Investigating ICT skills as enablers for sustainable youth employability in South Africa: A literature review

Kenneth Ohei(a)* Evangelos Mantzaris(b)

(a) Dr, Management Sciences, Mangosuthu University of Technology, South Africa.
(b) Professor, Management Sciences, Mangosuthu University of Technology, South Africa.

ABSTRACT

The progress and sustainability of a nation’s economy are attributed to its human capital, and a country lacking competent, knowledgeable, and productive manpower will struggle to thrive due to a dearth of talented individuals in the job market. To enhance the quality of skilled manpower in industries, the South African government is promoting digital literacy among its youth. This research aims to investigate the use of ICTs skills and competences as an enabler for promoting sustainable advancement of youth employability in South Africa, as the country’s youth unemployment rate for the 15-34 age group was 55.2% in the 1st quarter of 2019. The Fourth Industrial Revolution (4IR) era has exacerbated job scarcity and inequality due to the scarcity of advanced ICT skills. As a result, South Africa has chosen to increase ICT usage to enhance economic activity and job creation. A critical literature review was conducted to support the research inquiry through a systematic literature review (SLR) as the research methodology since the contents are based on existing literature studies in identifying research needs and gaps, collecting or gathering lines of thoughts Memon et al. (2020) and views in in relation to ICT skills and competences as an enabler for sustainable advancement of youth employability in South Africa. The approach was supported using the Sustainable Livelihood Theory as the research framework to support the findings.

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Introduction

Many developing countries’ governments have encouraged their citizens to embrace technology and urged higher education institutions to incorporate it into their curriculum, research, and operations. While the use of technology is expected to benefit their economies, there are scholarly debates surrounding the negative effects of technology adoption, such as job losses for unskilled workers and increased demand for skilled labour (Stiglitz, 2017; Sadiq & Mohammed, 2015). This study investigates how the use of ICTs can promote sustainable advancement in youth employability in South Africa.

The decision to adopt technology is typically up to individual citizens in any country, and the debate surrounding this trend is centered on whether the adoption of Information and Communication Technology (ICT) will enhance employability. The fourth industrial revolution (4IR) relies on the use of technology in industries, organizations, and various aspects of human activity to drive economic growth for countries (Bloem et al., 2014). This revolution is often referred to as the era of the internet of things, which involves a system of integrated computing strategies, machine-driven and digital devices equipped with unique identifiers that can transfer data over a network without human-to-human or human-to-computer interaction, as well as energy and cyber-physical systems (Bloem et al., 2014).

The adoption of the 4IR era is anticipated to promote the utilization of technology for economic growth (Li Hou & Wu, 2017; Bloem et al., 2014). However, there is insufficient comprehension of the correlation between the third industrial revolution (3IR) and the fourth industrial revolution (4IR), which have been interrelated and employed to advance economic processes and appraise their

* Corresponding author. ORCID ID: 0000-0002-5923-2012
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outcomes (Duncombe, 2014). The interrelation of both revolutions is considered a necessary skill set in the industry, which most developing nations encourage citizens, especially youths, to adopt for enhanced employability and economic activity (Bakhshalipour et al., 2019). The use of technology is promoted to create novel opportunities and possibilities to improve sustainable development goals, including the application of ICTs (Willard & Halder, 2003).

The current global situation has brought about discussions on the 4IR and its potential to either improve or worsen the economy (Li et al., 2017; Sadiq & Mohammed, 2015). Nevertheless, the distribution of the first, second, and third industrial revolutions is still unevenly spread worldwide, yet the 4IR is presented as the future (Bloem et al., 2014). The use of machines, technology, and innovation can be challenging for people in developing countries, especially when access and adaptability to technology are not evenly distributed, resulting in a significant digital divide (Sadiq & Mohammed, 2015). This study aims to explore how ICTs can promote the sustainable advancement of youth employability in South Africa (eTransform Africa, 2012).

ICTs are a valuable resource for improving digital skills and reducing the youth unemployment gap (Michael & Samson, 2014). Since youths are considered the future leaders of any country, it is crucial to identify the factors contributing to their unemployment (Eynon & Geniets, 2016). Addressing the shortage of digital skills, including ICT skills, is critical to the industry (Sadiq & Mohammed, 2015). By utilizing ICTs, socio-economic opportunities can be created for the youth in countries like South Africa, especially as technology has become a tool for economic growth in recent times.

The adoption of digital skills worldwide has been promoted by international organizations. The UN World Summit on the Information Society, held in Geneva, addressed the issues of the global information society and sustainable development, which have had a positive impact on the lives of youths around the world (Hilty & Hercheui, 2010). The discussions held at the UN have transformed and advanced humanity into an information society, thanks to the growing influence of ICT and globalization, which have strengthened the factors that have driven this progress (Hilty & Hercheui, 2010). According to NEMISA, digital skills are significant and can be classified into four categories: Digital literacy, ICT practitioner skills, sector user digital skills, and digital leadership skills. These skills are essential for individuals to perform various tasks, solve problems, communicate, manage, create, and share content, and build knowledge in all sectors of the industry and daily life. However, despite these efforts, there is still a significant unemployment rate among youths in South Africa, with the burden of unemployment mostly affecting those between the ages of 15-34 (Statistics SA, 2019). The country’s richest 10% population has become significantly richer over the years, but their percentage of total income has reduced.

The low rate of youth employment in South Africa can be addressed by improving digital skills, as suggested by Hamilton et al. (2015). However, the lack of infrastructure can make accessing ICTs challenging, leading to low usage among youths (Vinichenko et al., 2016; Eynon & Geniets, 2016). This study identifies the lack of digital skills as one of the factors contributing to youth unemployment, which in turn contributes to the digital divide and poverty in developing countries. The study aims to explore how ICTs can enhance youth employability and sustainable advancement. The emerging research question guiding the study is: “How can ICTs promote the sustainable advancement of youth employability?” The study is guided by the Sustainable Livelihood Theory and employs a quantitative method for data collection. The literature review section supports the study's objectives.

**Literature Review**

**Theoretical and Conceptual Background**

**ICTs affordance in South Africa**

South Africa has a high unemployment rate despite being a middle-income country (Statistics SA, 2020). A significant proportion of the country’s population, around 10 million households, earns only R7,167 ($536) per month, while a small elite group earns more than R196,668 ($14,692) per month (Statistics SA, 2018). These income disparities have resulted in extreme wealth inequality and a divided society, with a visible gap between the wealthy and the poor (The RSA Presidency, 2011). Although poverty has slightly decreased over time, inequality remains a significant challenge in South Africa (The RSA Presidency, 2011). The richest 20% of the population accumulates 68.1% of the country's income, while the poorest 10% earns less than 0.57%. Additionally, 62.3% of households fall within the lowest income bracket, earning less than R86,000 ($6,424) per annum, and make up 26.4% of all households in South Africa (Statistics SA, 2011).

Possible strategies have been adopted by the country to tackle the unemployment crisis, including research and innovation, promotion of lifelong learning, strengthening university-business collaborations and connections, and engaging society in social responsibility (Stukalina, 2018). These efforts were expected to generate sustainable competitive advantages, but the results have fallen short, producing only a limited number of highly skilled youths (Stukalina, 2018). The educational value and employment opportunities were limited to those who could fit into the global industries or labour market, which became problematic. This lack of skills advancement hindered youth employability and productivity (Stukalina, 2018; Eynon & Geniets, 2016).

According to various scholars (Merkel et al., 2019; World Bank, 2012; Mazibuko et al., 2008), ICTs can play a significant role in advancing employment opportunities and reducing poverty in developing countries. However, simply providing access to ICTs is not enough to alleviate poverty. Rather, it is more effective to use ICTs as a tool to promote specialized digital skills that can lead to better employability in the job market (Sadiq & Mohammed, 2015).
South Africa has a growing demand for ICT skills that are necessary for the Fourth Industrial Revolution (4IR) (Fernández-Sanz et al., 2017). As a possible approach to job creation, the country's social partners, research institutions, and educational authorities are embracing the 3IR and 4IR (Calitz et al., 2014). Occupations such as Chief Information Officer, ICT Project Manager, Data Management Manager, Application Development Manager, Information Systems Manager, IT Manager, Computer Quality Assurance Specialist, ICT Communications Assistant, AI Specialist, Data Science Analyst, and other Science and Technology professions are listed as specialized skills needed in the country.

**ICT Skills Shortage of Youth and Employability**

The global economy, whether advanced or developing, is facing a serious shortage of highly skilled professionals and practical workers required to keep up with the ever-changing digital landscape (Marumo & Sebolaaneng, 2019; Mckenzie et al., 2017; Jackson & Wilton, 2016). It is essential for youths to acquire the necessary skills and knowledge before entering the job market to make informed career choices (Marumo & Sebolaaneng, 2019; Mckenzie et al., 2017; Jackson & Wilton, 2016). In South Africa, youth unemployment is increasing, as a limited number of youths possess computer skills or access to information and communication technologies (ICTs) that can enhance their economic standards. Only a few can afford personal computers, iPads, and smartphones, and those who have access to them primarily use them for personal and social purposes. This has become a significant challenge, widening the unemployment gap for youths in the country.

In South Africa, a significant proportion of youths are living in poverty due to a lack of education and income. According to Statistics SA (2018), 33.4% of individuals aged 15-24 who do not have an income are considered poor based on a multidimensional poverty scale, while one-fifth of South Africa's youths aged 18-34 fall below the lower-bound poverty line of 8664 per person per month. The unemployment rate among youths in South Africa is particularly high, with youths accounting for 63.4% of the country's total unemployed population (Statistics SA, 2019). Du Toit (2015) describes this generation as "distressed," with an average youth unemployment rate of 52.43% from 2013 to 2019, peaking at 56.40% in the second quarter of 2019 and reaching a record low of 48.80% in the fourth quarter of 2014 (Statistics SA, 2019). The unemployment rate in South Africa increased from 27.2% at the end of the second quarter of 2018 to 27.5% in 2019 (Statistics SA, 2019). According to the Quarterly Labour Force Survey for the third quarter, there are 16.4 million employed individuals and 6.2 million unemployed individuals aged between 15 and 64 years in South Africa (Statistics SA, 2019).

In September 2019, the formal sector employment in the country witnessed a decrease of 28,000, with 11,000 full-time and 17,000 part-time jobs lost during the quarter. According to the September 2019 Quarterly Employment Statistics (QES) survey, approximately 10,142,000 individuals were employed in the formal non-agricultural sector of the South African economy, which was lower by 28,000 compared to the previous quarter's figure of 10,170,000. In addition, the global unemployment rate in 2017 decreased to 5.6% from 6.4% in 2000, and it has been projected that 470 million jobs would be required worldwide for new entrants to the labour market between 2016 and 2030 (Eşkinat, 2016)

**Discourse on Digital Integration for Sustainability**

ICTs have been recognized as a catalyst for progress that can contribute to education, health, and the economy of any country. Scholars argue that ICTs, such as telecentres, can play a crucial role in youth empowerment by providing access to information that can enhance their personal advancement (Mazibuko et al., 2008). In South Africa, telecentres were used to promote economic empowerment among disadvantaged youths in the Smart Cape telecentre in Cape Town, according to a study that utilized the Choice Framework and data collected from user interviews (Booi et al., 2019). Despite facing personal, environmental, and institutional challenges, telecentres helped to empower youths, as evidenced by the study's findings.

There are several instances where ICTs have been deployed to empower the youths. In 2010, the AmpaBits project, a youth-based organization in Uganda, positively impacted the lives of 300 vulnerable youths, improving their access to productive employment and their ability to cope with their social environment through creativity and innovation by Semutenga et al. (2019). The project aimed to inform youths about the skills required in the job market, with skill trends largely influenced by two software advancement partners in Uganda, Andela Uganda, and Tunga. The project began with 93 youths’ graduates from the training program, and 74 youths were placed in internship and job placements after the training.

The Kampabits/Ampabits project demonstrated that many youths were placed in employment through partnerships with the Commonwealth of Learning after the six-month ICT for Youth Employability project. The project focused on enhancing the livelihoods of 95 youths living in informal settlements in Kampala and Wakiso by providing hands-on skills training in areas such as graphics and web design, life skills, and sexual reproductive health. The initiative targeted 10 youths with disabilities, made possible with support from Light for the World. The initiative further offered training on the use of enterprise software to deliver training content, with the curriculum updated in response to changing employer demands (Semutenga et al., 2019). The training utilized free open-source software and renewed engagements with employers to identify current job skills, which enabled curriculum updates to impact marketable skills for learners. The OASIS open learning resources were used in the training, with Kampabits repackaging the training materials to include an updated curriculum that aligned with market needs.
ICTs as Enabler for Youth Advancement

The lack of knowledge on how to access information using ICTs among youths affects their ability to enhance their skills advancement, which contributes to high rates of unemployment in developing countries due to factors such as lack of education and computer skills (Eynon & Geniets, 2016). While ICTs can potentially lead to social exclusion and a digital divide, they can also equip individuals with new skills and provide access to accurate and up-to-date information (David & Surmaya, 2005; Talbot & Bizzell, 2016). Therefore, investing in digital skills training for youths can boost the socio-economic growth of any country (Bakhshalipour et al., 2019).

Research in Australia has shown that many youths lack the digital skills required by industries and are unaware of employers' expectations regarding the necessary skill set required in the work environment (Jackson & Wilton, 2017). Industries are unlikely to provide in-house training, instead preferring to hire skilled graduates who possess the required digital skill set (Mckenzie et al., 2017; Tsakissiris, 2016). Therefore, youths must attain the necessary skill set required for improved employability, as employment policies constantly change. Employers are now focusing on hands-on skills when recruiting, particularly in the areas of ICT and innovation. As a result, ICT professionals must adopt new professionalism and new skills set to succeed in the era of the Fourth Industrial Revolution (4IR) (Li, Hou, & Wu, 2017; Bloem et al., 2014; Sadiq & Mohammed, 2015; Michael & Samson, 2014).

Competence and Skills Advancement for Youth Employability in the Industry

Having digital skills is important for employability in today's job market. Specifically, proficiency in Microsoft Office Package (which includes Word, Excel, PowerPoint, Outlook, Publisher, Internet, Electronic mail, Access, OneNote, Outlook, Power BI, Visio, and OneDrive for Business) is required for entry-level positions (Sadiq & Mohammed, 2015). Soft skills are also necessary for success in the job market, as they complement technical or "hard" skills. Soft skills include problem-solving, creativity, and interpersonal communication, and they enhance an employee's effectiveness and performance (Ohei & Brink, 2019; 2021). These skills are self-taught and learned through focused application, and they provide a competitive edge in today's job market (Ohei & Brink, 2019). Soft skills include the ability to effectively use English, team building, leadership, time management, group discussion, career planning, resume writing, and dealing with placement consultants and headhunters. Soft skills also involve emotional intelligence, which includes the ability to manage one's own feelings and empathize with others (Ohei & Brink, 2019; 2021).

In addition to soft skills, hard skills are also necessary for success in the job market. Hard skills are specific and measurable abilities, such as proficiency in a foreign language, machine operation, computer programming, web design, accounting, finance, writing, mathematics, legal skills, and other quantifiable skills required for a particular job (Ohei & Brink, 2021). Hard skills are important for employees and employers, as they increase job performance and effectiveness (Pandey & Pandey, 2015). However, soft skills contribute 85% to one's overall success, while hard skills only contribute 15% (Ohei & Brink, 2021; Pandey & Pandey, 2015). Therefore, having a combination of both soft and hard skills is necessary for employability and success in today's competitive job market.

ICT Skills and Competence required for Youth Employability

The concept of technology empowerment can easily be classified as the process of converting computer skills into actions that lead to positive and self-directed changes in an individual's life (Gigler, 2014). The Sustainable Development Goal 8 places emphasis on the role of ICTs in improving the situation for youths, particularly in terms of employment and economic growth (Sachs et al., 2019). Therefore, promoting the use of technology can create social and economic opportunities that enhance the economic status of youth in developing countries (Zaugolnikov, 2013).

The Fourth Industrial Revolution (4IR) has made the job market more complex, requiring youths to acquire additional digital/IT skills set to be competitive (Sadiq & Mohammed, 2015). The lack of ICT skills has contributed to declining employment rates, and highly sought-after professions in ICT, such as Mobile Application Developer, Web Designer, Application Development and Programming, Analytics and Data Management, System Enterprise Architecture, AI Machine learning, Cloud Computing, Cybersecurity, Virtualization, Networking, and Wireless, are scarce globally. Therefore, promoting ICT skills among youths is crucial for promoting the essence of the 4IR and boosting a country's economy (Calitz et al., 2014).

The emergence of technology, including innovations such as artificial intelligence, 3D printing, and other digital devices, has affected people's lives in new and unanticipated ways, thereby affecting employability in developing countries (Li Hou & Wu, 2017; Bloem et al., 2014). The 4IR era has contributed to an increase in unemployment and skill requirements that are biased towards higher-income earners, which could ultimately affect lower-income individuals working in manual handling technology or industries most prone to automation (Li Hou et al., 2017). However, the current revolution of innovative economies in ICTs offers new business and employment opportunities with higher efficiency gains and new demands on skills (Fernández-Sanz et al., 2017).

Several specialized ICT occupations, such as ICT systems analyst, software developer, ICT risk specialist, programmer analyst, developer programmer, applications programmer, data quality officer, decision support analyst, computer network technician, geographic information system specialists and technicians, multimedia designer and web designer, web developer, database designer and administrator, computer network and systems engineer, network analyst, and ICT security specialist, are in high demand in the
country. Youths can explore these and other potential career paths (Stukalina, 2018; Mckenzie et al., 2017) to gain the skills required for the evolving job market.

Deterrent to Youth Unemployability in South Africa

In 1995, South Africa had around 463,000 youths in the labour force, which increased to 1.1 million by 2011. However, there has been a recent decline in the number of youths in the labour market, and the unemployment rate for graduates remains high (Vinichenko et al., 2016). Nevertheless, the lack of basic computer skills is a major contributor to the unemployment gap, preventing youths from gaining practical experience in the workplace. Ohei and Brink (2019) identify several factors contributing to youth unemployment, including the youth's inability to secure preferred employment, lack of capital investments for education, universities not aligning their curriculum with employers' expectations, and inadequate feedback during job applications. Scholars argue that employers tend to assume that hiring youths may lead to incompetency due to their lack of industrial skills. Some executives are not motivated to employ youths due to cultural and communication barriers. Although South Africa's digital knowledge has improved over the years, unemployment remains a significant issue for the country's youths, unlike in other developed countries where most youths secure employment within six months of graduating (Ohei & Brink, 2019).

Research and Methodology

This study seeks to address the research question of how ICTs can promote the sustainable advancement of youth employability, a conceptual analysis was conducted by critically reviewing relevant literature. In attempt, the paper adopted a systematic literature review (SLR) research methodology since the contents are based on existing literature studies in identifying research needs and gaps, collecting or gathering lines of thoughts (Memon et al., 2020) or researchers’ views in ICT skills and competences as an enabler for sustainable advancement of youth employability in South Africa. To gather relevant information for this study, multiple sources were utilized, including EBSCO, Google Scholar, and the Web of Science, to access peer-reviewed publications (Morakanyane, Grace, & O'Reilly, 2017). The retrieved publications underwent a systematic pruning process to focus on the most pertinent ones (Kraus et al., 2022). Thematic analysis was then conducted on these publications to extract valuable information for the study (Cooper et al., 2018). A total of 65 studies from Scopus and the Web of Science were utilized after a thorough literature assessment. The method was deemed suitable in addressing the phenomenon that in being probed, therefore analysing the thoughts of reviewers, and reporting on the findings and drawing conclusion, through recommendation.

Discussion

Ideally, framework develops the concepts involved and expands the body of knowledge. More specifically, the benefit of the framework is that it aimed in broaden insight into the phenomena being studied. It brings understanding and exposes the theoretical foundations of complex research phenomena through visual exposition (Webster & Watson, 2002). Additionally, this framework ought to be perceived as a road map that provides soundness to the practical investigation in research activity. Omona, Van der Weide, and Lubega (2010) add that it is an organized technique of expressing how and why a research inquiry takes effect, and how to understand its activities. In this study, the framework is a sort of transitional theory that sought to guide the researchers in all parts of this research and align the problem statement and research questions so that the research ultimately comes together as a whole (Ohei & Brink, 2021).

Framework: Sustainable Livelihood Theory

The Sustainable Livelihood Theory was employed as the conceptual framework for this study by (Parkinson & Ramirez, 2007). The theory posits that a sustainable livelihood is based on assets, capabilities, activities, and access to these elements, which are the fundamental components that shape people's lives (Mensah, 2012). As such, livelihood outcomes, whether social or economic, depend on the combination of these assets, the context of vulnerability in which people find themselves, and the policies, institutions, and processes, including ICT systems, that surround them (Morse & McNamara, 2013). The Sustainable Livelihood framework identifies several sources of vulnerability, including economic, environmental, human, social, physical, and political factors (Mensah, 2012). Furthermore, other vulnerabilities that affect people's livelihoods include, but are not limited to, high unemployment, floods, violence, inadequate healthcare services, insufficient public schools, and police brutality (Mensah, 2012).

Waema and Miroro (2014) theory explains that livelihood outcomes can range from poverty, which is an "inadequate livelihood outcome," to poverty reduction, which is a favourable outcome resulting in improved material or non-material lives. This study considers poverty reduction to be a multidimensional concept that involves various factors such as increased income through skills development, participation in governance, and increased voice; greater access to public goods and services; acquisition of education in terms of knowledge and skills; reduced vulnerability or increased risk preparedness; and increased capacity to cope with, prepare for, and adapt to natural or economic shocks. (Harris, 2004; Morse & McNamara, 2013; Waema & Miroro, 2014). The Sustainable Livelihood Theory provides a comprehensive framework for assessing the impact of ICT initiative on youth's decision-making, assets, and risks, and helps to contextualize impact assessment. The theory highlights assets, capabilities, activities, and access to these elements as the key components of sustainable livelihood and identifies economic, environmental, human, social, physical, and political factors as the main sources of vulnerability in the framework (Mensah, 2012).
The Impact of ICTs

According to Morse and McNamara (2013), the Sustainable Livelihood (SL) approach is primarily used to identify unexpected impacts. Due to the need to adapt the framework to a specific research context and purpose, several evaluation frameworks and methodologies have been proposed for assessing ICT for development initiatives (Parkinson & Ramirez, 2007). In ICT for development initiatives, it is rare to find a direct causal link between the intervention and the resulting benefits, and the benefits themselves can be difficult to predict, particularly when ICTs are introduced in an open-ended manner, as is the case with digital centers in some ICT for development initiatives nor projects (Parkinson & Ramirez, 2007).

The SL framework provides a suitable approach for analyzing ICT-related issues in a comprehensive manner, allowing researchers to consider ICTs from a bottom-up perspective. This includes examining the ways in which ICTs impact various livelihood strategies, whether positively, negatively, or neutrally (Parkinson & Ramirez, 2007). Additionally, the framework can help identify demographic groups that utilize these approaches and those most likely to be affected by ICTs and how these technologies have influenced their lives. In this study, the focus is on utilizing ICTs for sustainable youth advancement for employability. It has been found that the lack of access to ICTs can hinder employability opportunities for some youths who may not have access to information-seeking resources.

Advancement of ICTs as Assets to Sustainable Livelihood

In Parkinson and Ramirez (2007) theory, the SL framework considers multiple dimensions of ICTs that are interconnected in a dynamic way. The framework attempts to link macro and micro-factors, such as structures and processes, which are accessible to people that use them as strategies. These factors also shape and constrain people's possibilities. The SL theory process is broad and allows for the use of social and cultural factors that shape livelihoods. The aim is to facilitate structured and coherent debate among stakeholders with different perspectives on the factors that affect livelihoods, their relative importance, and the way they interact.

When it comes to ICTs, their impact on livelihood assets depends on the local context in which they are introduced. Public access points, such as digital centres, can be used to provide access to digital tools and facilitate computer skills training for people living in disadvantaged communities. The sustainable livelihoods approach categorizes these assets into five categories: Human capital, social capital, natural capital, physical capital, and financial capital.

In the study on the sustainable advancement of youth employability, the use of ICTs is crucial in providing information and knowledge. The study shows that lack of ICT access can hinder improved employability, as some youths lack access to ICTs to seek information. The use of ICTs can improve access to education, training, market information, and financial institutions, which can enhance youth advancement. The study argues that if ICTs are applied successfully, they can be a tool for sustainable youth advancement, leading to the establishment and sustenance of new capabilities (Oduwole, 2015).

There are three out of the five categories of livelihood assets that are most likely to be affected by the unique characteristics of ICTs, along with the general context of vulnerability. These three categories are social capital (with a focus on networking), financial capital (including income generation and savings resulting from substituting ICT use for other activities) and human capital (encompassing knowledge and information resources available to individuals).

Analytical Model

In this section, a diagrammatical analytics model is presented which outlines the potential relationships between variables that underpin this study. This model provides a logical framework for assessing the deployment of digital skills and ICTs for enhancing youth employability in a sustainable manner. The conceptual model depicted in Figure 1 illustrates how ICTs can impact, therefore promoting the sustainable advancement of youth employability in South Africa.
Justification for deploying the Sustainable Livelihoods Method

Poverty and advancement differently than poor people themselves. Poverty is a much more complex issue than experts like Chambers (1995) tend to believe, as people living in poverty often adopt various strategies to maximize their income, minimize risks, and protect or increase other valuable assets. Chambers claims that poor people prioritize differently from what is typically attributed to them by development experts, and their plans are often more complex in terms of action and motivation. The Sustainable Livelihood (SL) approach aims to help vulnerable people develop the capacity and resilience to cope with external shocks that may affect their livelihoods. This theory is useful in identifying unexpected impacts, as the framework can identify how development initiatives can influence the decisions people make based on the risks they face and the assets they have access to, thereby putting impact assessment in a more comprehensive context. Figure 2 presents the Sustainable Livelihood Theory (DFID, 2005).
**Conclusions**

This research raises crucial questions and suggests how policymakers and other stakeholders in the ICT industry can leverage technology to promote the digital skills advancement of youth and facilitate economic growth in developing countries. The study recommends that policymakers and stakeholders prioritize the use of ICT as an intervention for the sustainable advancement of youth. This will help governments ensure that digital literacy is ingrained in youths from an early age, rekindling their interest in ICT and promoting their future involvement in ICT-related careers. The study further raised awareness within ICT decision-makers regarding the importance of ICT skills in driving economic growth and empowering the youth’s advancement. Additionally, it contributes to the body of knowledge in the academic sphere, particularly in ICT for sustainable development research, which relates to policy-relevant social-scientific projects and human science research for public sector users, as well as science and technology initiatives aimed at addressing poverty and inequality.

The study suggests that the South African government should utilize ICTs to improve skill advancement within the Department of Higher Education and Training (DHET), as well as research institutions. This recommendation is based on the understanding that ICTs can greatly enhance the quality and accessibility of education and training, particularly in fields related to digital skills and technology. By using ICTs, DHET and research institutions can provide online courses, virtual classrooms, and other forms of digital learning that can be accessed by a wide range of students, regardless of their location or other constraints.

Additionally, the research recommends promoting digitization in grassroots areas through government-sponsored community initiatives that emphasize the importance of technology for better employability and livelihoods. By focusing on these recommendations, the government can create opportunities for the youth to gain necessary digital skills that are critical for their employability and help them prepare for the demands of a rapidly changing digital economy. Moreover, by incorporating technology into grassroots communities, youths who may not have had previous access to technology can learn valuable digital skills that will increase their economic opportunities and quality of life. Most importantly, recommendation from the study involves promoting digitization in communities. These initiatives should focus on the significance of technology for improved employability and sustainable livelihoods, particularly for youths. The goal of such initiatives should be to increase access to digital skills training and technology in underserved communities, and to provide opportunities for youths to develop the skills they need to succeed in the digital economy.

Overall, these recommendations reflect the importance of using ICTs to address the digital skills gap and promote economic growth and development in South Africa. By investing in digital skills training and technology infrastructure, the government can ensure that youths have the tools they need to succeed in the digital economy and can help to reduce inequality and promote inclusive economic growth. The emerging 4IR era has become crucial in driving economic growth in many countries, and this paper raises the question of whether technology adoption can be the solution to economic decline and unemployment. Several studies have shown that there is a shortage of ICT skills worldwide, and this research addresses the issue of youth unemployment and how ICTs can be used to tackle this issue in South Africa.
The South African government has recognized the potential of technology in driving economic growth and has directed its efforts towards research that promotes ICT skills in various economic sectors. However, digital skills have not been adequately addressed among youths, mainly due to limited access to technology, lack of education, computer skills, and socio-economic barriers. To address these challenges, this study recommends that the South African government should prioritize the promotion of digital skills among the youth. This can be achieved through initiatives that enhance access to technology, such as community programs, and education institutions. Additionally, there is a need to invest in research and development in ICT to promote the use of technology in all sectors of the economy.

In a nutshell, this study highlights the importance of addressing the shortage of ICT skills in South Africa to promote economic growth and youth employability. By promoting digital skills among youths, the government can tackle the issue of youth unemployment and enhance the country’s economic advancement.

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