleration Project (KDEAP): Initiated by the Government of Kenya with support from the World Bank, KDEAP seeks to expand access to high-speed internet, improve the efficiency of education and government services, and build digital skills for the economy. The project emphasizes digital inclusion, particularly for the poor, rural communities, women, and persons with disabilities, by enhancing accessibility to connectivity and supporting productive participation in the digital economy.³⁰

Digital Bridge Project by Digital Opportunity Trust (DOT) Kenya: Launched in November 2024, this project aims to tackle barriers to digital inclusion, including access to digital tools, skills, and safe online experiences. Over its duration, the project plans to provide 10,000 young women and men (70% women) with the knowledge and skills required to use technology effectively for both professional and personal development. It focuses on fostering entrepreneurial, leadership, and digital competencies among participants.³¹

²⁹ <https://www.jrsusa.org/story/technology-opens-digital-doors-for-refugees-in-kakuma-refugee-camp/>

³⁰ <https://documents1.worldbank.org/curated/en/099102323010019198/pdf/P17094105e190f0820a4840c85b369d33b9.pdf>

³¹ <https://kenya.dotrust.org/digital-bridge-accelerating-inclusion-in-a-digital-world/>

The Instant Network Schools (INS) initiative: Launched in 2013 by the Vodafone Foundation and UNHCR, aims to enhance education for young refugees and host communities through digital technology. By transforming existing classrooms into multimedia hubs equipped with internet connectivity, sustainable solar power, and comprehensive teacher training, INS has established 130 centers across six countries, including Kenya, benefiting over 352,000 students and 6,400 teachers.

The Xavier Project: The initiative by the non-profit organization dedicated to enhancing educational and livelihood opportunities for refugees and marginalized communities in East Africa, particularly in Kenya and Uganda. Established in 2008, the organization collaborates closely with refugee-led organizations to implement community-driven initiatives that promote education, vocational training, and community development

Refugee Employment and Skills Initiative (RESI): The RESI program, a collaboration between the Norwegian Refugee Council (NRC) and the International Trade Centre (ITC), operates in Kenya's Dadaab refugee camps to enhance economic self-reliance among refugees and host communities. The program offers market-relevant skills training, including digital skills, and supports entrepreneurship to increase employability and income-generating opportunities.

2.6.4.1 Affordable Tools and Resources for Underrepresented Communities

Ensuring access to affordable digital tools and resources is a vital step in empowering underrepresented communities to participate in the digital economy. Initiatives that focus on affordability help bridge the gap for marginalized groups such as low-income individuals, youth, women, and refugees. Below are some strategies and programs that target affordability:

Low-Cost Internet Access

- **Free Wi-Fi Zones:** Programs like Kenya's Digital Literacy Program (DLP) and partnerships with telecommunication companies have established free Wi-Fi zones in rural and urban low-income areas to improve internet access.
- **Subsidized Internet Packages:** Telecom providers such as Safaricom and Airtel offer discounted data bundles tailored for students and low-income users to access educational and work-related platforms.

Public Digital Access Centers

- **Pasha Centers (Kenya):** Established by the Kenyan government as digital hubs offering low-cost access to computers, internet, and training for residents in rural areas.
- **Community Libraries with ICT Centers:** Many public libraries now incorporate affordable ICT resources, including computers and the internet, to ensure access for low-income communities.
- **Ajira Youth Empowerment Centers:** This is part of the Ajira Digital Program, a flagship initiative by the Government of Kenya under the Ministry of Communication, Information, and the Digital Economy. These centers are equipped with computers, high-speed internet, and other digital tools to facilitate training and access to online work opportunities. The initiative has helped reduce barriers to entry into the gig economy, particularly for individuals from low-income and underserved communities.

Partnerships for Subsidized Tools

- **UNHCR's Connectivity for Refugees Initiative:** Provides subsidized devices and connectivity for refugees, ensuring they can access online learning and employment opportunities.
- **Huawei DigiTruck:** A mobile digital classroom offering affordable ICT training and access to technology for marginalized groups in Kenya.

2.6.4.2 Bridging the Digital Skills Gap in Rural Areas

To address equitable access to digital skills training among underserved youth groups, especially in rural areas, women, Persons with Disabilities, and refugees, strategies adopted include;

Collaboration with Organizations Supporting Marginalized Groups: Partnerships with organizations like DRC, REFUSHE, Don Bosco Kakuma, and NGCDF offices ensure that refugees, women, Persons with Disabilities, and rural youth have access to training and resources.

Targeted Mobilization: Proactive outreach to underserved groups, including women and special populations, ensures that qualified youth are aware of and can access training opportunities.

Creating Rapport with Local Authorities: Building strong relationships with NG-CDF offices and Local Admin officers facilitates operationalization, infrastructure installation, awareness creation, and mobilization of youth to training hubs.

Recognition of Impact Stories across regions: Showcasing success stories of trainees from marginalized groups serves as an organic mechanism to attract more youth to the program, demonstrating its benefits and relevance.

Collaborating with local authorities, the Ministry and PR agencies: it is crucial to increase awareness and utilization of ICT hubs, ensuring they serve as effective training centres for rural and underserved communities.

2.6.5 Programs/Initiatives Targeting People with Disabilities

Integrating digital skills training for individuals with disabilities is essential to promote inclusivity and equal participation in Kenya's digital economy. However, persons with disabilities (PWDs) face unique challenges that hinder their access to digital skills and employment opportunities. Several initiatives in Kenya are working towards this goal:

Next Step Foundation: The Next Step Foundation empowers PWDs through digital training, mentorship, and access to technology. Notable projects include the AWS Initiative, which provides AWS cloud computing training to enhance employability in the tech industry.

Team4Tech: Team4Tech partners with non-profits to enhance digital literacy among underserved communities, including PWDs. One successful project is their collaboration with The Kenya Red Cross, implementing digital literacy programs in rural areas to support PWDs.

GSMA Initiatives: GSMA supports digital literacy and inclusion through programs such as the mLearning program, which helps PWDs use mobile technology for learning and employment by developing accessible mobile apps.

RET's Digital Work Livelihood Programme: Implemented in the Dadaab refugee camps, this program equips refugee youth, including those with disabilities, with ICT skills. The Digital Livelihood Training project enables them to access online jobs, fostering self-reliance.

Tunapanda Institute's Training Initiatives: Tunapanda Institute offers intensive tech courses in Nairobi's Kibera slum. Their Tech for All Program provides PWDs with skills in web development, graphic design, and digital marketing, enhancing their employability in the tech sector.

iHub's Tech Program for PWDs: iHub's Accessible Tech Training Program provides PWDs with training in app development and UX/UI design, enabling them to develop their own digital solutions and access the digital job market.

Kenya Association of the Deaf (KAD) Digital Literacy Program: KAD's Sign Language Digital Training Initiative helps individuals with hearing impairments gain digital skills, using sign language to make digital literacy and mobile technology accessible to the deaf community.

Moringa School's PWDs in Tech Program: In partnership with Safaricom PLC, Moringa School launched the PWDs in Tech program, which trained its first cohort of PWDs in software engineering. This initiative empowers participants with practical skills to thrive in the tech industry and break barriers in digital spaces.

2.6.5.1 Barriers to PWDs' Inclusion in Digital Programs

Persons with disabilities (PWDs) in Kenya face numerous barriers to accessing digital skills training and employment opportunities. These challenges are rooted in structural, technological, and societal factors that continue to exclude PWDs from the digital economy.

Inaccessible Digital Platforms: Many digital platforms are not designed with assistive technology in mind. This makes navigation difficult for users with visual, hearing, or mobility impairments, limiting their ability to engage fully in digital training or job opportunities.

Limited Access to Assistive Devices: The high cost of assistive devices such as screen readers, hearing aids, and specialized input tools makes them inaccessible for many PWDs. Without these tools, participation in digital programs becomes extremely challenging.

Non-Inclusive Training Programs: Digital skills training programs often lack inclusive teaching methods or adapted learning materials. This oversight excludes PWDs from acquiring the skills needed to compete in the digital workforce.

Stigma and Discrimination: Prejudices and discriminatory attitudes persist both in educational settings and the job market. These social barriers restrict the full participation of PWDs, even when they have the interest and capability to succeed.

Exclusion from the Digital Workforce: Inclusion for PWDs is a major challenge in workplaces that do not have inclusion policies for the workforce. Therefore, Many individuals with disabilities remain excluded from the rapidly expanding digital job market, despite their potential to contribute meaningfully.

Limited Reach of Targeted Programs

Many programs designed to support PWDs are concentrated in urban areas or higher-level institutions, failing to reach grassroots and rural communities. This limited outreach leaves a significant portion of the disabled population without access to much-needed digital opportunities and support systems.

2.6.5.2 Recommendations for Expanding Programs to Reach More PWDs

To ensure persons with disabilities (PWDs) are not left behind in the digital economy, it is essential to adopt a holistic and inclusive approach that addresses both systemic and practical barriers. The following strategies focus on enhancing accessibility, fostering inclusive environments, and empowering PWDs with the skills and support needed to thrive in digital careers.

1. Enhance Accessibility in Digital Training Programs

- **Design Inclusive Training Platforms:** Develop digital training content and user interfaces that address the diverse needs of PWDs, such as incorporating keyboard navigation, screen prompts, and alternative input methods.
- **Ensure Assistive Technology Compatibility:** Make all digital learning platforms fully compatible with screen readers, voice recognition tools, and other assistive devices to support various disabilities.
- **Provide Flexible Learning Options:** Offer self-paced and modular training formats that accommodate learners who may require extended time due to mobility, cognitive, or health-related challenges.

2. Enhance Inclusive Infrastructure and Service Accessibility for PWDs

- **Upgrade Physical Infrastructure:** Improve accessibility by installing ramps, accessible restrooms, and other inclusive features to accommodate diverse mobility needs.
- **Provide Access to Assistive Devices:** Ensure the availability of essential tools such as white canes, wheelchairs, screen readers, hearing aids, adaptive keyboards, and ergonomic chairs to support functional independence.
- **Ensure Strategic Accessibility:** Maintain 24-hour access to ICT centers and situate them in socially inclusive and easily reachable areas to encourage participation and convenience for all users, including PWDs.
- **Support Communication Accessibility:** Equip ICT centers with sign language interpreters and hearing assistance devices to facilitate effective communication for individuals with hearing impairments.

3. Foster Partnerships with Tech Companies

- **Collaborate with Leading Tech Companies:** Partner with technology providers such as AWS, Google, and others to deliver free or low-cost digital training programs specifically designed to support the upskilling of PWDs.
- **Provide Financial Support:** Offer targeted financial assistance to PWDs in underserved regions to help cover costs related to training fees, internet access, and necessary assistive technologies.

4. Promote Inclusive Hiring Practices

- **Ensure Accessible Job Advertisements:** Encourage organizations to create and share job postings in accessible formats to reach a broader pool of candidates, including PWDs.
- **Collaborate with Disability-Focused Organizations:** Partner with organizations that advocate for or support PWDs to enhance talent sourcing and job placement efforts.
- **Advocate for Inclusive Policies:** Support the adoption of inclusion and diversity policies within workplaces to ensure that hiring practices and work environments accommodate the needs of PWDs.

5. Foster Non-Discriminatory Digital Workspaces for PWDs

- **Build Inclusive Digital Environments:** Design digital workspaces that actively destigmatize disability, promote equity, and celebrate the unique contributions of individuals with diverse abilities.
- **Amplify Success Stories:** Showcase the achievements of PWDs in digital work to challenge stereotypes and support employer sensitization and awareness initiatives.
- **Ensure Reasonable Accommodation:** Guarantee that all digital workspaces provide reasonable accommodations for PWDs, including tools, flexible arrangements, and support systems tailored to individual needs.

6. Offer Psychosocial Support

- **Provide Counseling and Mentorship:** Establish counseling and mentorship programs to empower PWDs, alleviate fear, and foster resilience as they pursue careers in digital work.
- **Build Confidence and Coping Skills:** Support PWDs in developing self-confidence and equipping them with the skills needed to navigate challenges such as discrimination and bias within the digital job market.

7. Track and Verify Inclusion Progress

- **Establish Verification Systems:** Develop robust mechanisms to identify and verify PWDs, including individuals with non-visible disabilities, to ensure accurate inclusion data.
- **Monitor Engagement and Outcomes:** Track participation, progress, and success rates of PWDs in digital programs to evaluate impact and inform continuous improvement efforts.

8. Customize Platforms for Better Inclusivity

- **Promote Adaptive Platform Features:** Prioritize the use of platforms like Fiverr that incorporate accessibility tools, such as UserWay, which allow users to personalize settings like font size, color contrast, and navigation to meet their specific needs.
- **Encourage Universal Design:** Advocate for the integration of inclusive design features across all digital platforms to ensure usability for individuals with a wide range of disabilities.

2.7 ENABLER STAKEHOLDERS

Section Overview
Enabler stakeholders, including governments and private sector partners, play a key role in shaping the digital economy. Governments implement policies to promote digital work, while private companies provide training and resources to support workforce development. This section explores their contributions and initiatives.
Summary Findings
Government Leadership: The Kenyan government plays a central role in shaping the digital ecosystem through initiatives like the Ajira Digital Program, which trains and connects workers to online opportunities. Policies and frameworks such as Special Economic Zones (SEZs) and the proposed BPO Authority aim to attract investments, incentivize businesses, and support workforce development. Role of Industry Associations: Organizations like BPOAK and KEPSA are key advocates for industry-friendly policies, improved labor legislation, and economic incentives. KEPSA, in partnership with the MasterCard Foundation, implements the Ajira Digital Program to create jobs and enhance skilling initiatives for youth. Skilling Partners' Contributions: Skilling institutions such as eMobilis, Moringa School, and Career Box address workforce readiness by offering tailored training, mentorship, and industry-aligned programs. These organizations also ensure a steady pipeline of skilled workers for industries such as BPO and technology. Global Partnerships: Collaborations with tech giants like Google, Microsoft, and AWS provide access to affordable upskilling platforms, mentorship opportunities, and career resources. These partnerships align local talent with global market demands through certifications, hands-on training, and networking opportunities. Academic and Industry Collaboration: Academic institutions work with industry stakeholders to align curricula with evolving market needs. This ensures that students graduate with skills relevant to the job market. Structured internships, mentorship, and practical exposure provided through these collaborations enhance employability. Impact of Stakeholder Ecosystem: Enabler stakeholders collectively contribute to Kenya's digital workforce growth by creating skilling pathways, advocating for better policies, and improving access to training resources. However, there is a need for sustained collaboration and innovation to ensure inclusivity, affordability, and adaptability in skilling efforts.
Recommendations
Establish a National Digital Workforce Development Strategy: Collaborate with stakeholders to align training, certifications, and job placement with industry needs. A national digital talent database should link trained youth to employers, while expanding ICT hubs and regional training centers will improve access. Partnerships with BPOs and outsourcing firms should create structured job pathways, and SEZ-based digital incubators can support youth-led businesses. Expand Stakeholder-Supported Digital Job Marketplaces & Freelancing Infrastructure: Partner with tech firms, and local businesses to increase youth access to high-paying digital jobs. Incentives for local businesses to hire Kenyan freelancers and a freelancer support hub offering financial assistance, legal guidance, and payment facilitation will strengthen job security.

2.7.1 Ecosystem Actors

The table below outlines various stakeholders and their respective roles in the BPO industry.

Table 16: Ecosystem Actors

Government of Kenya	Ministry of Information, Communication and The Digital Economy (MICDE)	❑ The Ajira Digital Programme, which trains online workers, is overseen by a government ministry. The ministry is working closely with the Business Process Outsourcing Association of Kenya (BPOAK) to develop policies for the BPO sector. Additionally, the ministry has proposed the establishment of a BPO Authority to support BPOs, though this proposal is still under discussion.
	Communications Authority of Kenya (CAK)	❑ Responsible for licensing of BPOs ❑ Currently, the license is discounted at USD 77 per annum
	Kenya Investment Authority (KenInvest)	❑ Promotes and facilitates investment in the BPO sector. However, support for the sector has been weak due to a lack of understanding of the ecosystem's needs
	Special Economic Zones Authority (SEZA)	❑ SEZA is responsible for the development and regulation of Special Economic Zones (SEZs) in Kenya, which are designated areas that offer special economic regulations and incentives to attract investment and promote economic activities, including BPO operations.
	The Judiciary	❑ As part of the government digital transformation programme, outsourced its transcription to Adept BPO in selected courts. This initiative was funded by the Master Card Foundation.
Industry Associations	BPO Association of Kenya (BPOAK)	❑ BPOAK is an industry association established in 2023 to support and promote BPOs. It has approximately 40 members, including major international BPOs such as CCI, Majorel, and Sama Source. BPOAK actively lobbies for improved labor legislation and incentives to benefit the BPO industry.
	Kenya Private Sector Alliance (KEPSA)	❑ KEPSA is a private sector umbrella organization, with most industry associations as members. It has a strong lobbying presence, including holding roundtable meetings with the presidency. Recently, KEPSA and BPOAK jointly met with the President to advocate for increased incentives for the sector. KEPSA is also an implementing partner for the Ajira Digital Programme, funded by the MasterCard Foundation, with a primary focus on job creation.
Skilling Partners	eMobilis	❑ Training of digital workers under the Ajira Digital Programme ▪ Have trained over 30,00 youth. Has an institute that offers training on advanced skills such as coding ▪ Are the manager for over 200 Ajira Youth Empowerment Hubs across the country. These centres provide online works skills training. ❑ Has a BPO readiness training programme. Conduct shortlisting, interviews and pre-screening for the BPOs. Has partnered with BPO organizations to provide a pipeline of alumni as follows

		▪ Provision of Alumni for CCI Kenya call center agents through initial pre-screening of candidates ▪ Provision of talent for Cloud Factory on 3D annotation data specialist roles.
	Career Box	Training of BPO workers for CCI only ❑ Recruiting and screening unemployed youth for BPO and ITO roles ❑ Demand-driven hard and soft skills training ❑ Mentorship and on-the-job training
	Moringa School	❑ Moringa School is a multi-disciplinary learning-accelerator committed to closing the skills-gap in Africa's job markets by delivering transformative tech-based learning to high-potential jobseekers; and on graduation connecting them to local and international employers who desire high-quality tech talent
	ACWIT (African Centre For Women, Information and Communications Technology)	❑ Linking women and youth to ICT careers Demand-driven hard and soft skills training
Recruitment	eMobilis and Career Box	❑ As detailed above
	Generali employment recruitment agencies that advertise BPO jobs	❑ Fuzu (strong online recruitment portal) ❑ Brighter Monday (strong online recruitment portal) ❑ Corporate Staffing Services ❑ Flexi Personnel ❑ Manpower Services Group
Donors	MasterCard Foundation (MCF)	❑ Provides funding for the Ajira Digital Programme, which aims to enhance digital skills and create job opportunities in the BPO sector. MCF is funding Ajira through partners such as KEPSA, eMobilis to mention a few. MSF is about to commence on a second round of funding for Ajira Digital Programme for the next five years.
	German Agency for International Cooperation (GIZ)	❑ Engages in projects aimed at improving vocational training and employment opportunities, which can benefit the BPO industry. Currently offering digital skills through the Technical and Vocational Education and Training (TVETS)

2.7.2 Private Sector Partnerships

2.7.2.1 Collaborations with Global Tech Companies (Google, Microsoft, AWS)

In an increasingly digital world, partnerships between multinational tech companies and local organizations are pivotal in creating opportunities for youth. These collaborations can bridge the gap between academic training and market demands by offering access to innovative programs, mentorship opportunities, and career resources. Through affordable upskilling platforms, sponsorship programs, and direct engagement, multinational tech companies play a crucial role in empowering young people to meet the challenges of a competitive global workforce.

Affordable and Accessible Upskilling:

Multinational tech companies have the potential to provide cost-effective technology training programs for youth, allowing them to gain essential digital skills without financial strain. By hosting free or affordable training sessions, these companies ensure that youth can access the resources they need to build successful careers.

"Actually, most of these companies also conduct their own training programs. Sometimes, you can find free training sessions listed on their websites, where they describe their products and how they work. These companies could potentially partner with other institutions, allowing them to subscribe to these programs and form collaborations."

Global BPO

Collaborative Sponsorships:

Corporate sponsorships can help alleviate financial barriers that limit access to education and training for many young people. Multinational companies can collaborate with community-based organizations (CBOs) and local organizations to co-sponsor impactful programs that offer financial support and career pathways.

"As I mentioned regarding the CBOs and organizations, they need to be contacted because a lot of sponsorship is required. By working with these technology companies, I'm sure they can also co-sponsor the youth, which I believe they already do."

Corporate

Engagement with Academia:

To align academic training with industry needs, multinational tech companies can partner with universities and academic institutions. These partnerships can enhance curricula, ensuring students are better prepared for market demands. Collaborative efforts between academia and industry promote a seamless transition for students into the workforce.

Direct Engagement with Students:

Multinational tech companies can also engage directly with IT students by organizing career talks and offering training opportunities. By sharing insights into global industry trends and guiding students on skill alignment, these companies equip young people with practical knowledge and tools for success.

Career Coaching and Networking:

Mentorship and networking opportunities are vital for connecting young professionals with industry leaders. Multinational tech firms can offer career coaching sessions and mentorship programs that provide valuable guidance and build lasting professional relationships.

"They should offer career coaching, engage with the youth, and provide more financial support for their start-ups. Additionally, they should offer networking opportunities."

Big Tech Company

2.7.2.2 Role of the Private Sector in Building Workforce Skills and Creating Opportunities

Proactive engagement with local and global stakeholders is essential to bridge the gap between academia and industry. This ensures youth are equipped with the skills needed for intermediate and advanced digital roles.

Local Stakeholders: Engaging local stakeholders is critical for positioning youth in intermediate and advanced digital jobs. Insights from key informants emphasized:

- **Involvement in Curriculum Development:** Local industry players should be actively involved in curriculum development to ensure alignment with market trends and skill requirements.
- **Internships and Industry Exposure:** Structured internships, attachments, and industry visits help equip students with workplace-relevant skills.
- **Feedback Mechanisms:** Establishing regular feedback channels between academia and industry ensures that emerging skill gaps and market needs are addressed.
- **Collaboration with Professional Associations and Tech Hubs:** Partnerships with local tech hubs and professional bodies enhance the relevance of academic programs.

Global Stakeholders: Global stakeholders, such as multinational tech companies, can amplify training opportunities through:

- **Affordable Upskilling Platforms:** Providing accessible technology training to youth at minimal costs.
- **Collaborative Sponsorships:** Co-sponsoring youth-focused programs with local organizations to eliminate financial barriers.
- **Engagement with Academia:** Supporting academic institutions in enhancing curricula and aligning training with industry standards.
- **Direct Student Engagement:** Organizing career talks and mentorship programs to provide insights into global industry trends.
- **Networking Opportunities:** Facilitating connections between students and global industry professionals to foster career growth.

3. APPENDICES

3.1 Digital Programs by Development Partners

UNDP Kenya	Kenya Accelerator Lab ³²	Focuses on innovative solutions to democratize access to information and tackle youth unemployment through digital inclusion initiatives.	Youth and marginalized communities	Kenya
UNHCR Kenya	Kenya Digital Inclusion Program ³³	Aims to provide refugees with access to digital tools and training to help them integrate into the workforce and improve their livelihoods.	Refugees and displaced communities	Kenya
UNDP Kenya, Microsoft, Kenya School of Government	Africa Centre of Competence for Digital and AI Skills ³⁴	Established to enhance digital literacy and AI skills among public servants, aiming to improve public service delivery and innovation.	Public servants and youth	Nairobi
UNDP Kenya	Green Economy Youth Activation Programme (GrEYAP)	Aims to build the capacity of youth to establish and strengthen businesses in the forestry and agro-forestry sectors, catalyzed by digital innovation.	Youth entrepreneurs	Kenya
UNDP Kenya, UNESCO, UNCDF, UN Women, UNEP	DigiKen Programme	Selects and supports Digital Innovation Hubs to empower vulnerable groups with digital skills, fostering economic growth and job creation.	Vulnerable groups, including youth	Kenya
UNHCR & Mastercard Foundation	Support for Refugee Learners ³⁵	Partnership to support refugee learners through education and digital financial inclusion initiatives.	Refugee youth	Kenya

³² <https://www.undp.org/kenya/accelerator-labs>

³³ <https://www.unhcr.org/innovation/digital-inclusion>

³⁴ Refer to UNDP Kenya's initiatives: <https://www.undp.org/kenya>

³⁵ <https://www.unhcr.org/us/about-unhcr/our-partners/private-sector/mastercard-foundation>

Mastercard Foundation & USIU-Africa	Mastercard Foundation Scholars Program ³⁶	Provides full-cost scholarships to academically talented youth from Africa facing financial, gender, displacement, or disability constraints, enabling them to pursue undergraduate degrees and become transformative leaders.	Young Africans seeking first-time undergraduate degrees	Kenya
Mastercard Foundation	Alice Ngunzu Digital Labs	Provides digital skills training and resources to empower youth in underserved communities, bridging the digital divide and enhancing educational opportunities.	Youth from underserved communities in Kenya	Makueni and Embu counties, Kenya
Mastercard Foundation	Mastercard Foundation EdTech Fellowship	Supports growth-stage, impact-driven EdTech companies aiming to enhance educational outcomes through technology and innovation.	EdTech startups operating in Africa	Multiple African countries (Kenya, Nigeria, Ghana, South Africa, Egypt, etc.)
World Bank	Kenya Analytical Program on Forced Displacement (KAP-FD) ³⁷	Focuses on data collection methodologies and capacity building in data analysis, which may include digital tools and technologies.	Refugee and host communities, policymakers, and researchers	Kenya (focusing on areas like Turkana County)
Asante Africa Foundation	Digital Employability and Entrepreneurship Program (DEEP) ³⁸	Equips rural youth with digital, entrepreneurship, and leadership skills to enhance livelihood opportunities.	Rural youth	Kenya
ILO & Learning Lions	Digital Skills Training in Turkana ³⁹	Provides digital skills, mentorship, and remote work opportunities to young people in Turkana and refugee communities.	Refugee and host community youth	Turkana

³⁶ <https://www.usiu.ac.ke/mastercard-foundation-scholars-program>

³⁷ Refer to World Bank's initiatives: <https://www.worldbank.org/en/country/kenya>

³⁸ <https://www.asanteafrica.org/>

³⁹ <https://www.learninglions.org/>

UNITAR	Digital Skills Training for Women and Youth ⁴⁰	Offers training in data analysis, software development, and project management to improve employability of youth and women.	Women and youth	Kenya
Digital Opportunity Trust (DOT) Kenya	Youth Leadership Programs ⁴¹	Trains youth and women to use digital tools for community problem-solving, entrepreneurship, and leadership.	Youth and women	Kenya
Tunapanda Institute	Tech, Design & Business Training ⁴²	Offers free training in technology, design, and entrepreneurship for youth in Kibera and underserved areas.	Youth in Kibera	Nairobi
Qhala & County Government	Digital Economy County Centers of Excellence (DECCOE)	Offers comprehensive digital skills training and entrepreneurship support to empower youth in Nakuru and beyond.	Youth in counties	Nakuru
UNESCO	Digital Innovation Hubs	Supports marginalized groups through training in digital marketing, AI literacy, software development, and entrepreneurship.	Youth, women, PWDs	Kenya
Don Bosco Boys Town & AWS	AWS Digital Academy ⁴³	Offers cloud computing and digital skills certification in partnership with AWS, improving job readiness in the tech sector.	Youth interested in cloud computing	Nairobi
Don Bosco Kakuma	Digital Literacy & Coding for Refugees	Delivers Microsoft Digital Literacy, Hour of Code, ICDL, and NITA-accredited ICT training for both school-going and out-of-school youth.	Refugee youth	Kakuma
Don Bosco DBDON & ProFuturo Foundation	ProFuturo Digital Education Program	Implements e-learning in schools with digital infrastructure support, benefiting over 11,000 students in rural Kenya.	School children	Nairobi, Machakos, Kitui

⁴⁰ <https://www.unitar.org/>

⁴¹ <https://www.dotrust.org/>

⁴² <https://tunapanda.org/>

⁴³ Refer to Don Bosco's initiatives: <https://donboscoafrika.org/>

Don Bosco Kakuma	ICT Certification Courses	Offers KNEC-accredited 6-month and 1-year ICT training programs including Microsoft Office, networking, and communication skills.	Youth seeking ICT credentials	Kakuma
Don Bosco in Partnership with eMobilis	Ajira Digital Village ForShe Project	Providing skilling and apprenticeship for targeting 1500 Young refugee women and Host communities in digital and digitally enabled work in Don Bosco Training Centers	Young Refugee Women & Host Communities	Kakuma
Nest Step Foundation	Next Step Digital Skilling Program in collaboration with AWS ⁴⁴	Empowering PWD and youth from underserved communities; equipping with cutting-edge digital skills for thriving in the 4th Industrial Revolution.	People with Disabilities	Kenya
WUSC (World University Service of Canada)	Digital Skills Training for Young Women in Kakuma ⁴⁵	Equips young women in Kakuma Refugee Camp with foundational and advanced digital skills, enhancing their employability and opening opportunities in the digital economy.	Young women in Kakuma Refugee Camp	Kakuma
WUSC	DREEM Project	Supports young refugee entrepreneurs by offering financing, digital skills training, and mentorship to foster online entrepreneurship and sustainable business models within refugee communities.	Young refugee entrepreneurs	Kakuma
WUSC	LEAP Project	Provides digital skills training to young women, facilitating their transition from training to income generation through online work opportunities, including scholarships for diploma-level technical and vocational courses.	Adolescent girls and young women	Kalobeyei Settlement
WUSC	Digital Skills for Refugee Students	Prepares refugee students in Kakuma and Dadaab for higher education abroad by equipping them with essential digital skills necessary for academic success.	Refugee students awaiting resettlement	Kakuma and Dadaab

⁴⁴ <https://nextstepfdn.org/digital-skilling-program/>

⁴⁵ <https://wusc.ca/>

GIZ & EU	Digital Skills for Jobs and Income ⁴⁶	Provides ICT training and employment support to youth in Kenya, especially in rural and underserved communities.	Youth in rural Kenya	Kenya (multiple counties)
EU & Africa AI Innovation Network	AI and Digital Innovation Bootcamps ⁴⁷	Promotes AI education, innovation, and entrepreneurship by organizing training bootcamps and innovation challenges for youth.	Youth innovators	Kenya and East Africa

3.2 Training Costs for Top Certificates In Demand Globally

DevOps and Cloud Computing	AWS Certified Solutions Architect – Professional ⁴⁸	Amazon Web Services	AWS Training and Certification	\$300	3–6 months	Validates advanced technical skills and experience in designing distributed applications on AWS.
DevOps and Cloud Computing	Google Professional Cloud Architect ⁴⁹	Google Cloud	Google Cloud Training	\$200	3–6 months	Demonstrates ability to design and plan a cloud solution architecture.
DevOps and Cloud Computing	Microsoft Certified: Azure	Microsoft	Microsoft Learn	\$165 per exam	4–6 months	Confirms expertise in designing solutions that run on Microsoft Azure.

⁴⁶ <https://www.giz.de/en/worldwide/32413.html>

⁴⁸ <https://aws.amazon.com/certification/certified-solutions-architect-professional/>

⁴⁹ <https://cloud.google.com/learn/certification/cloud-architect>

	Solutions Architect Expert ⁵⁰					
DevOps and Cloud Computing	Certified Kubernetes Administrator (CKA) ⁵¹	The Linux Foundation	CNCF Training	\$395	2–4 months	Assesses skills in deploying, managing, and troubleshooting Kubernetes clusters.
DevOps and Cloud Computing	HashiCorp Certified: Terraform Associate ⁵²	HashiCorp	HashiCorp Learn	\$70	1–3 months	Validates basic infrastructure automation skills with Terraform.
Data Analytics & Visualization	Microsoft Certified: Data Analyst Associate ⁵³	Microsoft	Microsoft Learn	\$165	2–4 months	Demonstrates proficiency in enabling businesses to maximize the value of their data assets using Power BI.
Data Analytics & Visualization	Tableau Desktop Certified Professional ⁵⁴	Tableau	Tableau Training	\$600	3–6 months	Validates deep understanding and mastery of Tableau Desktop.

⁵⁰ <https://learn.microsoft.com/en-us/certifications/azure-solutions-architect/>

⁵¹ <https://training.linuxfoundation.org/certification/certified-kubernetes-administrator-cka/>

⁵² <https://developer.hashicorp.com/certification/terraform-associate>

⁵³ <https://learn.microsoft.com/en-us/certifications/power-bi-data-analyst-associate/>

⁵⁴ <https://www.tableau.com/learn/certification/desktop-certified-professional>

Data Analytics & Visualization	SAS Certified Advanced Analytics Professional ⁵⁵	SAS	SAS Training	\$250 per exam	4–6 months	Confirms ability to analyze big data with a variety of statistical analysis and predictive modeling techniques.
Data Analytics & Visualization	IBM Data Science Professional Certificate ⁵⁶	IBM	Coursera	Subscription-based	3–6 months	Covers data science methodology, Python programming, and data visualization.
Data Analytics & Visualization	Google Data Analytics Professional Certificate ⁵⁷	Google	Coursera	Subscription-based	3–6 months	Provides foundational skills in data analytics, including data cleaning, analysis, and visualization.
AI, Machine Learning & Data Science	TensorFlow Developer Certificate ⁵⁸	Google	TensorFlow	\$100	2–4 months	Demonstrates proficiency in building and training neural network models using TensorFlow.
AI, Machine Learning & Data Science	Microsoft Certified: Azure AI Engineer Associate ⁵⁹	Microsoft	Microsoft Learn	\$165	2–4 months	Validates ability to build, manage, and deploy AI solutions on Azure.

⁵⁵ https://www.sas.com/en_us/certification/credentials/advanced-analytics.html

⁵⁶ <https://www.coursera.org/professional-certificates/ibm-data-science>

⁵⁷ <https://www.coursera.org/professional-certificates/google-data-analytics>

⁵⁸ <https://www.tensorflow.org/certificate>

⁵⁹ <https://learn.microsoft.com/en-us/certifications/azure-ai-engineer/>

AI, Machine Learning & Data Science	AWS Certified Machine Learning – Specialty ⁶⁰	Amazon Web Services	AWS Training and Certification	\$300	4–6 months	Confirms expertise in building, training, tuning, and deploying machine learning models on AWS.
AI, Machine Learning & Data Science	Professional Certificate in Machine Learning and Artificial Intelligence ⁶¹	MIT	edX	\$2,300	6–12 months	Provides comprehensive knowledge in machine learning and AI.
AI, Machine Learning & Data Science	NVIDIA Deep Learning Institute Certifications ⁶²	NVIDIA	NVIDIA DLI	Varies	Varies	Validates skills in deep learning and accelerated computing.
UX/UI Design	Nielsen Norman Group UX Certification ⁶³	Nielsen Norman Group	NN/g	\$4,000	6–12 months	Demonstrates comprehensive understanding of UX principles and practices.
UX/UI Design	Google UX Design	Google	Coursera	Subscription-based	6–12 months	Covers foundational UX concepts, including user research, wireframes, and prototypes.

⁶⁰ <https://aws.amazon.com/certification/certified-machine-learning-specialty/>

⁶¹ <https://professional.mit.edu/programs/short-programs/machine-learning-artificial-intelligence>

⁶² <https://www.nvidia.com/en-us/training/>

⁶³ <https://www.nngroup.com/certification/>

	Professional Certificate ⁶⁴					
UX/UI Design	Interaction Design Foundation Certifications ⁶⁵	Interaction Design Foundation	IDF	Membership-based	Varies	Offers various UX design courses and certifications.
UX/UI Design	HFI Certified Usability Analyst (CUA) ⁶⁶	Human Factors International	HFI	\$1,500	3–6 months	Validates knowledge in usability engineering and user-centered design.
UX/UI Design	Adobe Certified Expert (ACE) ⁶⁷	Adobe	Adobe Training Services	Varies	Varies	Demonstrates proficiency in Adobe design tools.
Cybersecurity	Certified Information Systems Security Professional (CISSP) ⁶⁸	(ISC) ²	(ISC) ²	\$749	6–12 months	Recognized globally as a standard of achievement that confirms an individual's knowledge in information security.
Cybersecurity	Certified Ethical Hacker (CEH) ⁶⁹	EC-Council	EC-Council	\$1,199	3–6 months	Validates skills in identifying and assessing computer system security.

⁶⁴ <https://www.coursera.org/professional-certificates/google-ux-design>

⁶⁵ <https://www.interaction-design.org/courses>

⁶⁶ <https://www.humanfactors.com/certification/cua/>

⁶⁷ <https://learning.adobe.com/certification.html>

⁶⁸ <https://www.isc2.org/Certifications/CISSP>

⁶⁹ <https://www.eccouncil.org/programs/certified-ethical-hacker-ceh/>

Cybersecurity	CompTIA Security+ ⁷⁰	CompTIA	CompTIA	\$392	2–4 months	Demonstrates baseline skills necessary to perform core security functions.
Cybersecurity	Offensive Security Certified Professional (OSCP) ⁷¹	Offensive Security	Offensive Security	\$999	6–12 months	Validates ability to execute penetration tests with the use of exploitations and other hacking tools.
Cybersecurity	Certified Information Security Manager (CISM) ⁷²	ISACA	ISACA	\$760	4–6 months	Demonstrates expertise in information security governance, program development, and risk management.

⁷⁰ <https://www.comptia.org/certifications/security>

⁷¹ <https://www.offensive-security.com/pwk-oscp/>

⁷² <https://www.isaca.org/credentialing/cism>

3.3 Case Study: Next Step Foundation PWD Impact

Overview

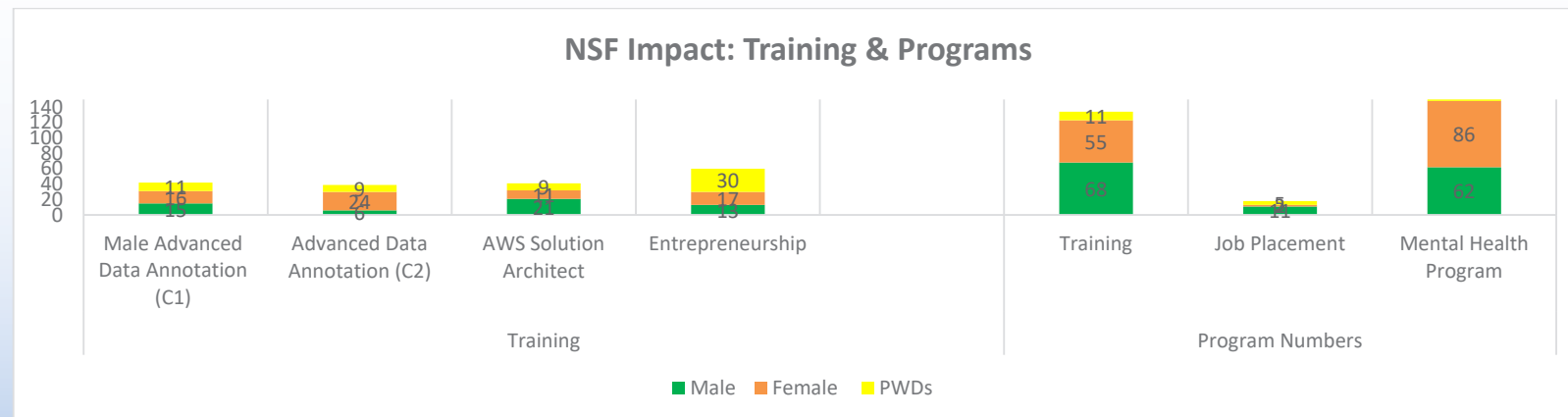
Next Step Foundation (NSF) is a Kenyan-based nonprofit organization that leverages technology to economically empower Persons with Disabilities (PWDs), women, and youth from underserved communities. Operating across East Africa, NSF has become a pioneer in inclusive digital skills training, disability inclusion advocacy, and workplace transformation. The foundation delivers programs across AI, AWS Cloud Computing, entrepreneurship, and psychosocial support, aligning its impact with Sustainable Development Goals (SDGs) 4, 8, 10, and 11.

Programmatic Interventions and Outcomes

1. Technical and Vocational Training

- NSF trained 123 individuals, 11 of whom were PWDs, in digital economy skills including Advanced Data Annotation, AWS Solutions Architect, and Entrepreneurship. All participants completed their training with a 98% completion rate and 100% job retention post-placement.

Figure 41: Next Step Foundation Training & Programs



Source: Next Step Foundation

2. Job Placement

- Of the PWDs trained, over 20% secured jobs, significantly higher than the national average employment rate of 9.8% for PWDs. NFS graduates have transitioned from marginalized roles into professional careers in technology and customer service.

3. The Upili Program – Mental Health Support

- Upili offered group therapy and psychosocial support led by counselors with disabilities. The program reached 148 students across special schools, notably SA Joytown Secondary and Kambui School for the Deaf, where mental health interventions in Kenyan Sign Language led to improved academic performance. The Upili Aides initiative trained Laypersons with disabilities to facilitate peer support, creating both impact and employment within the disability community.⁷³

4. Entrepreneurship

- In partnership with Somo Africa, NSF graduated 27 entrepreneurs with disabilities in Kilifi County, Kenya. These participants developed life and business management skills, challenging societal perceptions of PWDs as dependents.

5. Corporate Disability Inclusion Advocacy

- In 2024, NSF Disability Inclusion training and awareness initiatives resonated with 75% of the corporations, prompting them to take concrete actions or initiate conversations regarding PWDs' inclusion within their offices.

⁷³ <https://nextstepfdn.org/our-impact/>

3.4 Case Study: Platform Work and Labour Protections in Pakistan

Overview

According to the Fairwork Pakistan Ratings 2022 report, published by the Centre for Labour Research in collaboration with the Fairwork Foundation, the country's digital labour platforms such as Uber, Careem, Foodpanda, Bykea, Daraz, Cheetay, InDriver, Airlift, Gharpar, and Jovi have become integral to the gig economy, offering services in ride-hailing, food and e-commerce delivery, and beauty services. Despite their growing presence, platform workers face precarious conditions with minimal protections under the existing labour framework.⁷⁴

Research Scope

A joint evaluation by the Centre for Labour Research (Pakistan) and the Fairwork Foundation (University of Oxford) assessed the working conditions of seven prominent platforms in Islamabad and Rawalpindi between 2021–2022. The study applied five fairness principles: Fair Pay, Fair Conditions, Fair Contracts, Fair Management, and Fair Representation.

Key Findings

Fair Pay: Only Gharpar provided sufficient evidence of workers earning above the minimum wage after accounting for costs. Workers on platforms like Uber, Careem, and Foodpanda often earned below the minimum wage (PKR 109/hour) due to high expenses (fuel, mobile data, repairs). Some workers reported negative income, especially those who had loans to purchase vehicles.

Fair Conditions: Only Uber received a point for mitigating risks (insurance, emergency services, data privacy). Other platforms had partial safety measures but lacked comprehensive protections. None offered reliable sick pay or a long-term income safety net.

Fair Contracts: Only Foodpanda met the criteria by providing accessible and translated contracts in Urdu. Other platforms had contracts that were either inaccessible, not in the national language, or placed all liabilities on workers.

Fair Management: No platform scored any points. Absence of due process for worker grievances and lack of protections from algorithmic or customer discrimination. Gharpar showed some efforts (e.g., an anti-discrimination policy) but fell short of formalization.

⁷⁴ <https://clr.org.pk/Platform-Work-and-Labour-Protections-English-Flyer.pdf>

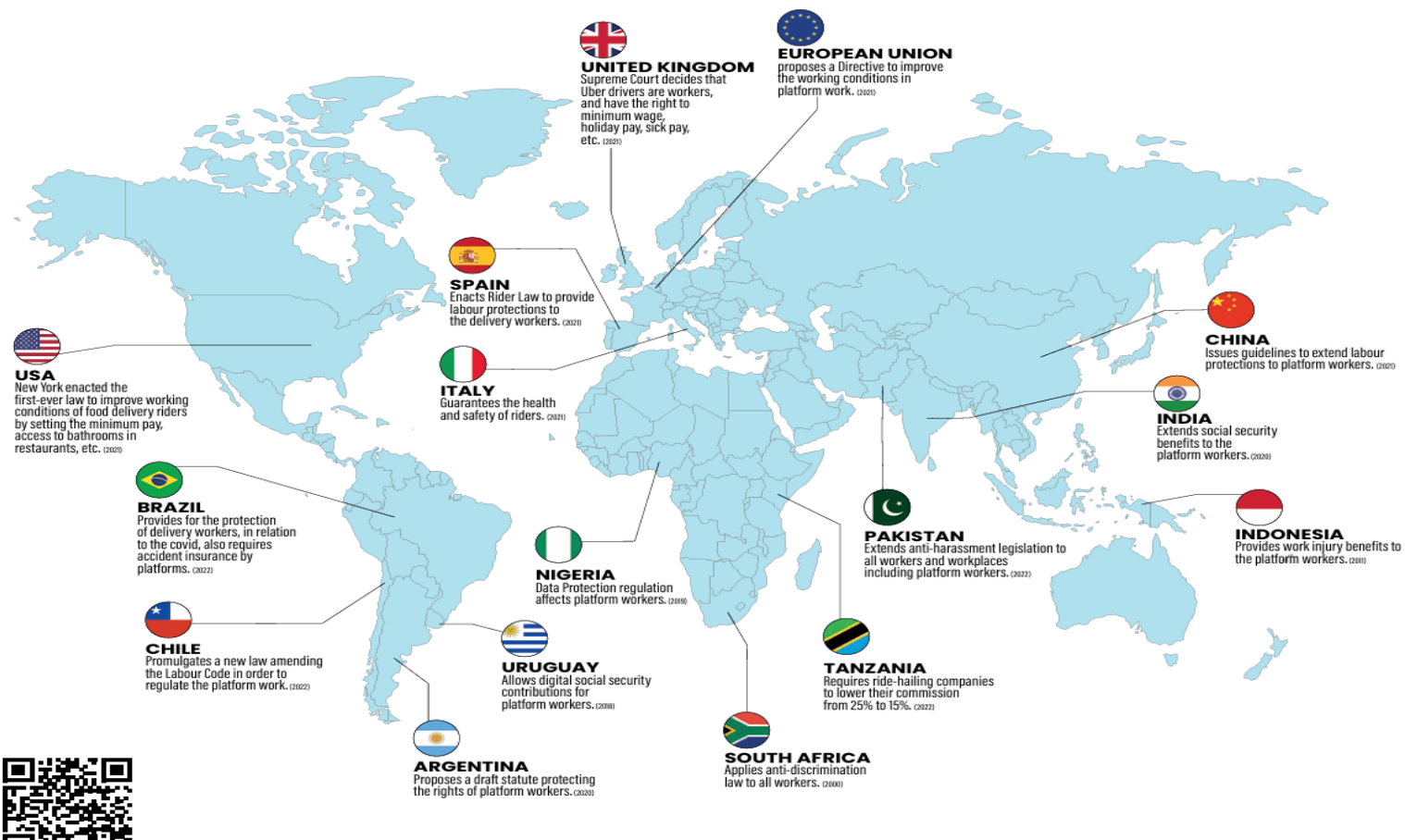
Fair Representation: No platform officially supported collective worker representation. Gharpar had informal worker meetings but no formal structures or protections.

Regulatory Context: No legal definition of platform work. No labour regulations currently apply to digital platforms. Platforms are not considered employers, stripping workers of basic protections.

Proposed Legislative Reforms: The Centre for Labour Research has drafted a law proposing:

- Formal classification of platform workers as employees.
- Mandatory minimum wage compliance.
- Registration with social protection institutions (ESSI, EOBi).
- Benefits like sick leave, maternity leave, pension, healthcare.
- Right to unionize, bargain collectively, and protection from harassment and discrimination.

Figure 42: How the World is Regulating Platform Work





The Voice of the Private Sector in Kenya

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