



Digital Literacy and Skills Development in Nigeria for Youth Empowerment and Job Creation

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ABSTRACT

In this study, the strength of digital skills development to empower youths, enhance the existing jobs or create new ones is discussed. Empirical data from the global competitiveness index and network readiness index of Nigeria suggest that investment in the emerging technologies, digital skill sets, cybersecurity, research and innovation, training and development in the country are very low compared to the high-income countries. It is therefore suggested that jobs could be created massively in Nigeria when the youths and the entire workforce are trained to apply digital technologies to establish enterprises, work in organizations and solve societal challenges through improved funding, public-private partnership, effective quality assurance mechanism, periodic capacity building of ICT educators and sustained investment in relevant infrastructure development

INTRODUCTION

The global economy is becoming more digitalized and depending on innovative technologies. Nowadays, emphasis on supply of cheap labour to drive economic activities is being shifted to sophisticated digital technologies and human capital. The implication of the technological advancement on the landscape of workforce is that employers are seeking for employees with new skills. Therefore, investment in human capital to acquire digital skills aligning with the rapidly changing labour market is a must in this century. To create more jobs and empower the youths, Nigeria needs to produce advanced skilled manpower that will drive innovation, entrepreneurial activities and economic development. They are needed to implement public policies, start digital skills initiatives and attract high value economic opportunities to the country (Bester et al., 2020; World Bank, 2021).

Nigerian labour market resolves around three key sectors. These are agriculture, services, and oil and gas. These sectors are not large enough to create adequate jobs for millions of the Nigerian workforce. The inability of government to diversify and strengthen the economy has created unemployment in Nigeria. According to African Development Bank (AFDB), the youth unemployment and underemployment rates are alarming, and it was estimated that 1 in every 3 young people in Nigeria is unemployed (Howard, 2023).

LITERATURE REVIEW

The consequences of youth unemployment in the country cannot be ignored. It has created many social vices which are now prevalent across the country. Among them are drug abuse and trafficking, terrorism, abduction, armed banditry and robbery, cybercrime, violence and unrest, vandalization of public infrastructures, prostitution, cultism, sex trafficking, modern slavery or domestic servitude among others. Thus, the youth unemployment is making the country to be unsafe for local and foreign investors, has increased the level of poverty and economic hardship, and led to declined economic growth (Tunji-Olayemi et al., 2019).

A recent study by World Bank (2021) showed that by 2030, 35 to 45 percent of all jobs in Nigeria are expected to require digital skills as the number of job openings in the digital economy is growing and digital hiring rate is increasing. Thus, a more promising panacea to reduce youth unemployment in the 21st century is for the Nigerian youths to acquire digital and other workplace skills to fill these plausible job vacancies in the near future. Digital skills entail capabilities and knowledge needed to use digital technologies (device or system) for social, political and economic purposes. The demand for digital literacy and skills cut across different sectors and occupations (IOE, 2024; World Bank, 2021). The import of equipping the youths with digital skills is that innovative services could be created without the need to depend on the developed countries for everything. In addition, digital up-skilling and reskilling are indispensable for employees to be successful in the modern job markets and meet the demand for digital talent.

Previous studies showed that digital skills are important to create digital jobs and empower the youths for the new job opportunities in the society. For instance, Leahy and Wilson (2014) examined available digital skills frameworks to understand digital skills and competences, their scopes and how they are related to the soft skills among the European countries. It was found that digital skills are needed to enable individuals to find, evaluate and create information for further training, higher education and employment. Tunji-Olayemi et al. (2019) examined the impact of a pilot digital skills training programme on the youths in Nigeria. The results of the study showed that the youths between 19 and 24 years especially the undergraduate students acquire digital skills than any other age group. Obisanya et al. (2022) showed that unemployment in Nigeria could be reduced through entrepreneurship skills acquisition and empowerment programmes. It was suggested that youths should be empowered by providing them with enabling environment, training facilities and materials to acquire entrepreneurial and digital skills.

Intaract (2022) performed a study among six selected ASEAN countries to understand the situations in these countries how COVID-19 pandemic and digital technologies influenced the future of workforce. The study showed that all the marginal workers without digital literacy and skills were negatively affected by the pandemic and technological disruptions. Gupta et al. (2023) proposed a model to equip vulnerable youths with technical and employability skills. The results of testing the model showed that the development of work-based, interpersonal and behavioural skills could be seen as collective responsibility of the key stakeholders while teachers or trainers should be enlightened on the guidelines and appropriate instruction delivery methods for vulnerable and at-risk youths.

Stofkova et al. (2022) assessed the level of digital skills of the Slovaks and their awareness of e-Government services. The study revealed that there is a decreased or stagnant level of digital literacy among young people. It was suggested that digital skills and technologies should be integrated into teaching curricula in the Slovakian schools. Regina et al. (2023) examined the roles and challenges of youth empowerment. The authors recommended that adequate funds and necessary logistics should be provided to create jobs for the youths. Most recently, Chinyere and Ifeyinwa (2024) found that online business training by the secondary schools in Nigeria helped to create employment for young school leavers. The authors found that there is a positive correlation between the online business training and employment creation when there is a reliable internet infrastructure, secured electronic payment platform and regular power supply.

From the foregoing, it is inferred that previous studies have not been sufficiently carried out on the digital literacy and skills development to empower the youths and create jobs in order to expand the economy and reduce socio-economic challenges especially in sub-Saharan Africa. Thus, the study discussed the digital skills development in the Nigerian education system. New or emerging job opportunities that would be in high demand in less than a decade from now are highlighted in the article. Empirical data obtained

from the global competitiveness index and network readiness index were analyzed to identify areas that require urgent intervention by the country to accelerate digital skills development. Recommendations are proposed to provide intermediate and advanced digital skills to the youths to create more jobs and diversify the Nigerian economy.

Digital Skills Development

1. Digital Literacy and Skills

According to IIEP-UNESCO (2023), digital literacy is defined as the ability to access, manage, understand, integrate, communicate, evaluate and create information safely and appropriately through digital technologies for employment, decent jobs and entrepreneurship while digital skills are broad range of abilities to use digital devices, communication applications and networks to access and manage information. They enable people to create and share digital contents, communicate, collaborate, and solve problems for effective and creative self-fulfillment in life, learning, work and social activities at large. From these definitions, it can be deduced that both digital literacy and digital skills have interrelated technical and cognitive skills but the digital literacy focuses more on the cognitive abilities that is basic human proficiency and mindset needed to exist and take advantage of the opportunities in the digital world (Howard, 2023).

Digital skills and competences are required to address the impact of fourth industrial revolution technologies like artificial intelligence, internet of things, cloud technology, big data analysis, robotics and other disruptive technologies on the global economy (UNDP, 2023). As they become prevalent, more youths with advanced digital skills are needed to apply them proficiently in different sectors to create a safe, prosperous and sustainable society. Digital skills can be categorized into three based on skills complexity framework (Howard, 2023). These are:

- **Basic digital skills:** They are foundations skills such as digital literacy. Digital literacy entails the ability of individuals to use digital tools and facilities to perform tasks, solve problems, communicate, manage information, collaborate, create and share contents and build knowledge in all areas of everyday life and for work. It is necessary to tap the productive opportunities and capabilities in the digital economy. It is the basic or elementary aspect of digital skills. Examples include typing, word processing, email, use of apps, access information online, web browsing, social media messaging, create digital contents, apply antivirus, basic financial transactions;
- **Intermediate digital skills:** These cover the productive use of digital technologies for work such as desktop publishing, digital marketing, digital graphic design, working with spreadsheets and statistical packages, power point presentation, introduction to data science, computer aided design etc;
- **Advanced digital skills:** They are specialized skills required to work in ICT related professions, such as programming, network administration and complex skills such as artificial intelligence, big data analytics,

coding, cyber security, web design and development, Internet of things, mobile app development, block chain, cloud computing, digital manufacturing, Automation etc

2. Components of Nigerian Education Sector

The National Policy on Education recognized the following components of the Nigerian education sector (FGN, 2013):

- Basic education which includes: Early child care and development education; Pre-primary education; Primary education; and Junior secondary education.
- Post-basic education and career development which includes: Senior Secondary education; Technical colleges; and Vocational enterprise education.
- Mass and Nomadic education which includes: Mass Literacy; Adult and Non-formal education; and Nomadic education.
- Tertiary Education comprising of: University education; Teacher education; Technology education (Polytechnics, Monotechnics and Specialised Institutions); and Innovation Enterprise education;
- Open and distance education;
- Special need education;
- Nigerian Skills Qualification Framework.

The Nigerian education system is designed to train and produce manpower needed by the labour market. The transition of individuals from one level of education to another or decision to move into the labour market is indicated in Figure 1.

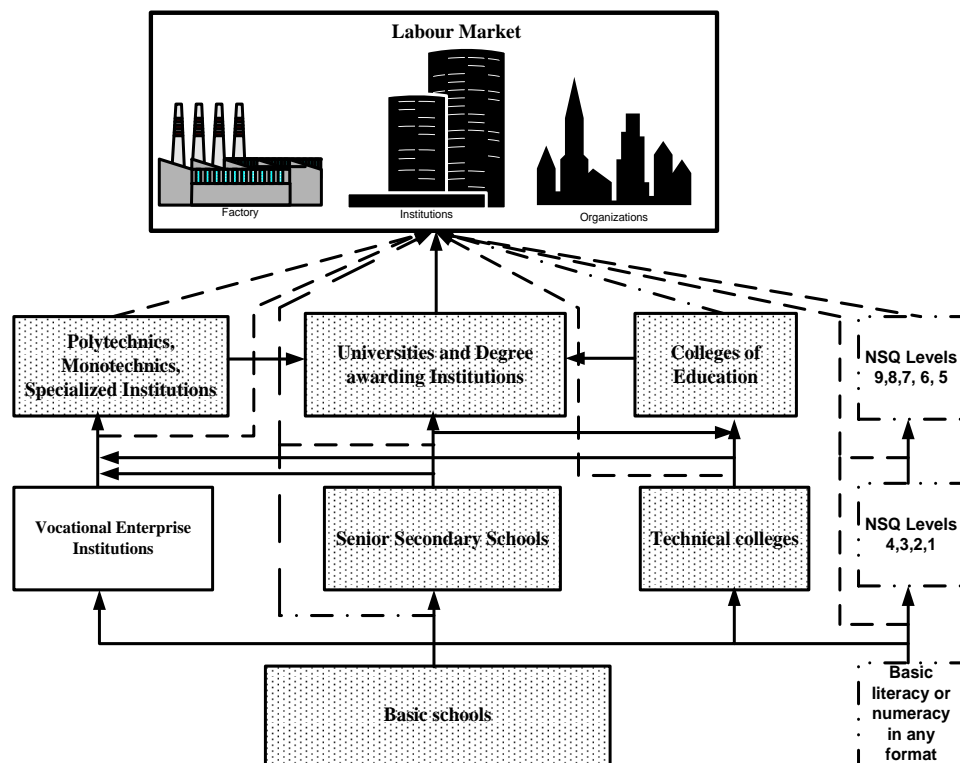


Figure 1 Education Structure in Nigeria

3. Digital Skills Development in the Nigerian Basic and Secondary Education Levels

Various attempts have been made at the basic, secondary and post basic education levels in Nigeria to provide digital literacy and skills to the youths. For instance, the new curricula for basic and secondary schools developed by the Nigerian Educational Research and Development Council (NERDC) are enriched with topics on computer and ICT in the relevant subjects. Furthermore, the National Board for Technical Education (NBTE) also developed curricula for Technical Colleges and Vocational Enterprise Institutions to enable students acquire digital skills. The subjects introduced into the curricula provide basic and intermediate digital skills to the students.

4. Digital Skills Development in the Nigerian Skills Qualification Framework

National Skills Qualifications (NSQs) are work related, competence-based qualifications where skills are assessed at both the training centres and workplaces under the Nigerian Skills Qualification Framework. NSQs are about showing the stakeholders what learners are competent to do the job. They require that learners can consistently show to the Assessors that they can do the job competently and answer questions associated with the job. NSQs are available to young people as well as adults through implementation of National Occupational Standards at accredited NQS Training Centres. NSQs cover several occupations and trades.

Recently, NBTE in conjunction with Computer Professionals Registration Council of Nigeria (CPN) developed and reviewed National Occupational Standards designed to produce technical manpower with digital skills within a period of one year and below as shown in Table 1. It is envisaged that the skills-based training centres as well as post basic Institutions in Nigeria will mount all these digital skills programmes to train young Nigerians and bridge skills gap to due lack of competent technical manpower for the Nigerian digital economy.

Table 1. List of NSQ Programmes Offering Digital Skills

Title of Skills Programme	NSQ Levels (1-9)
Computer Hardware Repairs & Maintenance	3 & 4
Digital Service Operations	2 & 3
Mobile Application Development	3, 4 & 5
Mobile Phone Repairs and Maintenance	1 & 2
Photography	3
Cinematography	3
Social Media Communication	3
Web Development	3
GSM Hardware Repairs	2 & 3
Artificial Intelligence	4
Backend Web Development	3
Cloud Security Engineer	5
Computer Aided Design/Computer Aided	3

Manufacturing (CAD/CAM)	
Computer Operations	2
Cyber Security Analyst	3
Cyber Security Engineer	5
Data Analytics	4
Data Science	5
Database Management	3
Digital Animation	3
Digital Automotive Diagnostic	3
Digital Content Creation (Web Social Media and Blogging)	3
Digital Marketing	3
Digital Product Management	3
Drone Technology	3
e-Commerce	4 & 5
Front End Web Development	3
General Service Support	3 & 4
Graphic Design	3
Home Automation and IoT Technologies	3 & 4
Information Technology	2 & 3
Internet of Things	3
Network Cabling, Installation and Maintenance	2
Network Support Specialist	4
Programming with JAVA	3 & 4
Programming with PHP Using Laravel and MySQL	5
Project Management	5
Robotics	3
User interface and User Experience Design (UI/UX)	3
Video Production and Editing	3

Source: Adapted from NBTE (2025)

5. Digital Skills Development in the Nigerian Tertiary Education

There are curricula developed for programmes offered in the Colleges of Education, Polytechnics, Monotechnics, specialized Institutions and Universities in Nigeria by their respective regulatory agencies. Polytechnics and similar tertiary technical Institutions run National Diploma and Higher National Diploma programmes for at least a period of two years each. Colleges of Educations run National Certificate in Education programmes for at least a period of three years while Universities run undergraduate programmes for a minimum period of three years. Generally, all curricula are expected to provide at least basic digital skills to all students admitted into the tertiary Institutions.

This is premised on the fact that ICT course(s) such as Introduction to Computer studies or Computing is a mandatory course for all students irrespective of their programmes at their first year. Specifically, there are other programmes that equip the students with intermediate and advanced digital

skills especially to the young school leavers. However, these programmes can only produce competent digital workers for the Nigerian digital economy when the Institutions' administrators or proprietors pay adequate attention to the training resources and give strong commitment to update their teaching curricula, upgrade their facilities, collaborate with the ICT industry for acquisition of industry-based exposures and employ more academic staff with industrial experiences for digital skills development in their academic departments.

6. Current Job Opportunities Facilitated by Digital Literacy and Skills

From the point of view of the Nigerian curriculum design, it has been established that digital skills training and education is well recognized and integrated into the Nigerian education system. Furthermore, it is imperative to state that the digital skills development has helped a lot of computer literate youths to get jobs in the past two decades. Depending on the nature and origin of the jobs, three major classifications of jobs facilitated by ICT include (Sanz, 2023):

- ICT intensive jobs: These are jobs that depend totally on digital devices, services or technologies. They focus on advanced digital skills and can support remote work like freelancing, web development, digital marketing and content development. Workers in these areas are programmers, system analysts, network administrators, computer engineers, web designers and developers, data analysts etc;
- ICT dependent jobs: These are jobs that use digital technologies to a varying extent in combination with the relevant proportion of essential knowledge and competence from their professional disciplines. These are also referred to as hybrid jobs. They combined intermediate digital skills with traditional specializations. Examples of these workers engaged for hybrid jobs are bankers, brokers, insurers, architects, accountants, graphic designers, engineers etc;
- ICT enhanced jobs: These are jobs that can be performed without digital skills but their performance or quality can be improved using digital technologies. They are existing jobs that can be executed without ICT but have been transformed by using digital literacy. Most of these jobs are enhanced by using application packages installed on mobile devices. Examples of the workers doing these jobs are ride hailing drivers, doctors, mobile banking operators, marketers, teachers, smart farmers etc.

METHODOLOGY

Youth Empowerment, Job Creation and Digital Skills

Overview of Youth Empowerment and Job Creation

Youth empowerment is generally referred to as the idea or programme designed to enable the youths learn skills, trades or professions such that they are given tools, resources and opportunities they need to transform or take control of their lives (Regina et al., 2023). It could also be described as the process of creating and supporting enabling conditions through which young

persons can act on their own, in their own terms instead of following the direction of others (Chinagorom, 2023). Young persons are empowered when they are aware that they can create or have choices in life, know the implications of these choices and make an informed decision freely, take action on that decision and accept responsibilities for the consequences of their action (Idoko, 2014). Furthermore, it refers to the attitudinal, structural and cultural processes whereby young people gain the ability, authority and agency to make decisions, implement changes in their own lives and in the lives of other people around them. Youths are said to be empowered when they have a stable environment of equality, peace, positive value system, unhindered access to knowledge, skills and information, supportive legal and administrative framework, fair distribution and allocation of economic resources for them (Obisanya et al., 2022).

Job creation generally involves deliberate process of providing new jobs and making jobs available for the unemployed to reduce unemployment. This deliberate process or effort to create jobs could be initiated by individuals, corporate organizations and governments. Job creation ensures that the unemployed in an economy are employed. It involves creation of job opportunities for individuals leading to increased employment rate. Job creation can occur through various means, such as establishment of new businesses, expansion of existing industries, government initiatives and policies, foreign investments and entrepreneurship. It therefore improves welfare of citizens, leads to economic growth and reduces poverty (Manabete, & Umar, 2018).

Jobs however have been very difficult to create in Nigeria in spite of various interventions of Government due to a number of reasons such as (Chinyere & Iheanaetu, 2024):

- Increasing inflationary trends, coupled with socio-economic instability;
- Limited access to credit facilities, capital or government incentives and resources by the entrepreneurs;
- Inadequate public infrastructural facilities and utility services;
- Political instability, hostility and terrorism in certain localities or regions;
- Lack of requisite technical and managerial skills which are barriers to sole proprietorship and other forms of business organizations;
- Half-baked graduates unsuitable for new employment opportunities and school-to work transition coupled with skills mismatch; and
- Administrative, bureaucratic and fiscal bottleneck discouraging entrepreneurial endeavours or creation of novel business ventures.

Nigeria is experiencing higher demand for digital jobs in her economy due to significant increase in the internet penetration rate, availability of mobile technologies and computer systems (new and fairly used). Also, various organizations are using web and digital technologies for their operations and to expand their services in the country. The national digital economy is growing rapidly and providing flexibility and options to work remotely for the youths. In addition, with the Government policy to drive the Nigerian economy by

digital technologies, there are new job opportunities that are being created in the digital economy that can help to address the frustration, hardship, crimes and brain drain mostly among the Nigerian youths.

Previous studies have shown that the future of works lies in the digital job landscape and concerted efforts should be made to meet the manpower demand in the skill areas as earlier listed in Table 1. This list is not exhaustive. This is the age of digital up-skilling and reskilling and Nigeria should not be left behind. Many new job opportunities are created globally from time to time due to the vast opportunities in the digital economy. Although, Nigeria has started its digitization journey, there is more to be done to gain more economic benefits like high income countries and create a sustainable and inclusive economy (Leahy & Wilson, 2014; UNDP, 2023; Chinyere & Ifeyinwa, 2024).

RESULT

Digital Readiness for Youth Empowerment and Job Creation in Nigeria

- **Digital Readiness Data Analysis**

Digital literacy and skills allow organizations to create new ways to expand and innovate new products that are not capital intensive, and foster rapid transfer of technologies and ideas. They are proven to be a reliable lifeline during national crisis or pandemic. The rapid use of Internet and huge amount of data in the cyberspace has become sources of wealth generation and critical resource for nations. However, misuse of internet, social media and digital resources is a big threat to the data privacy and online safety of users who have access to the digital world.

To analyse the state of digital readiness for youth empowerment, datasets about some indices were obtained to determine the Nigeria's capacity to apply information and communications technologies, enhance productivity, increase efficiency, inspire innovation and increase industrial output. They show how the business environment has promoted entrepreneurship, innovation, inventions and creativity.

Table 2 shows some of the metrics of the global competitiveness index of Nigeria from 2007 to 2017 while Table 3 indicates metrics of the network readiness index of Nigeria from 2020 to 2024. The dataset revealed how Nigeria is adapting to changes in the technological innovations, and its effect on the level of productivity.

Table 2 Specific Metrics from the Global Competitiveness Index

Year	Availability of latest technology	Internet access in schools	Individuals using Internet
2007	3.33	2.5	3.8
2008	4.22	2.43	5.95
2009	4.41	2.94	7.26
2010	4.21	3.2	28.43
2011	4.36	3.3	28.43
2012	4.73	3.46	28.43
2013	4.62	3.52	32.88

2014	4.37	3.35	38
2015	4.23	2.99	42.68
2016	4.29	3.08	47.44
2017	4.26	3.19	25.67
Mean	4.27	3.08	26.27
Standard deviation	0.33	0.34	14.11

Source: World Bank (2024)

Table 3 Specific Metrics from the Network Readiness Index

Year	Access	Content	Future Technologies	Individuals	Trust
2020	26.11	10.51	18.94	24.94	32.23
2021	46.66	23.68	25.35	39.5	35.93
2022	57.53	31.17	25.53	18.41	35.61
2023	55.57	22.29	25.4	20.71	35.41
2024	38.87	31.77	26.87	27.35	37.66
Mean	44.95	23.88	24.41	26.18	35.37
Standard deviation	10.53	7.03	2.55	6.72	1.61

Source: Portulans Institute (2024)

- **Availability of Latest Technologies**

Availability of latest technologies is one of the metrics in the global competitiveness index used in this study to determine the level of digital readiness of Nigeria to create jobs and empower the youths. It shows the extent of adoption and availability of latest technologies in a country. It measure how existing technologies are accepted or used to improve the industrial productivity, increased efficiency and innovation for competitiveness using information and communication technologies in day-to-day activities and production operations. Figure 2 shows the level of availability of latest technologies especially ICTs in Nigeria from 2007 to 2017. The range of the indicator is from 1 to 7. Within the period under consideration, it showed that the adoption of ICTs in Nigeria which had a mean value of 4.7 was above the average level of 3.5. This shows that the adoption and acceptance of latest technologies in the Nigeria was positive.

- **Internet Access in Schools**

Another metric in this study is Internet access in schools. This shows the extent at which the Internet is used in schools for learning purpose. The range of the indicator is from 1 to 7. From Figure 3, it is shown that the Internet access in the Nigerian schools is below the average level. The mean value of the Internet access in schools was 3.08. This is below the average value of 3.5. This indicates that the internet access in the Nigerian schools was inadequate. For digital skills to be taught and learnt, free internet access should be provided in all the schools in Nigeria.

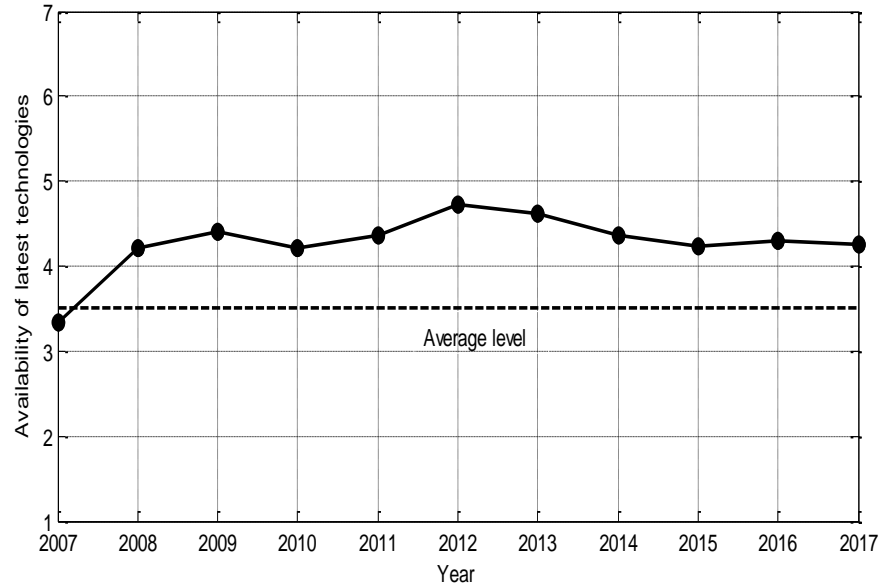


Figure 2 Availability of Latest Technologies in Nigeria from 2007 to 2017

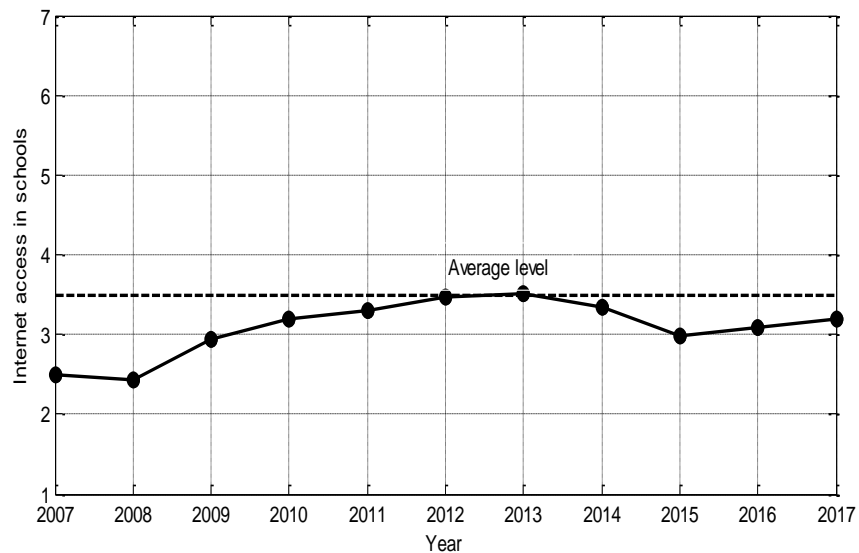


Figure 3 Internet Access in Schools in Nigeria from 2007 to 2017

- **Individuals Using Internet**

Individuals using Internet metric indicate the people who used the Internet from any location and for any purpose, irrespective of the devices and network used over a certain period of time. The access can be through fixed or mobile networks using smartphones, tablet, game machines, smart TV, laptop computer, desktop computers and other digital devices, (World Economic Forum, 2024). Figure 4 shows that the individuals using Internet over the years have been fluctuating below the average rate. The average value of the Individual using Internet in Nigeria is 26.27%. This was very low and not encouraging. The number of Internet users should be increased through adequate digital literacy for all and affordable Internet data subscription plan by the network operators.

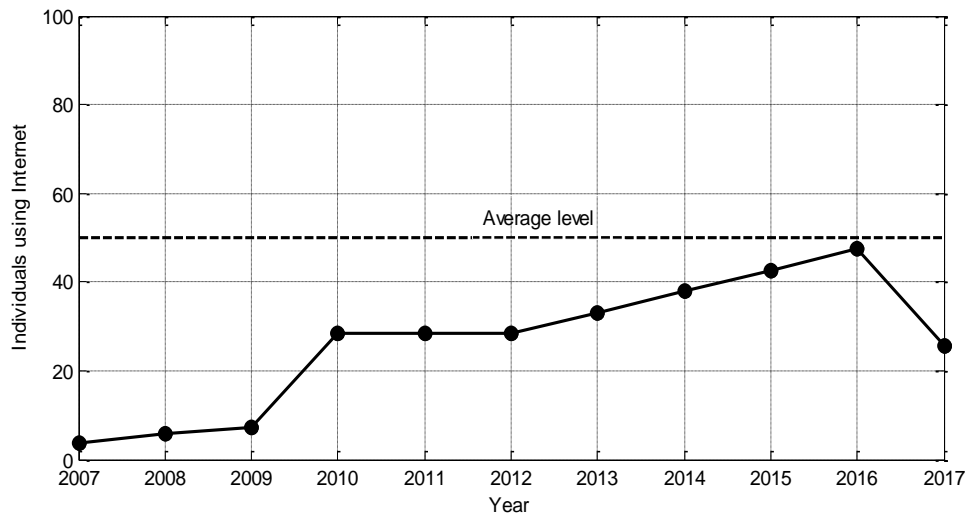


Figure 4 Individuals Using Internet in Nigeria from 2007 to 2017

- **Access**

Access metric is the aggregate of mobile tariffs, handset prices, the number of subscriptions to fibre-to-the home/building Internet connection, percentage of the population covered by at least 3G mobile cellular whether they are connected or not, international internet bandwidth in megabits per seconds (Mbit/s) and share of primary schools with access to the Internet through fixed narrowband or broadband or mobile networks. Figure 5 shows that access to digital technologies and internet services in Nigeria increased from 2000 to 2022 but later decreased till 2024. The value of access metric was obtained approximately as 45%. This is below the average level of 50%. The implication of this finding is that access to digital technologies and internet connectivity in Nigeria was not sufficient enough to provide digital skills to her citizens. There is a need to ensure that mobile tariffs and prices of smart mobile phones are affordable. More incentives should be given to telecommunication network providers to increase their network coverage across every town and community in Nigeria where there is poor connectivity. Also, free internet connectivity and functional computer studios should be provided in all basic schools while their teachers need to be trained or retrained in all aspect of digital literacy.

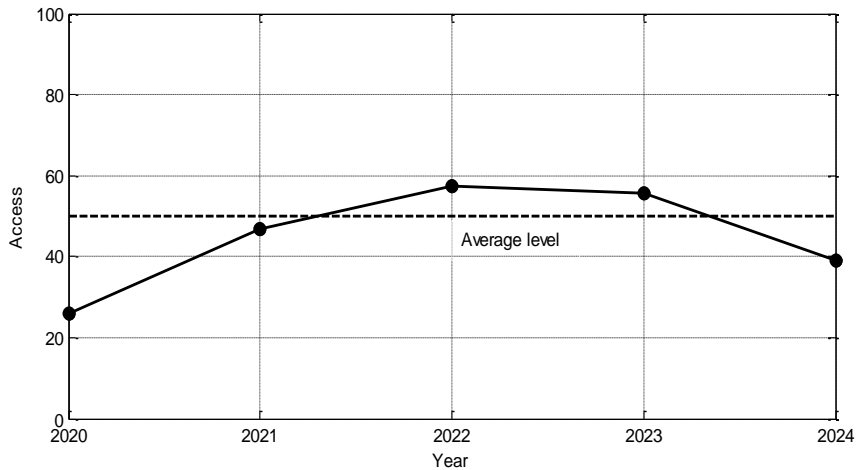


Figure 5 Basic Level of ICT Accessibility for Individuals in Nigeria from 2020 to 2024

- **Content**

The content metric is the aggregate of Internet domain registration, an indicator of the volume of internet content, global download of mobile apps, total number of AI publications in Elsevier per economy, and Github commits indices. Figure 6 shows that the content metric from 2020 to 2024 falls below the average level of 50%. The mean value of the content metric was obtained approximately as 24%. This is far below the average level. It is an indication that Nigerians need to acquire more digital skills to produce internet contents, upload, download and use both locally and foreign mobile apps and publish more journal articles in high impact journals and be active in the Github, which is the repository of source codes on the Internet.

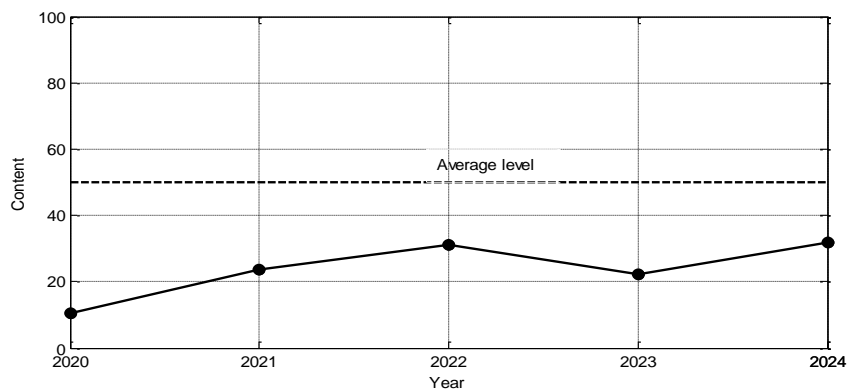


Figure 6 The content metric in Nigeria from 2020 to 2024

- **Future Technologies**

The future technologies metric is the summation of investment in emerging technologies, number of multipurpose industrial robots per 10,000 persons employed in the manufacturing industry (robot density), total value of purchased or leased software packages (computer software spending) and adoption of salient emerging or disruptive technologies such as artificial intelligence, big data, Virtual reality, internet of things, robotics and automation

cloud computing, 3D printing. Figure 7 shows that Nigeria has not invested enough in the emerging technologies and the software packages in the last five years. The adoption of emerging technologies was observed to be very slow but later was increasing. The mean value of the future technologies metric is obtained as 24%. This is below the mean value of 50%. This calls for investment by Governments at all level and greater attention to emerging technologies to empower the youths and create more jobs for the rapid growth and diversification of the Nigerian economy.

- **Individuals**

Individuals metric is the aggregation of mobile broadband internet traffic, ICT skills in the education system or workforce proficiency in ICT, penetration of active social media users expressed as a percentage of the total population, percentage of the population aged 15 years and over who can read, write and understand simple statements (adult literacy), and Artificial Intelligence talent concentration. Figure 8 shows that the individuals metric from 2020 to 2024 in Nigeria was fluctuating over the period. The mean value of the individuals metric was obtained as 26.2%.

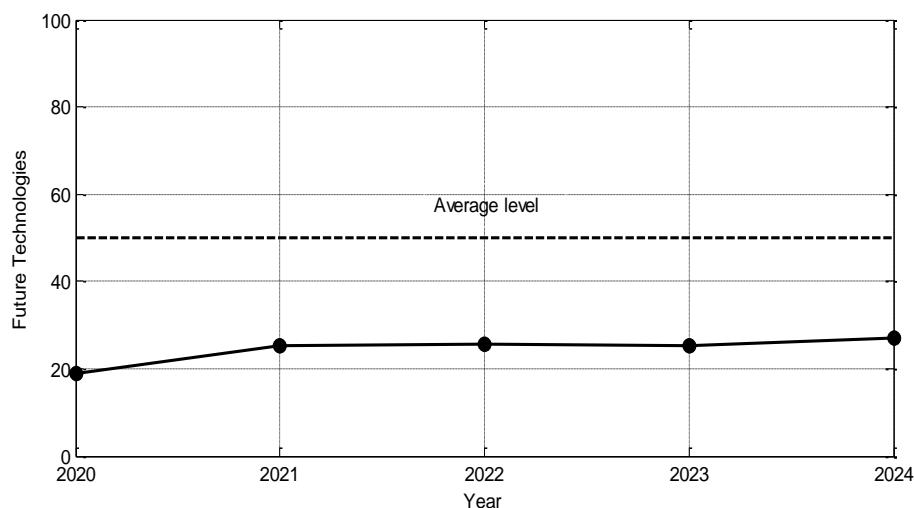


Figure 7 Adoption of Future Technologies in Nigeria from 2020 to 2024

This is below the average level of 50%. This shows that the broadband traffic volumes originated within the Nigeria especially 3G networks or higher generation networks due to usage was generally not adequate. In addition, the workforce having digital skills and active social media users in Nigeria are few compared to the entire population. The adult literacy level in Nigeria is currently less than 80%. This is below the recommended UNESCO literacy rate of 90%. Lastly the number of AI talent or people with AI skills is quite low. It is therefore obvious that the number of individuals with basic, intermediate and advanced digital skills is not enough to create jobs. All Institutions in Nigeria should prioritize digital literacy and skills development in their operations. Organisations should also train their employers regularly to acquire new skills.

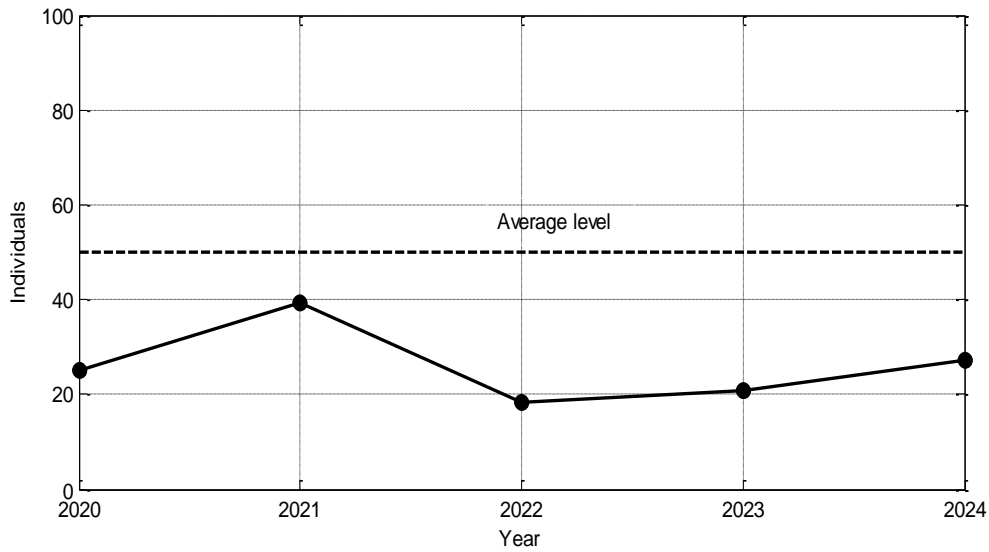


Figure 8 Individuals Technological Utilization in Nigeria from 2020 to 2024

The philanthropists and government agencies should organize and sponsor free digital skills training and certification programmes for young members of the public especially women, people with special needs, physically challenge persons, internally displaced persons and out of school children who have interests in digital skills but lacks the means to acquire the training.

- **Trust**

Trust is a metric from the network readiness index examined in this study. It is made up of servers using encryption technology in Internet technologies, global cyber security index, online access to financial Institution account using mobile phones or Internet, percentage of internet users purchasing goods and services online from aged 15years and above (Internet shopping). Figure 9 shows that trust metric increased steadily from 2020 to 2024. The mean value of trust metric for Nigeria was obtained as 35.4%. This is below the average level of 50%.

The performance shows that the there are concerns around the adequacy of secure internet servers, level of cybersecurity commitments made by Nigeria. Although, there is a substantial improvement in the number of persons in urban areas of Nigeria using mobile phone, point of sales (POS) terminals or mobile apps to make payments, purchase products and receive or send money using financial Institution accounts, however the rural areas are yet to adopt this e-payment systems. More awareness in local languages and affordable smartphones should be available to increase online access to financial payment channels. With sustained and improved investment in digital skills development, the Nigerian economy will expand and unemployment rates especially among the youth will reduce drastically.

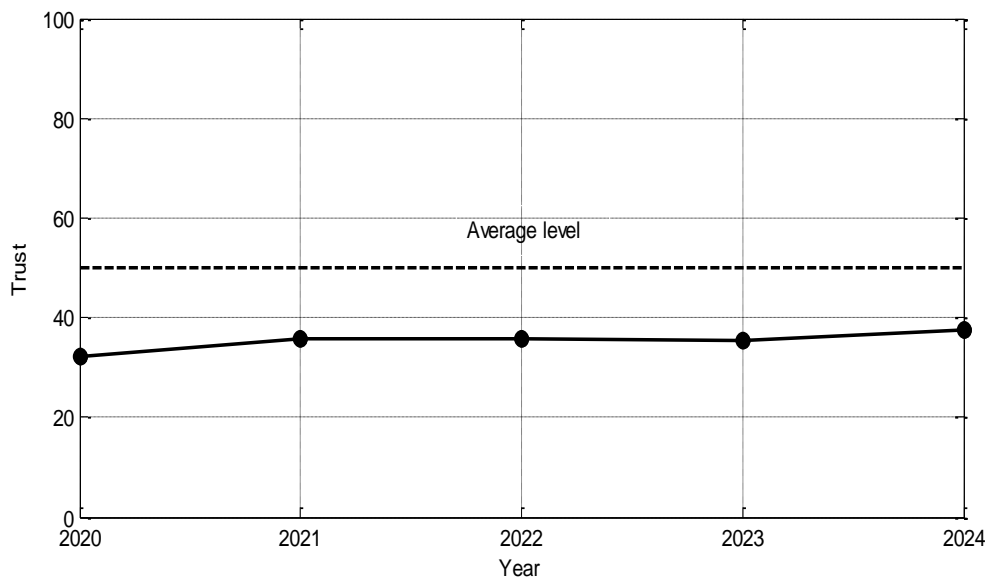


Figure 9 Online Safety and Security for Individuals and Corporations in Nigeria from 2020 to 2024

DISCUSSION

This study highlights the vital importance of digital literacy and skills development in reducing youth unemployment and promoting job creation in Nigeria. It examines how acquiring digital skills empowers Nigerian youths, revealing opportunities for economic growth and societal advancement through targeted interventions.

The study reveals a notable gap in digital readiness between Nigeria and high-income countries, as shown by metrics from the global competitiveness and network readiness indices. Although some progress has been made in technology adoption and internet accessibility, these improvements are inadequate for driving significant economic transformation. For instance, the average level of internet access in schools is below acceptable standards, underscoring a pressing need to equip younger generations with basic digital skills.

The findings also indicate inconsistent levels of internet usage among individuals, with an average penetration rate of just 26.27%. This low figure is concerning, given the increasing reliance on digital tools in modern economies. The limited incorporation of digital skills in the workforce, combined with low adult ICT literacy, hinders access to emerging job opportunities. Additionally, the lack of advanced skills such as artificial intelligence and data science expertise limits Nigeria's ability to compete globally and foster innovation.

Despite these challenges, the study identifies a growing number of opportunities for employment in the digital economy. Roles in ICT-intensive fields like programming, cybersecurity, and data analytics are expanding, alongside hybrid positions that combine digital expertise with traditional skillsets. Moreover, the rise in ICT-enhanced roles, such as telemedicine and smart farming, demonstrates how digital tools can revolutionize conventional industries.

The research highlights systemic obstacles impeding the growth of a thriving digital economy in Nigeria. Factors such as political instability, inadequate infrastructure, and restricted access to financing are significant barriers to entrepreneurship and job creation. Furthermore, a disconnect between academic curricula and labour market requirements exacerbates the mismatch in skills, leaving many graduates ill-equipped for roles in a technology-driven workforce.

Encouragingly, there is growing recognition of the importance of digital literacy in education, as seen in the integration of ICT topics into school curricula. Additionally, the expansion of mobile technologies and internet penetration lays the groundwork for further progress. To close the gap between the current state and desired outcomes, the study emphasizes the following priorities:

1. **Greater Investment in Digital Infrastructure:** Providing free internet access in schools and communities is vital to enhancing digital literacy on a wide scale.
2. **Educator Training and Development:** Equipping teachers with the skills to deliver ICT-based instruction will ensure students gain essential digital capabilities.
3. **Collaborative Public-Private Initiatives:** Partnerships between government and industry can help create internships, subsidized training programs, and scalable solutions.
4. **Support for Tech Entrepreneurs:** Offering tax breaks and financial incentives to young entrepreneurs in the tech sector can boost job creation and economic diversification.
5. **Policy Alignment and Oversight:** Reforming educational policies to align with labour market demands and implementing monitoring systems can help bridge the skills gap.

In summary, the study highlights that digital literacy and skills are crucial for empowering Nigeria's youth and reducing unemployment. By addressing systemic barriers and leveraging opportunities in the digital sector, Nigeria can unlock the transformative potential of technology to foster a more inclusive and prosperous economy.

CONCLUSIONS AND RECOMMENDATIONS

The rapidly changing technologies are affecting the way people in the society relate, work, communicate and live with each other. In this fourth industrial revolution, material and financial resources may become secondary to digital skills. Thus, policy makers must ensure that everyone can participate and learn digital skills to promote inclusive labour markets, facilitate growth, innovation and productivity (OECD, 2015; Intarat, 2021; Gupta, Datta & Kothe, 2023).

Nigerian youths confront a lot of tough struggles and difficulties in getting jobs on a daily basis. With the vast opportunities in the digital economy, there is a strong rationale for Nigerian youths to possess digital skills and should not be left behind. The digital skills ecosystem in Nigeria needs to be well funded and strengthened to respond adequately to the challenges of digital

transition, digital divide, environmental sustainability, inclusivity and accessibility. Furthermore, it is obvious that utilization of digital skills among the youths needs to be monitored, regulated or controlled to eradicate the abuses that may result from the mass digital literacy initiatives. Strict legal actions should be instituted to discourage youths from engaging in cybercrime, academic dishonesty, piracy, cyber-bullying, credit card fraud and any other related offences. Future studies will involve comparing digital literacy and skills development in Nigeria and selected countries in Africa.

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