



'creating a level playing field'

National Digital Literacy and Digital Skills Assessment

2025



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MIDLANDS STATE UNIVERSITY



Our Hands Our Minds Our Destiny

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Abbreviations and Acronyms

4IR	Fourth Industrial Revolution
5G	Fifth Generation
AI	Artificial Intelligence
API	Application Programming Interface
AR	Augmented Reality
BDLS	Basic Digital Literacy Scale
CAPI	Computer – Assisted Personal Interviews
CSO	Civil Society Organizations
DigComp	Digital Competence Framework for Citizens
DISTO	Digital Skills to Tangible Outcomes
DL	Digital Literacy
DLGF	Digital Literacy Global Framework
DLS25	Digital Literacy Skills 2025
DS	Digital Skills
EA	Enumeration Area
ECD	Early Childhood Development
EDS	Essential Digital Skills
ERP	Enterprise Resource Planning
FGD	Focus Group Discussion
GIS	Geographic Information System
ICDL	International Certificate of Digital Literacy
ICT	Information and Communication Technology
IDLS	Intermediate Digital Literacy Scale
IoT	Internet of Things
IPA	Intelligent Process Automation
ISP	Internet Service Provider
IT	Information Technology
ITU	International Telecommunication Union
KII	Key Informant Interviews
KPIs	Key Performance Indicators
LMICs	Low – and Middle- Income Countries
MDCA	Multiple Decision Criteria Analysis
MSMEs	Micro Small and Medium Enterprises
MSU	Midlands State University
NDLSA	National Digital Literacy and Digital Skills Assessment
NDS1	National Development Strategy 1
NGO	Non-Governmental Organisation
OECD	Organisation for Economic Co-operation and Development
PIAAC	Program for the International Assessment of Adult Competencies
PWD	People with Disabilities
QCR	Quality Contribution Ratio
RPA	Robotic Process Automation

Abbreviations and Acronyms

RRI	Responsible Research and Innovation
SAP	Systems Applications and Products in Data Processing
SDG	Sustainable Development Goals
SMS	Short Message Service,
SME	Small to Medium Enterprise
TV	Television
USSD	Unstructured Supplementary Service Data
VR	Virtual Reality
WCAG	Web Content Accessibility Guidelines
ZDLI	Zimbabwe Digital Literacy Index
ZIMSTAT	Zimbabwe National Statistics Agency
ZTA	Zero Trust Architecture
ZIMRA	Zimbabwe Revenue Authority

Introduction

The National Digital Literacy and Digital Skills Assessment (NDLS) 2025 provides a comprehensive evaluation of Zimbabwe's digital landscape, identifying strengths, gaps and opportunities for policy intervention. Commissioned by the Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) and conducted by Midlands State University (MSU), this study assesses digital literacy and skills across Zimbabwe demographics, infrastructure and economic sectors. Furthermore, the assessment proposes indicators that will be used to track progress in digital literacy and digital skills over time and to compute the Zimbabwe Literacy Index (ZDLI). The study was conducted in Zimbabwe's ten provinces. The findings aim to guide Zimbabwe's digital transformation in alignment with its economic blueprints, and with regional and global digital trends.

Methodology

The study used a mixed-methods approach. It included quantitative surveys of 2,401 participants from the ten provinces. Respondents were stratified by age, gender and locality (urban-rural). Qualitative insights came from 45 Key Informant Interviews (KIIs), 10 Focus Group Discussions (FGDs), and 20 field observations. Desk research benchmarked Zimbabwe against regional and global digital trends. Regional trends covered mobile money and the fintech boom, the digital talent gap, the rural-urban divide, e-government, smart cities, and green Information Communication Technology (ICT). Global trends included the dominance of Artificial Intelligence (AI) and generative AI, cloud-edge computing convergence, hyperautomation and intelligent process automation (IPA), zero-trust cybersecurity models, and decentralised Web3 technologies.

In addition, the study applied the Merged Framework. This model combined global standards such as UNESCO's Digital Literacy Global Framework (DLGF), the Digital Skills to Tangible Outcomes model, and the International Telecommunication Union's (ITU) Digital Competence Framework. Data sources included government agencies, civil-society groups, academic institutions (primary to tertiary) and private-sector actors. The research measured a range of digital indicators, which included basic to advanced skills, access to devices, broadband connectivity, and adoption of digital tools. Results were disaggregated by province, locality, gender, age, and socio-economic status. This ensured that marginalised and underserved populations were adequately represented.

Key Findings

Current State of Digital Literacy and Skills

Of the sampled participants, 32.8% have basic digital literacy, with notable disparities by province, gender, age, and location. Males (38.1%) have higher digital literacy than females (28.0%), particularly disadvantaging rural women. Urban areas (47.8%) have almost double the literacy rate of rural areas (23.4%). Younger people (ages 10–30) are more digitally literate, while those over 50 have significantly lower skills. Overall, digital literacy and skills in Zimbabwe remain low in comparison with the United Nations' minimum benchmark, which defines a digitally enabled society as one where at least 50% of the population possess basic digital literacy and skills.

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Determinants of Digital Literacy and Digital Skills in Zimbabwe

The findings reveal that factors like formal computer training, access to the internet, and higher education play a major role in improving digital abilities. This shows how important it is to invest thoughtfully in education and digital infrastructure to boost national digital literacy.

The Zimbabwe Digital Literacy Index (ZDLI)

The National Average ZDLI (computed as a composite index, combining basic, intermediate and advanced skills) is at 37.3%, with urban males scoring highest (50%) and rural females lowest (30%). The proposed indicators that track the progress in digital literacy and skills metrics include technical and employability skills, infrastructure and access indicators that measure digital inclusion and connectivity as well as economic and employment impact indicators that measure the digital skills effect on livelihoods.

Digital Literacy Divide in Zimbabwe

Zimbabwe's urban-rural digital gap persists. Urban areas score higher levels of digital capabilities, with 38.8% having internet access, more than rural areas, with 10.8%. The digital divide is also gendered, showing that men (39.76%) outperform women (34.97%). Marginalised groups such as older adults, persons with disabilities and rural populations face severe exclusion due to infrastructure deficits, affordability issues and cultural barriers. Despite the physical establishment of community information centres (CICs) across the country, many centres remain underutilised, due to a lack of critical digital infrastructure.

Demand and Supply of Digital Skills Across the Country's Economic Sectors

The findings reveal a mismatch between labour-market demands and the digital capabilities of the workforce. Uneven adoption of digital tools, shortages in advanced skills and systemic barriers were noted. Another key finding was that tertiary institutions continue to produce graduates with predominantly basic abilities, falling short of the evolving industry needs. There are sectoral gaps, with finance and telecoms having relatively advanced internal skills, but agriculture, small to medium enterprises, and public institutions lagging behind.

Conclusions

Zimbabwe is navigating a pivotal "digital window" in the Fourth Industrial Revolution (4IR). While it presents unprecedented opportunities for economic growth, innovation and social development, Zimbabwe risks deepening digital exclusion if it fails to close its digital skills gap. With digital literacy at just 32.8% (those who scored at or above basic level), and disproportionately lower among women, rural communities and people with disabilities (PWDs), targeted interventions are no longer optional, they are urgent and foundational for national transformation.

The current landscape is characterised by fragmented policies, inadequate infrastructure, outdated education curricula, and limited private-sector engagement, all of which hinder inclusive digital progress. Without urgent and coordinated intervention, these gaps will widen, further

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marginalising vulnerable groups and stifling the nation's potential to achieve Vision 2030 and the Smart Zimbabwe Master Plan. The policy and strategic recommendations can assist in accelerating Zimbabwe's digital literacy and skills development. The following recommendations are grounded in empirical research and aligned with the NDLSA objectives.

Policy Recommendations

Establishment of a National Digital Skills Council

Zimbabwe's digital landscape suffers from fragmented strategies across ministries, leading to inefficiencies in implementation and poor alignment with national development goals. To address this, the government should establish a multi-stakeholder Digital Skills Council under POTRAZ, comprising representatives from key ministries, private-sector players, academia and civil society. This council will be mandated to coordinate all digital literacy initiatives, ensuring harmonised implementation across all sectors.

A unified National Digital Literacy Framework should be developed, explicitly aligned with Vision 2030 and the Smart Zimbabwe Master Plan. This framework will standardise digital competency benchmarks and provide clear guidelines for sectoral adoption. Additionally, the mandatory inter-ministerial digital implementation plans should be introduced, requiring each ministry to integrate digital skills development into their annual strategic plans, with progress reviewed quarterly by the Council.

Deployment of Inclusive Digital Infrastructure

Persistent disparities in digital access, particularly along rural-urban, gender and disability lines, remain a major barrier to nationwide digital literacy. To bridge this gap, the government should prioritise increasing the installation of solar-powered community digital hubs in underserved districts by 2030, ensuring reliable internet and device access in off-grid areas.

The telecommunications regulator is encouraged to mandate zero-rated access for essential educational, health and government service platforms, removing cost barriers for low-income users. Furthermore, targeted device-subsidy programmes should be implemented, offering discounted tablets and smartphones for women, the elderly and people with disabilities, supported by tax incentives for manufacturers and retailers. All hubs should adhere to universal design standards and be interoperable with educational platforms. Maintenance partnerships with local youth entrepreneurs should ensure sustainability.

Comprehensive Education Curriculum Reform

Zimbabwe's current education system lacks integration of Fourth Industrial Revolution competencies, leaving graduates ill-prepared for a digital economy. The national curriculum must be revised to embed coding (Python), AI fundamentals, and cybersecurity as core subjects from primary to tertiary levels.

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Sector-specific Upskilling Initiatives

Critical sectors such as agriculture, healthcare and SMEs face acute shortages of mid-career professionals with intermediate-to-advanced digital skills. An annual sectoral skills gap analysis should be conducted to identify priority areas, followed by funding for 100 specialized bootcamps annually (e.g. IoT for agriculture, telemedicine for health, e-commerce for SMEs). A National Digital Skills Observatory should be created to publish annual demand-supply heatmaps by sector, guiding bootcamp funding and curriculum adjustments.

Targeted Programmes for Marginalised Groups

Women, the elderly and people with disabilities (PWDs) consistently exhibit the lowest digital literacy rates, exacerbated by cultural and accessibility barriers. Voice-based learning platforms in Shona, Ndebele, and other local languages should be developed to cater to non-literate users.

To promote economic inclusion, 30% of digital entrepreneurship grants should be reserved for women-led initiatives. Government platforms must also comply with WCAG accessibility standards, ensuring that PWDs can fully participate in the digital economy. WCAG compliance should be audited annually across all government platforms, with non-compliant agencies subject to ICT development fund penalties.

Real-time Monitoring and Data Systems

The lack of disaggregated data hampers evidence-based policy-making. An annual Zimbabwe Digital Literacy Index (ZDLI) should be implemented, measuring literacy across provinces, age groups and genders. These metrics must be integrated into ZIMSTAT's quarterly labour surveys for ongoing assessment. A publicly accessible dashboard should track real-time progress on digital hub usage, training completion rates, and literacy improvements, enabling transparent accountability. The dashboard should include an open API to enable civic tech actors and researchers to track digital inclusion progress and propose data-driven policy adaptations.

Strengthened Public-Private Partnerships

Private-sector engagement in upskilling remains limited. To incentivise participation, companies investing in digital training should receive tax deductions. A digital innovation fund should be established to match grants for NGO-tech collaborations, scaling proven models like WhatsApp microlearning to one million users by 2030. Corporate digital training tax deductions should be linked to outcome-based Key Performance Indicators (KPIs). A private-sector digital inclusion scorecard should be published annually by POTRAZ.

National Digital Citizenship Campaign

Cybersecurity and digital rights awareness are alarmingly low. A 'Digital Zimbabwe' campaign should educate citizens on online safety, complemented by mandatory 20-hour annual ethics training for civil servants. A gamified mobile application could engage youths in learning cybersecurity basics. Decentralising through local governments is also essential; local authorities should co-deliver digital citizenship events alongside national agencies, promoting trust and contextual relevance in cybersecurity education.

EXECUTIVE SUMMARY

Strategic Recommendations

National Digital Literacy Campaign

With only 32% digital literacy and minimal structured programmes for rural and informal sectors, Zimbabwe must urgently scale accessible, certified training to achieve its 70%+ literacy target.

Proposed actions include Mobile-First Microlearning, in which POTRAZ and government will partner with telecommunication providers to deliver free USSD/SMS courses on basic digital skills, such as mobile banking and internet safety. The partnership will develop gamified apps like DigiSkills ZW for low-bandwidth environments. POTRAZ will introduce Mass Media Outreach and broadcast digital literacy programmes on ZBC and StarFM in local languages to reach non-literate populations. POTRAZ will carry out Public Awareness, national campaign via social media, community radios, and town halls to promote digital rights and training opportunities, prioritising rural youth and women.

Expansion of Public Wi-Fi and Digital Hubs

Limited free Wi-Fi (mostly urban) and underutilised Community Information Centres (CICs) are exacerbating the rural-urban divide. The initiative by POTRAZ to convert redundant post offices into CICs represents a strategic intervention aimed at enhancing digital inclusion and promoting equitable access to ICT services across the country. This approach aligns with national development priorities and the broader goals of Vision 2030, particularly in addressing the urban-rural digital divide. However, results from the assessment reveal a critical implementation gap. Many CICs currently lack essential digital infrastructure, particularly Wi-Fi connectivity and hotspot capabilities. This deficiency significantly limits the functionality of these centres, impeding their ability to provide meaningful access to online services, digital skills training and e-government platforms – especially for rural youth, entrepreneurs and marginalised populations. To fully realise the potential of CICs as engines of digital empowerment and socio-economic transformation, the initiative must move beyond physical refurbishment and focus on full digital enablement. This includes ensuring reliable high-speed internet, user support services, and integration with other national broadband and e-service strategies. Moreover, a sustainable funding model and maintenance framework should be established to support long-term operational efficiency and local engagement.

Education System Overhaul

Outdated curricula are lacking in coding/IT, and teachers lack digital proficiency. Curriculum reform should integrate coding (Python, Scratch), cybersecurity and digital citizenship infused into primary and secondary education, teacher training programme targeting to certify 1000 teachers annually in digital pedagogy through partnerships with universities and technology firms; increasing device access by distributing low-cost tablets with localised content to schools, targeting a 1:10 device-learner ratio. will improve digital proficiency.

EXECUTIVE SUMMARY

Gender and Disability Inclusion

Rural women are 50% less likely to own smartphones, while PWDs face exclusion. Women- focused initiatives such as girls' coding clubs, women-only tech hubs (e.g. Women in Tech Zimbabwe), and rural digital ambassadors (NGOs can support these) and accessibility compliance through mandating Web Content Accessibility Guidelines (WCAG) standards for government platforms, incorporating sign language and braille tools for PWDs will broaden inclusion of other marginalised communities.

Private Sector Engagement

There is limited corporate participation in upskilling initiatives. Through tax incentives such as tax deductions for companies that train employees in digital skills, donate refurbished computers to schools, sponsor hackathons and apprenticeships, or Adopt-a-School programmes to fund IT labs in rural schools, increase private-sector participation.

Digital Entrepreneurship Push

POTRAZ can partner with Zim Trade to train youth in e-commerce, freelancing and AI/blockchain applications and launch AI chatbots (WhatsApp/Facebook) to guide entrepreneurs in business development. Integrate Zimbabwe Youth Council or Innovation Hubs into the delivery model for stronger youth engagement

National Certification Framework

The absence of standardised digital certification limits workforce mobility. POTRAZ can develop a Zimbabwe Digital Skills Certification aligned with employer needs and link the certifications to job placements through partnerships with local and global firms.

Leveraging on Emerging Technologies

POTRAZ can pilot Virtual Reality laboratories in universities for advanced skills training in AI and cybersecurity and partner with Google and Microsoft to offer free cloud skills programmes.

Policy and Infrastructure Reforms

Fragmented strategies across ministries hinder progress in advancing digital literacy and skills. POTRAZ is recommended to establish a Digital Skills Steering Council to harmonise policies with Vision 2030 to enforce ministerial digital transformation scorecards to track compliance and accountability.



1. INTRODUCTION

1.1. Background

With an estimated 2.6 billion people still offline globally, digital skills and digital literacy have emerged as the new socio-economic currency, determining who thrives and who is left behind in an increasingly digitalised world (International Telecommunication Union [ITU], 2023). In this context, digital competencies are not merely optional, they are now integral to social inclusion, economic participation and national competitiveness. As digital transformation accelerates, the capacity to navigate, critically evaluate and strategically apply digital technologies becomes a key determinant of individual empowerment and collective progress. Countries that successfully cultivate digitally literate and technologically proficient populations are better positioned to address systemic inequities, unlock innovation, and promote sustainable development.

To unlock the full value of digital technologies, governments and regulatory bodies must appreciate, deeply, the breadth of digital access and its multifaceted impact on socio-economic development. Digital tools have evolved from passive enablers to active, systemic catalysts that drive transformative change across critical sectors such as education, healthcare, governance and entrepreneurship. This evolution is particularly salient for countries like Zimbabwe, where digital innovation presents opportunities to leapfrog longstanding infrastructure deficits and accelerate inclusive development. Through strategic deployment of digital platforms, integrated data ecosystems, and e-governance mechanisms, nations can enhance operational efficiency, empower citizens, and address persistent service-delivery gaps (United Nations Development Programme [UNDP], 2023).

In such an environment, digital literacy has emerged as a strategic national imperative. It enables citizens to interact with digital ecosystems safely, critically and productively, ensuring they are not passive consumers but active economic contributors within the digital economy. Recognising the urgency of this agenda, the Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) launched the National Digital Literacy and Skills Assessment (NDLSA) 2025. This initiative represents a foundational diagnostic exercise designed to establish an empirical baseline of Zimbabwe's digital capabilities, thereby informing targeted interventions to strengthen digital inclusion and preparedness.

The NDLSA is fully aligned with national blueprints, which explicitly identify digitalisation as a central pillar in achieving Vision 2030, the national ambition to attain upper-middle-income status by the end of the decade. The NDLSA emerges at a pivotal juncture as Zimbabwe seeks deeper integration into the global digital economy following decades of economic contraction and simultaneously grapples with widening internal digital divides. The international digital landscape is undergoing profound transformation, driven by a suite of disruptive megatrends. These include, inter alia, the accelerated deployment of artificial intelligence (AI) and generative AI, the convergence of cloud and edge computing, intelligent process automation (IPA), the refinement of cybersecurity through zero-trust architectures, and the integration of sustainability principles via green computing (Gartner, 2024).

1. INTRODUCTION

Additionally, trends such as data-driven decision-making, Web3 technologies, 5G infrastructure, and hyper-personalised digital experiences are redefining operational models for both public and private institutions (World Economic Forum [WEF], 2024; ITU, 2022). These developments collectively underscore the escalating demand for sophisticated digital skill sets, thereby necessitating a coordinated, future-oriented national capacity- development strategy.

Zimbabwe's acceleration of its digital economy agenda is therefore both a strategic necessity and a developmental imperative. This approach not only highlights the scale of existing disparities but also offers a structured roadmap for bridging the digital divide, stimulating innovation, and positioning Zimbabwe as a competitive participant in the Fourth Industrial Revolution (4IR). By equipping policy-makers, regulators, educators and development partners with actionable, evidence-based insights, the NDLSA lays the groundwork for a digitally empowered society, one in which technological advancement becomes a lever for inclusive growth, resilience and long- term national prosperity.

1.2. Objectives

The assessment was guided by the following specific objectives:

- a. Establish the current state of digital literacy and digital skills in Zimbabwe, i.e. the overall digital-literacy rate and relevant category rates.
- b. Investigate the determinants of digital literacy and digital skills in the country.
- c. Identify specific areas that need improvement to raise the digital-literacy rate.
- d. Determine the current demand and supply of digital skills across the country's key economic sectors and conduct a thorough gap analysis.
- e. Determine the digital divide in Zimbabwe.
- f. Develop applicable indicators that can track progress in digital literacy and digital skills over time, i.e. the Zimbabwe Digital Literacy Index (ZDLI).
- g. Assess the digital-skills levels present in government and regulatory authorities, education, the private sector and civil society.



2. DIGITAL LITERACY AND DIGITAL SKILLS CONCEPTUAL FRAMEWORK

2.1. Introduction

As digital transformation reshapes global economies, Zimbabwe faces both opportunities and challenges in developing a digitally competent workforce. In 2023, the Government of Zimbabwe announced that it was targeting 75% internet penetration by 2025 (Karombo, 2023). However, digital exclusion remains a structural barrier that exacerbates inequalities in education, health, economic opportunity and civic participation. This section presents the digital literacy and digital skills conceptual framework which builds on Zimbabwe's development blueprints and aligns with global standards (SDG 4 and 9, ITU Guidelines). In this section, there is differentiation between digital literacy (responsible technology use) and digital skills (technical abilities), categorisation of competencies into basic, intermediate and advanced levels. There is also an analysis of the key factors that determine digital literacy and skills and the computation of the ZDLI.

2.2 The Conceptual Framework

To meet the overall objectives of the National Digital Literacy and Digital Skills Assessment in Zimbabwe, the consultancy team leveraged on the conceptual framework depicted in Figure 2-1.

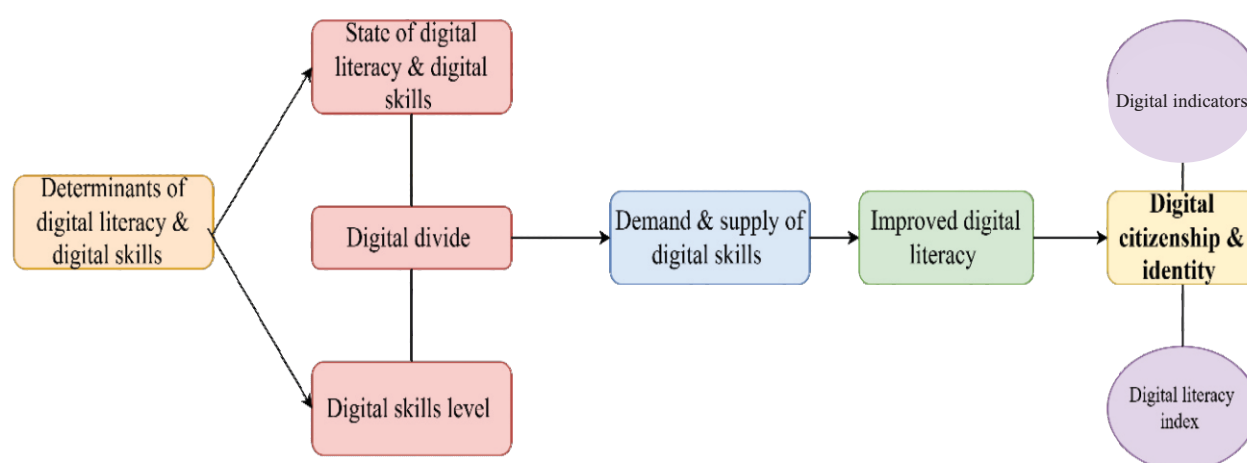


Figure 2-1: Conceptual Framework

The conceptual framework is grounded in the country's blueprints, which recognise information and communication technology (ICT) skills as a fundamental pillar in advancing economic modernisation and promoting inclusive social development. The framework is further aligned with the United Nations Sustainable Development Goals (SDGs), specifically SDG 4, which advocates inclusive and equitable quality education, and SDG 9, which emphasises industry, innovation and infrastructure. Additionally, it draws on the ITU's Digital Transformation Guidelines for Developing Countries, which emphasise the importance of closing digital divides through strategic capacity-building and institutional reform (ITU, 2022).

2. DIGITAL LITERACY AND DIGITAL SKILLS CONCEPTUAL FRAMEWORK

This conceptual framework is not presented as an abstract theoretical construct but rather as a strategically grounded, action-oriented tool designed to inform and facilitate practical implementation. Zimbabwe's digital development trajectory will be contingent upon the nation's ability to invest in human capital, reinforce digital infrastructure, and nurture a national culture of innovation, adaptability and secure digital participation. The framework serves as a foundational blueprint to guide evidence-based policy-making, shape targeted programme design, and foster effective multi-stakeholder collaboration. It ensures that digital transformation initiatives are not only technologically progressive but also inclusive, contextually responsive, and aligned with national development priorities. Critically, the framework aims to guarantee that no Zimbabwean is marginalised in the evolving digital ecosystem, reinforcing the imperative of equity and sustainability in the digital age.

2.1.1. Defining the Key Constructs: Digital Literacy, Digital Skills and Categories

A robust conceptual framework necessitated the clear and precise definition of its core constructs. For the purposes of this assessment, digital literacy and digital skills are treated as interrelated yet analytically distinct domains, each contributing uniquely to an individual's capacity to navigate and succeed within digital environments.

Digital literacy refers to an individual's ability to access, comprehend, evaluate and responsibly communicate information through the use of digital technologies (UNESCO, 2021). It encompasses both the cognitive and socio-cultural dimensions of digital engagement, which are critical for cultivating informed, ethical and participatory citizenship in the digital era. This assessment delineates digital literacy across three progressive tiers:

Basic digital literacy includes the ability to operate digital devices (e.g. smartphones, laptops), navigate online content, practise safe browsing, and demonstrate foundational awareness of cyber threats and personal data protection.

Intermediate digital literacy extends to the use of e-government services (e.g. e-tax submissions, digital civil registration), interaction with digital financial platforms (e.g. EcoCash, InnBucks, OneMoney), and recognition of online threats such as scams, disinformation and phishing attempts.

Advanced digital literacy enables individuals to critically assess digital content, assert digital rights (including data privacy and online ethics), and participate in civic and democratic processes through digital means (e.g. e-petitions, open data engagement and citizen journalism).

By contrast, **digital skills** are defined in more technical terms, referring to the ability to utilise digital tools effectively to perform professional tasks, drive innovation, and support entrepreneurial activities. These skills underpin the growth of digital economies and are essential for employment in ICT-intensive sectors.

Basic digital skills involve the use of standard productivity applications (e.g. Microsoft Office), participation in virtual communication platforms (e.g. Zoom, Google Meet), and leveraging social media tools for micro-enterprise development and personal branding. The basic level represents the foundational competencies required for engaging with ICTs. For some individuals, these skills pertain exclusively to mobile devices, whereas others must acquire proficiency across multiple device types.

2. DIGITAL LITERACY AND DIGITAL SKILLS CONCEPTUAL FRAMEWORK

Fundamentally, basic ICT skills involve operating a digital device using a keyboard or touchscreen, using software applications to download applications or create documents, and conducting routine online transactions such as performing web searches, sending and receiving emails, and completing digital forms. These competencies may be developed through formal instruction, self-directed learning, or informal peer support. Acquiring these foundational skills facilitates communication, enhances digital confidence, and enables users to access both public – and private-sector services more effectively (ITU, 2018a).

Intermediate digital skills refer to the capacity to engage with digital technologies in purposeful, adaptable and value-enhancing ways across diverse personal, educational and occupational settings. At this level, individuals are expected to progress beyond basic digital literacy, demonstrating proficiency in applying a wider and more intricate array of digital tools, platforms and processes. This comprises competencies such as basic programming in languages such as HTML, CSS or Python, managing and publishing content across digital platforms, and executing functional tasks in digital marketing, e-commerce or elementary data analysis.

These competencies are frequently customised to meet specific professional, industry or task- related requirements, thereby rendering them highly contextual. For instance, an individual in an administrative role may require fluency in advanced word-processing, spreadsheet analytics, and collaborative cloud-based platforms (e.g. Microsoft 365, Google Workspace).

Conversely, professionals in creative industries may need expertise in digital graphic design, video- editing software or content-management systems. Such role-specific applications highlight the practical and operational relevance of intermediate digital competencies. The scope of intermediate digital skills is inherently dynamic, evolving in tandem with technological innovation and shifting labour-market expectations. Crucially, the acquisition of these skills facilitates lifelong learning by enabling individuals to remain responsive to emerging technologies, adapt to new digital interfaces, and integrate evolving workflows into their professional routines. This adaptability fosters resilience and agility in increasingly digitised work environments. This level of digital competence represents the critical bridge between foundational digital literacy and advanced, specialised digital expertise. It empowers individuals to contribute meaningfully to the digital economy, enhance workplace productivity, and transition into more complex, technology- intensive roles. Accordingly, the development of intermediate digital skills constitutes a strategic imperative for workforce development, equitable digital inclusion, and the enhancement of national competitiveness in an era defined by rapid and pervasive technological change.

Advanced digital skills encompass high-level capabilities, including the design and deployment of artificial intelligence (AI) solutions, cloud-computing infrastructure, advanced data science and analytics, machine-learning, blockchain technology development, and cybersecurity engineering (European Commission, 2020; OECD, 2023). Advanced digital skills are essential for individuals pursuing specialist roles in any economic sector of a country. These competencies involve the application of highly specialised knowledge and technical expertise across complex digital systems and infrastructures. Professionals operating at this level, such as software developers, data scientists, network engineers and cybersecurity analysts, leverage advanced digital tools to innovate, optimise and secure digital environments. As with intermediate skills, the demand for advanced competencies is rapidly expanding, in terms of both breadth and sophistication, in response to emerging technologies and evolving industry needs.

2. DIGITAL LITERACY AND DIGITAL SKILLS CONCEPTUAL FRAMEWORK

Notably, areas such as Artificial Intelligence, Big Data analytics, cybersecurity, digital entrepreneurship, the Internet of Things (IoT), and immersive technologies like Virtual Reality (VR) are increasingly central to modern digital ecosystems (ITU, 2020).

These domains require not only technical proficiency but also critical thinking, problem-solving, and systems-level understanding. While many individuals acquire these skills through formal higher education such as university degrees in computer science or engineering, alternative and flexible learning pathways are gaining prominence. These include intensive coding boot camps, industry-recognised certifications, and self-paced online learning platforms. The cultivation of advanced digital skills is vital for driving technological innovation, enhancing national ICT capacity, and positioning Zimbabwe to compete effectively in the global digital economy.

This tiered classification provides the framework with dual utility, as both a diagnostic instrument and a strategic roadmap for capacity development. The deliberate differentiation between digital literacy and digital skills allows for nuanced policy and programme interventions, tailored to address specific capability gaps across demographic groups, sectors and regions. Figure 2-2 provides a summary of digital skills and literacy categories.

2. DIGITAL LITERACY AND DIGITAL SKILLS CONCEPTUAL FRAMEWORK

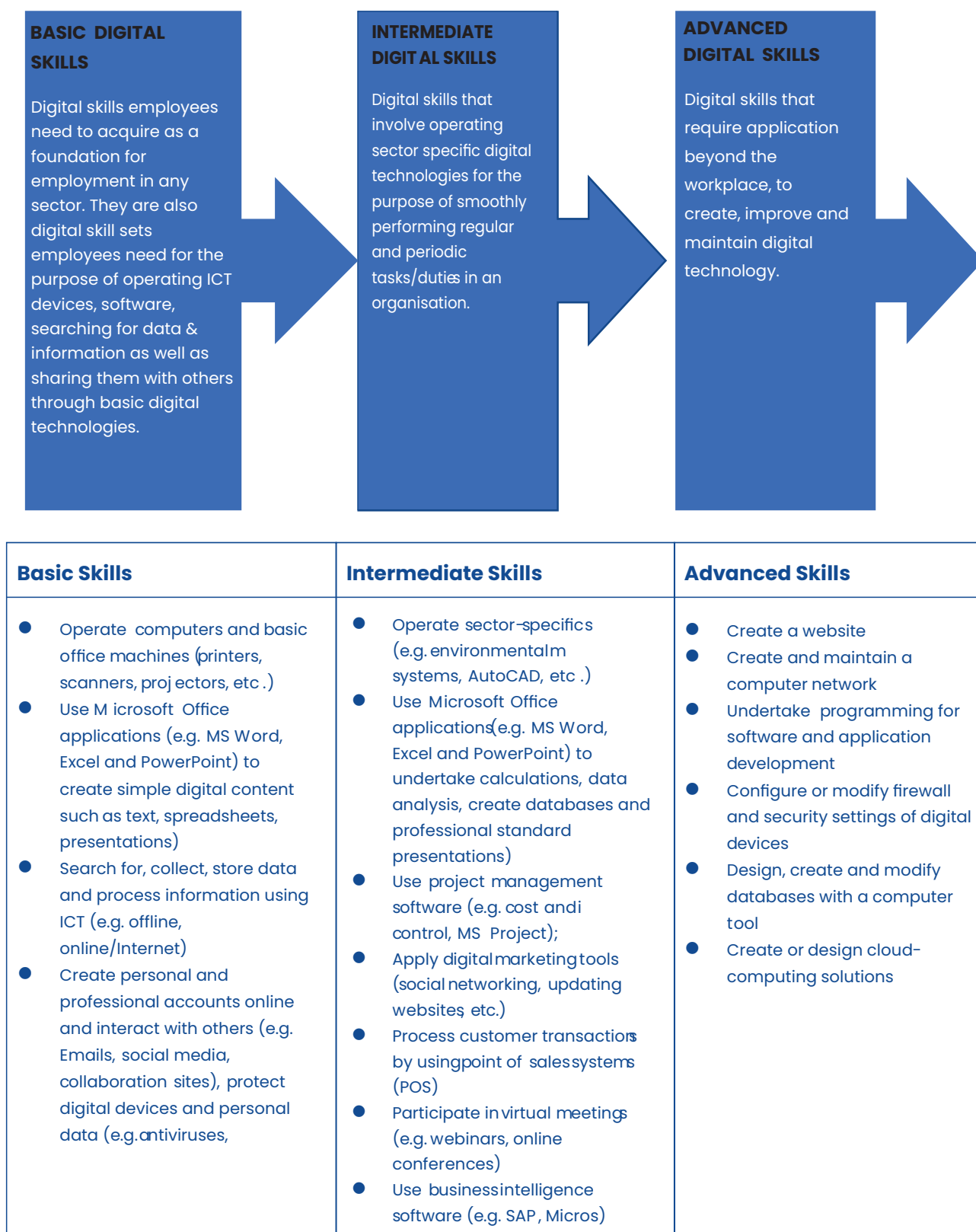


Figure 2-2: Digital Skills and Literacy Categories

2. DIGITAL LITERACY AND DIGITAL SKILLS CONCEPTUAL FRAMEWORK

2.2. Determinants of digital literacy and digital skills

Determinants of digital literacy and digital skills are the factors that influence an individual's ability to acquire and develop proficiency in using digital technologies effectively. Determinants of digital literacy and digital skills are multifactorial. Literature reports that digital literacy and digital skills are largely associated with better labour-market outcomes and depend on demographic factors such as gender, age, educational attainment, nature of employment, socio-economic factors and cultural background (Erwin and Mohammed, 2022; ITU, 2020). Several studies report that age was an important factor in digital literacy and digital skills but noted that it was not the only determinant. For instance, studies show that people who are over fifty years of age are more likely to have lower levels of digital literacy and digital skills regardless of gender (Peng and Yu, 2022).

In terms of gender, males tend to have higher digital literacy and digital skills than females. For example, many studies have revealed that males were more digitally literate and digitally skilled than females (Tran et al., 2020). Among the studies that analysed the influence of education, most studies have reported statistically significant results that presented a positive influence of educational level on digital literacy and digital skills scores (Reddy et al., 2023). Literature also reports that socio-economic status is also a vital factor affecting an individual's digital literacy and digital skills. Likewise, individuals from lower socio-economic backgrounds tend to have a lower level of digital literacy and digital skills and vice versa. Furthermore, research also shows that technology readiness, attitudes towards technology, and internet-use patterns are other factors that influence the level of digital literacy and digital skills (Nikou et al., 2022).

2.2.1. Digital literacy rate

Digital literacy ensures that an individual possesses the technical and operational skills to use technology for various reasons. Developing a digitally literate population calls for the involvement of different institutions. To improve the digital literacy rate, many employers are conducting digital workshops and training to ensure that their workforce has the relevant digital competencies needed for a digitalised environment. In the same vein, many governments have national digital literacy programmes to improve it. However, these programmes have not been successful in reducing the digital literacy gap in the country (Reddy et al., 2023; Nikou et al., 2022). The continued presence of the digital literacy gap proves that digital programmes intended to improve individuals' digital literacy are not effective, calling for innovative solutions.

2.2.2. Demand and supply of digital skills

Demand and supply of digital skills Globally, there is a pronounced and widening mismatch between the demand for digital skills and the current capabilities of the workforce. Existing digital competencies are increasingly inadequate to support the complexity and agility required by modern digital economies (Nikou, Aavakare, and Bouwman, 2022). This skills gap is particularly acute in developing regions, including Zimbabwe, especially in rural and marginalised communities, where the speed of technological diffusion far exceeds the capacity of education and training systems to produce job-relevant digital proficiency.

2. DIGITAL LITERACY AND DIGITAL SKILLS CONCEPTUAL FRAMEWORK

In sub-Saharan Africa, the challenge is even more severe. Although skill shortages exist at all levels, basic, intermediate and advanced, the most significant deficit lies at the intermediate tier, encompassing capabilities such as digital marketing, coding, and the use of specialised software for business operations (ITU, 2020). These competencies are critical for enabling SMEs, accelerating public-sector digitalisation, and supporting the growth of emergent technology-driven industries. Yet they remain significantly underdeveloped across much of the region.

As digitalisation reshapes labour markets, the demand for digital capabilities is projected to escalate dramatically. More than 200 million jobs in Africa are expected to require digital skills by 2030, generating nearly 600 million training and upskilling opportunities. Notably, the proliferation of AI is anticipated to generate entirely new high-value job categories within the next five to ten years, particularly benefiting those with advanced technical acumen (Reddy, Furr and Trako, 2020). These trends emphasise the scale and urgency of intervention required to align education and training systems with evolving labour-market needs and to unlock the inclusive growth potential of digital technologies.

Moreover, in 2020, the ITU identified an unprecedented demand for digital skills across multiple stakeholder categories. In sub-Saharan Africa, business-to-business (B2B) and business-to-government (B2G) sectors are projected to require approximately 625 million digitally literate individuals by 2030, while the business-to-consumer (B2C) sector will necessitate digital competence for an estimated 25 million individuals to participate meaningfully in platform-based services and markets.

This demand trajectory reflects a profound transformation in the economic landscape: digital skills are no longer peripheral, they are now central to productivity, innovation and global competitiveness. In other words, countries that fail to address digital skills gaps face a heightened risk of exclusion from the Fourth Industrial Revolution, while those that successfully invest in workforce readiness will be better positioned to generate employment, attract digital investment, and build knowledge-intensive economies.

In Zimbabwe, this transformation is being propelled by various blueprints and the broader aspirations of Vision 2030. Digital technologies are becoming embedded across sectors, public service delivery, education, health, financial inclusion and entrepreneurship, driving demand for a digitally fluent workforce. However, the pace of digital adoption has exposed a persistent and widening mismatch between workforce demand and available digital capabilities.

In the education sector, digital platforms have become indispensable, particularly in the post-COVID-19 era. Yet only 32% of public schools are equipped with sufficient ICT infrastructure and reliable internet access, limiting early exposure to digital tools (Ministry of Primary and Secondary Education, 2022). Although tertiary institutions and vocational colleges graduate approximately 25,000 ICT-qualified students annually, many face labour-market challenges due to outdated curricula and limited exposure to real-world digital applications (ZIMSTAT, 2023). The private sector is responding through online courses, bootcamps and certification programmes. However, cost barriers and digital infrastructure constraints significantly restrict access for rural and low-income populations (GSMA, 2022). Equally concerning, only 18% of employers in the formal

2. DIGITAL LITERACY AND DIGITAL SKILLS CONCEPTUAL FRAMEWORK

economy offer structured digital upskilling programmes, citing limited financial capacity and unclear return on investment (Charles, Xia and Coutts 2022).

As a result, Zimbabwe's digitally skilled workforce comprises approximately 1.5 million individuals with basic literacy, 300,000 with intermediate digital skills, and only 45,000 with advanced capabilities. This leaves a projected skills gap exceeding 2.2 million individuals by 2030, if current trends persist (ITU, 2020; World Bank, 2022). The consequences of this imbalance are multifaceted. First, it threatens to exacerbate youth unemployment, even as digital jobs proliferate. Second, it risks deepening systemic inequalities, particularly for rural, female and disabled populations, who face higher barriers to digital training and employment. Third, it limits Zimbabwe's ability to innovate and compete in the digital economy, where technological agility and specialised expertise are key differentiators (OECD, 2023).

Addressing this critical gap necessitates a coordinated national strategy, and bridging Zimbabwe's digital skills gap is not only a labour-market necessity but a foundational pillar for inclusive and sustainable economic development. In proactively aligning digital education and workforce development with national digital transformation objectives, Zimbabwe can maximise the social and economic returns of its Vision 2030 agenda.

2.3. The Conceptual Framework Summary

2.3.1. Strategic Pillars

Table 2-1: Summary of Strategic Pillars

Pillar	Objective	Key Actions
1. Access & Infrastructure	Ensure affordable connectivity	Expand community ICT hubs, zero-rating educational content
2. Education & Training	Upskill citizens at all levels	School coding clubs, vocational digital skills programmes
3. Policy & Regulation	Foster an enabling environment	Data- protection laws, e-learning standards
4. Private Sector & NGO Partnerships	Scale impact through collaboration	Microsoft/ZOL digital skills partnerships
5. Monitoring & Evaluation	Track progress and adapt	Annual Digital Readiness Index

2. DIGITAL LITERACY AND DIGITAL SKILLS CONCEPTUAL FRAMEWORK

2.3.2. Target Groups & Interventions

Table 2-2: Summary of Target Group and Interventions

Group	Intervention	Delivery Method
Primary/Secondary Students	Coding, online safety	School ICT labs, gamified learning
Tertiary Students	AI, cloud computing	University tech hubs (e.g. UZ Innovation Hub)
Micro Small and Medium Enterprises (MSMEs) and Informal Traders	E-commerce, digital payments	WhatsApp Business training
Rural Communities	Agri-tech, telehealth	Mobile-enabled learning (USSD/SMS)
Government Workers	E-governance tools	POTRAZ-certified training

2.4. Constructing the Zimbabwe Digital Literacy Index (ZDLI)

The ZDLI is a weighted score combining skills levels (Below Basic, Basic, Intermediate, Advanced) using a 1:2:3:4 contribution ratio as guided by the ITU framework.

2.4.1. Skills Assessment Formulae

$$\text{Basic Skills Score} = \frac{\sum b_{var}}{(b_n)(r)}$$

Where

b_{var} = All variables (BDLS1-16) measuring the basic skills;

b_n is the number of all the Basic level variables while r is the scoring rate per variable/item.

For this assessment $b_n = 16$ and the $r = 5$ and all the b_{var} have the same value. This means $(b_n)(r) = 80$, the maximum possible score.

Therefore, the summation of one's scores ($\sum b_{var}$) is the numerator and the denominator is the maximum possible number of scores.

As a rule of thumb, one would be considered to have basic skills if the score is 50% or above (≥ 0.5). Anyone whose score is below the 50% threshold would be below basic.

$$\text{Intermediate Skills Score} = \frac{\sum i_{var}}{(i_n)(r)}$$

Where

i_{var} = All variables (IDLS1-11) measuring the Intermediate skills;

i_n is the number of all the variables at Intermediate level while r is the scoring rate per variable/item.

For this assessment $i_n = 11$ and the $r = 5$ and all the i_{var} have the same value. This means $(i_n)(r) = 55$, the maximum possible score.

2. DIGITAL LITERACY AND DIGITAL SKILLS CONCEPTUAL FRAMEWORK

Therefore, the summation of one's scores ($\sum i_{var}$) is the numerator and the denominator is the maximum possible number of scores.

As a rule of thumb, one would be considered to have Intermediate skills if they pass the Basic skills assessment (≥ 0.5) and went on to score at least 50% (≥ 0.5) of the Intermediate level.

Advanced Skills Score =

$$\sum \left\{ \left(\frac{\sum cd_{var}}{cd_n}(r) \right) (cd_{ratio}) \mid \left(\frac{\sum bd_{var}}{bd_n}(r) \right) (bd_{ratio}) \mid \left(\frac{\sum de_{var}}{de_n}(r) \right) (de_{ratio}) \right\}$$

Where

cd_{var} = All variables measuring cybersecurity and data protection, the first of the three constructs of Advanced skills. cd_n is the number of all the variables for cybersecurity and data protection while r is the scoring rate per variable/item. cd_{ratio} is the contributory rate of cybersecurity and data protection score to the overall advanced score. The cd_{ratio} is set at 0.40. Cybersecurity and data protection variables were construed as the strongest attributes as they relate to legal data awareness and the ability to critically evaluate sources of information to make strategic decisions. It was inferred that compliance to data ethos and cybersecurity principles is highly expected for all with Advanced skills and should have the highest contributory value.

bd_{var} = All variables measuring Big Data and AI, the second of the three constructs of Advanced skills. bd_n is the number of all the variables for Big Data and AI while r is the scoring rate per variable/item. bd_{ratio} is the contributory rate of Big Data score to the overall Advanced score. The bd_{ratio} is set at 0.35. This second part was more on the Advanced ability to interpret and analyse complex information in digital environments, utilize emerging technologies such as artificial intelligence, IoT and Big Data techniques.

de_{var} = All variables measuring Digital Entrepreneurship, the third of the three constructs of Advanced skills. de_n is the number of all the variables for Digital Entrepreneurship while r is the scoring rate per variable/item. de_{ratio} is the contributory rate of Digital Entrepreneurship score to the overall Advanced score. The de_{ratio} is set at 0.25.

Within each category, items carry equal points, a maximum of 5 points.

2.4.2.Computation of Zimbabwe Digital Literacy Index (ZDLI)

$$ZDLI = \sum (\hat{p}_b)(b_{adjust(-)}) (\hat{p}_b^+)(b_{adjust}) | (\hat{p}_i^+)(i_{adjust}) | (\hat{p}_a^+)(a_{adjust})$$

$$\text{Where } \hat{p}_b^- = \frac{b^-}{n} \quad \hat{p}_b^+ = \frac{i^-}{n}; \quad \hat{p}_i^+ = \frac{a^-}{n} \text{ and } \hat{p}_a^+ = \frac{a^+}{n}$$

b stands for the **Basic level skills**, hence $\hat{p}_b^+$ represents the proportion of those at basic level while $\hat{p}_b^-$ represents the proportion of those below the basic level. b_{adjust} stands for the Quality Contribution Ratio (QCR) assigned to the Basic level contribution to the ZDLI. The higher the b_{adjust} , the weaker the ZDLI and vice versa. For this study, the QCR for b_{adjust} was 0.5 (50%) while $b_{adjust(-)}$ was 0.25 (25%).

i stands for the **Intermediate level skills**, hence $\hat{p}_i^+$ represents the proportion of those at Intermediate level while $\hat{p}_i^-$ represents the proportion of those below the Intermediate level but would have passed the Basic level. Therefore, it can be deduced that $\hat{p}_i^-$ equates those at Basic level since it excludes those who failed the Basic level ($\hat{p}_b^-$). i_{adjust} stands for the QCR assigned to the Intermediate level contribution to the ZDLI. Higher i_{adjust} would moderately compromise the ZDLI and vice versa. For this assessment, the QCR for i_{adjust} is set on 0.75(75%).

a stands for the **Advanced level skills**, hence $\hat{p}_a^+$ represents the proportion of those at Advanced level while $\hat{p}_a^-$ represents the proportion of those below the Advanced level but would have passed the Intermediate level. Therefore, it can be deduced that $\hat{p}_a^-$ equates those at Intermediate level since it excludes those who failed the Intermediate level ($\hat{p}_i^-$). a_{adjust} stands for the QCR assigned to the Advanced level contribution to the ZDLI. a_{adjust} returned the absolute value obtained in $\hat{p}_a^+$ since this is the assumed as the apex of the skills acquisition. By default, the QCR for a_{adjust} is set on 1(100%).

Note that **b**, **i** and **a** are mutually inclusive. It is assumed that when every participant is at **a**, then the **ZDLI = 100%**, if every participant is at **i**, then **ZDLI = 75%** while if every participant is at **b. (Basic)**, then the **ZDLI = 50% and the** if every participant is at **b. (Below Basic)**, then the **ZDLI = 25%**. However, the results of each computation is relative to the varied proportions ($\hat{p}$) and the concomitant adjusters on the three levels. The higher the proportion ($\hat{p}$) at **a**, the stronger the ZDLI, the index would increase at increased rate.

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3.1. Introduction

This study employed a rigorous and inclusive methodology designed to assess the state of digital literacy and skills across Zimbabwe. Anchored in a hybrid assessment model, the research integrated four internationally recognised digital competence frameworks into a unified Merged Framework, tailored to Zimbabwe's unique socio-economic and infrastructural context. A concurrent transformative mixed-methods design was adopted, combining quantitative and qualitative approaches to generate comprehensive, equity-focused insights. Quantitative data were gathered from 2,401 respondents across all ten provinces using structured questionnaires developed in alignment with the Merged Framework, while qualitative data were sourced through Key Informant Interviews (KIIs), Focus Group Discussions (FGDs) and structured observations. Stratified random sampling and proportional representation ensured national coverage across sex, locality and age group. Extensive quality control, ethical protocols and real-time data monitoring were employed to maintain validity and reliability. Together, these methods enabled the study to deliver robust evidence on the digital divide, skills gaps and infrastructure disparities necessary for informing Zimbabwe's digital policy and programming.

3.2. Hybrid Assessment Model

The research team employed a hybrid assessment model to conduct a comprehensive study on digital skills and digital literacy in Zimbabwe. To ensure methodological robustness and contextual relevance, four globally recognised digital competence frameworks were integrated into a unified analytical structure referred to as the Merged Framework. These frameworks included:

- the Digital Competence Framework for Citizens (DigComp);
- the Digital Literacy Global Framework (DLGF);
- the Digital Skills to Tangible Outcomes (DiSTO) framework, and
- the New Essential Digital Skills Framework (Education and Skills Funding Agency, 2019).

In synthesising the core strengths of each model, the Merged Framework was designed to comprehensively reflect the diverse digital needs, behaviours and competencies required by various demographic and occupational segments of Zimbabwe's population. The hybrid model enabled the development of a multi-dimensional data-collection tool that combined different types of digital skills indicators. Specifically, the tool was structured to:

- Elicit self-assessment responses on individual digital skills using items adapted from the DiSTO framework;
- Capture cognitive and applied workplace digital competencies essential for full participation in the 21st-century knowledge economy;
- Assess the use of digital skills in varied settings – home, workplace, education and community engagement; and
- Incorporate task-based digital competence questions derived from Dig Comp and the New Essential Digital Skills Framework.

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This integrative approach ensured that the assessment tool could capture both the technical and socio-behavioural aspects of digital engagement, addressing a broad spectrum of digital proficiency, from foundational access skills to advanced task execution and problem-solving.

The rationale for merging these frameworks was twofold: first, to align global benchmarks with Zimbabwe's national context and, second, to overcome the individual limitations of each framework when used in isolation. A detailed comparative analysis of these limitations is provided in Table 3-1.

Table 3-1 : Limitations of Each Model

Framework	Primary Limitations
DigComp (European Union)	• Focuses on individual competence, not societal impact. • Lacks behavioural/attitudinal metrics (e.g. willingness to learn). • Eurocentric, may not fit Global South contexts.
DLGF (UNESCO/ITU)	• Strong on basic literacy but weak on advanced skills (AI, cloud). • Does not measure tangible outcomes (jobs, productivity). • Less structured for workplace assessments.
DiSTO (London School of Economics and Political Science)	• Focuses on socio - economic outcomes, not skill granularity. • Overlooks safety/security competencies. • Complex for policy implementation.
EDS (UK Govt.)	• Too simplistic – misses advanced digital skills. • No clear link to global standards (e.g. SDGs). • Limited cultural adaptability.

3.3.The Merged Framework

The hybrid model cured the individual framework by identifying core assessment questions from the individual models and aligning them into a single, comprehensive framework to capture information literacy, communication, content creation, safety and security, problem solving, and career and learning data. As a result, the research combined individual and societal impacts (measuring the office competence and real-world impact), balanced Basic and Advanced skills (to expert-level competencies), integrated cultural and workplace relevance (African rural communities and Western corporate upskilling), added behavioural and attitudinal metrics (tracking or not just skills but willingness to adapt), and linked policy and SDGs (better monitoring of digital inclusion, e.g. gender gaps).

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Table 3-2: Merged Framework

Dimension	DigComp	DLGF	DiSTO	EDS	Compensated
Skill Depth (Basic–Advanced)	✓	X (Basic only)	X	✓	DigComp + EDS
Realworld Outcomes (Jobs, Productivity)	X	X	✓	X	DiSTO Integration
Global Adaptability	X (EU bias)	✓	✓	X	DLGF’s Inclusivity
Security & Ethics	✓	X	X	✓	DigComp + EDS
Policy Alignment (SDGs, National Strategies)	✓ (EU)	✓ (UN)	X	X	

The Merged Framework yielded substantial practical benefits across a range of stakeholder groups. For government, it enabled more robust monitoring of the digital divide, particularly along gender, geographic (rural-urban) and age dimensions, while also strengthening the policy linkages between digital skills development and national digital economy objectives. For the education sector, the framework informed curriculum development, supporting progression from basic digital literacy to advanced competencies such as artificial intelligence and cloud computing. Employers benefited from its application in workplace assessments, facilitating the evaluation of both employee skills and associated productivity gains. For civil society and development partners, the framework offered a valuable tool for conducting impact evaluations of digital interventions, particularly in low-resource contexts, for instance, assessing whether digital training contributed to poverty reduction. Importantly, the framework also provided the methodological flexibility required to gather both quantitative and qualitative data. This was achieved through a combination of desk reviews of secondary literature and datasets, structured questionnaires, FGDs, KIs and observational methods, all of which are detailed in the sections that follow.

3.4. Concurrent Transformative Approach

The research adopted a concurrent transformative approach within its mixed-methods design, integrating both quantitative and qualitative data-collection streams. This methodology prioritised inclusivity, adaptability and the generation of real-time insights, enabling a more comprehensive understanding of digital competencies across diverse demographic groups. In collecting quantitative data (through structured surveys) alongside qualitative data (via key informant interviews, focus group discussions and observations) concurrently, the approach captured the dynamic and contextual nature of digital skill acquisition and use. The transformative lens underpinning this methodology ensured a focus on equity and inclusion, explicitly addressing digital divides by ensuring the representation of marginalised populations, including low-income.

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During implementation, several key steps were undertaken:

- Defining objectives and equity goals, with a focus on identifying key digital competencies such as cybersecurity and information literacy.
- Ensuring the cultural and linguistic appropriateness of assessment instruments, surveys and discussion tools, which were translated into local languages including Shona, Ndebele, Tonga and Kalanga to enhance accessibility and respondent engagement.
- Combining structured instruments for quantitative data with open-ended reflections for qualitative insight, enabling triangulation and the validation of findings.
- Employing iterative analytical processes and feedback loops, with continuous engagement from stakeholders to refine data-collection tools and ensure contextual relevance throughout the process.

This concurrent transformative methodology enhanced the research's ability to generate policy-relevant, equity focused evidence on digital literacy and skills, while embedding flexibility and responsiveness to emerging field realities.

3.4.1. Desk Review

As digital technologies continue to permeate all aspects of economic and social life, an appreciation of the existing digital skills landscape is essential for evidence-based policy-making and targeted programme design. The desk review formed a critical component of the research methodology, providing a foundational understanding of Zimbabwe's digital readiness, capabilities and gaps. This review synthesised insights from both domestic and international sources to build a comprehensive picture of the current state of digital literacy and skills within the country.

A wide range of documents were examined, including annual reports on global and regional ICT development. Notably, the ITU's Global ICT Development Reports and Digital Skills Insights series offered valuable comparative data on digital inclusion, skill gaps across countries, and progress in national digital strategies (ITU, 2020; ITU, 2023). These sources helped contextualise Zimbabwe's digital journey within broader African and global trends, highlighting the growing digital skills deficit, particularly in emerging economies.

At the national level, data from ZIMSTAT was instrumental. Nationally representative surveys, including the Labour Force and Child Labour Survey (ZIMSTAT, 2023) and the Information and Communication Technology (ICT) Access Survey, provided detailed information on household internet access, device ownership, ICT use by gender and geography, and levels of educational attainment. These insights helped map digital access and skills across different socio-economic groups and regions, revealing disparities between urban and rural populations, as well as among youth, women and individuals with disabilities.

The desk review also considered regional benchmarks by analysing reports and surveys from peer regulatory authorities in Southern Africa, including the Communications Authority of South Africa (ICASA) and the Communications Regulatory Authority of Namibia (CRAN). These publications offered lessons from neighbouring countries on strategies to improve digital literacy and infrastructure, providing useful models for potential policy adaptations in Zimbabwe (ICASA, 2022 CRAN, 2021).

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In addition, development-focused reports from the World Bank, UNESCO and the United Nations Development Programme (UNDP) were used to identify best practices and capacity-building frameworks relevant to low- and middle-income countries (World Bank, 2022; UNESCO, 2021; UNDP, 2023).

Through this review, several thematic areas emerged as priorities for further exploration and intervention. These included (i) low levels of intermediate and advanced digital skills among the working-age population; (ii) significant geographic disparities in digital access and use; (iii) lack of curriculum alignment with emerging industry needs; and (iv) insufficient data on informal and non-institutional digital learning pathways. The desk review, thus provided the empirical grounding necessary to guide the field-research and stakeholder-engagement components of this study.

3.4.2. Quantitative Data Collection

3.4.2.1. Questionnaire (Survey Instrument)

The questionnaire used for the NDLSA25 was developed using an iterative and stakeholder-driven approach, with contributions from POTRAZ, the research team and field personnel. The ITU model questionnaire provided the base for the development of the questionnaire used to conduct the survey. The questionnaire was developed using the World Bank's Computer-Assisted Personal Interviews (CAPI) system (Survey Solutions), which facilitated the use of tablets for field interviewing. This method achieved the following:

Reduced data-collection time: Once the interview was completed and uploaded to the server, supervisors reviewed and approved/rejected interviews. There was no need for interviewers and supervisors to meet physically to exchange information.

Improved data quality: The questionnaire was designed with several enabling conditions, validation rules and option filters, all key features of Survey Solutions, to simplify the interviewing process and automatically prompt interviewers to correct any invalid data. These features eliminated the need to return to the field to correct interviewing errors and the need to develop complex computer editing and imputation routines for data validation and cleaning.

Facilitated real-time monitoring: The survey team monitored field activities in real time, including the validation of interview locations on Google Maps, allowing for better management of field operations. Additionally, quality controls, validation checks and filter options were incorporated into the design of the questionnaire to flag logical errors and inconsistent responses, allowing the interviewers to correct them at the source. These modifications ensured that the data collected are of a high quality and eliminate the need for extensive data cleaning and validation procedures at the data-processing stage.

The research questionnaire was based on:

(a) Self-assessments-employing predefined measures to measure digital skills by asking participants to rate their level of knowledge, ability, confidence or usage. Self-assessments can households, the elderly and rural communities.

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cover an almost unlimited range of skill types, from basic to advanced, and it is easy and the least costly to create and deploy. The self-assessment tool enabled citizens to assess their digital skills based on four levels:

(1) Basic level – ability to use digital devices, navigate online platforms, and access digital information. These are skills needed to fully participate in the digital society and to feel confident when using digital technologies to communicate, obtain information or conduct transactions, such as shopping or interacting with public administrations or private companies.

(2) Intermediate level– involving more complex technological activities, such as sophisticated online searches, publishing digital content, or programming and configuring simple digital systems. These skills, by their nature, are particularly relevant for the working population.

(3) Advanced level– these competencies are necessary to satisfy employment needs for specialists in digital technologies in areas such as the design, implementation, operation and/or maintenance of digital systems. This group of skills includes cutting-edge technological areas such as data analytics, the Internet of Things, 3D printing, artificial intelligence, cybersecurity, supercomputing, quantum computing, Big Data, virtual reality and blockchain. Thus, skills to be measured included computer operations, internet browsing, digital communication, digital documents, and digital security. A five-point Likert scale was used, ranging from 1 = "strongly disagree" to 5 = "strongly agree". The questionnaire contained multiple-choice and Likert scale questions with three primary sections of the study. The first section focused on the participants' demographic information, such as age (in years), gender, level of education (current and attained), employment status, ministry/department/agency, income and socio-economic status, disability, language proficiency and geographic location (urban, peri-urban, rural), among others. The second section assessed the digital literacy rate and the level of digital skills (Basic, Intermediate, Advanced). The third section tested knowledge of digital literacy and digital skills.

3.4.3. Qualitative Data Collection

3.4.3.1. Focus Group Discussions

Focus groups are group interviews to explore participants' expertise and experiences, including explorations of how and why people behave in certain ways. Ten focus group discussions, one in each province comprising between eight and twelve participants, were conducted; ten focus group discussions are enough to reach data saturation. Each focus group discussion was led by an experienced moderator in digital transformation. Along with focus group questions, ground rules were developed for all groups.

3.4.3.2. Key Informant Interviews

The exploratory nature of research objectives (d) and (e) necessitated the use of semi-structured interviews for data collection, with the aim of understanding participants' interpretations of the demand and supply for digital skills, as well as the digital divide. A semistructured interview guide was developed with a framework of themes to be explored. However, questions were rephrased based on the participant's response and elaboration. The semi-structured interview format helped the interviewers dig into the experiences and concerns about digital literacy of the private sector and public sector.

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This approach helped to gather the views and opinions of directors, managers, heads of departments, and executives regarding the digital skills gaps among their employees, as well as the issues related to changing digital trends, digital innovation, skills development and the need to enhance digital literacy skills. Each interview lasted between 30 and 40 minutes. The study interviewed a total forty-five participants (i.e. the private sector, the public sector, education and civil society). Interviews were conducted face-to-face and virtually by trained interviewers.

3.4.3.3. Observations

Because of the limitations of self-assessment and knowledge-based assessment, the study considered performance-based assessment to measure actual performance of digital skills in realistic scenarios using tools. Each observation took approximately 30 minutes. Observations were particularly useful to gain insights into a certain setting and actual behaviour and lived experiences, as opposed to reported behaviour or opinions. By observation, it was possible to assess Zimbabwe's digital skills landscape, providing first-hand, unbiased insights into technology access, usage patterns and infrastructural challenges. Thus, it was possible to capture real-world digital behaviour. Hence, observations revealed the device usage on whether there was a mix of shared/individual computers, with disparities in functionality (old vs modern equipment). It also showed actual connectivity situation and reliance on wireless networks, with routers/switches ensuring stable internet in urban areas. The research identified sectoral gaps. For example, urban schools used projectors and labs, while rural schools had non-functional computers due to power shortages. As a result of observation approach, self-reporting biases (e.g. surveys might overstate technology access) were limited as actual usage was documented (e.g. smartphones vs desktops in workplaces) and infrastructural barriers identified.

3.5. Population and Sample

The research team designed a robust methodology and sampling framework to ensure representation and statistical validity in the NDLSA. A total of 2,400 participants were engaged across 160 Enumeration Areas (Eas), which were randomly selected from across Zimbabwe's provinces. This approach was aimed at achieving both geographic and demographic diversity, ensuring that findings could be generalised with confidence across the national population. The sample distribution was informed by the 2022 Zimbabwe Population and Housing Census, with proportional allocation based on the actual population parameters. Specifically, the sample reflected population weightings by province, sex and locality (urban-rural), thereby maintaining alignment with the national demographic structure. This stratified random-sampling approach ensured the inclusion of respondents from varying socio-economic backgrounds, age cohorts, and digital-access environments. The research team was able to gather data that are both statistically representative and demographically balanced, strengthening the relevance and policy utility of the study's findings.

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Table 3-3: Sample Parameters

	Proposed Sample			Achieved Sample			Variance		
Province	Females	Males	Total	Females	Males	Total	Females	Males	Total
Bulawayo	57	49	106	56	49	105	-1	0	-1
Harare	201	183	384	204	182	386	3	-1	2
Manicaland	169	152	322	169	153	322	0	1	0
Mash Central	111	107	218	109	106	215	-2	-1	-3
Mash East	142	132	274	143	131	274	1	-1	0
Mash West	152	148	300	152	149	301	0	1	1
Masvingo	138	121	259	140	121	261	2	0	2
Mat North	68	64	132	71	61	132	3	-3	0
Mat South	62	58	120	62	58	120	0	0	0
Midlands	148	137	286	148	137	285	0	0	-1
Total	1248	1152	2400	1254	1147	2401	6	-5	1

The proposed sample for the study consisted of 2,400 participants (1,248 females and 1,152 males) distributed across Zimbabwe's ten provinces. The sample that was achieved closely matched the target, reaching a total of 2,401 respondents (1,254 females and 1,147 males), resulting in a minor overall variance of just +1 participant. Provincially, most areas saw slight deviations: Harare and Masvingo slightly overachieved their targets, while Mashonaland Central and Matabeleland North recorded slight shortfalls. Overall, the achieved sample maintained the gender and geographic balance, with minimal deviations from the proposed targets.

3.6. Sample Design and Sample Allocation

3.6.1. Locating the Enumeration Area (EA)

To ensure accurate fieldwork implementation, each assigned Enumeration Area was accompanied by a detailed map and descriptive metadata, designed to guide enumerators in identifying both the location and geographic boundaries of the EA. These materials were critical for ensuring consistency in data collection and minimising enumeration errors. Each map included a structured set of descriptors on the right-hand panel, providing the following information:

- **Map References:** Identifying prominent place names, landmarks and geographical features located within or adjacent to the EA to aid orientation.
- **EA Location :** Specifying the exact geographic coordinates and administrative classification of the EA within the district or province.
- **EA Boundary Description :** Offering a comprehensive narrative of the EA's perimeters, describing its boundaries on all four sides (north, south, east and west) in relation to identifiable physical or administrative features.

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To supplement the mapping tools, enumerators engaged in district entry protocols, during which local administrative officials assisted in the accurate identification of wards and sub-areas within each district. This collaborative approach enhanced the efficiency of EA access and improved the accuracy of household targeting during data collection.

3.6.2. Identification of the Household to Interview

To ensure randomised and systematic household selection within each EA, a day-code system was used. This approach introduced variability based on the calendar date of the interview and served as a field-friendly method to determine household skip intervals. Upon identifying a starting point and direction, enumerators applied the following rules:

- Single-digit dates (1 –9): The calendar day directly determined the skip interval. For instance, on the 2nd of the month, the enumerator would proceed to the 2nd household; on the 9th, the 9th household would be selected.
- Double -digit dates (10 –31): Enumerators added the two digits of the date to derive a single-digit number. For example:
 - On the 12th, $1+2=3$, so the 3rd household would be selected.
 - On the 29th, $2+9=11$; then $1+1=2$, indicating selection of every 2nd household.

This generated a skip pattern whereby enumerators counted forward by the calculated number before selecting a household for the interview.

In cases where the selected household was a non-response or vacant dwelling, a replacement protocol was applied. Enumerators were instructed to approach a neighbouring household, preferably in the same direction of sampling to minimise spatial bias.

As a general rule, each physical dwelling was considered to be a single household. However, in multi-storey or flat complexes, enumerators assessed the building layout to count appropriately and to distinguish between households, ensuring that each unit was treated as a distinct enumeration point.

In low-density or rural areas, such as farms and plots, the day-code rule was adapted. Given the considerable distance between dwellings, supervisors were authorised to implement dynamic sampling strategies that preserved geographic coverage while maintaining representativeness within each EA.

3.6.3. Selection of a Participant in the Household

Within each selected household, enumerators followed a randomised and gender-sensitive protocol to identify an eligible participant. The assigned interview ID determined the sex of the individual to be selected in that household. Enumerators first identified all household members aged ten years and above who met the gender eligibility criterion, ensuring that every qualifying individual had an equal probability of selection. Once the eligible pool was established, enumerators assigned a random number to each qualifying household member. A simple random-selection method, such as a number draw or random-number generator, was then used to determine the final participant. Emphasis was placed on ensuring that the selection process remained transparent, impartial and clearly explained to household members to build trust and prevent confusion.

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Where the selected participant was not present at the time of the visit, perhaps due to work, school or other commitments, enumerators made concerted efforts to schedule follow-up engagements, including through remote or virtual interviews, where feasible. This approach aimed to minimise sample bias and ensure that working-age, school-going or mobile populations were adequately represented. Only when it was not possible to contact or interview the selected individual after reasonable effort, did enumerators proceed to a replacement household, maintaining consistency with the original sampling strategy.

3.7. Qualitative data-collection procedure

To complement the quantitative data and provide deeper contextual insights, a qualitative inquiry was conducted using a multi-method approach involving KIs, FGDs and structured observations. These qualitative tools were designed to explore not only the presence of digital skills across sectors but also the challenges, perceptions and institutional readiness influencing digital literacy and competence.

Key Informant Interviews (KIs): A total of 45 KIs were conducted across all ten provinces, targeting strategic actors in government and regulatory authorities, the education sector, the private sector and civil-society organisations. Respondents included senior officials, programme implementers, and technical leads involved in digital transformation initiatives, training or policy development.

Observations: Twenty structured observations were carried out in institutions across the same four sectors. These observations focused on how digital skills are operationalised, the availability and usage of ICT infrastructure, and the level of digital engagement demonstrated by staff or service users.

Focus Group Discussions (FGDs): Ten FGDs were convened, one in each province. Each session brought together participants from multiple sectors (e.g. education, business, agriculture, youth initiatives) to gather diverse perspectives on digital skills access, training needs and barriers to participation in digital platforms.

A purposive sampling strategy was employed for the KIs and FGDs. Selection criteria prioritised individuals and offices with demonstrated roles in digital skills implementation, oversight or usage. Particular attention was given to government departments, educational institutions and sector-specific bodies to ensure relevance and depth of responses.

This qualitative component added richness to the overall analysis, offering explanatory insights that helped interpret patterns observed in the quantitative findings and informing the development of targeted, evidence-based recommendations, CSOs, and institutions associated with ICT-related mandates. The following sections detail the participants included in the qualitative inquiry. Data triangulation and qualification were envisioned to come from qualitative data collection through KIs and FGDs. Sampling for FGDs and KIs was based on purposive sampling, targeting specific offices, government departments, CSOs, and institutions that were axiologically linked to ICT-related mandates.

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3.7.1. Identifying Focus Groups

A team supervisor responsible for data in a province gathered information about the provincial status quo regarding the digital landscape of the province. This information was acquired during the courtesy calls or other parallel research. This information was critical to determine who should be invited to discuss the pertinent issues for the province. The FGDs were done at a provincial level. Once the participants were invited, a member of the core team and a dedicated qualitative researcher conducted each FGD with the assistance of a note-taker. With the consent of the participants, the FGDs were recorded, and, in addition to note-taking, the conversation was interpreted and transcribed into English.

The interviews were transcribed in full, and the discussions were not paraphrased in any way. All materials, including notes, recordings, transcripts and translations, were provided after completion.

3.7.2. Identifying Key Informants

Supervisors assigned to each province were provided with a comprehensive listing of targeted institutions, including specific government departments, CSOs, regulatory authorities and educational institutions, as potential sites for KIIs and structured observations. These listings were used to guide planning and ensure alignment with the study's sectoral representation targets.

Each supervisor was tasked with purposively selecting a minimum of six institutions per province. Within each selected institution, at least one KII was conducted and, where feasible, a structured observation was also carried out among staff to assess the practical application of digital skills in operational contexts. Identification of these institutions was further refined during courtesy visits to provincial and district authorities, which provided local insights into relevant offices and ongoing digital initiatives.

KIIs were conducted at either the provincial or district level, depending on the institutional hierarchy and the relevance of the department or agency to the digital skills agenda. Once an institution was selected, the appropriate respondent was identified, contacted and a convenient interview time scheduled.

As with FGDs, each KII was conducted by a core member of the qualitative research team. In addition to detailed note-taking, interviews were audio-recorded with participant consent and subsequently transcribed in full. No paraphrasing or summarisation was applied during transcription to preserve the integrity and authenticity of respondent narratives. Transcripts, field notes, audio recordings and any translated content were compiled and submitted upon completion of fieldwork. Computer-Assisted Personal Interviewing (CAPI) systems were activated at the beginning of each interview session. Enumerators ensured that all administrative and metadata questions were completed either during or immediately following the discussion, facilitating proper classification and subsequent analysis.

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3.8. Quality-control Measures

To ensure accuracy, reliability and credibility of the survey findings, the research team implemented rigorous quality-control measures across all stages of data collection, analysis and reporting. Below were the key steps taken.

3.8.1. Pre-fieldwork Preparations

3.8.1.1. Survey Design and Pilot Testing

The research team implemented several measures to ensure the validity and contextual relevance of the questionnaire. One key approach involved a real-time review of the data-collection instruments by POTRAZ and selected local stakeholders. This collaborative process ensured alignment with international standards while also incorporating national policy priorities and contextual realities. To enhance accessibility and inclusivity, the instruments were translated into local languages as well as into English, allowing respondents to engage with the content in their preferred language. Furthermore, the questionnaire underwent a pilot test conducted in three districts of Harare, involving a sample of fifty respondents. Insights from the pilot phase were used to refine question clarity, structure and sequencing, thereby improving the instrument's reliability and cultural appropriateness ahead of full-scale deployment.

3.8.1.2. Enumerator Training

The researchers and enumerators were given a two-day intensive training covering digital literacy definitions (Basic, Intermediate, Advanced), Solstice tablet use (Survey Solutions), and ethical protocols (consent, data privacy under Zimbabwe's Data Protection Act).

3.8.2. Fieldwork Quality Assurance

3.8.2.1. Real-time Monitoring

The research manager and supervisors used the GPS validation to verify EA boundaries via Solstice Map. On the ground, the supervisors would conduct back-checks by randomly re-contacting the enumerators to confirm authenticity. Uploads of data were done at once, and data were synced to a central server for immediate validation checks.

3.8.2.2. Data Validation Rules

Skip Logic and Range Checks. For example, if a respondent claims "advanced skills", follow-up questions on Big Data will be triggered. Outlier detection allowed for the flagging of improbable responses (e.g. a 70-year-old with "expert AI skills" but no formal training).

3.8.2.3. Supervisor Oversight

To maintain quality assurance during fieldwork, a ratio of one supervisor for every five enumerators was implemented. Supervisors were responsible for conducting spot checks on interviews, ensuring adherence to data-collection protocols, verifying accuracy, and providing immediate field-level support where needed. For FGDs and KIs, standardised protocols were strictly followed. All sessions were audio-recorded with the informed consent of participants and were transcribed within 24 hours to minimise recall bias and preserve the integrity of responses. This prompt transcription process contributed to the reliability and analytical value of the qualitative data.

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3.8.3. Post-fieldwork Data Quality Checks

Data cleaning and validation were critical steps in ensuring the accuracy and reliability of the survey findings. The process began with the support of the Solstice data-collection system, which performed automated checks to detect and eliminate duplicate or inappropriate submissions. Solstice also carried out internal consistency checks, cross-referencing responses for logical coherence, for example, flagging cases where formally employed respondents reported digital skills at Below Basic levels, which would typically be inconsistent with occupational expectations. To assess the statistical reliability of the instruments, the research team employed standard psychometric tests, including Cronbach's alpha, to evaluate the internal consistency of the digital skills scales and related constructs. Survey data were weighted by province, age group and gender, to align with the 2022 national census demographics, ensuring representativeness across key population strata. Further enhancing the robustness of the findings, the dataset underwent methodological triangulation. Survey results were cross-validated against:

- existing POTRAZ sectoral reports (e.g. internet penetration and mobile usage statistics);
- insights derived from KIIs with sector experts in telecommunications, education and civil society ;
- outcomes from FGDs ;and
- field-level observations conducted during the study.

This multi-source validation approach reinforced the credibility of the data and ensured alignment between self-reported skills and institutional or sectoral realities.

3.8.4. Ethical and Bias Mitigation

To address ethical considerations, the research team ensured that all participants provided informed consent prior to their involvement in the study. Given the scale of the survey and logistical constraints, oral consent was obtained in most cases, with parental or guardian approval required for minors aged 10 to 17 years. Enumerators were trained to explain the purpose of the study, participation rights and data confidentiality in a language understood by the respondent.

To promote gender equity and demographic representativeness, the sample was structured to reflect national population ratios, achieving a balance of 52% female and 48% male respondents. Additionally, the study maintained a rural-urban distribution of 61% rural and 39% urban participants, consistent with Zimbabwe's population structure and designed to mitigate urban-centric bias in digital access and skills reporting.

The inclusion of PWDs was also considered a priority. Approximately 2.5% of the sample comprised PWDs, a figure that, while modest, reflects the practical challenges of identifying and sampling this demographic subgroup in general population surveys. Targeted efforts were made to ensure that their perspectives on digital inclusion were captured wherever possible.

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3.8.5. Transparency and Reporting

The research posited that POTRAZ's portal would anonymise and publish open data for peer review. The research identified several limitations, including self-reporting bias (e.g. some individuals overclaiming their skills), coverage gaps, and the under-representation of hard-to-reach areas.

Table 3-4: Key Quality-control Outcomes

Metric	Result	Benchmark
Response Rate	100%	ITU Standard: ≥80%
Data Consistency (Cronbach's α)	0.78–0.95	Acceptable: ≥0.7
Gender Representation	52% F / 48% M	Census-aligned

3.9.Data Collection and Analysis

The data-collection exercise was conducted through a structured and phased approach spanning from 10 April 2025 to 28 May 2025. The study utilised four primary data-collection instruments: structured questionnaires, KIs, FGDs and observations. The process commenced with an intensive roll-out of questionnaires, which formed the backbone of the initial phase of data gathering.



3. RESEARCH METHODOLOGY

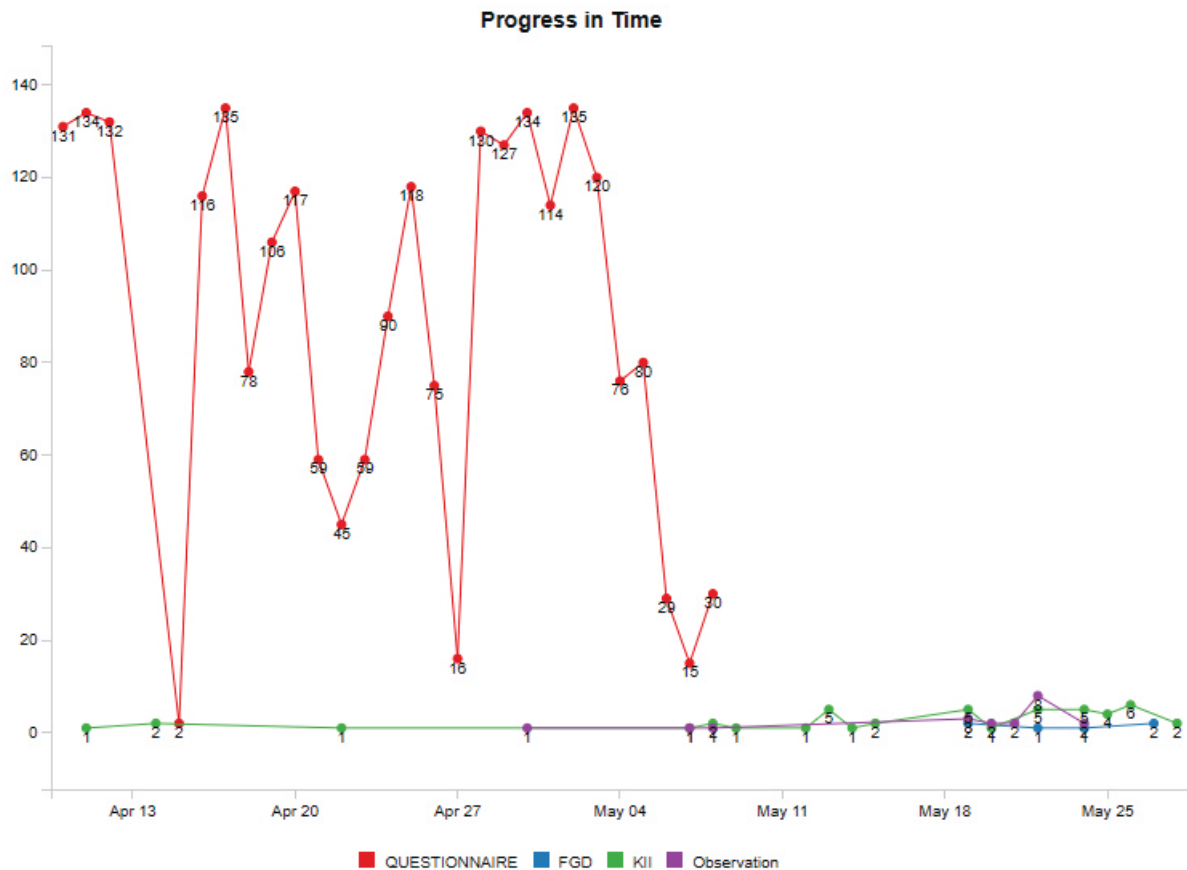


Figure 3-1 : Real-time Monitored Submission of Data

Between 10 April 2025 and 3 May 2025, the study recorded high submission volumes, with several days yielding over 100 completed responses. This frontloaded strategy was probably designed to establish a robust quantitative baseline, enabling the research team to map digital skills patterns across diverse communities and demographic profiles early in the study period. The subsequent phases integrated qualitative methods, KIIs, FGDs and observations, allowing for triangulation, deeper contextual interpretation, and validation of emerging quantitative trends. As the questionnaire phase tapered off, KIIs and observations began to rise in frequency, indicating a strategic shift toward deepening and triangulating insights. KIIs were initially sparse but picked up momentum from mid-May, peaking on days such as 26 May, which recorded six interviews.



3. RESEARCH METHODOLOGY

Table 3-5: Data-collection Metrics

Tool Type	Collection Window	Peak Period	Notes
Questionnaire	10 Apr – 8 May	10 Apr – 2 May (daily)	Large – scale, frontloaded enumeration
KII	11 Apr – 26 May	13 – 26 May	Gradually intensified
Observation	30 Apr – 24 May	19 – 22 May	Low volume but consistent
FGD	19 – 26 May	N/A	Very selective, used later

Observations, introduced from 30 April 2025, were used steadily and selectively, peaking on 22 May 2025 with eight entries, likely to validate site conditions and contextual factors. Lastly, FGDs were limited but targeted, occurring only on four dates between 19 and 26 May 2025, to consolidate thematic findings emerging from earlier tools. This phased roll-out, broad surveys first, followed by layered qualitative and contextual methods, suggests a well-sequenced, mixed- methods strategy designed to maximise both coverage and depth of understanding.

3.9.1. Quantitative Analysis

Descriptive statistics were used to calculate means, percentages and frequency distributions for digital literacy rates (national, provincial and gender-based) and internet access disparities (urban vs rural). Inferential statistics used tools such as the chi-square tests to examine associations (e.g. education level vs digital skills). Ordinal logistic regression was used to predict digital skills levels based on respondents' age, gender, education, locality and internet access. The reliability test followed the Cronbach's alpha (Basic skills scale: 0.95; Advanced skills: 0.84). Index construction was the ultimate objective of the survey. The ZDI, which is the weighted composite of Below Basic (25%), Basic (50%), Intermediate (75%) and Advanced (100%) skills were generated, giving a ratio of 1:2:3:4.

3.9.2. Qualitative Analysis

Thematic coding was used for qualitative data analysis. Thematic coding transformed raw qualitative data into actionable insights, making it essential for the Zimbabwe Digital Literacy Assessment (2025) to drive evidence-based digital inclusion policies. This coding system enabled the management of large quantities of qualitative data, captured diverse perspectives (rural vs urban), supported mixed methods and was flexible and adaptable to the local and specific contexts.

NVivo software was used to code FGD/KII transcripts, causing themes to emerge, such as "Electricity instability hinders e-learning" and "Women face socio-cultural barriers to tech access". However, triangulation of data assisted in cross-verification of the survey data with KII insights (e.g. private sector demand for AI skills), observations and POTRAZ's infrastructure reports.

3. RESEARCH METHODOLOGY

Table 3-6: Key Outputs from Data Analysis

Output	Method Used	Example Findings
National Digital Literacy Rate	Survey + ZDLI	44.5% Average Proficiency
Gender Gap	Chi-square tests	Women 15% Less Likely To Have Intermediate Skills
Rural –Urban Divide	Regression Analysis	Rural Access 28% Vs Urban 65%
Sectoral Skills Demand	KII Thematic Analysis	AI, Cyber Security, Data Analytics Top Needs



4.THE CURRENT STATE OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

4.1. Introduction

This section presents and discusses the survey findings on the current state of digital literacy and digital skills in Zimbabwe. The results are reported and discussed at both the provincial and national levels.

4.2. Geolocations visited

The map in Figure 4.1 shows that the study managed to reach out to a wide area in Zimbabwe. This was a result of the random sample allocation where districts and EAs were randomly picked, giving an equal chance for all other options.

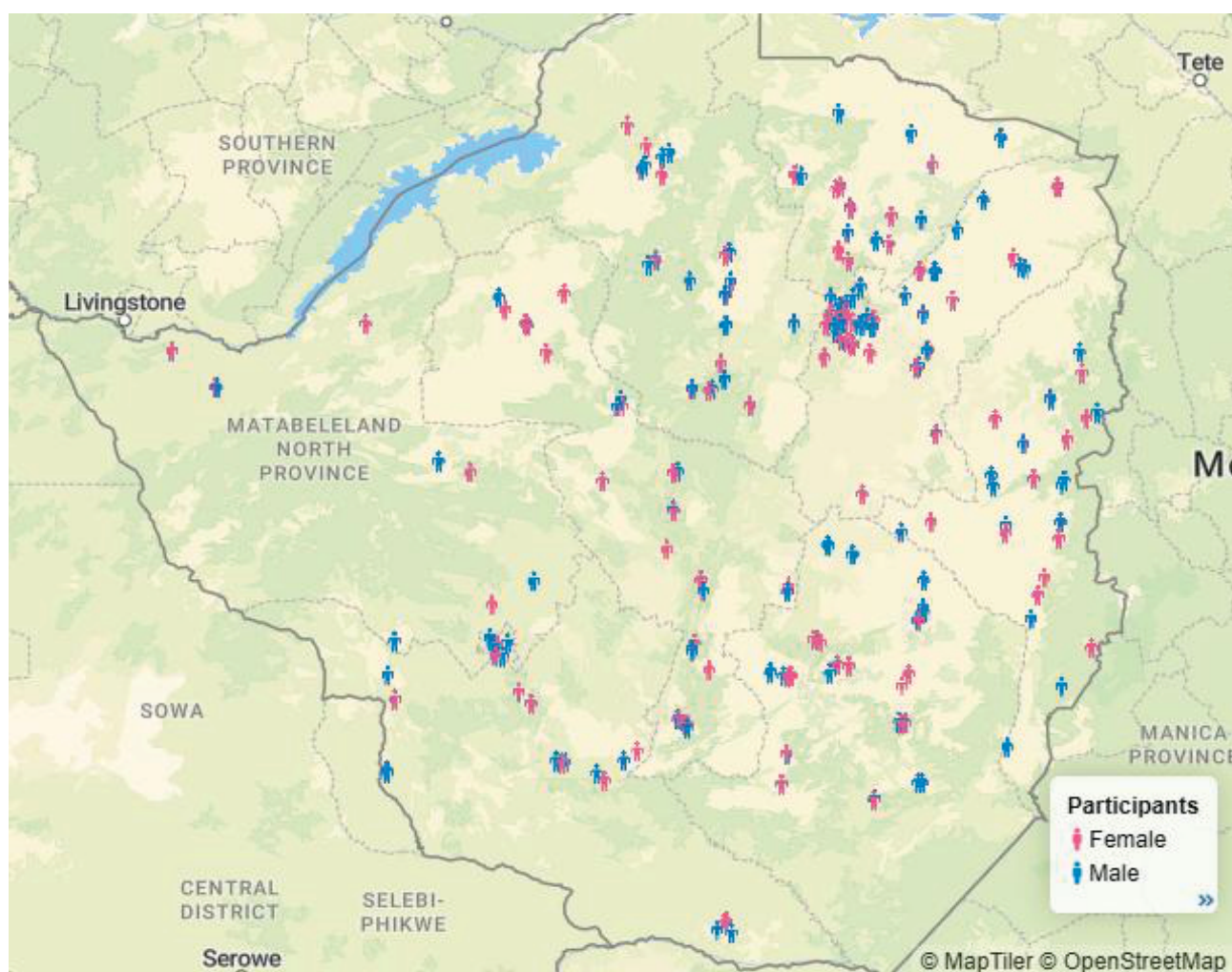


Figure 4-1: Geolocations Visited

4.THE CURRENT STATE OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

4.3. Demographics

4.3.1. Provincial and Gender Coverage

Data were collected from a total sample of 2,401 participants: females 1,254 (52.2%) and males 1,147 (47.8%), reflecting the 52% female and 48% male as depicted in the 2022 census.

Table 4-1 : Province and Sex Crosstab

			Gender of the participant		Total
			Female	Male	
Province Name	Bulawayo	Count	56	49	105
		% within Province	53.3%	46.7%	100.0%
	Harare	Count	204	182	386
		% within Province	52.8%	47.2%	100.0%
	Manicaland	Count	169	153	322
		% within Province	52.5%	47.5%	100.0%
	Mashonaland Central	Count	109	106	215
		% within Province	50.7%	49.3%	100.0%
	Mashonaland East	Count	143	131	274
		% within Province	52.2%	47.8%	100.0%
	Mashonaland West	Count	152	149	301
		% within Province	50.5%	49.5%	100.0%
	Masvingo	Count	140	121	261
		% within Province	53.6%	46.4%	100.0%
	Matabeleland North	Count	71	61	132
		% within Province	53.8%	46.2%	100.0%
	Matabeleland South	Count	62	58	120
		% within Province	51.7%	48.3%	100.0%
	Midlands	Count	148	137	285
		% within Province	51.9%	48.1%	100.0%
Total		Count	1254	1147	2401
		% Total	52.2%	47.8%	100.0%

A cross-tabulation of province by sex revealed that the sample included 1,254 females (52.2%) and 1,147 males (47.8%) across all ten provinces of Zimbabwe. Harare had the largest representation for both sexes, contributing 16.3% of all females and 15.9% of all males. All provinces exhibited a slight female predominance, with male-to-female ratios ranging from 0.86 to 0.98. A chi-square test of independence showed no statistically significant association between sex and province,¹ suggesting that the distribution of sex across provinces is relatively uniform and balanced.

¹ $\chi^2(9) = 0.92, p \approx 0.999$

4.THE CURRENT STATE OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

4.3.2. Locality and Gender of the Participant

The cross-tabulation of sex by locality shows that 61.4% of participants were from rural areas and 38.6% from urban areas, reflective of the census parameters. Both rural and urban samples exhibited a near-equal distribution of females (52.0% and 52.6%, respectively) and males (48.0% and 47.4%). A The chi-square test of independence revealed no significant association between sex and locality. This finding suggests that the sex distribution is comparable across rural and urban populations.

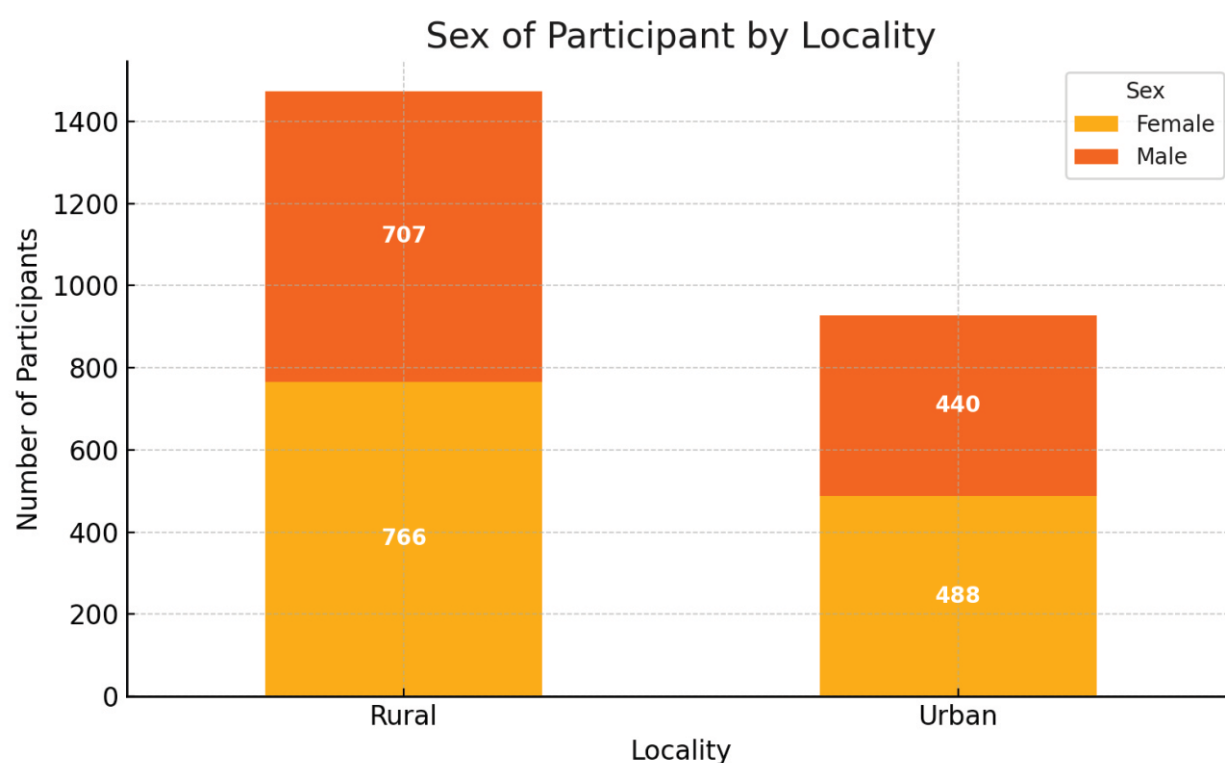


Figure 4-2: Sex and Locality

4.3.3. Province and Age

The age distribution across Zimbabwe's provinces indicates a predominantly young population, with 69.5% of participants under the age of 40. The age group 21-30 years is the most common across all provinces, peaking at 40.7% in Manicaland. Manicaland and Matabeleland South have the youngest age profiles, with over 50% of their populations aged 10-30. In contrast, Mashonaland Central and Masvingo display a relatively higher proportion of older participants, with more than 19% aged 51 and above. The 71+ age group remain low in all regions, never exceeding 3.8% in any province, suggesting real age distribution trends.

² $\chi^2(1) = 0.05, p \approx 0.82$.

4.THE CURRENT STATE OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

Below is the heatmap of age distribution by province. Darker shades indicate higher proportions of participants in each age group within a province. As seen, Manicaland stands out for its high concentration in the 21-30 age group. Bulawayo has a relatively higher proportion in the 10-20 and 61-70 brackets. Mashonaland Central shows a broader age spread, including older adults.

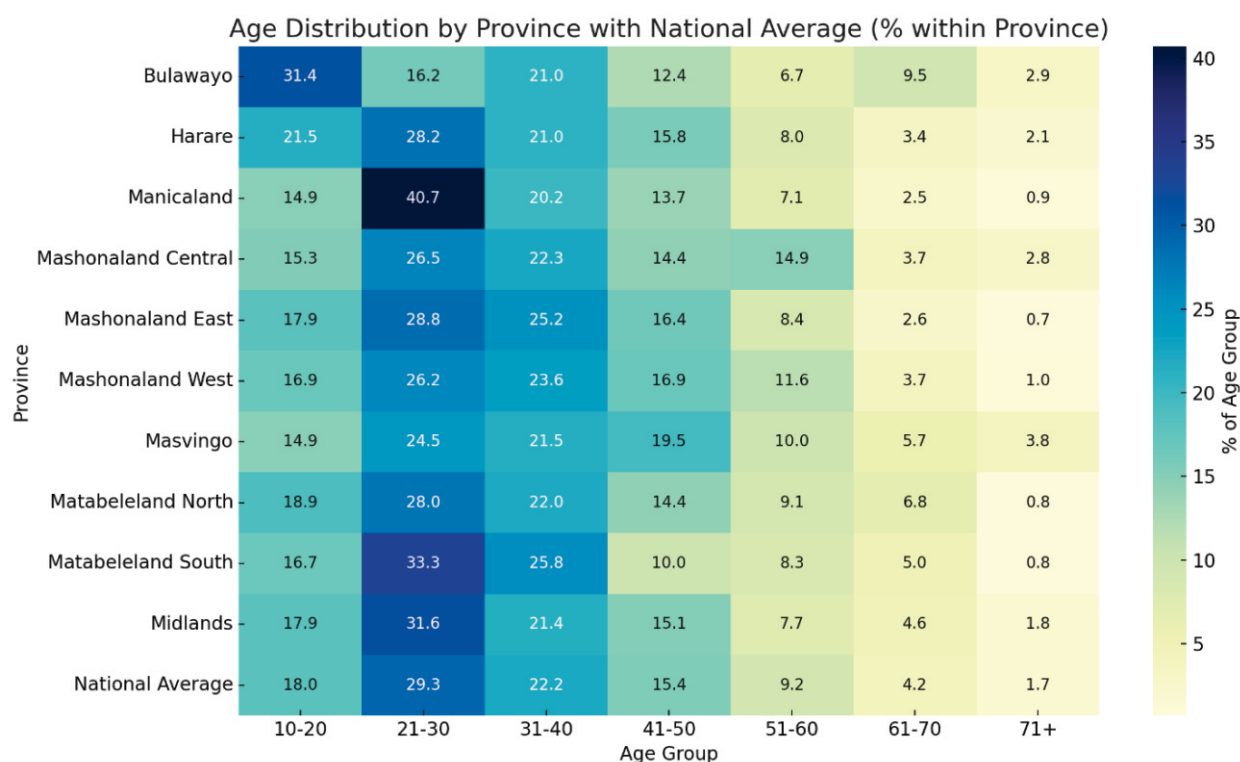


Figure 4-3: Heatmap of Age Distribution

4.3.4. Disability Status

The distribution of reported disabilities across provinces reveals that only 2.5% of participants nationally indicated having a disability, while 97.5% reported none. Mashonaland West recorded the highest proportion of individuals with disabilities at 5.3%, followed by Mashonaland Central (4.7%) and Masvingo (3.5%). In contrast, Matabeleland North and Matabeleland South reported no participants with disabilities in this sample. All other provinces had disability prevalence rates below 2.5%, aligning closely with the national average.

4.THE CURRENT STATE OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

Overall, the data suggest a low self-reported disability rate across the sample, with modest provincial variation.

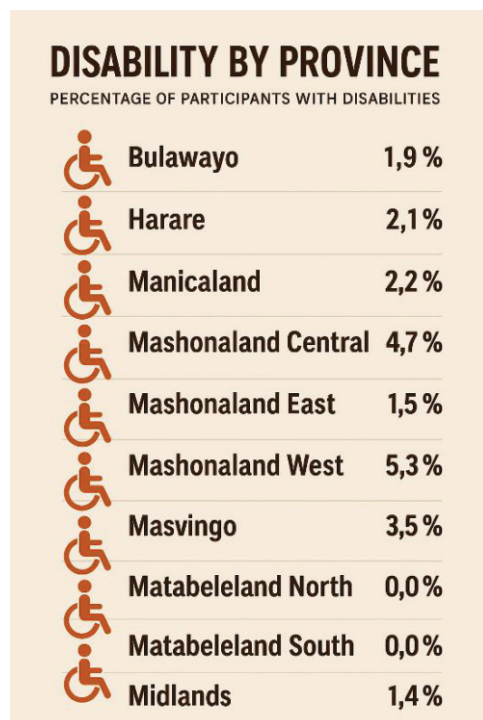


Figure 4-4: Disability Status

4.3.5. Employment Status

Employment patterns across Zimbabwean provinces reveal a strong reliance on self-employment, with nearly 4 in 10 participants engaged in informal economic activities. Unemployment remains a critical issue, particularly in Mashonaland Central and Mashonaland West, where rates exceed 38%.

Formal employment remains limited nationwide, though Matabeleland South stands out with nearly one-third of respondents formally employed. The urban provinces of Bulawayo and Harare have the highest proportion of students, while provinces such as Matabeleland North and South record notable shares of individuals in unspecified or irregular occupations.

Table 4-2: Employment Status

	Unemployed	Self - employed	Formally Employed	Student	Other
Bulawayo	29.5%	31.4%	12.4%	28.6%	1.0%
Harare	34.7%	35.5%	14.8%	15.8%	.8%
Manicaland	18.9%	44.4%	24.2%	13.0%	2.2%
Mashonaland Central	46.5%	37.7%	9.8%	6.0%	
Mashonaland East	24.5%	45.6%	17.2%	13.5%	1.5%
Mashonaland West	38.2%	38.9%	13.3%	10.0%	2.3%
Masvingo	36.4%	36.0%	18.4%	9.6%	1.1%
Matabeleland North	39.4%	31.8%	19.7%	10.6%	8.3%
Matabeleland South	23.3%	40.0%	30.8%	5.8%	9.2%
Midlands	29.8%	43.9%	12.6%	13.7%	2.5%
Total	32.0%	39.4%	16.8%	12.4%	2.2%

These patterns underline both the challenges and structural characteristics of Zimbabwe's labour market, particularly the reliance on informal economies and regional disparities in job access.

4.THE CURRENT STATE OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

4.3.6. Educational Qualifications

The distribution of educational attainment across Zimbabwe's provinces reflects both national consistencies and regional disparities. Nationally, 32.5% of respondents had completed secondary education, with a further 27.1% having attended secondary school (Form 1-4) without completing. Only 1.5% reported having no education, while approximately 9% had achieved post-secondary qualifications such as certificates, diplomas or degrees.

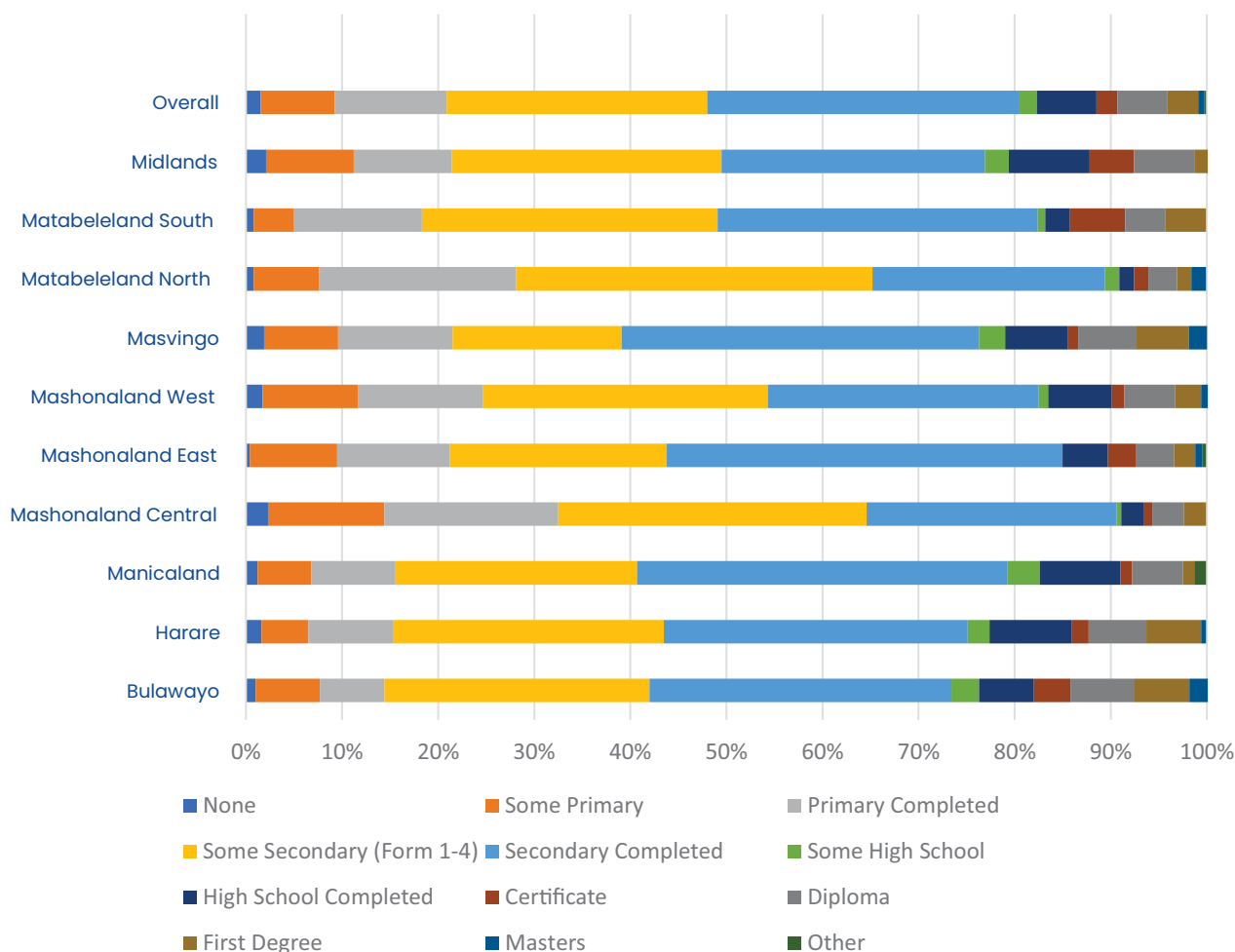


Figure 4-5: Educational Qualifications

The urban provinces of Harare and Bulawayo show higher educational achievement, with a greater proportion of respondents holding diplomas, degrees and postgraduate qualifications. In contrast, Mashonaland Central and Matabeleland North reflect lower levels of formal education, with larger percentages reporting only primary or incomplete secondary education. The prevalence of completed secondary education in Manicaland (38.5%) and high certificate rates in Matabeleland South (5.8%) are additional provincial distinctions. Overall, while secondary education remains the most common level nationwide, access to and completion of tertiary education varies notably by region.

4.THE CURRENT STATE OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

4.3.7.Formal Training in How to Use Computers

Nationally, only 21.4% of respondents reported having received formal computer training. The urban provinces of Bulawayo (30.5%) and Harare (26.7%), and also Matabeleland South (27.5%), exhibited the highest proportions of trained individuals. In contrast, provinces like Mashonaland Central (8.8%) and Mashonaland West (15.6%) recorded notably lower levels. A chi-square test confirmed a statistically significant relationship between province and access to computer training, suggesting marked regional disparities in digital training access and opportunities. These patterns probably reflect urban-rural divides, differing institutional access, and broader infrastructural inequality.

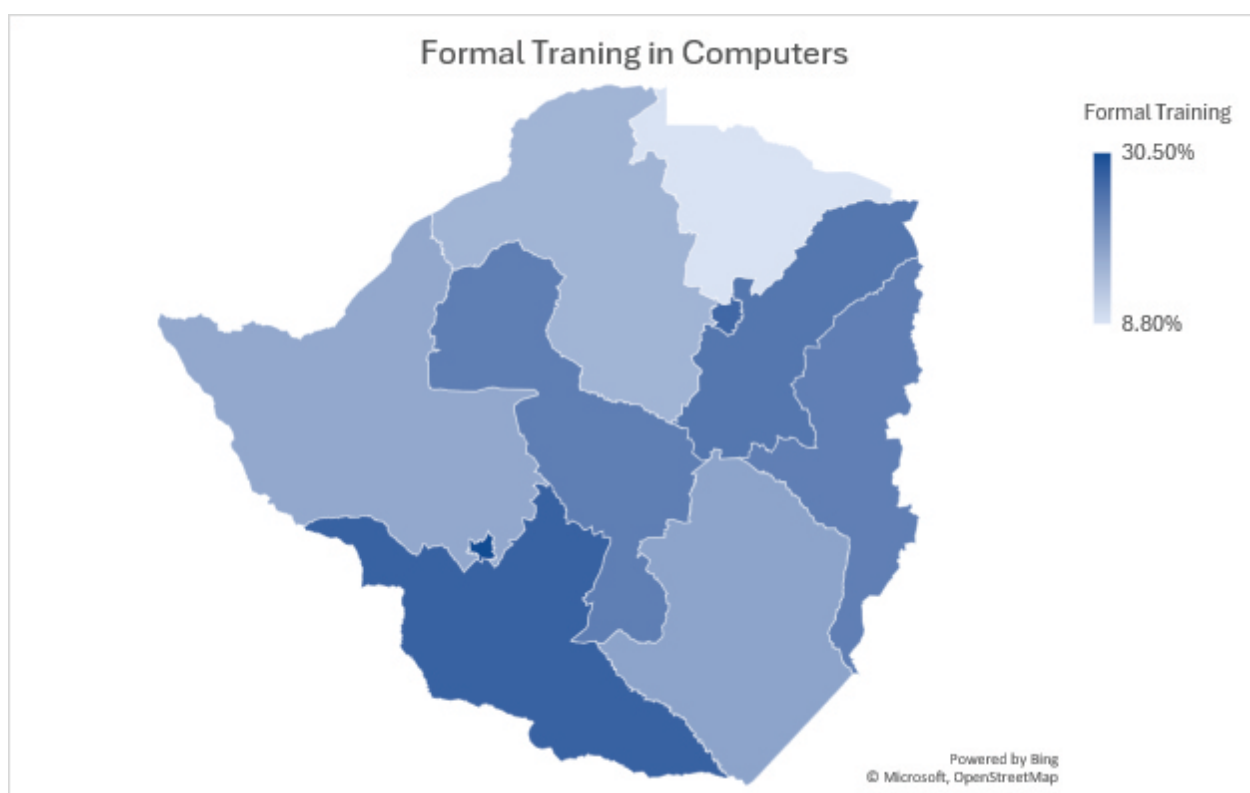


Figure 4-6: Formal training in computers

The analysis reveals a significant digital divide between urban and rural localities in access to formal computer training. While 29.2% of urban residents reported having received such training, only 16.4% of rural respondents had. This gap reflects disparities in digital infrastructure, access to educational institutions, and possibly socio-economic conditions. A chi-square test confirmed the strength of this association, with results showing a statistically significant relationship between locality and training status. These findings point to the need for targeted digital literacy programmes in rural areas to bridge this skills gap.

³ $\chi^2(9) = 47.39, p < 0.0001$

4.THE CURRENT STATE OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

The analysis shows that a gender-based disparity also affects access to formal computer training. Only 19.3% of female participants (very close to global index, World Bank, 2023) had received training, compared to 23.6% of males. Although the difference is not large, it is statistically meaningful. A chi-square test confirmed this association, indicating that sex is significantly associated with access to digital training opportunities. Generally, women are 25% less likely than men to have received formal digital skills training (ITU, 2023); in sub-Saharan Africa, only 28% of women have Basic digital skills vs. 40% of men (GSMA, 2024); in Advanced digital skills, only 3% of women in Low - and Middle-Income Countries (LMICs) have advanced ICT skills (e.g. coding, AI) vs. 8% of men (World Bank, 2023); in Latin America, women hold just 17% of tech-related jobs (IDB, 2024). It is worse off among rural women in Zimbabwe, who are five times less likely than urban men to have programming skills (ZIMSTAT, 2024). These results point to a subtle but important gender gap in digital skills development, with implications for equity in education and employability.

Age is a highly significant predictor of whether participants have received formal computer training. The global averages show that ages 15–24 have 65% with formal digital training (ITU, 2023), and those 55+ have only a 20% chance of training. In the Global South, Nigeria exemplifies the bleak situation where less than 10% of adults over 60 have ever used a computer (GSMA, 2024) due to lack of tailored programmes, physical and cognitive challenges and economic exclusion. Hence, the proportion of trained individuals in Zimbabwe is highest among those aged 10–20 (32.4%) and 21–30 (26.7%), while training uptake drops sharply in older age groups, with only around 9% of individuals aged 51 and above reporting any training.

⁴ $5\chi^2(1) = 6.43, p = 0.0112$

4.THE CURRENT STATE OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

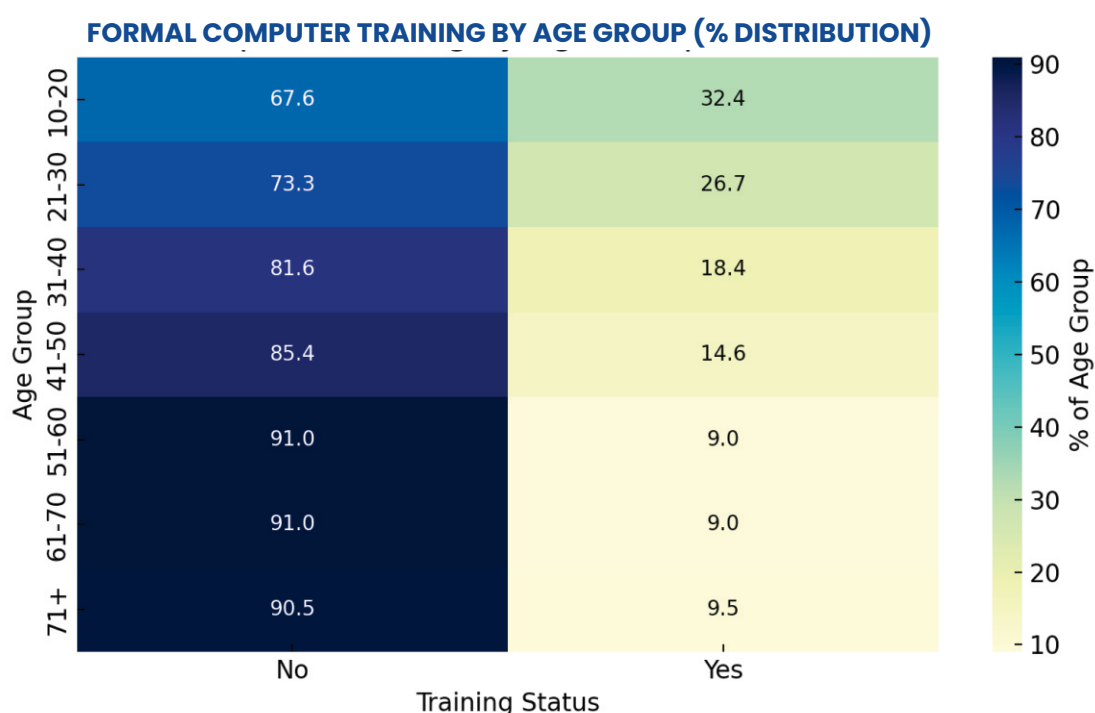


Figure 4-7: Heatmap of Formal Training by Age

A chi-square test confirms a strong and statistically significant association between age group and computer training status, highlighting a substantial digital generation gap. The findings suggest an urgent need for age-inclusive digital literacy interventions, especially for older adults.

A five-way intersectional analysis of computer training access across Zimbabwe confirms a layered and nuanced digital divide which is shaped by sex, locality, age and province. Hence, Zimbabwe's digital divide is not just about gender only, it is about where women live, how old they are, and how much they earn.

Urban youths (10-30), especially females in Bulawayo and males in Matabeleland South and Midlands, show the highest training participation, frequently exceeding 50-75%.

In stark contrast, rural females in Mashonaland Central and East and rural males over 50 have some of the lowest training rates, often under 10%.

Urban males in Matabeleland South and Masvingo aged 21-30 recorded the strongest training access at 75-83%.

Thus, gender and rurality act as a double disadvantage, with urban women, 42% of whom have basic digital skills (mainly in Harare and Bulawayo), being more likely to access training via schools/workplaces. Rural women have only 12% capability of using a computer. Old women are the most excluded in situations where young women (15-24) occupy 35% of those that have digital skills (via schools/NGO programmes), while those over 50 have less than 5% with formal training. These women face ageism and sexism, as they are assumed to be "too old to learn tech".

⁵ $\chi^2(6) = 88.92, p < 0.000$

4.THE CURRENT STATE OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

Figure 4-8 is the visual quadrant matrix showing formal computer training access across different combinations of sex, locality and age group:

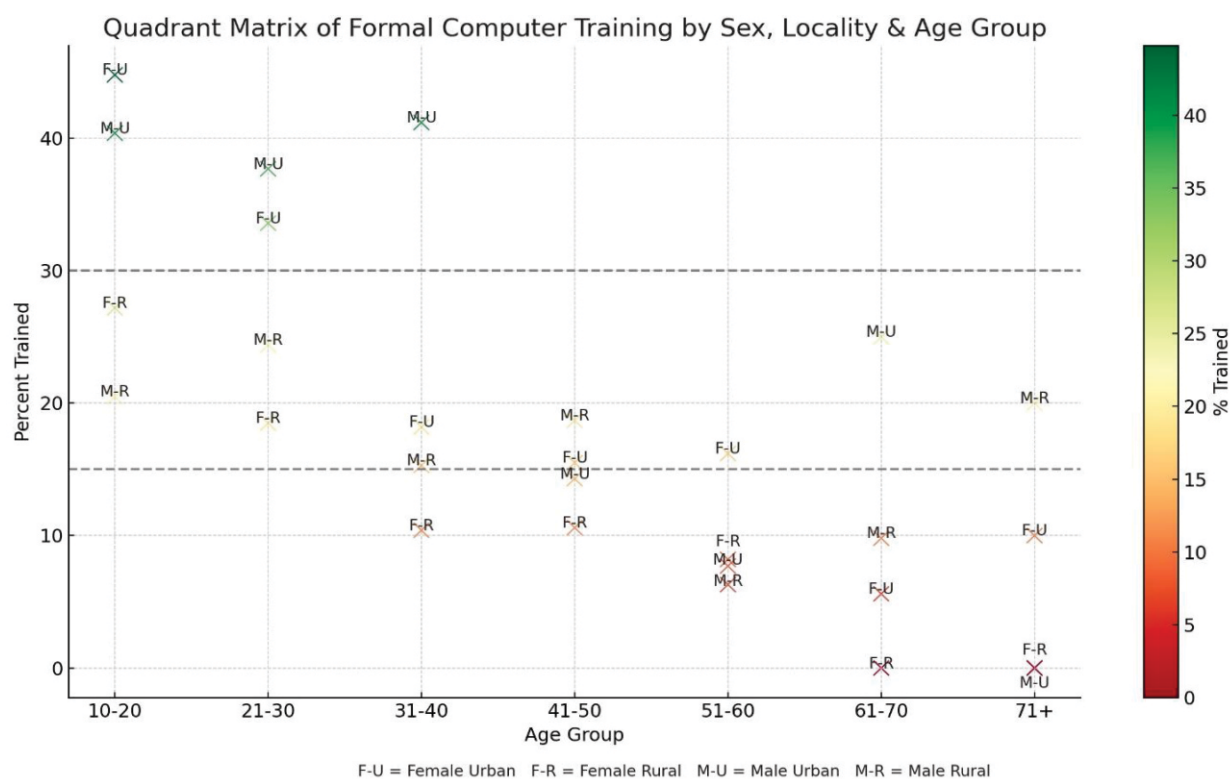


Figure 4-8: Quadrant Matrix on Formal Training

Each data point represents the percentage of individuals trained within a specific sex–locality–age group combination. The colour gradient reflects the intensity of digital training exposure:

- Green indicates high training intensity,
- Yellow indicates moderate intensity, and
- Red indicates low training intensity.

The horizontal dashed lines delineate training access tiers as follows:

- Above 30% – Strong Access
- 15% to 30% – Moderate Access
- Below 15% – Weak Access

This segmentation enables a clear visual interpretation of disparities in digital training coverage across demographic subgroups.

4.THE CURRENT STATE OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

4.3.7.1. Key Insights from the Quadrant

Table 4-3 summarises the insights from the quadrant.

Table 4-3: Strong Training Access: (≥30% formally trained)

Group	Age Group	% Trained	Remark
F-U	10 – 20	44.80%	Urban young women show strongest access
F-U	21 – 30	33.60%	Still strong but drops quickly after 30
M-U	10 – 20	40.40%	Strong early training
M-U	21 – 30	37.70%	High digital literacy in young urban males
M-U	31 – 40	41.20%	Highest male score:a digital peak
M-R	21 – 30	24.40%	Better than female rural counterparts but still below 30%
F-R	10 – 20	27.20%	Strongest rural female age group
M-U	61 – 70	25.00%	Notable outlier for older men

Table 4-3 reveals several critical trends in access to formal computer training across demographic segments. Urban youths aged 10–20, particularly Male Urban (M-U) and Female Urban (F-U) groups, exhibit the highest training rates, with participation levels exceeding 40%. However, access to training declines progressively with age, and nearly all subgroups above 51 years fall into the weak access category, defined as below 15% trained. Rural populations, especially older females (F-R, 51+), consistently show the lowest levels of formal training, highlighting a significant digital exclusion gap. While moderate access, ranging between 15% and 30%, is most common among the 21–40 age group, a clear urban–rural divide persists across all age cohorts. Thus, urban areas consistently out-perform rural ones across all age groups. Furthermore, digital training is concentrated heavily among youths (10–30), especially urban males, while midlife urban males (31–40) have the highest rates overall (41.2%). Table 4-4 provides data on weak training access.

Table 4-4: Weak Training Access: (≤15% trained)

Group	Age Group	% Trained	Remark
F-R	31 – 50	10.4 – 10.6%	Persistently low access
F-R	61 – 71+	0.00%	Complete exclusion
F-U	61 – 70	5.60%	Digital marginali sation
M-R	51 – 60	7.70%	Extremely low training uptake
M-U	51 – 60	6.30%	Urban not immune to midlife gaps
M-U	71+	0.00%	Digital gap for elderly

The data (Table 4-4) highlight a pronounced pattern of digital exclusion among rural women over the age of 30, who consistently record the lowest levels of formal computer training across all demographic categories. This exclusion becomes particularly acute beyond age 50. Notably, even in urban areas, training participation declines sharply after age 50, with a steeper drop observed among urban males, suggesting limited engagement in lifelong digital learning. The 0% training rates recorded for Female Rural (F-R) respondents aged 61–70 and 71+ are especially concerning, indicating that entire population segments may lack any formal digital exposure.

4. THE CURRENT STATE OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

These disparities underscore the critical need for targeted outreach and inclusive training strategies aimed at older and rural women, who are currently the most under served in digital capacity-building efforts. Rural women over 30, therefore, face the steepest digital exclusion. Even in urban areas, training drops sharply after age 50, especially for males.

The 0% rates in F-R 61 –71+ suggest entire segments without any digital exposure.

4.3.7.2. General Observations

There is a gendered urban-rural divide, particularly disadvantaging older rural women. Male urban youths (10–40) and female urban youths (10–30) represent the most digitally included groups. The transition from moderate to weak training starts just after age 30 for most groups. The patterns confirm significant inequalities, with urban youths benefiting from digital inclusion while older rural adults, especially women, remain marginalised. Strategic targeting of these excluded groups is essential for digital equity.

4.3.8. Access to Internet Services

Globally, 75% of people aged 15–24 use the internet vs 40% of those 55+ (ITU, 2024). The trend in developing countries shows that the gap is wider. For instance, in Nigeria, 65% of youths (15–24) are online vs 12% of seniors (60+) (GSMA, 2022), and in India, 70% of urban youths use the internet vs less than 20% of rural elderly (IAMAI, 2024). This is because of exposure to technology, where the younger generations grew up with digital devices, their educational systems increasingly integrate digital literacy, and their jobs require internet skills, pushing youths to adopt faster. The implications for Zimbabwe are that for the youth (15–35), 60% have internet access in cities, but less than 20% in rural areas; for adults 50+, less than 10% have consistent access (POTRAZ, 2024), and older rural women are the most excluded group (as low as 2%). The following section provides the detail.

4.3.8.1. Key Age Based Observations in Internet Access: Younger Age Groups Have Highest Access

Across both urban and rural contexts, participants aged 21–30 and 31–40 consistently reported the highest levels of internet access, indicating strong digital engagement within these cohorts. Notably, urban males aged 21–30 reported access rates as high as 94.1% in Bulawayo, while urban females in the same age group typically exceeded 90% access across most provinces. Equally significant, rural females aged 21–30 recorded access rates between 85% and 91% in provinces such as Manicaland, Mashonaland East and Matabeleland South. The findings reveal the emergence of a digitally active and economically mobile demographic, individuals more likely to own smartphones, use social media, and engage with a range of online services. Their high connectivity positions them as key drivers of digital adoption, innovation and economic participation within both urban and rural economies.

4.THE CURRENT STATE OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

Figure 4-9 presents data for Internet access based on sex, age and locality.

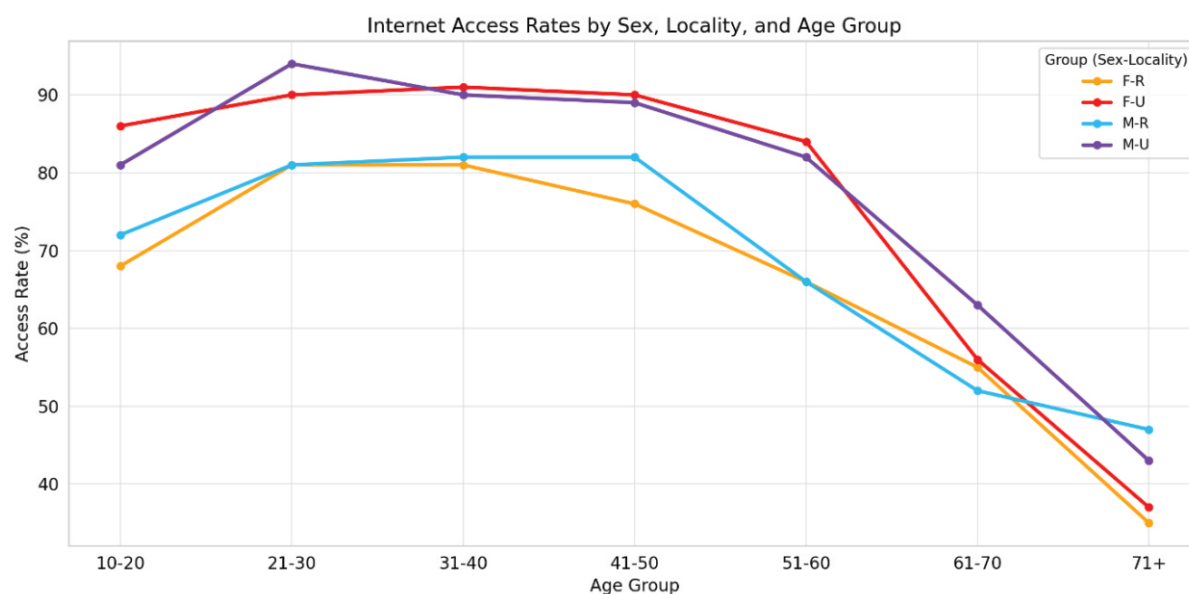


Figure 4-9: Internet Access –Sex, Age and Locality Factors

4.3.8.2. Older Age Groups Show Rapid Drop-off

From the age of 51 and above, internet access begins to decline sharply, with the most pronounced drop-offs observed in rural areas and among female participants. For instance, rural females aged 61-70 reported access rates of 50% or lower across most provinces. Among those aged 71 and older, internet access falls even further, often ranging between 0% and 33%, particularly in rural provinces. This trend reflects a clear digital generational divide, where older individuals face compounded barriers to connectivity, including limited digital literacy, affordability constraints related to device ownership, and a lack of perceived relevance or benefit. Thus, urban teenagers studied (aged 10-20) have high access (76-93%), especially in the cities of Bulawayo and Harare. Rural teenagers, however, show wide variation: as low as 43.8% (e.g. rural females in Mashonaland Central) and up to 88.9% (e.g. rural females in Matabeleland South). School exposure, phone access, and family income probably influence these variations; some rural teens may rely on school Wi-Fi or shared family devices.

4.3.8.3. Older Urban Participants Fare Better than Rural Counterparts

In urban localities, even some participants aged 60-70 report access levels above 60%. An example would be Urban Male 61-70 in Bulawayo: 100%. In rural areas, the same age group often reports much lower access. Urban retirees may have better financial means, existing devices, or help from children to stay digitally connected. Table 45 provides the overall averages.

4.THE CURRENT STATE OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

Table 4-5: Internet Access by Age Group (Overall Averages)

Age Group	Average Internet Access (Rural)	Average Internet Access (Urban)
10–20	~68.4%	~86.2%
21–30	~81.4%	~92.2%
31–40	~81.0%	~90.3%
41–50	~76.1%	~90.7%
51–60	~65.8%	~81.2%
61–70	~51.5%	~61.8%
71+	~34.6%	~50.0%
Overall, in locality	74.6%	87.6%
Grand Overall	79.6%	

Tables 4-6 and 4 -7 provide a descriptive analysis of access to internet services based on the 5 - dimensional crosstab (Sex × Locality × Age):

Table 4-6: Internet Access Descriptive Statistics (Grouped by Sex and Locality)

Sex	Locality	Mean Internet Access %	Standard Deviation
Female	Rural	61.80%	±21.7
Female	Urban	79.20%	±13.2
Male	Rural	68.90%	±15.0
Male	Urban	80.10%	±17.8

Analysis of the average internet access rates reveals a distinct urban-rural and gender-based divide. Urban males and urban females reported the highest average access levels—at 80.1% and 79.2%, respectively – reflecting widespread connectivity in metropolitan settings. In contrast, rural females recorded the lowest average access, at just 61.8%, highlighting a significant digital access gap. Furthermore, this group also exhibited the highest variability in access, with a standard deviation of 21.7%, indicating greater inequality and inconsistency in connectivity across different provinces and localities. There are therefore disparities tied to the intersectional barriers faced by rural women; limited infrastructure, affordability constraints and socio-cultural norms were noted as restricting digital engagement in this regard.

Table 4-7: Internet Access Inferential Statistics: Two-way Analysis of Variance (ANOVA) (Sex × Locality)

Factor	F -value	p-value	Interpretation
Sex	0.38	0.542	Not statistically significant
Locality	4.82	0.038	Statistically significant
Sex × Locality	0.23	0.634	No significant interaction

4.THE CURRENT STATE OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

Findings from the study noted that locality emerged as a statistically significant factor influencing internet access, with a marked difference observed between urban and rural participants, irrespective of sex ($p = 0.038$). This finding confirms that place of residence is a primary determinant of digital access, probably driven by infrastructure disparities, availability of service providers, and economic factors. In contrast, sex did not independently predict internet access ($p = 0.542$), suggesting that gender alone does not account for variations in connectivity when controlling for locality. Moreover, no significant interaction effect was found between sex and locality, indicating that the impact of locality on access is consistent across both male and female participants.

4.3.8.4. Key Takeaways

The following are the key takeaways:

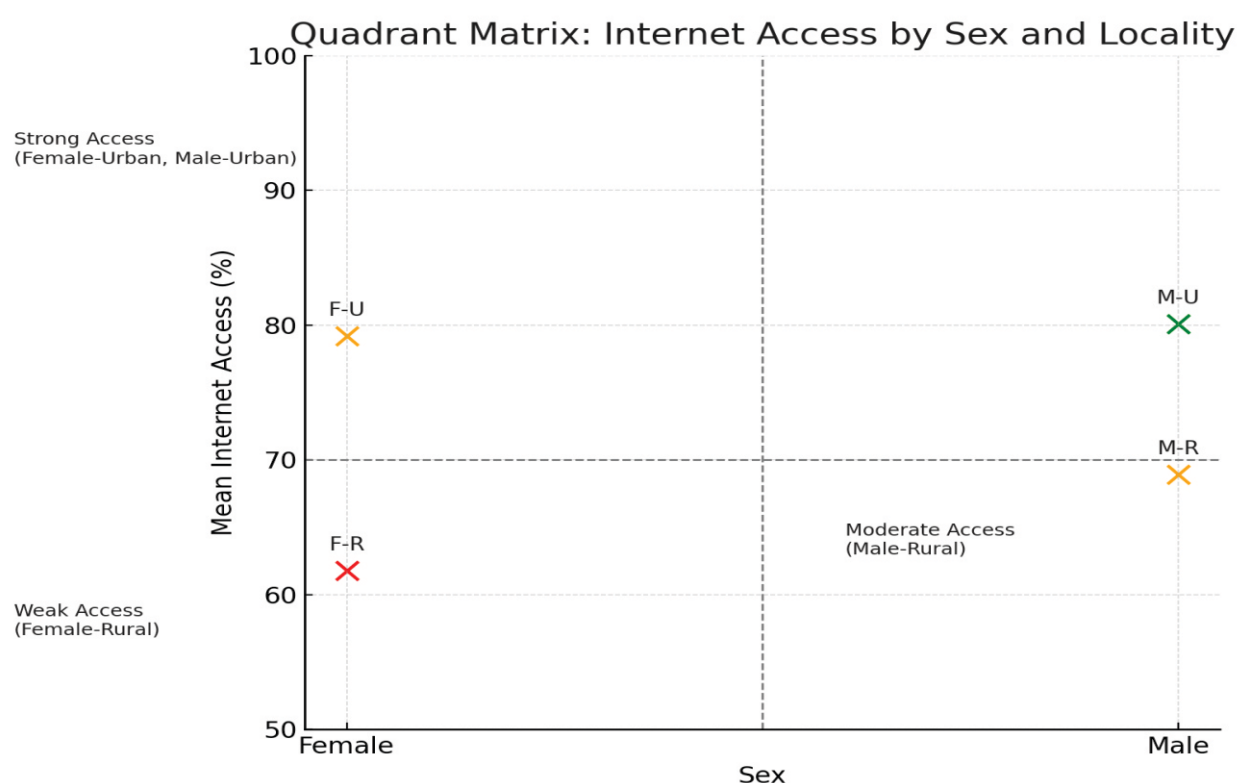
Urban advantage: Internet access is significantly higher in urban areas than in rural ones for both males and females.

Gender equality in access: There is no major difference in access between males and females when controlling for locality.

Rural females are the most disadvantaged group in terms of variability and overall access level. Figure 4-10 shows internet access by sex and locality, based on average access levels across all age groups.



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Legend: F-R = Female Rural; F-U = Female Urban; M-R = Male Rural; M-U = Male Urban

Figure 4-10: Quadrant Matrix Visual for Internet Access by Sex and Locality

Figure 4-10 demonstrates that locality is the primary determinant of internet access, with both urban males and females reporting substantially higher access rates compared to their rural counterparts. Importantly, sex does not independently predict access ($p = 0.542$), as gender differences within the same locality are minimal, for example, urban males and females exhibit similarly high levels of connectivity. Furthermore, there is no statistically significant interaction between sex and locality, indicating that the effect of locality on internet access is consistent across both genders ($p = 0.038$ for locality). Quadrant patterns are summed up in Table 4-8.

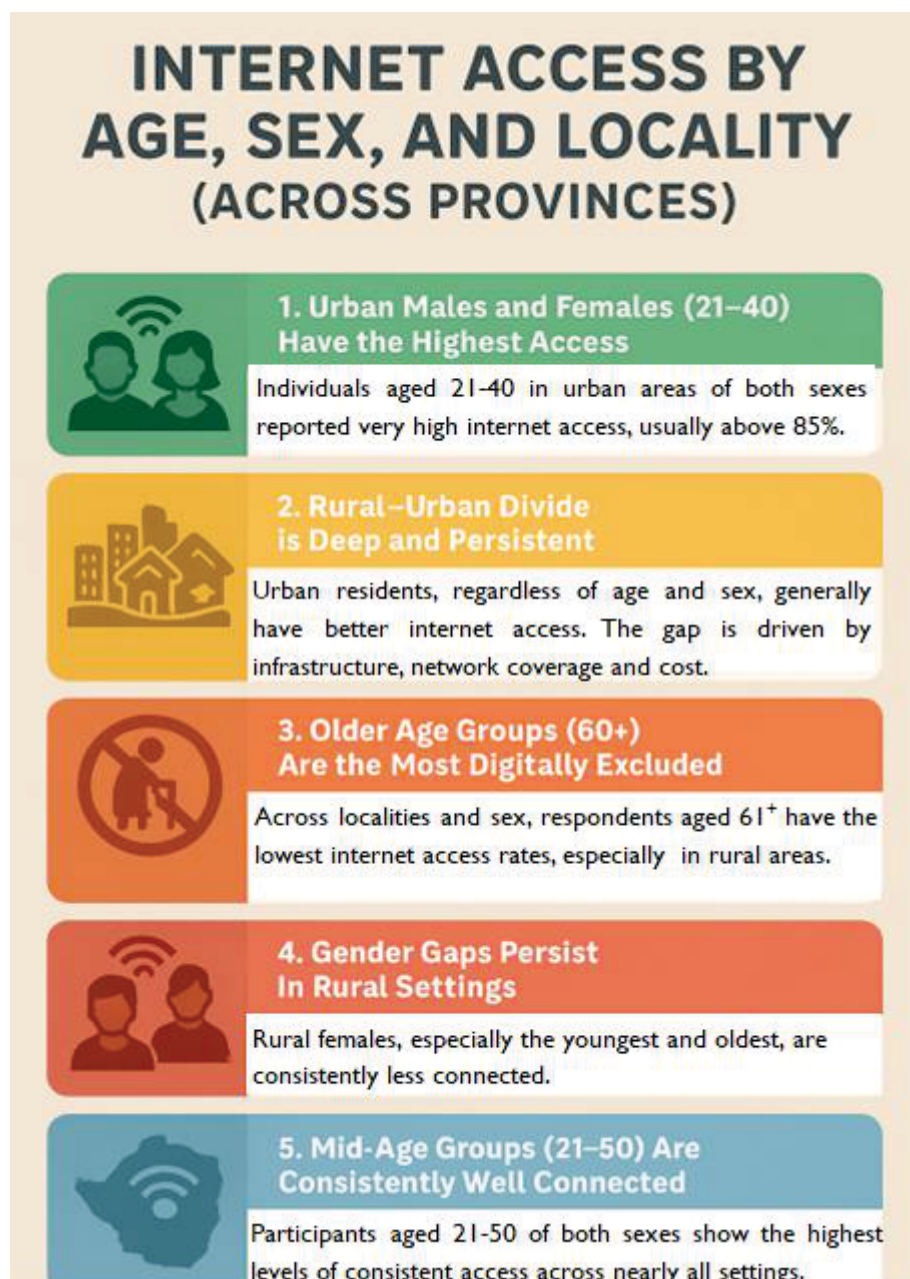
Table 4-8: Quadrant Patterns

Group	Mean Internet Access (%)
Female Rural (F-R)	61.80%
Female Urban (F-U)	79.20%
Male Rural (M-R)	68.90%
Male Urban (M-U)	80.10%

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4.3.8.5. Quadrant Interpretation

Three critical insights concerning internet access across gender and geographical lines in



Zimbabwe are noted. Firstly, a pronounced urban–rural divide is evident, with both male and female urban populations demonstrating relatively high internet access rates (approximately 80%), whereas their rural counterparts lag significantly behind. Secondly, a disparity gender persists predominantly within rural areas, where male respondents (68.90%) report higher internet access than female respondents (61.80%). In contrast, urban settings show minimal gender variation, suggesting that infrastructural and socio-economic factors have a more profound impact in rural contexts. These patterns underscore the structural inequalities that shape digital inclusion in Zimbabwe. Thirdly, and most crucially from a policy standpoint, the data suggest that rural women represent the most digitally marginalised group.

4.3.8.6. Conclusion: Internet Access by Age, Sex and Locality (Across Provinces)

Urban males and females (21–40) have the highest access: in urban areas, both males and females age 21–40 report very high access levels usually above 85. examples:

Figure 4–11: Conclusion: Internet Access by Age, Sex Locality (Across Provinces)

- Urban Male 21–30 in Bulawayo and Harare: 94–100% access
- Urban Female 31 – 40: consistently 85–100%

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This group represents the digitally dominant cohort, likely to be employed (self or formally), studying or socially active online. They are also the most connected demographic in the country.

Rural-Urban Divide is Deep and Persistent: Urban residents, regardless of age or sex, generally have better internet access. In contrast, rural areas show wide variations, with significant provincial disparities. Example:

Rural Female 10–20 in Mashonaland Central: 46.7%

Urban Female 10–20 in Bulawayo: 82.4%

Infrastructure, network coverage and cost probably drive the urban–rural access gap.

Older Age Groups (60+) are the most digitally excluded: Across all localities and sexes, participants aged 61–70 and 71+ have the lowest internet access rates. In rural areas:

Rural Female (71+), mostly 0% to 33%

Rural Male 71+: slightly better in some areas (e.g. 66%) but still low

Even in urban areas, this age group struggles (e.g. Urban Male 71+ in Harare: 33%). The elderly, studied especially in rural Zimbabwe, are largely digitally excluded, posing risks of isolation in an increasingly online world.

Gender Gaps Persist in Rural Settings: From the study, rural females, particularly in teen and older age groups, are consistently less connected than their male counterparts. Example:

Rural Female 10–20 (Mashonaland Central): 46.7%

Rural Male 10–20 (Mashonaland Central): 57.1%

Among the elderly studied, female digital access is even lower than male, hence digital gender inequality is most visible in rural areas and affects particularly the youngest and oldest women.

Mid-Age Groups (21–50) Are Consistently Well Connected: The 21–50 age group shows the highest levels of consistent access across nearly all settings. Even rural males and females in this group reported 70–85% access, especially in Matabeleland South, Harare Metropolitan, Bulawayo Metropolitan and Manicaland. This group is the most digitally reachable for services like mobile banking, e-learning, and health information dissemination.

Provincial Patterns Reinforce Inequality: Provinces such as Bulawayo Metropolitan, Harare Metropolitan, Matabeleland South and Manicaland reported higher access across all age groups. In contrast, Mashonaland Central, Mashonaland East and Midlands had lower access, especially for rural females and older populations. Any digital inclusion policy, therefore, must thus be province-specific, acknowledging the localised nature of inequality.

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4.3.8.7.Conclusions on Internet Access

Internet access patterns across Zimbabwe were noted as a multi-dimensional digital divide, shaped by the intersection of age, locality and gender. Access is not evenly distributed, and specific groups face structural disadvantages that limit their participation in the digital economy.

Table 4-9: Overall Summary Table (Indicative Rankings)

Group	Access Level	Notes
Urban Males/Females (21–40)	Very High (85–100%)	Digitally active core
Rural Males (21–40)	High (75–90%)	Slightly behind urban peers
Rural Females (21–40)	Moderate – High (65–85%)	Strong in some provinces
Urban Males/Females (10–20)	High (76–90%)	Students, socially active
Rural Teenagers (10–20)	Low – Moderate (45–75%)	Uneven access
Urban Elderly (60+)	Low – Moderate (40–60%)	Better than rural peers
Rural Elderly (60+)	Very Low (0–40%)	Most excluded group

Urban Advantage with Age Concentration: Urban residents aged 21–40, both male and female, exhibited the highest internet access levels (85–100%), forming the country's digitally active core. This group benefits from better infrastructure, high smartphone ownership, and strong engagement with digital services for work, education and social connectivity.

Rural Youth Gaps While rural males aged 21–40 reported relatively high access (75–90%), their female counterparts show slightly lower but still moderate to high access (65–85%), depending on province. Among rural teenagers (10–20), access varies widely (45–75%), indicating uneven early digital exposure. This disparity is more pronounced for rural girls, who face barriers such as lower device ownership, household responsibilities and gender norms.

Digital Exclusion of the Elderly: Participants aged 60 and above report significantly lower internet access, with the rural elderly being the most excluded group. Access among rural females aged 60+ often falls below 40%, and in many cases approaches zero, reflecting a generational digital divide intensified by gender and geographic location.

Gender Alone Is Not the Primary Predictor: Statistical analysis shows that locality, not gender, is the strongest independent predictor of access. While urban males and females report nearly equal access, rural women lag behind rural men, indicating that gender disparities are more acute in rural settings. This suggests that gender inequalities amplify the effects of rurality on digital exclusion.

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4.4. Skills Assessment Reliability Test

4.4.1. Basic Digital Literacy Scale Items

A 16-item Basic Digital Literacy Scale (BDLS) was used, and these items had a Cronbach's alpha of 0.95, implying strong internal consistency. A Cronbach's alpha of 0.950 indicates excellent internal consistency. This value suggests that the 16 items on your scale are highly interrelated and probably measure a single underlying construct (basic digital literacy and skills). According to common interpretation: ≥ 0.9 = Excellent; $0.8-0.9$ = Good; $0.7-0.8$ = Acceptable. It can be concluded that this digital literacy scale is highly reliable and consistent for this sample ($n = 2401$).

Table 4-10: Descriptive Statistics: BDLS Item Means and Variability

Item	Description (Paraphrased)	Mean	Std. Dev.	Interpretation
BDLS1	Able to use a computer	2.18	1.31	Low-Moderate
BDLS2	Create Word documents	1.82	1.27	Low
BDLS3	Create Excel spreadsheets	1.51	1.07	Very Low
BDLS4	Download documents online	2.69	1.44	Moderate
BDLS5	Search for information online	2.68	1.48	Moderate
BDLS6	Create an email account	1.97	1.43	Low
BDLS7	Install/uninstall apps	2.96	1.51	Moderate-High
BDLS8	Use email for communication	1.82	1.36	Low
BDLS9	Access govt/private services online	1.55	1.06	Very Low
BDLS10	Share information online	2.46	1.44	Moderate
BDLS11	Participate in online platforms	2.26	1.36	Moderate
BDLS12	Use social media	3.09	1.48	High
BDLS13	Create PowerPoint presentations	1.45	1.07	Very Low
BDLS14	Configure settings on a computer	1.58	1.12	Very Low
BDLS15	Recognize false information online	3.04	1.48	High
BDLS16	Use different storage media (USB, hard disk, etc.)	2.58	1.53	Moderate

Competency Strengths from the descriptors - Highest means: social media use (3.09), recognising fake news (3.04), and app installation (2.96). Lowest means: PowerPoint (1.45), Excel (1.51), configuring settings (1.58). This suggests that participants are more familiar with mobile and social platforms than with productivity or system-management tasks.

The Skill Gaps Identified - The participants have very low mean scores in document creation (Word, Excel and PowerPoint), email usage and set-up, as well as computer configuration and storage media. This finding indicates significant skill gaps in core office and workplace applications.

Standard Deviation (Variability) - Most items had high SDs (e.g. >1.4), implying a wide variation in digital literacy levels across the population. The BDLS scale is statistically reliable ($\alpha = 0.950$), and individual item responses reflected a studied population with basic functional exposure to digital tools but low proficiency in productivity software and systems management.

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4.4.2. Intermediate Digital Literacy Scale Items

An 11-item Intermediate Digital Literacy Scale (IDLS) was used. A Cronbach's alpha of 0.902 reflects excellent internal consistency, suggesting that the 11 items reliably measure a unified concept of intermediate digital competence. This makes the scale robust for measuring mid-level digital literacy in the sample. The IDLS is a statistically reliable instrument with excellent internal coherence across its items and assessed on 479 participants.

Table 4-11 : Descriptive Statistics: IDLS Item-wise Analysis

Item	Paraphrased Description	Mean	Std. Dev.	Interpretation
IDLS1	Know how to create and share digital content	3.22	1.41	Moderate-High
IDLS2	Know how to organise digital content (docs, images, videos)	3.09	1.44	Moderate
IDLS3	Able to collaborate with others to create digital content	2.73	1.43	Moderate-Low
IDLS4	Able to use a computer to secure personal data	3.31	1.37	Moderate-High
IDLS5	Able to teach others how to use digital technologies	3.19	1.29	Moderate-High
IDLS6	Use digital tools as communication platforms	3.46	1.29	High
IDLS7	Know dangers of cyberbullying	3.57	1.36	High
IDLS8	understand the importance of cybersecurity	3.33	1.41	Moderate-High
IDLS9	Able to transact on e - government platforms	2.19	1.36	Low
IDLS10	Able to disable tracking cookies	2.24	1.38	Low
IDLS11	Able to understand and approve privacy policies on websites/apps	2.69	1.47	Moderate-Low

Competency Strengths from the descriptors – Participants showed higher confidence in cyber awareness: knowing dangers of cyberbullying (IDLS7, M = 3.57); digital communication (IDLS6, M = 3.46); cybersecurity understanding (IDLS8, M = 3.33); and content creation and data protection (IDLS1, IDLS4, IDLS5; means ~3.2-3.3). This reflects relatively good awareness and communication competence in digital environments.

Competency Gaps – The weakest skills lie in privacy, security and e-governance interaction: e- government use (IDLS9: M = 2.19), cookie management (IDLS10: M = 2.24), and reading privacy policies (IDLS11: M = 2.69). These data suggest a lack of digital autonomy and user-rights awareness, which are key to digital citizenship.

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Variation: Most standard deviations (SDs between 1.29 and 1.47) indicate moderate to high variation, meaning that subgroups may exist with very different levels of intermediate skills. This variation can be inferred to justify segmentation by age, education, locality or prior exposure in targeted interventions.

The IDLS scale demonstrates excellent reliability and offers helpful information about intermediate digital competencies. Most participants are reasonably confident in content creation, communication and cyber safety but lack more profound awareness of privacy controls, e-government interaction and online rights

4.4.3. Advanced Digital Literacy Scale Items

Advanced Digital Literacy was assessed in four parts: data protection (7 items), cybersecurity (9 items), Big Data and AI (10 items), and digital entrepreneurship (6 items).

4.4.3.1. Data Protection

The Advanced Skills Assessment – Part I focuses on Data Protection and was based on a 7-item scale: A Cronbach's alpha of 0.914 indicates excellent internal consistency, suggesting that the items are highly correlated and reliably measure understanding and application of advanced data – protection practices. The scale is statistically sound and suitable for evaluating advanced data– protection competencies. The tool was administered to 48 participants who reported being data controllers.

Table 4-12 : Descriptive Statistics: Data Protection Item – Level Summary

Item Code	Paraphrased Description	Mean	Std. Dev.	Interpretation
CB1	Complies with the Cyber and Data Protection Act (2021)	3.42	1.318	Moderate
CB2.a	Processes personal info respecting privacy rights	4.08	1.069	High
CB2.b	Ensures lawful, fair, transparent processing	4	1.13	High
CB2.c	Collects data only for specific and legitimate purposes	3.94	1.156	High
CB2.d	Limits data collection to only what is necessary	3.75	1.158	Moderate – High
CB2.e	Provides valid explanations for sensitive/private data	3.88	1.16	Moderate – High
CB2.f	Keeps data accurate and deletes outdated data when needed	3.96	1.129	High

Strengths – Respondents showed strong awareness and practice regarding: Respecting privacy rights (CB2.a: M = 4.08); Transparency and lawful data-processing (CB2.b & CB2.c: M = 4.00); Accuracy and relevance of data retention (CB2.f: M = 3.96) These scores suggest a mature understanding of legal obligations and best practices around data lifecycle and privacy ethics.

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Moderate Areas–The item CBI (overall compliance with the Cyber and Data Protection Act) has a lower mean of 3.42 and a higher standard deviation ($SD = 1.318$), indicating variability in legal compliance or confidence in doing so. The results may point to a gap between knowledge of principles and actual practice under legal frameworks like the Zimbabwe Cyber and Data Protection Act (2021).

4.4.3.2. Cybersecurity

Advanced Skills Assessment Part 2: Cybersecurity, based on the 9-item scale: A Cronbach's alpha of 0.768 reflects acceptable reliability, the scale items are reasonably consistent in measuring cybersecurity awareness and behaviour. This level was appropriate for exploratory research or practical assessment contexts. The scale was administered to a total of 305 participants.

Table 4-13 : Descriptive Statistics: Cybersecurity Item-level Summary

Code	Paraphrased Item Description	Mean	Std. Dev.	Interpretation
CB3	Careful with email attachments	3.48	1.31	Moderate – High
CB4	Identifies phishing attacks	3.1	1.4	Moderate
CB5	Logs off apps after use	2.99	1.52	Moderate
CB6	Regularly changes passwords	2.51	1.43	Low – Moderate
CB7	Avoids untrusted software	3.21	1.45	Moderate
CB9	Has reliable data back-up	3.13	1.47	Moderate
CB10	Uses firewall protection	2.91	1.51	Moderate – Low
CB11	Detects when device is hacked	3.21	1.39	Moderate
CB12	Removes sensitive data before sending device for repair	2.97	1.62	Moderate

Strengths: CB3 (Careful with email attachments) has the highest mean (3.48), showing that many users are aware of phishing/malware risks through attachments. CB7 and CB11 also scored above 3.2, reflecting moderate awareness around avoiding risky software and detecting intrusions. Weaknesses: CB6 (password hygiene) is a weak point ($M = 2.51$), suggesting low adherence to password rotation best practices. CB10 (firewall usage) is also underwhelming, likely due to either lack of knowledge or lack of control over devices/settings.

4.4.3.3. Big Data and Artificial Intelligence

Advanced Digital Literacy–Part 3: Big Data and AI based on a 10-item scale: A very high Cronbach's alpha (0.915) indicates excellent internal consistency, meaning that the scale items reliably measure knowledge and perceived proficiency in Big Data and AI. This consistency suggests a well – structured instrument suitable for assessing advanced digital skills in analytics and AI. 305 participants.

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Table 4-14 : Descriptive Statistics: Big Data & AI Item-level Summary

Code	Big Data & AI Skill Description	Mean	Std. Dev.	Interpretation
BD1	Data management & architecture (modelling, warehousing)	1.76	1.18	Low
BD2	Data processing & statistical analysis	1.78	1.18	Low
BD3	Use of Internet of Things (IoT)	1.9	1.25	Low
BD4	Understanding of machine learning & AI frameworks	2.08	1.47	Low– Moderate
BD5	Data visualization & storytelling	2.1	1.28	Low– Moderate
BD6	Use of AI to enhance business efficiency	2.37	1.54	Moderate
BD7	Use of data mining/scraping tools	1.53	1.02	Very Low
BD8	Use of social media measurement tools (e.g. Google Analytics)	1.79	1.27	Low
BD9	Programming/deployment of digital data-collection technologies(e.g.KoBo Toolbox)	1.63	1.09	Very Low
BD10	Knowledge of 5 types of Big Data analytics (descriptive, predictive, etc.)	1.39	0.86	Lowest

The overall means fell between 1.39 and 2.37, suggesting limited to very low proficiency in Big Data and AI skills across the sample. The most understood area is the use of AI in business operations (BD6, mean = 2.37), possibly due to media coverage or workplace relevance. The least understood area is understanding the five types of Big Data analytics (mean = 1.39), indicating a severe knowledge gap in structured analytics thinking. Across technical skills (e.g. BD1, BD2, BD7, BD9), scores are particularly low, indicating limited practical knowledge or experience with back- end digital tools. Conceptual knowledge (e.g. BD4 and BD10) also remained weak.

4.4.3.4. Digital Entrepreneurship

Advanced Skills – Part 4 focused on digital entrepreneurship, which is assessed using a 6-item scale: A Cronbach's alpha of 0.842 indicates good internal consistency, suggesting that the scale is a reliable tool for measuring digital-entrepreneurship proficiency across 305 participants.

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Table 4-15 : Descriptive Statistics of Digital Entrepreneurship items

Code	Digital Entrepreneurship Skill Area	Mean	Std. Dev.	Interpretation
DE1	Digital content creation	2.69	1.4	Moderate
DE2	Buying from suppliers online	3	1.46	Moderate – High
DE3	Selling products/services online	2.7	1.51	Moderate
DE4	Using virtual reality for marketing	2.12	1.39	Low – Moderate
DE5	Technology skills (web/app development)	1.67	1.11	Low
DE6	Participation in ideation and problem - solving	2.32	1.49	Low – Moderate

Strengths. The highest score was on DE2: Buying from suppliers online (mean = 3.00), which may reflect increased exposure to platforms like WhatsApp, Facebook Marketplace, or e-commerce apps. DE3: Selling online (mean = 2.70) and DE1: Content creation (mean = 2.69) also showed relative proficiency, suggesting engagement in informal e-commerce.

Weaknesses. Technology development skills (DE5) are significantly low (mean = 1.67), highlighting a severe capacity gap in web/app creation. Using virtual reality in marketing (DE4) and innovative problem-solving (DE6) also shows limited familiarity, suggesting that these are emerging or underexposed domains among respondents.

Entrepreneurial use of digital platforms (especially buying/selling and content creation) is moderately familiar, indicating a growing interest or practice in digital trading. However, technical development, immersive technologies, and creative ideation remain notably underdeveloped.

4.4.3.5. Consolidated Reliability Analysis of Advanced Digital Skills Domains

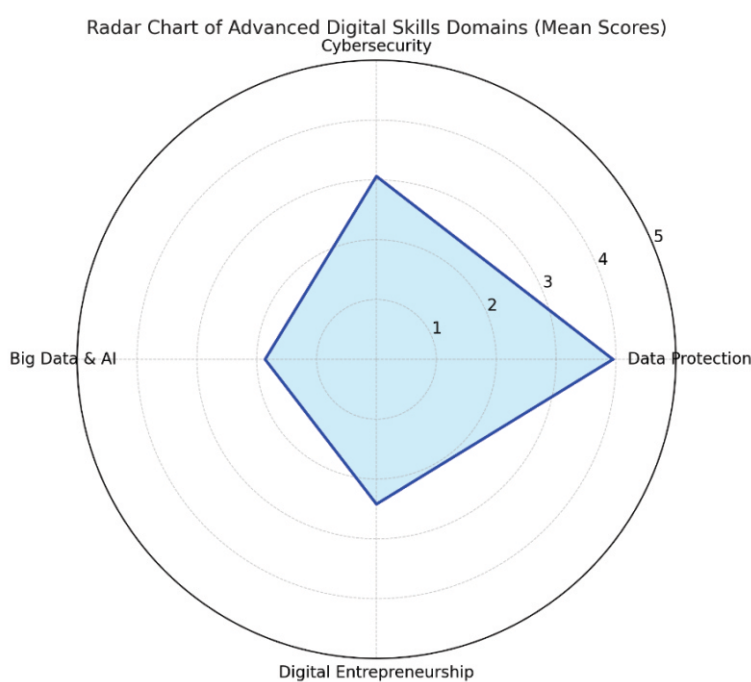
Thematic Insights across Domains – Strengths were in legal compliance and data responsibility under the Cyber and Data Protection Act (2021), which scored well. Also, awareness of cyber risks such as phishing and back-ups is present, though inconsistent.

Weaknesses: Participants struggled with practical cyber hygiene (e.g. frequent password changes, firewall settings). There is deficient capacity in data science, machine learning, analytics and platform-based programming. Technabled entrepreneurship, including app/web development and VR marketing, was also weak.

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Table 4-16 : Summary of Advanced Scale Reliability tests

Domain	No. of Items	Cronbach's Alpha	Overall Mean	Skill Level	Summary Insight
Data Protection	7	0.914	3.95	Moderate –High	Participants showed a strong grasp of privacy principles and compliance obligations.
Cybersecurity	9	0.768	3.06	Moderate	Fair awareness of risks, but weak proactive behaviours such as password safety.
Big Data & AI	10	0.915	1.86	Very Low	Participants have extremely limited skills in AI, analytics and digital tools.
Digital Entrepreneurship	6	0.842	2.42	Low – Moderate	Buying/selling online was more common, but tech-driven innovation was lacking.



The radar (or spider) chart illustrating advanced digital skills presents a comparative visual snapshot across four key domains of higher-order digital literacy. The chart is notably asymmetrical, with a pronounced peak in Data Protection and a marked trough in Big Data and AI, suggesting a sharp contrast in proficiency levels.

The compressed segment for Big Data and AI reflects a significant skills gap, likely stemming from restricted access to training and low exposure to advanced digital technologies. By contrast, the chart's outward stretch towards Cybersecurity and Digital Entrepreneurship signals emerging

Figure 4-12 : Radar Chart for the advanced domains

competence, albeit with variability and uneven depth across subcomponents. Data Protection recorded the highest mean score at 3.83, indicating strong familiarity with legal and ethical standards, particularly around compliance, privacy and responsible data handling. This probably reflects growing public awareness driven by national legislation, such as the Cyber and Data Protection Act.

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Cybersecurity, with a mean score of 3.06, reflects moderately high awareness. While a basic understanding of digital security exists, behavioural inconsistencies remain evident, such as irregular use of strong passwords, back-ups or log-off protocols, suggesting that cybersecurity is not yet deeply ingrained in daily practice.

Digital Entrepreneurship averaged 2.42, indicating modest competence. Participants are beginning to adopt digital business tools and engage in online commerce. However, familiarity with more advanced applications, such as augmented or virtual reality marketing and platform development, remains limited.

Big Data and AI emerged as the weakest area, with a mean score of just 1.85. This low rating points to a critical gap in skills related to data analytics, machine learning and intelligent systems, key technologies driving digital economies. To shed more light regarding the above, the study thus presents skills assessment results in the sections that follow.

4.5.Basic Skills Assessment Results

A total sample of 2401 was assessed and had an average score of 44.55%, giving a national average of modest competence. While females had moderate basic digital literacy (42%), males had slightly higher literacy (47%).



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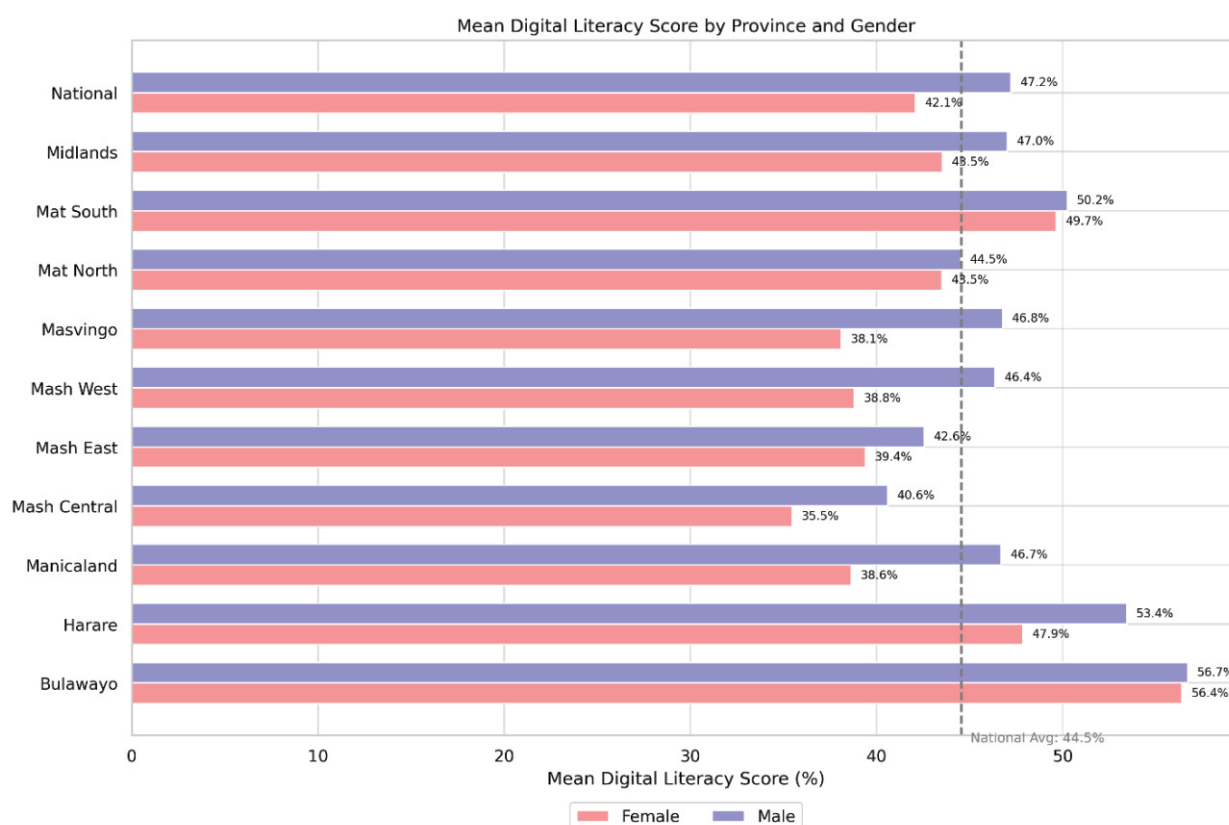


Figure 4-13 : Basic Skills Assessment

Figure 4-13 reveals a persistent gender gap in digital literacy across all provinces, consistently favouring males. However, the extent of this disparity varies by region. Urban provinces, notably Bulawayo Metropolitan and Harare Metropolitan, demonstrate the highest levels of digital literacy, reflecting better access to infrastructure, services and digital education, as observed. In contrast, rural-dominated provinces such as Mashonaland Central and Manicaland exhibit the lowest digital literacy rates, thus reflecting the impact of geographic inequality on digital skills development. In terms of assessing how provinces fared with respect to the above, Table 4-17 captures the realities.

Table 4-17 : Top and Bottom Provinces by Mean Score (Total)

Province	Mean (Total)	Std. Dev.	Observation
Bulawayo (Metropolitan)	56.55%	22.75%	Highest digital literacy
Matabeleland South	49.94%	22.10%	Strong performance
Harare (Metropolitan)	50.49%	21.93%	Slightly lower than Bulawayo
Mashonaland Central	38.00%	16.50%	Lowest digital literacy
Manicaland	42.46%	17.42%	Below national average

Further analysis confirms that males out-perform females in mean digital literacy across all provinces. The gender gap is narrowest in Bulawayo Metropolitan, suggesting more equitable

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access and opportunity in urban contexts. In contrast, the widest disparities are observed in Masvingo and Manicaland, where structural and socio-cultural barriers seem to be disproportionately limiting female digital engagement.

Table 4-18: Sex-Based Differences within Provinces

Province	Female Mean	Male Mean	Gap(M–F)	Direction
Harare	47.86%	53.43%	5.57%	Males higher
Manicaland	38.63%	46.68%	8.05%	Males higher
Masvingo	38.10%	46.77%	8.67%	Males higher
Midlands	43.54%	47.03%	3.49%	Males higher
Bulawayo	56.41%	56.71%	0.30%	~Equal

Guided by Table 4-18, it is noted that the effect of the geographical context exerted significant influence on both digital access and proficiency. Urban provinces, particularly Bulawayo Metropolitan and Harare Metropolitan recorded notably higher mean scores, pointing to the role of infrastructure, exposure and service availability in shaping digital outcomes. In contrast, provinces with predominantly rural populations display substantially lower levels of digital literacy, highlighting entrenched contextual inequalities.

4.5.1. Statistically Significant Gender Differences in Several Provinces

Table 4-19 : Provinces where Males Scored Significantly Higher than Females ($p < 0.05$)

Province	Mean Score: Female	Mean Score: Male	p-value	Conclusion
Harare	47.86%	53.43%	0.003	Significant male advantage
Manicaland	38.63%	46.68%	<0.001	Significant male advantage
Mashonaland West	38.80%	46.37%	<0.001	Significant male advantage
Masvingo	38.10%	46.77%	<0.001	Significant male advantage
Midlands	43.54%	47.03%	0.046	Marginal but significant male advantage
Overall	42.10%	47.22%	<0.001	Significant national - level male advantage

These results strongly suggest a consistent and statistically significant gender gap in digital literacy, with males out-performing females in multiple provinces and nationally. In the provinces listed in Table 4-20, gender differences were not statistically significant ($p > 0.05$). Thus, digital literacy levels between males and females were more balanced, suggesting either better gender parity (potentially for Bulawayo) or uniformly low performance.

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Table 4-20: No Statistically Significant Difference

Province	p - value	Interpretation
Bulawayo	0.91	No meaningful gender difference
Mashonaland Central	0.06	Close to significant; trend favours males
Mashonaland East	0.05	Borderline significance
Matabeleland North	0.71	No gender difference
Matabeleland South	0.84	No gender difference

Urban respondents demonstrated higher average basic digital literacy scores (52.00%) than rural respondents (39.85%), with a wider variability in urban scores (21.7%) than rural (17.9%). There is a statistically significant difference in basic digital literacy scores between rural and urban populations. According to Effect Size (Cohen's d): 0.62, this is a moderate-to-large effect size, meaning that the difference in digital literacy scores between rural and urban participants is substantively meaningful, not just statistically significant. Thus, urban residents significantly out performed their rural counterparts in basic digital literacy skills. This gap is both statistically robust and practically significant, suggesting a clear digital divide that may need targeted interventions in rural areas.

Gender inequality in digital literacy is, therefore, a persistent feature across almost all provinces. In every region except Matabeleland North, males out-perform females in digital literacy scores, often by wide margins. The gender gap is especially stark in Masvingo, where the male pass rate (37.2%) is more than double that of females (16.4%). Notably, even in provinces with a higher overall performance, such as Harare, the gender divide remains a major concern. The national row on the heatmap (Figure 4-14) serves as a critical benchmark, highlighting how most provinces, particularly in female performance, fall below the average. These patterns emphasise the urgent need for targeted digital skills development programmes, especially those that are gender-sensitive and responsive to rural marginalisation.

4.5.2. Statistically Significant Difference on Age

Age has a statistically significant effect on basic digital literacy scores. The highest mean scores are observed in the 21-30 age group (48.73%), followed by 10 -20 (47.12%) (see Table 4-21). There is a steady decline in average digital literacy as age increases beyond 30. The lowest scores are seen in the 71+ group (26.16%).

⁶ *p-value*: < 0.001

⁷ $F(6, 2395) = 29.13, p < 0.001$

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Table 4-21 : Difference on Age

Age Group	N	Min	Max	Mean (%)	Std. Deviation (%)
10 –20	432	20	100	47.12	19.85
21 –30	703	20	100	48.73	20.54
31 –40	533	20	100	46.42	20.23
41 –50	370	20	97.5	42.3	20.08
51 –60	221	20	100	35.02	16.47
61 –70	100	20	91.25	31.15	15.74
71+	42	20	88.75	26.16	12.39

Post hoc tests (Tukey's HSD) revealed that 21-30 vs 51-60, 61-70, and 71+ have significant differences. The age group 31-40 vs 61-70 and 71+ also has significant differences. Lastly, 41-50 vs 71+ also has a significant difference. The differences between younger age groups (10-40) are not always statistically significant, but all older groups (51-71+) perform significantly worse than the younger core groups (21-30, 10-20). There is a clear age gradient in digital literacy, with younger participants significantly out-performing older ones. The digital divide by age is most pronounced after 50 years, intensifying sharply among those 71 and above.

4.6. Assessment of Skills Level

4.6.1. National Overview

At the national level, 32.8% of participants achieved a score of 50% and above in basic digital literacy and skills, while 67.2% scored below the basic threshold. This reflects significant digital literacy gaps across the country. A gender disparity is evident: 28.0% of females achieved scores 50% compared to 38.1% of males, indicating that women are generally lagging behind men in digital competencies. Figure 4-14 is the heatmap showing the percentage of participants scoring 50% and above in the basic digital literacy category across provinces, disaggregated by gender and total population. Darker shades indicate higher performance.

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HEATMAP OF BASIC DIGITAL LITERACY SCORES $\geq$ 50% BY PROVINCE, GENDER, AND NATIONAL AVERAGE



Figure 4-14 : Heatmap for Skills Below and Above 50%

Figure 4-14 illustrates the provincial disparities in basic digital literacy skills across Zimbabwe, with particular attention to gender differences and national averages. Bulawayo Metropolitan stands out as the strongest performer, where over 55% of both males and females scored at or above the 50% threshold, well above the national averages of 38.1% for males and 28.0% for females. Matabeleland South and Harare Metropolitan also performed relatively better than many other provinces, especially among males. In contrast, provinces such as Mashonaland Central, Masvingo and Manicaland showed alarmingly low levels of digital proficiency, particularly among women, where, in some cases, fewer than 20% of females met the basic skills threshold. These data suggest that, while urban provinces may be making progress, rural and more peripheral areas continue to lag significantly behind.

4.6.2. Overall Skills Assessment

This analysis assessed the distribution of digital literacy and skills levels across Zimbabwe's ten provinces, using a four-tier classification: Below Basic, Basic, Intermediate and Advanced. The results highlight stark regional disparities in digital competencies and reveal a significant digital divide. At the national level, 67.2% of participants fall into the Below Basic category, while only 3.4% demonstrate Advanced digital skills. This finding indicates that the majority of the population lacks even foundational competencies, with fewer than 13% attaining Intermediate or Advanced proficiency. The best-performing provinces in terms of higher skills include Bulawayo and Harare, where over 20% of participants reach at least the Intermediate level. Bulawayo, in particular, stands out with the lowest rate of Below Basic skills (42.9%) and the highest rate of Advanced skills

4.THE CURRENT STATE OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

Province(7.6%), suggesting relatively better digital capabilities. In contrast, provinces such as Mashonaland Central, Manicaland, Masvingo and Mashonaland East exhibit alarmingly high proportions of residents with Below Basic skills, above 70% in each case.The association between province and digital skills level was tested using the chi-square test of independence, yielding statistically significant results. These results confirm that digital skills levels vary significantly by province, reinforcing the need for geographically tailored interventions to address skills shortages. Figure 4-15 is a heatmap visualisation of the distribution of digital skills levels across Zimbabwe's provinces, including the national average. The darker cells represent higher percentages within each skill category, making it easy to spot regional strengths (e.g. Bulawayo's advanced skills) and weaknesses (e.g. Mashonaland Central's high rate of Below Basic skills).

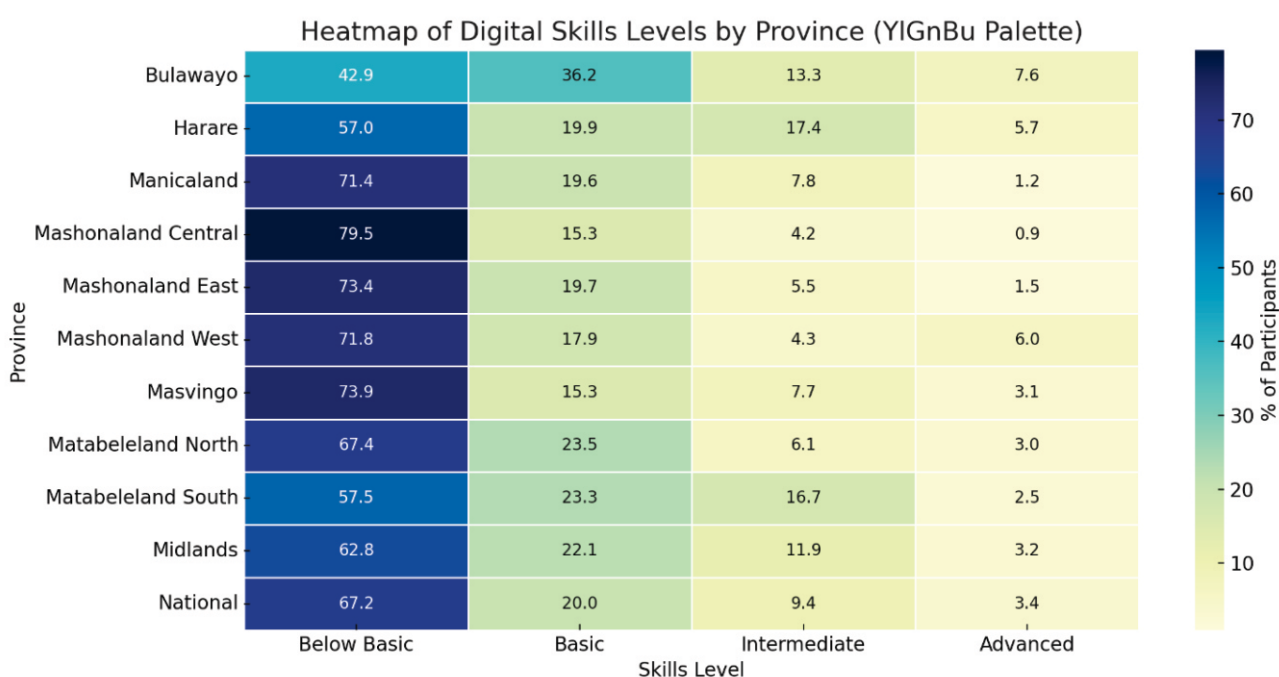


Figure 4-15 : Heatmap for Skills Levels

Given these findings, policy-makers and stakeholders should prioritise investment in digital literacy programmes targeting low-performing provinces, particularly rural and marginalised areas, and close the gender and locality gaps evident in previous cross-tabulations. Enhanced access to training infrastructure, digital devices and localised support mechanisms will be critical in achieving equitable digital transformations across Zimbabwe. The analysis of digital skills by gender and locality reveals a pronounced digital divide in Zimbabwe, with both sex and residence playing critical roles in shaping access to and proficiency in digital skills. Across the country, 72.0% of females and 61.9% of males fall into the Below Basic skills category, confirming a national gender gap in digital literacy. However, the gap is amplified in rural areas, where 80.5% of rural women have Below Basic skills compared to 72.4% of rural men. Rural women are the most digitally marginalised group, with only 0.7% reaching Advanced skills levels. In contrast, urban men perform best, with only 45.0% Below Basic and nearly 26% attaining Intermediate or Advanced levels.

⁸ $\chi^2(27, N=2401) = 137.33, p < .001$

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Urban women fare better than rural women but still trail their male counterparts across all skill tiers.

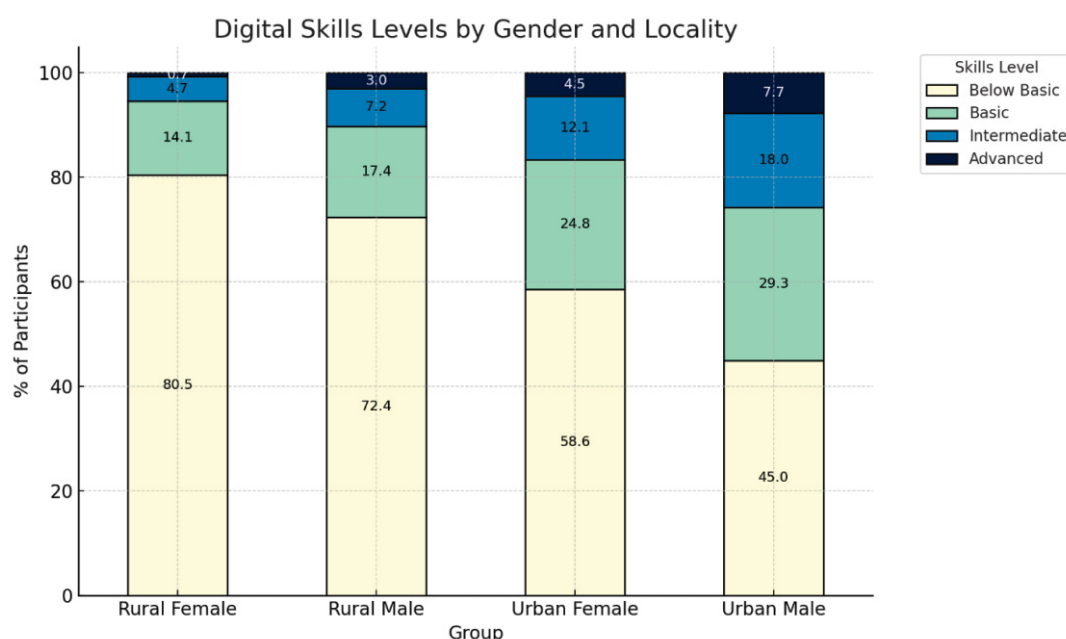


Figure 4-16 : Sex and Locality

The observed disparities are statistically significant across both rural and urban populations, as well as the national aggregate. The findings stress how rurality and gender intersect to compound digital exclusion, with rural women emerging as the most digitally marginalised group. Bridging this divide requires locally contextualised and gender-responsive interventions, prioritising expanded access to digital training infrastructure, mobile learning platforms and community-based digital literacy programmes in underserved rural areas. If left unaddressed, the digital divide will entrench existing socio-economic inequalities and constrain inclusive participation in Zimbabwe's digital economy.

Analysis of digital skills by age revealed a strong inverse relationship between age and digital proficiency. Younger cohorts (ages 10–30) display markedly higher digital competence, with approximately 23–27% achieving Basic or higher skills, and over 10% reaching Intermediate proficiency. The 21–30 age group registers the highest proportion of Advanced users (5.3%), positioning it as the cohort most capable of leveraging digital tools for economic and social advancement. In contrast, digital literacy deteriorates sharply with age. Among individuals aged 41–50, over 72% fall into the Below Basic category, while for those 51 and older, the figure rises above 85%. The most excluded group is those aged 71 and above, where nearly 98% exhibit Below Basic competence, and no respondents demonstrate Advanced skills. These findings highlight the urgency of age-sensitive digital inclusion strategies, particularly for older adults, whose exclusion risks deepening generational inequities in digital access and opportunity.

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Digital Skills Levels By Age Group

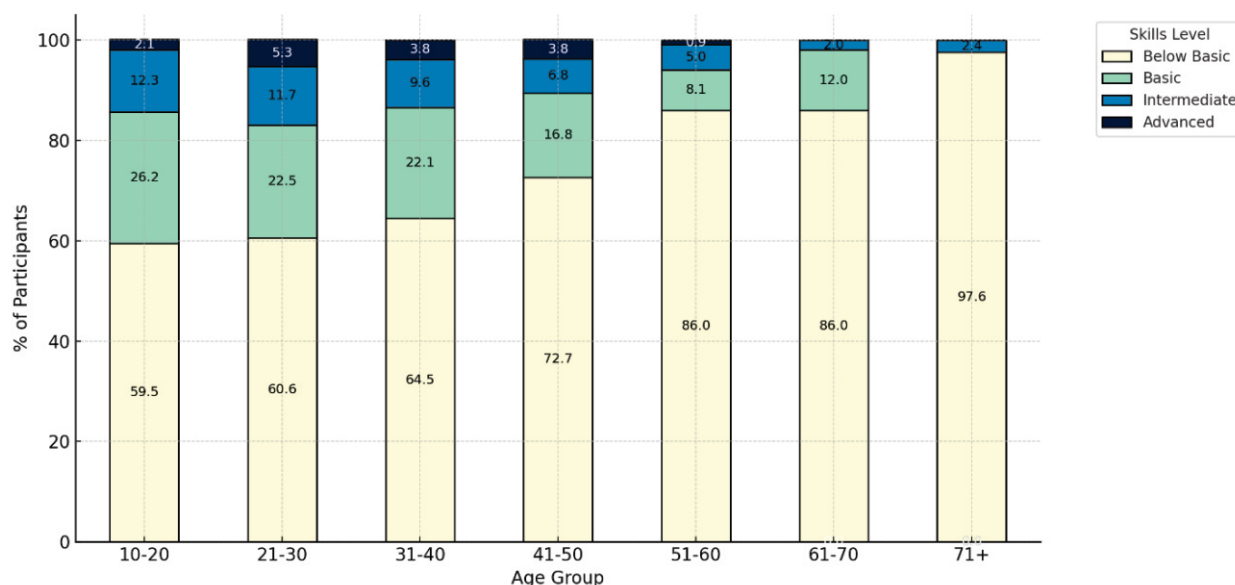


Figure 4-17 : Age and Skills Levels

These differences are statistically significant, indicating a non-random, systematic association between age and digital skills level. The findings underline the urgent need for age-responsive digital literacy interventions. While continued investment in youth digital skills is vital, the results highlight growing digital marginalisation among older adults, especially those in the 60+ category, who require tailored support to access, navigate, and benefit from digital tools and services. The analysis reveals a strong, positive correlation between educational level and digital skills proficiency in Zimbabwe. Participants with no formal education or only primary schooling are overwhelmingly at the Below Basic level, with over 93% in both groups indicating near-total exclusion from digital competency. Improvement becomes notable at the secondary level, where the share of participants with Basic or higher skills increases, though 72.6% remain below Basic. A significant shift occurs at the high-school level, with just 34.0% below Basic and nearly 31% reaching Intermediate or Advanced levels. Among those with tertiary education, only 12.3% are below Basic, while a majority, 55%, achieve Intermediate or Advanced proficiency, showcasing the critical role of post-secondary education in developing digital capacity. These differences are statistically significant, confirming a strong association between educational attainment and digital literacy levels. These findings emphasise the urgent need to integrate digital skills training into primary and secondary education and provide targeted outreach for adults and youth with limited schooling through non-formal and community based learning programmes. Expanding access to digital training at all educational stages is key to narrowing the digital divide and ensuring inclusive participation in Zimbabwe's digital transformation.

⁹ $\chi^2(18, N=2401)=115.42, p<.001$

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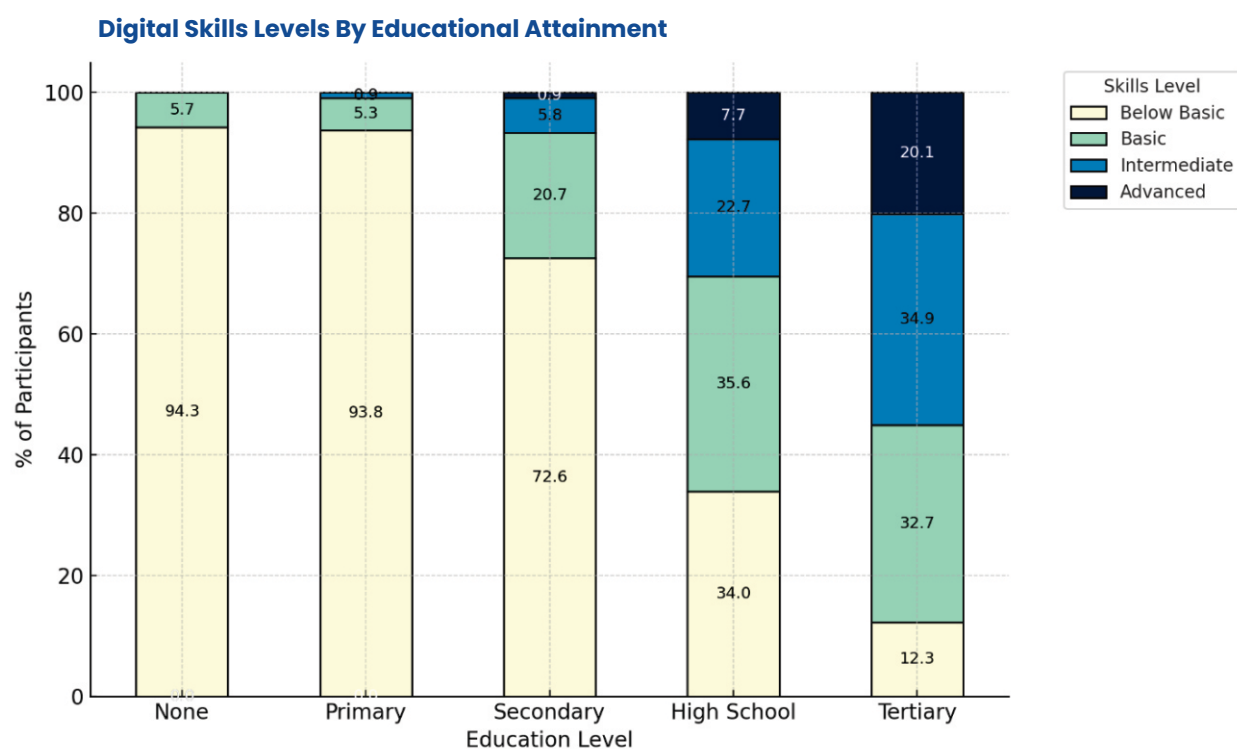


Figure 4-18 : Education and Skills Levels

Figure 4-18 is a stacked bar chart showing digital skills levels based on educational attainment. The visual clearly demonstrates the steep rise in digital proficiency with increasing education, especially at the high school and tertiary levels.

4.6.3. Concluding Summary

The analysis of digital skills levels across Zimbabwe reveals a deeply entrenched digital divide influenced by province, sex, locality, age and education. Provincial disparities show that the urban provinces of Bulawayo Metropolitan and Harare Metropolitan out-perform rural provinces such as in Mashonaland Central and Masvingo, highlighting uneven access to digital infrastructure and training.

¹⁰ $\chi^2(12, N=2401)=867.70, p<.001$

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Gender remains a consistent determinant, with males out-performing females across all provinces and skills levels, a gap that widens further in rural areas. Locality intensifies exclusion, as rural residents, especially women, exhibit the lowest levels of digital competence, with 67.2% scoring below Basic. Age also plays a critical role, with digital proficiency highest among youths aged 10–30 and declining sharply among older adults, particularly those aged 60 and above, where fewer than 5% attain Intermediate or Advanced skills. Finally, education emerges as the most powerful predictor, with those holding tertiary qualifications overwhelmingly achieving higher skills levels, while individuals with no or only primary education remain almost entirely digitally excluded. These patterns are statistically significant and point to the urgent need for targeted, multi-dimensional interventions that address structural barriers to digital inclusion across geography, gender, generation, and educational background.

The major finding is that 32.8% of Zimbabwe's sampled participants possess functional digital literacy, with severe shortages in advanced skills (AI, cybersecurity, cloud computing, data analytics). Thus, Zimbabwe's 32.8% digital skills rate is low compared to regional peers, where South Africa stands at 45–50% digital literacy (ITU, 2023), Kenya is at 40% (driven by M-Pesa and tech hubs) and Rwanda is at 35–38% supported by strong government-led digital policies. Zimbabwe is also lagging in digital readiness, ranking below SADC averages. The key bottlenecks include electricity and internet instability (only 10% rural coverage vs 60% urban), high costs of devices/data (US dollar pricing excludes low-income groups). Whether or not Zimbabwe is on track for Vision 2030, the answer is based on the current 32.8% digital literacy rate and, at the projected growth rate where digital literacy improves by 9.45% annually, Zimbabwe would reach 50% by 2030.

5. DETERMINANTS OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

5.1. Introduction

In recent years, digital literacy and skills have emerged as critical determinants of socio-economic development in nations worldwide. The ability to navigate digital environments effectively is increasingly vital for participation in the modern economy, influencing employment opportunities, educational attainment and social inclusion. This section provides results on the determinants of digital literacy and skills in Zimbabwe using an ordinal logistic regression model to assess the relationships between various factors and levels of digital competency.

5.2. Ordinal Logistic Regression: Predicting Digital Skills Level

5.2.1. Model Specification

The research team fitted a proportional odds ordinal logistic regression model to predict skills level using ten predictors. Skill level is an ordered categorical outcome with four levels (from lowest to highest): Below Basic, Basic, Intermediate and Advanced. The model assumes that the log odds of being at or below a given skill category is a linear function of the predictors (i.e. the proportional odds assumption).

5.2.2. Model Fit and Overall Performance

5.2.2.1. Ordinal Logistic Regression Equation and Thresholds

The cumulative logit model assumes that the relationship between each pair of outcome categories is the same. The estimated model takes the following form:

$$\text{Logit} [P(Y \leq j)] = \theta_j - (\beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k)$$

Where:

$P(Y \leq j)$ is the cumulative probability of being at or below category j ($j = 1, 2, 3$)

θ_j are the threshold (cut point) parameters estimated from the data

β_k are the coefficients for each predictor X_k

This model assumes the proportional odds assumption, i.e. that the slope coefficients (β_k) are the same across the different cut points.

Estimated Thresholds (θ_j):

θ_1 (Below Basic vs Basic and above): 6.643

θ_2 (Below Basic or Basic vs Intermediate and above): 0.720

θ_3 (Below Basic to Intermediate vs Advanced): 0.689

5. DETERMINANTS OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

The threshold values helped determine the placement of respondents into one of the four ordered categories of digital skill based on their cumulative probabilities and the linear predictor.

Table 5-1: Regression Metrics

Metric	Value
Log -Likelihood	1556.01
Null Log -Likelihood	2224.58
McFadden's Pseudo R ²	0.3005
AIC	3138.01
BIC	3213.2
N (Observations)	2,401

The McFadden's Pseudo R² of 0.30 indicates a strong model fit, especially for qualitative data. The model significantly improves over the null model, as evidenced by a much higher log-likelihood. AIC and BIC values can be used for model comparison in future model-building steps.

5.2.3. Interpretation of Coefficient Estimates and Odds Ratios

5.2.3.1. Sex

The results indicate that being male is positively associated with higher digital skills levels. With an odds ratio of 1.484, males are approximately 48% more likely to report higher digital skills than females, controlling for other factors. This gender disparity suggests a need for targeted interventions to bridge the gender gap in digital competency.

5.2.3.2. Age

The negative coefficient (-0.316) for age indicates that older respondents are less likely to possess higher digital skills. The odds ratio of 0.729 means that with each increase in age category, the odds of being in a higher-skills level decrease by about 27%. This underscores the importance of designing age-inclusive digital literacy programmes.

Table 5-2: Regression Results: Coefficient Estimates and Odds Ratios

Predictor	Coefficient (β)	Std.Error	Odds Ratio (exp(β))	p-value	Significance (p < 0.05)
Sex	0.395	0.101	1.484	0.0001	Yes
Age	-0.316	0.043	0.729	0.0001	Yes
Education	1.141	0.069	3.131	0.0001	Yes
Training	1.556	0.12	4.739	0.0001	Yes
Internet	1.559	0.247	4.752	0.0001	Yes
Locality	0.693	0.103	2	0.0001	Yes
AvailGadget	0.135	0.047	1.145	0.0037	Yes
AffordGadget	0.103	0.048	1.109	0.0321	Yes
GovtInvest	0.051	0.041	1.053	0.21	No
InfraEqual	0.07	0.034	1.073	0.0387	Yes

5. DETERMINANTS OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

Predictors with $p < 0.05$ are statistically significant and highlighted accordingly.

5.2.3.3. Education

Education is a strong predictor of digital skills, with an odds ratio of 3.131. This suggests that each unit increase in educational attainment more than triples the likelihood of reporting higher digital skills levels. Investing in education not only improves academic outcomes but significantly boosts technological adaptability.

5.2.3.4. Formal Computer Training

The strongest predictor in the model, with an odds ratio of 4.739, is formal computer training. Individuals who received training are nearly five times more likely to report advanced digital skills. This finding highlights the critical importance of accessible training programmes in enhancing national digital literacy.

5.2.3.5. Access to Internet Services

Those with internet access are 4.752 times more likely to report higher digital skills. This strong positive relationship suggests that connectivity is not just a technical issue but a key enabler of skills acquisition and application.

5.2.3.6. Locality

The study showed that urban residents are twice as likely as their rural counterparts to have higher digital skills ($OR = 2.000$). This urban-rural divide reflects infrastructure disparities and calls for strategic policy efforts to extend digital access to under-represented rural areas.

5.2.3.7. Availability of Internet Access Gadgets

Each increase on the 6-point scale of gadget availability corresponds to a 14.5% increase in the odds of being in a higher skill level ($OR = 1.145$). This finding reinforces the need for policies that ensure widespread and equitable access to digital devices.

5.2.3.8. Affordability of Internet Access Gadgets

Affordability also has a statistically significant positive effect ($OR = 1.109$). Individuals who perceive digital tools to be more affordable were noted as more likely to develop and sustain digital skills. This finding affirms the importance of subsidies or price regulation in improving uptake.

5.2.3.9. Perceived Government Investment

Although positively signed ($OR = 1.053$), the coefficient for perceived government investment is not statistically significant ($p = 0.210$). This suggests that, while people may recognise efforts, these perceptions alone are not currently driving skills outcomes.

5. DETERMINANTS OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

5.2.3.10. Perceived Equality in Internet Infrastructure

This variable is statistically significant ($p = 0.039$), with an odds ratio of 1.073. People who perceive internet infrastructure as equitably distributed are more likely to have higher digital skills, suggesting that perceived fairness in service delivery can influence engagement and learning. The model provides strong evidence that education, training, internet access and demographic factors significantly influence digital skills levels. The model performs well and can be used to predict and interpret digital skills development patterns across demographic segments in Zimbabwe.

5.2.4. Profile Based–Predicted Probabilities

Figure 5 –1 is a heatmap visually presenting the predicted probabilities of digital skills levels across the 12 specified profiles (based on locality, sex and education).

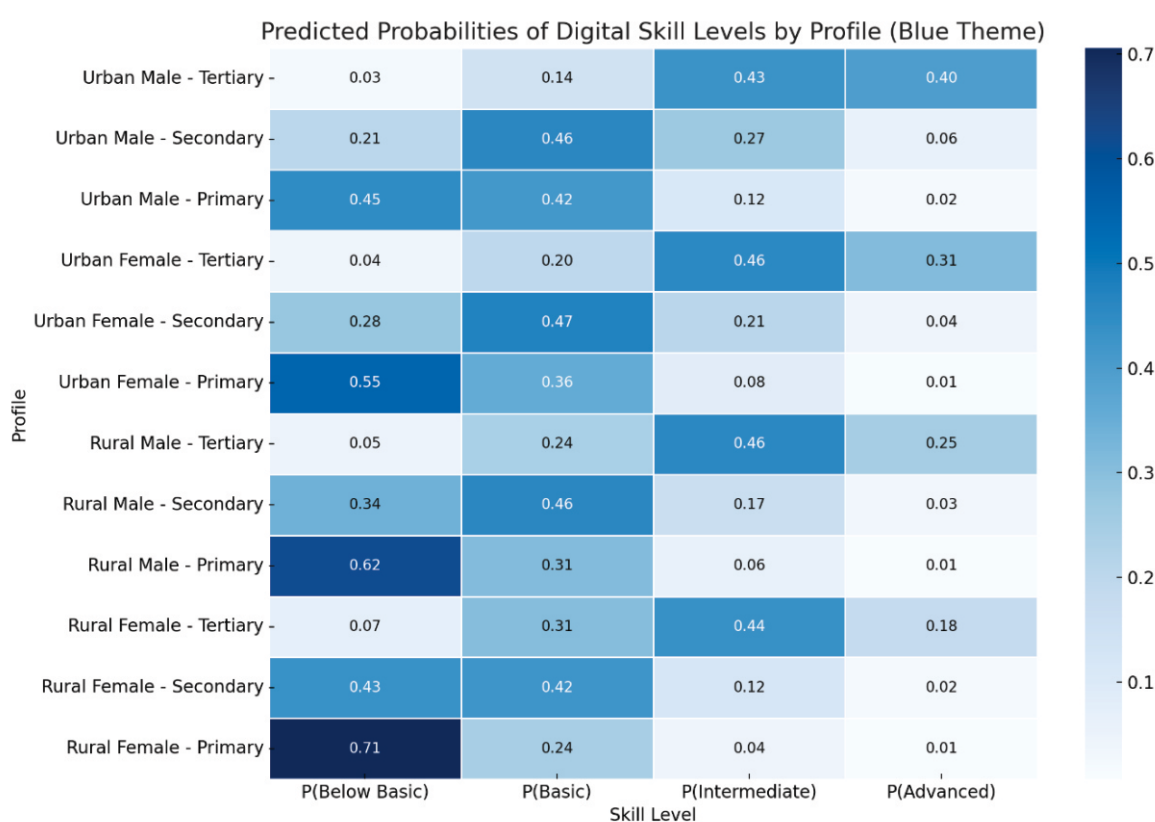


Figure 5-1 : Profile-based Predicted Probabilities

Each cell shows the predicted probability (in %) for that skills category, with a blue colour scale indicating the intensity of likelihood. The predicted probability results highlight a consistent relationship between education level, locality and digital skills attainment. Urban males and females with tertiary education have the highest likelihood of attaining Intermediate and Advanced digital skills. Urban males with tertiary education exhibit the highest likelihood of being classified as Advanced, with probabilities approaching 40%, while rural females with only primary education have the highest probabilities of falling into the Below Basic and Basic categories. The gradient across educational levels is particularly steep: as education level decreases from tertiary to primary, the predicted probability of achieving Advanced digital skills levels drops markedly, regardless of gender or locality.

5. DETERMINANTS OF DIGITAL LITERACY AND SKILLS IN ZIMBABWE

Furthermore, the urban-rural divide remains evident across all educational levels. Urban residents, regardless of sex, consistently show higher predicted probabilities for Intermediate and Advanced digital skills compared to their rural counterparts. For instance, even among those with secondary education, urban males and females are more likely to achieve higher skills levels than rural individuals. The impact of gender is also visible but less pronounced than the effects of education and locality. These findings reinforce the regression results and emphasise the compounded effects of locality and educational attainment on digital literacy outcomes.

5.2.5. Concluding Remarks on the Regression Results

The findings from these proportional odds ordinal logistic regression underline the complexities associated with digital skills acquisition in Zimbabwe. Strong statistical evidence points to formal computer training, access to internet services and higher educational attainment as the most powerful predictors of skill advancement. These factors exhibit large effect sizes, with odds ratios exceeding 3.0 and, in some cases, approaching 5.0, highlighting how targeted investments in education and digital infrastructure can yield substantial returns in national digital literacy outcomes. Equally important are demographic and structural dimensions. The urban-rural divide is stark, with urban residents consistently reporting higher skills levels even when controlling for education and training. Gender disparities are present, though less extreme, signalling that female populations still face underlying barriers to digital inclusion. Moreover, perceptions of equitable internet infrastructure and government investment, while less powerful statistically, hint at the broader social and psychological drivers of engagement. Altogether, the model confirms that closing Zimbabwe's digital divide will require not only educational and technological interventions but also structural equity and gender-responsive strategies.

6. COMPUTATION OF THE ZIMBABWE DIGITAL LITERACY INDEX (ZDLI) AND INDICATORS THAT TRACK PROGRESS IN DIGITAL LITERACY AND DIGITAL SKILLS OVER TIME.

6.1. Introduction

In the context of a rapidly evolving digital landscape, the need for comprehensive digital literacy has become increasingly paramount for nations striving for socio-economic development. In Zimbabwe, where disparities in access to technology and digital skills persist, establishing a clear framework for measuring digital literacy is essential. This section focuses on the computation of the Zimbabwe Digital Literacy Index (ZDLI), a quantitative tool designed for POTRAZ and relevant stakeholders to assess the digital skills of the population and track progress over time. Ultimately, the ZDLI serves as a vital tool for promoting digital empowerment and bridging the digital divide in Zimbabwe.

Furthermore, the research team established key indicators to monitor progress, such as people with basic digital literacy, internet penetration rates, participation in digital training programmes, and skills assessments; POTRAZ and stakeholders will be equipped to evaluate the effectiveness of policies aimed at enhancing digital literacy. This framework not only aims to inform policy makers but also seeks to foster a more inclusive digital environment, ensuring that all Zimbabweans can participate fully in the digital economy. This section also provides digital literacy growth projections towards a digitally enabled Zimbabwe for the period 2025–2030.

6.2. Zimbabwe Digital Literacy Index (ZDLI)

The ZDLI, a weighted score combining skills levels (Below Basic, Basic, Intermediate, Advanced) using a 1:2:3:4 contribution ratio, offers a composite view of digital proficiency across provinces and sexes. Nationally, the average ZDLI stands at 37.26%, with males scoring higher (39.76%) than females (34.97%), confirming earlier findings of a consistent gender gap in digital skills. At the provincial level, the highest ZDLI scores are observed in Bulawayo Metropolitan (46.43%), the top-ranked province overall, with strong female (47.32%) and male (45.41%) performance, driven by relatively high proportions of Intermediate and Advanced skills. Harare Metropolitan comes next (46.43% for males; 42.94% total), despite a significant gender gap. Males in Harare match Bulawayo's top ZDLI, buoyed by strong representation in higher skills bands.

6. COMPUTATION OF THE ZIMBABWE DIGITAL LITERACY INDEX (ZDLI) AND INDICATORS THAT TRACK PROGRESS IN DIGITAL LITERACY AND DIGITAL SKILLS OVER TIME.

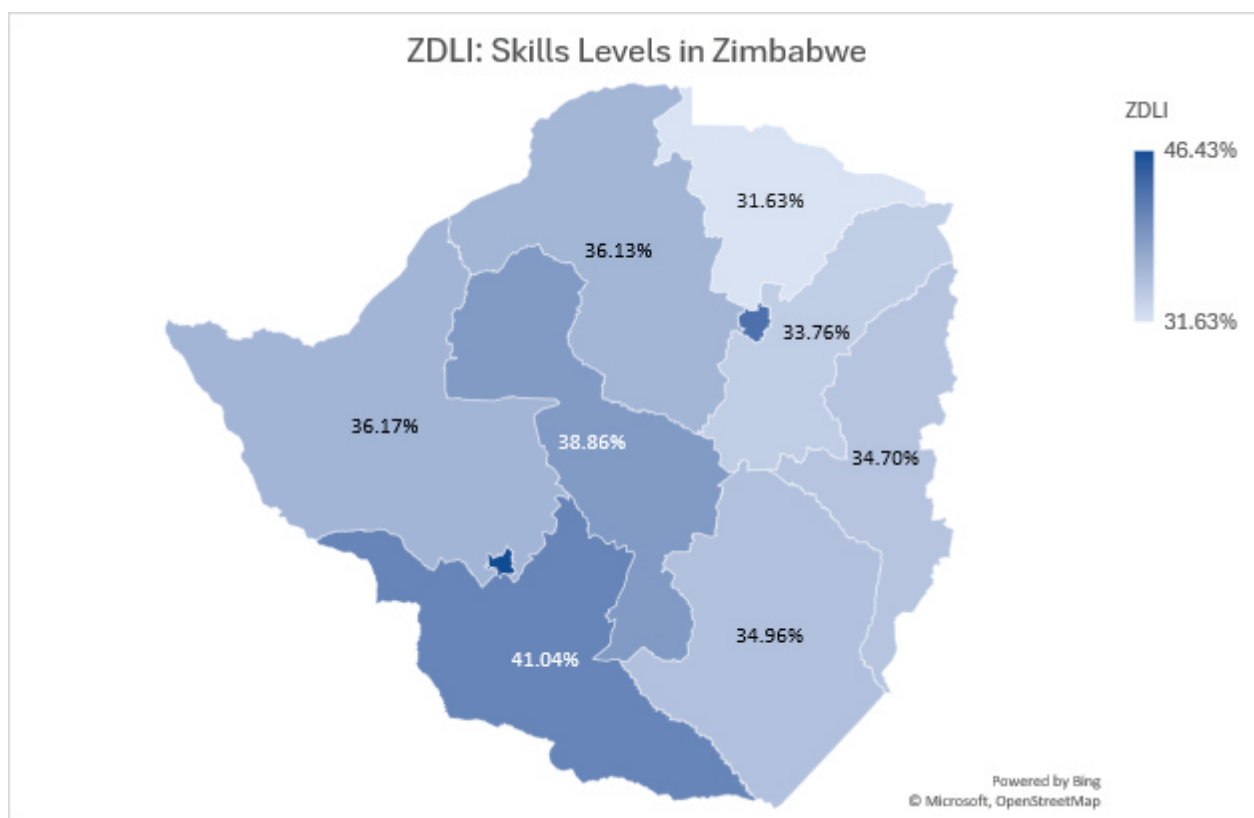


Figure 6-1: ZDLI: Skills Levels in Zimbabwe

Matabeleland South stands at 41.04% (total) with moderate balance across skills levels, though advanced representation is low, particularly among males (1.7%).

Provinces with mid-range ZDLI scores include Midlands(38.86%), with stronger male scores (41.06%), pushing the average upward. Mashonaland West (36.13%) and Matabeleland North (36.17%), with moderately balanced skill distributions with slightly better male performance.

Provinces with the lowest digital literacy indices are Mashonaland Central (31.63%), Manicaland (34.70%) and Masvingo (34.96%), characterised largely by high Below Basic rates and low-to-zero Advanced skills among females. Mashonaland East has a low score of 33.76%, while male scores are slightly higher at 35.11% because of minor improvements in Advanced skills.

6. COMPUTATION OF THE ZIMBABWE DIGITAL LITERACY INDEX (ZDLI) AND INDICATORS THAT TRACK PROGRESS IN DIGITAL LITERACY AND DIGITAL SKILLS OVER TIME.

Table 6-1: Zimbabwe Digital Literacy Index (ZDLI): Province and Sex Cross-tabulation

Province Name			Skills levels				ZDLI
			Below Basic	Basic	Intermediate	Advanced	
Bulawayo	Sex	Female	44.6%	32.1%	12.5%	10.7%	47.32%
		Male	40.8%	40.8%	14.3%	4.1%	45.41%
	Total		42.9%	36.2%	13.3%	7.6%	46.43%
Harare	Sex	Female	63.7%	17.6%	14.2%	4.4%	39.83%
		Male	49.5%	22.5%	20.9%	7.1%	46.43%
	Total		57.0%	19.9%	17.4%	5.7%	42.94%
Manicaland	Sex	Female	77.5%	19.5%	3.0%		31.36%
		Male	64.7%	19.6%	13.1%	2.6%	38.40%
	Total		71.4%	19.6%	7.8%	1.2%	34.70%
Mashonaland Central	Sex	Female	85.3%	8.3%	6.4%		30.28%
		Male	73.6%	22.6%	1.9%	1.9%	33.02%
	Total		79.5%	15.3%	4.2%	.9%	31.63%
Mashonaland East	Sex	Female	76.2%	17.5%	6.3%		32.52%
		Male	70.2%	22.1%	4.6%	3.1%	35.11%
	Total		73.4%	19.7%	5.5%	1.5%	33.76%
Mashonaland West	Sex	Female	77.6%	16.4%	2.6%	3.3%	32.89%
		Male	65.8%	19.5%	6.0%	8.7%	39.43%
	Total		71.8%	17.9%	4.3%	6.0%	36.13%
Masvingo	Sex	Female	83.6%	10.0%	5.7%	.7%	30.89%
		Male	62.8%	21.5%	9.9%	5.8%	39.67%
	Total		73.9%	15.3%	7.7%	3.1%	34.96%
Matabeleland North	Sex	Female	67.6%	25.4%	4.2%	2.8%	35.56%
		Male	67.2%	21.3%	8.2%	3.3%	36.89%
	Total		67.4%	23.5%	6.1%	3.0%	36.17%
Matabeleland South	Sex	Female	58.1%	24.2%	14.5%	3.2%	40.73%
		Male	56.9%	22.4%	19.0%	1.7%	41.38%
	Total		57.5%	23.3%	16.7%	2.5%	41.04%
Midlands	Sex	Female	64.9%	24.3%	9.5%	1.4%	36.82%
		Male	60.6%	19.7%	14.6%	5.1%	41.06%
	Total		62.8%	22.1%	11.9%	3.2%	38.86%
Total	Sex	Female	72.0%	18.3%	7.6%	2.2%	34.97%
		Male	61.9%	22.0%	11.3%	4.8%	39.76%
	Total		67.2%	20.0%	9.4%	3.4%	37.26%

Across nearly all provinces, males consistently out-perform females in ZDLI scores, sometimes by wide margins (e.g. Harare: 46.43% M vs 39.83% F; Masvingo: 39.67% M vs 30.89% F). This gendered pattern underscores the compounding effects of sex and geography in digital exclusion. The ZDLI provides a powerful synthesis of digital skills performance across Zimbabwe. It confirms that urban provinces and males are leading in digital literacy, while rural, female and educationally

6. COMPUTATION OF THE ZIMBABWE DIGITAL LITERACY INDEX (ZDLI) AND INDICATORS THAT TRACK PROGRESS IN DIGITAL LITERACY AND DIGITAL SKILLS OVER TIME.

disadvantaged populations remain significantly behind. These findings reinforce the need for targeted digital inclusion policies, especially for women and marginalised provinces, to ensure equitable digital transformation across the country.

6.3. Indicators to track progress in digital skills and literacy

6.3.1. Indicators for Digital Literacy

Table 6-2: Core Indicators for Digital Literacy (Measuring Basic to Intermediate digital competence among citizens)

Indicator	Baseline (2025)	Target (2030)	Data Source	Measurement Method
% of population with basic digital literacy	32.8%	50%	National Digital Literacy and Digital Skills Assessment Survey 2025 (NDLSA 2025)	NDLSA Survey
% of rural vs urban populations with Basic digital literacy	Rural: 23.4% Urban: 47.8%	Rural: 50% Urban: 70%	(NDLSA 2025)	NDLSA Survey
% of women with Basic digital literacy	28%	52%	(NDLSA 2025)	NDLSA Survey
% of schools integrating digital literacy in curriculum	45%	100%	Ministry of Education	School audits, teacher training logs

6.3.1.1. Digital Literacy Growth Projections Towards a Digitally Enabled Zimbabwe (2025 –2030)

As of 2025, Zimbabwe's national digital literacy rate stands at 32%, based on recent assessment. To align with global expectations of a digitally inclusive society, Zimbabwe aims to surpass the 50% digital literacy threshold by 2030. This target is consistent with the United Nations minimum benchmark, which defines a digitally enabled society as one where at least 50% of the population possess basic digital literacy and skills (UNESCO, 2022; ITU, 2023). This threshold is commonly used in international development planning for SDG 4 (Quality Education) and SDG 9 (Industry, Innovation and Infrastructure). Figure 6-2 is the projection chart showing how Zimbabwe's digital literacy rate could grow from the current 32% (2025) to reach the minimum UN threshold of 50% by 2030.

The model assumes a constant annual compound growth rate of approximately 9.42%. The Time- Series Simulation for 2025 to 2030 used a compound annual growth rate (CAGR) model in which the path required to raise digital literacy from 32% in 2025 to 50% by 2030 was simulated.

6. COMPUTATION OF THE ZIMBABWE DIGITAL LITERACY INDEX (ZDLI) AND INDICATORS THAT TRACK PROGRESS IN DIGITAL LITERACY AND DIGITAL SKILLS OVER TIME.

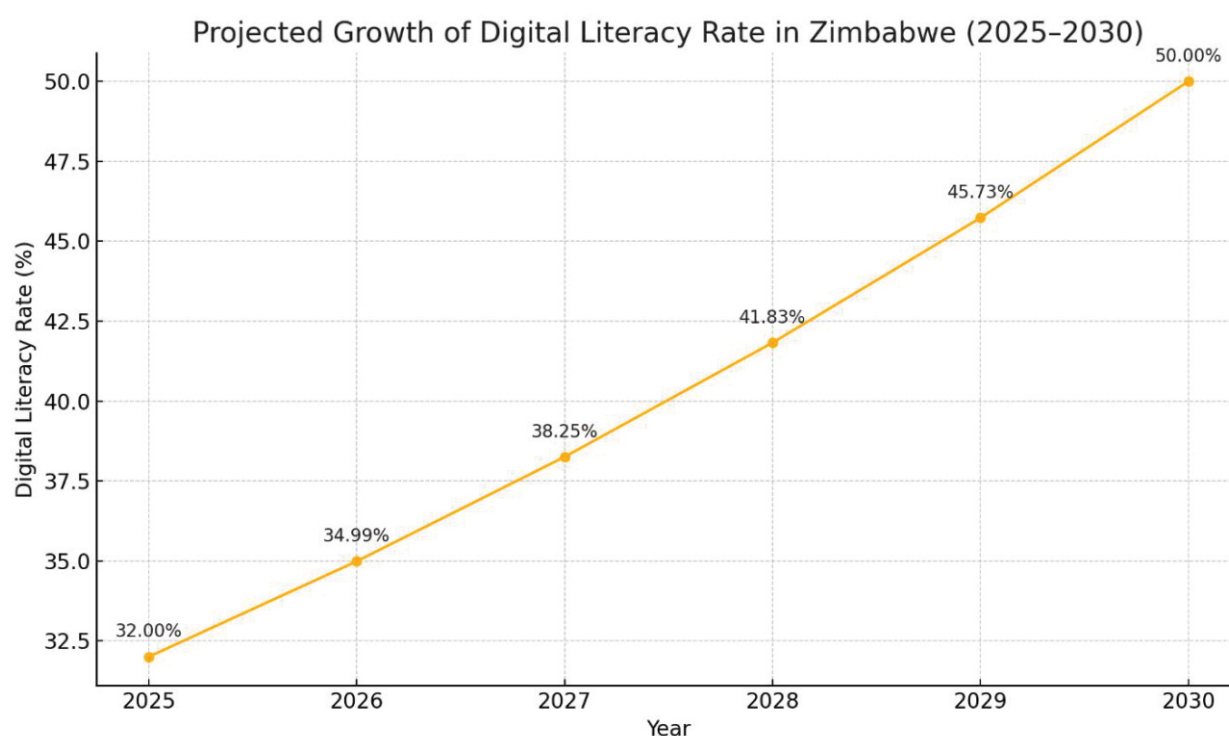


Figure 6–2: Digital Literacy Growth Projections (2025–2030)

The formula used is:

$$P_t = P_0 \times (1 + r)^t$$

Where:

- $P_0 = 32\%$ (starting literacy in 2025)
- $P_t = 50\%$ (target literacy in 2030)
- $t = 5$ years
- $r =$ annual growth rate required

Solving these yields:

$$r = \left(\frac{50}{32} \right)^{1/5} - 1 \approx 9.42\%$$

Zimbabwe must therefore achieve an average digital literacy growth of 9.42% per year from 2025 through to 2030 to meet the UN minimum benchmark. These figures assume a constant compound growth scenario driven by steady investment, infrastructure expansion, curriculum reform and digital inclusion efforts.

6. COMPUTATION OF THE ZIMBABWE DIGITAL LITERACY INDEX (ZDLI) AND INDICATORS THAT TRACK PROGRESS IN DIGITAL LITERACY AND DIGITAL SKILLS OVER TIME.

6.3.2. Indicators for Digital Skills

Table 6-3: Core Indicators for Digital Skills (Measuring technical and employability skills)

Indicator	Baseline (2025)	Target (2030)	Data Source	Measurement Method
Number of certified digital skills graduates (annually)	5,000	20,000	Training provider reports	Certification databases (Microsoft, Cisco, etc.)
% of youths(18–35) with intermediate digital skills	15%	60%	Labour Force Surveys	Skills assessment platforms (e.g. LinkedIn Skills)
% of MSMEs using digital tools (e-commerce, digital payments)	22%	80%	ZIMSTAT Business Surveys	Merchant transaction data (EcoCash, InnBucks)

6.3.3. Infrastructure and Access Indicators

Table 6-4: Infrastructure and Access Indicators (Measuring digital inclusion and connectivity)

Indicator	Baseline (2025)	Target (2030)	Data Source	Measurement Method
National internet penetration rate	76.2%	90%	POTRAZ Sector Reports	Network operator data
Mobile broadband coverage (4G/5G)	88%	100%	Telecom providers	Coverage mapping tools
Number of community digital hubs operational	50	1,000	POTRAZ Project Reports	Facility audits
Average cost of 1GB data (% of income)	5.2%	<2%	ITU Affordability Index	Pricing surveys
Electricity access in digital hubs	40%	100%	Rural Electrification Agency	Infrastructure assessments

6. COMPUTATION OF THE ZIMBABWE DIGITAL LITERACY INDEX (ZDLI) AND INDICATORS THAT TRACK PROGRESS IN DIGITAL LITERACY AND DIGITAL SKILLS OVER TIME.

6.3.4. Economic and Employment Impact Indicators

Table 6-5: Economic and Employment Impact Indicators (Measuring digital skills' effect on livelihoods)

Indicator	Baseline (2025)	Target (2030)	Data Source	Measurement Method
Youths(18-35) employed in ICT/digital jobs	8%	35%	Labour Force Survey	Employer payroll data
Reduction in informal sector due to digital formalisation	76% informal	50% informal	RBZ Financial Intelligence	SMEs Reports

6.3.5. Elements of the Zimbabwe Digital Literacy Index (ZDLI)

Table 6-6: Elements of the Zimbabwe Digital Literacy Index (ZDLI)

Basic Digital Literacy	Intermediate Digital Skills	Advanced Digital Competencies	Infrastructure & Access	Socioeconomic & Demographic Factors
Ability to use digital devices (smartphones, computers, tablets). Understanding of fundamental digital concepts (internet, email). Proficiency in productivity tools (Microsoft Office). Social media and online communication skills. Access to and use of digital services (e-government)	Digital content creation, organisation and collaboration . Cybersecurity basics . Use of digital services (e-government) . Basic troubleshooting and device maintenance.	Coding and software development skills. Data analytics and AI literacy. Cybersecurity awareness and best practices. Digital entrepreneurship and e-commerce capabilities .	Availability of internet connectivity (broadband, mobile data). Affordability of digital devices and data. Public and private sector support for digital upskilling	Urban vs rural digital inclusion. Gender disparities in digital access and skills. Age-related digital adoption trends

6. COMPUTATION OF THE ZIMBABWE DIGITAL LITERACY INDEX (ZDLI) AND INDICATORS THAT TRACK PROGRESS IN DIGITAL LITERACY AND DIGITAL SKILLS OVER TIME.

6.4 Concluding Remarks

The computed Time-Series Simulation for 2025 to 2030 used the compound annual growth rate (CAGR) model in which the path required to raise digital literacy from 32.8% in 2025 to 50% by 2030 was simulated. The model estimated the amount of effort needed yearly, a constant annual compound growth rate of approximately 9.42%, if Zimbabwe is to reach the United Nations minimum benchmark, which defines a digitally enabled society as one where at least 50% of the population possess basic digital literacy and skills (UNESCO, 2022; ITU, 2023).



7. ASSESSMENT OF THE DIGITAL LITERACY DIVIDE IN ZIMBABWE

7.1. Introduction

This chapter presents a comprehensive analysis of the digital literacy divide in Zimbabwe, with a focus on infrastructure availability, internet accessibility, the affordability of digital tools, and citizens' perceptions of inclusion and equity in the digital space. Drawing on disaggregated data by province, locality, sex and age, the chapter explores how structural and demographic factors shape digital experiences and access across the country. The findings expose significant disparities in connectivity, device affordability, perceived government effort and inclusive infrastructure development. These inequalities, especially pronounced along urban-rural and provincial lines, pose critical barriers to digital participation and skills development. The chapter concludes by examining citizens' awareness of digital rights and responsibilities, providing a holistic picture of digital inclusion and gaps in Zimbabwe.

7.2. Availability of internet infrastructure

7.2.1. Access to internet

The responses on the statement, 'It is easy to access the internet in my area', reveal notable variations across demographic and geographic categories in the heatmap as presented in figure 7.1. Overall, only a modest proportion of respondents selected 'Always' (14.1%) or 'Mostly' (24.7%), indicating generally limited satisfaction with internet accessibility. When disaggregated by sex, both males and females reported similar response patterns, with no statistically significant differences."

¹¹ $\chi^2(5) = 4.394, p = .494$

7. ASSESSMENT OF THE DIGITAL LITERACY DIVIDE IN ZIMBABWE

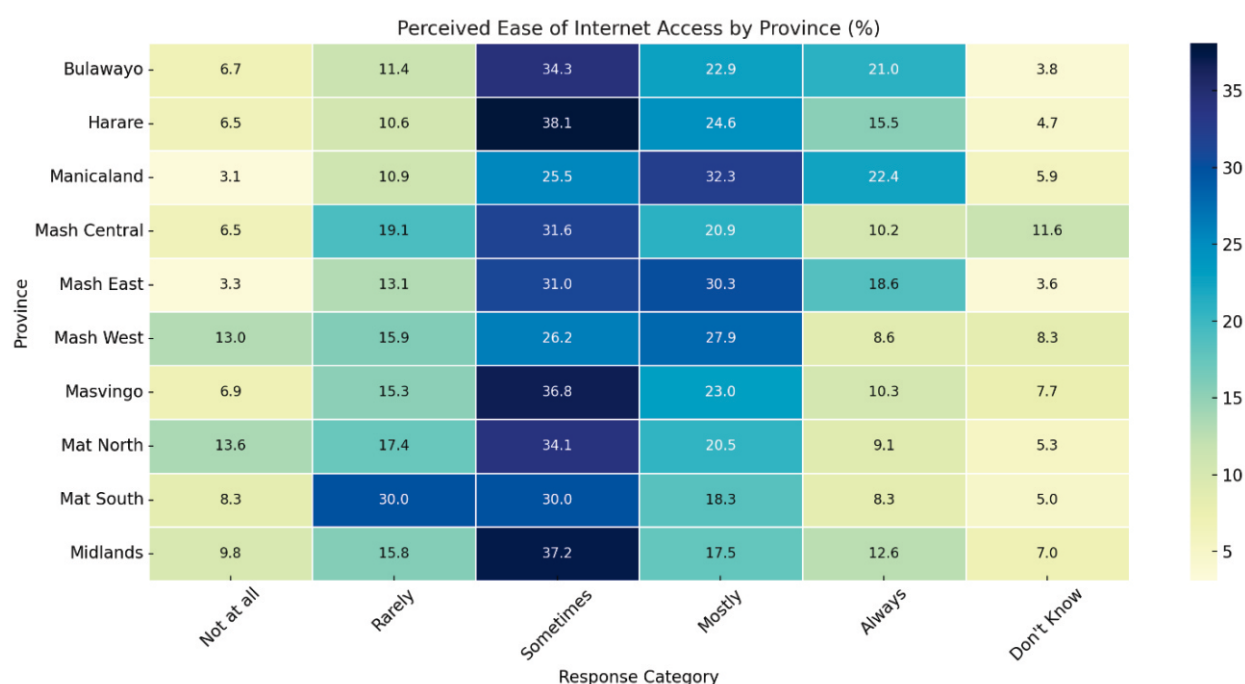


Figure 7-1 : Perceptions on Access to the Internet

This finding suggests that gender is not a major differentiator in perceived internet access. However, age showed a stronger variation: younger age groups (especially 21–30 and 31–40) were more likely to select 'Always' and 'Mostly', while older age groups, particularly those 61+ years, showed higher levels of uncertainty or disagreement, with up to 33.3% of the 71+ group responding 'Don't Know'. The age differences were statistically significant, implying generational disparities in both access and digital familiarity.

Geographical variables reveal even sharper contrasts. Participants from urban areas were significantly more likely to report 'Always' (19.3%) and 'Mostly' (31.1%) compared to their rural counterparts (10.8% and 20.7%, respectively), a highly significant difference.¹³ Across provinces, Harare Metropolitan, Bulawayo Metropolitan and Manicaland recorded relatively higher levels of agreement that the internet is accessible; over 21% of participants in these areas selected 'Always'. In contrast, provinces such as Matabeleland South, Mashonaland Central and Matabeleland North reported higher disagreement and uncertainty, reflecting infrastructural disparities. The provincial-level chi-square test further confirms that location is a strong determinant of perceived internet availability. These patterns suggest the persistence of a regional digital divide, where urban and better-resourced provinces enjoy better access, while peripheral and rural provinces face continued challenges. Targeted infrastructure investment in provinces with low 'Always' and 'Mostly' responses and high 'Rarely' and 'Not at all' rates may help bridge the provincial digital divide.

¹² $\chi^2(30) = 125.42, p < .001$

¹³ $\chi^2(5) = 137.41, p < .001$

¹⁴ $\chi^2(45) = 166.71, p < .001$

7. ASSESSMENT OF THE DIGITAL LITERACY DIVIDE IN ZIMBABWE

In light of the availability of internet infrastructure, it is noted that urban vs rural gaps exist everywhere, with rural areas often lacking fibre optics or cell towers, and this either slows internet or results in no internet. For instance, Zimbabwe has 80% urban 4G coverage vs <30% rural (POTRAZ, 2024), compounded with energy poverty (no electricity means no internet), in which 600M Africans lack grid access (IEA, 2023); rural populations cannot practise digital skills, even if they are trained.

7.2.2. Internet Strength

Perceptions of internet network strength vary significantly across Zimbabwe's provinces and localities. Urban participants generally expressed more favourable views than rural respondents: 13.9% of urban dwellers reported that the internet in their area was 'Always' strong, compared to only 6.9% in rural areas, while 'Mostly' responses stood at 30.5% (urban) vs 19.0% (rural).

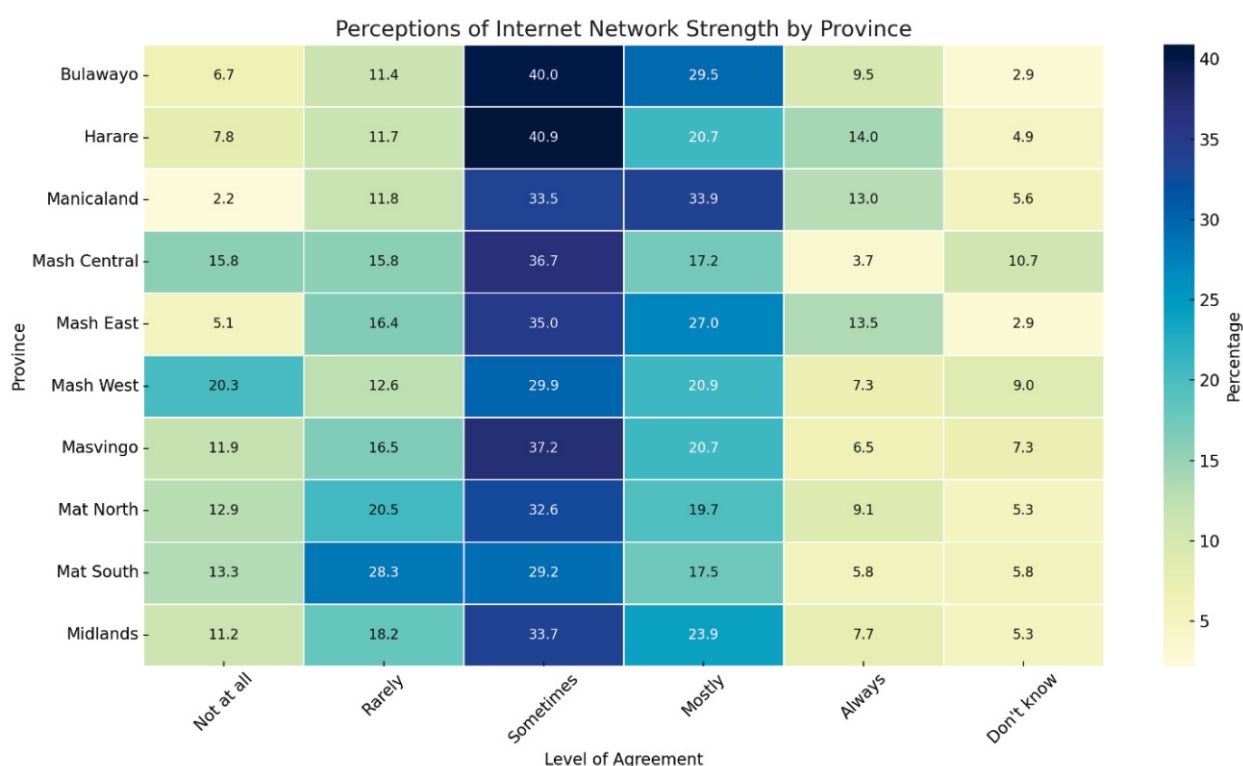


Figure 7-2: Perceptions on Network Strength

Conversely, negative perceptions such as 'Not at all' and 'Rarely' were considerably higher among rural participants, suggesting a persistent rural-urban divide in internet service quality. Provincial patterns mirrored this divide. The provinces of Manicaland, Harare Metropolitan and Bulawayo Metropolitan reported the highest ratings for network strength ('Always' and 'Mostly'), while Matabeleland South, Mashonaland Central and Mashonaland West showed higher dissatisfaction, with over 25% of respondents in each reporting 'Not at all' or 'Rarely'. These disparities were statistically significant across provinces¹³ and localities, underscoring regional inequality in digital infrastructure access.

7. ASSESSMENT OF THE DIGITAL LITERACY DIVIDE IN ZIMBABWE

¹⁷ In contrast, gender differences in perception of network strength were negligible, with males and females reporting almost identical response patterns across all categories. The difference was not statistically significant. However, age showed a clearer gradient: younger respondents (particularly those aged 21–30) were more likely to rate their network as 'Always' or 'Mostly' strong, whereas older age groups (61–70 and 71+) were less optimistic, with higher proportions saying 'Not at all' or selecting 'Don't Know'. Among those aged 71+, over 30% indicated uncertainty about network strength, hinting at potential barriers to engagement or usage. The association between age and perceived network quality was significant, suggesting that both infrastructure limitations and age-related digital exclusion may be influencing perceptions of internet network strength across the country.

7.2.3. Availability and Affordability of Internet Access Gadgets

Perceptions regarding the availability of internet access gadgets in Zimbabwe show substantial variation across provinces, localities and age groups, with statistically significant differences emerging. For example, urban respondents were more likely to agree that gadgets are readily available, with 17.9% selecting 'Always' and 30.9% selecting 'Mostly', compared to 8.1% and 21.2%, respectively, among rural respondents. This rura-urban divide was statistically significant,¹⁸ reflecting infrastructural disparities and access inequalities. At the provincial level, Bulawayo Metropolitan and Harare Metropolitan had the highest agreement scores for availability, with more than 60% of their residents selecting either 'Mostly' or 'Always'. In contrast, Matabeleland South, Midlands and Masvingo had much lower agreement levels and higher proportions selecting 'Not at all' or 'Rarely', a difference also supported by strong statistical significance.²⁰

Age differences further revealed noteworthy patterns. Younger age groups (21–30 and 31–40) had higher proportions agreeing that gadgets are available (29.4% and 26.6%, respectively, reporting 'Mostly'), while older adults aged 61–70 and 71+ were significantly more likely to report unavailability or express uncertainty, e.g. 28.6% of those aged 71+ selected 'Don't Know'.

¹⁵ $\chi^2(45) = 182.273, p < 0.001$

¹⁶ $\chi^2(5) = 141.03, p < .001$

¹⁷ $\chi^2(5) = 3.15, p = .676$

¹⁸ $\chi^2(30) = 108.19, p < .001$

¹⁹ $\chi^2(5) = 155.42, p < .001$

²⁰ $\chi^2(45) = 207.36, p < .001$

7. ASSESSMENT OF THE DIGITAL LITERACY DIVIDE IN ZIMBABWE

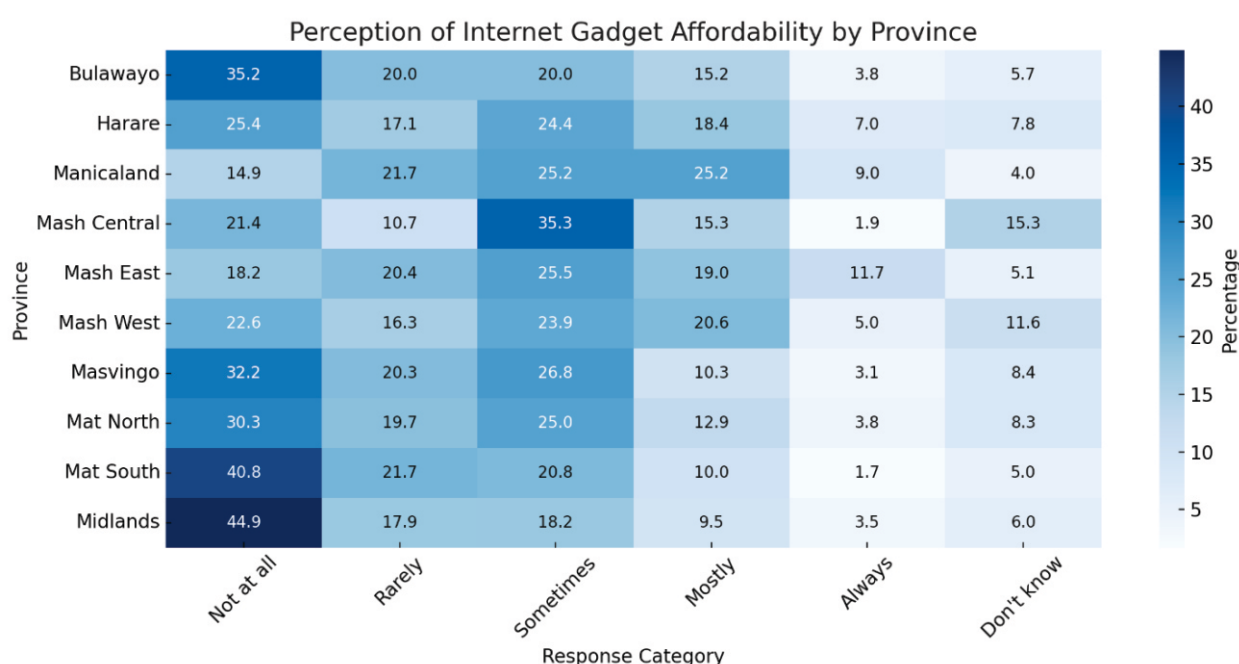


Figure 7-3: Perceptions on Gadget Affordability

These age-based disparities were statistically significant, probably reflecting generational differences in digital exposure and access. Interestingly, no significant difference was observed across sex,²² suggesting that men and women perceive the availability of gadgets similarly.

Respondents were asked to rate the affordability of internet access gadgets in their area, using a scale ranging from 'Not at all' to 'Always'. The data reveal notable differences across province, locality, sex and age group, with statistically significant associations in each case. A substantial proportion of respondents across the country (26.9%) felt that gadgets were 'Not at all' affordable. This perception was particularly strong in Midlands, Matabeleland South and Masvingo provinces, where between 31% and 45% of respondents expressed this view. In contrast, provinces such as Manicaland and Mashonaland East recorded relatively higher levels of perceived affordability, with over 25% of their respondents stating that gadgets were either 'Mostly' or 'Always' affordable. This provincial disparity was statistically significant,²³ pointing to entrenched regional inequalities in access to digital infrastructure.

Differences between rural and urban areas were also striking. Urban respondents were significantly more likely to perceive gadgets as affordable, with 38.8% stating they were 'Mostly' or 'Always' affordable, compared to only 25.5% among rural dwellers.²⁴ Similarly, age and gender shaped affordability perceptions. Younger participants (especially those aged 21-30) reported greater affordability, while older groups (51-70+) were more likely to say that gadgets were unaffordable.

²¹ $\chi^2(30) = 110.51, p < .001$

²² $\chi^2(5) = 6.61, p = .251$

²³ $\chi^2(45) = 219.23, p < .001$

²⁴ $\chi^2(5) = 39.06, p < .001$

7. ASSESSMENT OF THE DIGITAL LITERACY DIVIDE IN ZIMBABWE

The oldest age group (71+) also had a notably high 'Don't know' response rate (31%), suggesting possible digital disengagement. Gender differences, while statistically significant,²⁵ were more modest, with females slightly more likely than males to view gadgets as unaffordable. These patterns collectively underscore how structural and demographic factors contribute to perceptions of affordability, with clear implications for digital equity programming. In Nigeria, only 15% of rural households own a laptop (GSMA, 2024), and the data costs are high; hence, even if the infrastructure exists, people cannot afford to go online regularly.

7.2.4. Perceptions about Government Investment in Infrastructure

Perceptions regarding government investment in internet infrastructure vary substantially across Zimbabwe's provinces and population groups. The most pronounced variation occurred at the provincial level,²⁶ where Mashonaland East (46.7%), Masvingo (36.8%) and Manicaland (30.4%) showed the highest levels of scepticism ('Not at all'), while more moderate optimism was evident in Matabeleland North and Bulawayo Metropolitan, with higher responses in the 'Sometimes' and 'Mostly' categories. Across the board, however, only 3.9% nationally believed 'Always' that the government was investing in internet infrastructure. Importantly, Harare Metropolitan and Mashonaland West showed the highest levels of uncertainty, with over 30% of respondents saying 'Don't know', suggesting low awareness even in urbanised settings.

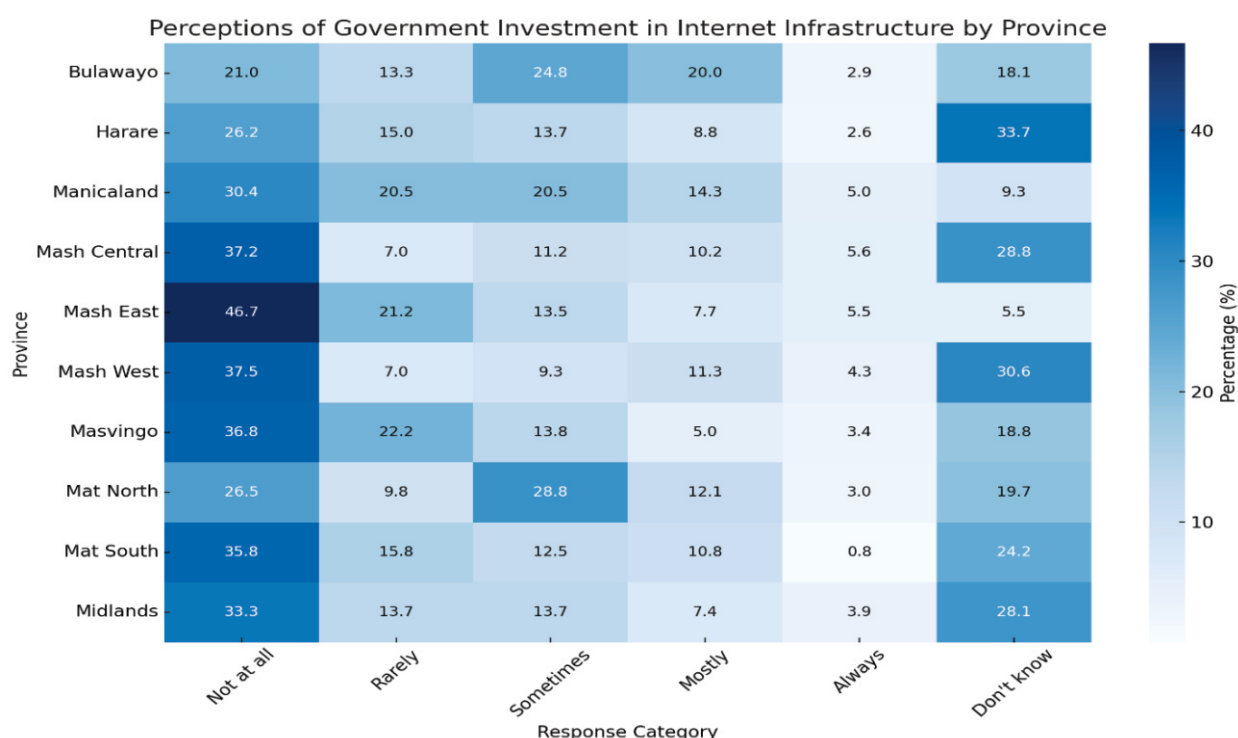


Figure 7-4: Perceptions on Government Investment

²⁵ $\chi^2(5) = 13.71, p = .018$

²⁶ $\chi^2(45) = 259.32, p < .001$

7. ASSESSMENT OF THE DIGITAL LITERACY DIVIDE IN ZIMBABWE

At the locality level, rural participants were significantly more sceptical,²⁷ with 37.7% saying that the government was investing 'Not at all', compared to 27.6% in urban areas. Urban residents were more likely to report occasional or consistent efforts by government ('Sometimes' to 'Always'). However, perceptions across sex were not statistically significant,²⁸ showing a similar pattern between men and women.

Age, however, showed a significant relationship,²⁹ with middle-aged adults (31–50) being the most sceptical and older adults (71+) the most uncertain, with 38.1% saying 'Don't know'. These findings reflect a broad lack of confidence or visibility around government-led infrastructure initiatives and point to the need for clearer communication and equitable policy visibility, especially in underserved rural areas and among the youth and older populations. These findings are in line with the findings from various studies (e.g. South Korea, Estonia), where universal broadband has led to 95%+ digital literacy, and weak investment (e.g. Chad, Haiti), with less than 10% internet penetration causing the skills to remain stagnant. Hence, without publicly funded networks or subsidies, digital literacy will lag.

7.2.5. Perceptions on Gender Balance in Internet Access

Overall, the national response reflects a moderate level of agreement that gender balance exists in terms of internet access, with 36.4% of respondents stating that 'Always' exists and a further 23.2% choosing 'Mostly'. However, 9.3% disagreed strongly (Not at all) while 13.0% expressed uncertainty ('Don't know'). Differences by locality reveal a significant urban–rural gap in perceptions: 30 41.3% of urban respondents perceived consistent gender balance ('Always') compared to 33.4% of rural respondents, while rural respondents were more likely to express uncertainty (12.8% rural vs 13.5% urban, 'Don't know'). Similarly, significant gender-based differences were observed:³¹ males were more likely to perceive gender balance ('Always', 39.8%) than females (33.3%), with females more likely to express disagreement or uncertainty.

²⁷ $\chi^2(5) = 43.44, p < .001$

²⁸ $\chi^2(5) = 8.04, p = .154$

²⁹ $\chi^2(30) = 71.09, p < .001$

³⁰ $\chi^2(5) = 19.21, p = .002$

³¹ $\chi^2(5) = 18.40, p = .002$

7. ASSESSMENT OF THE DIGITAL LITERACY DIVIDE IN ZIMBABWE

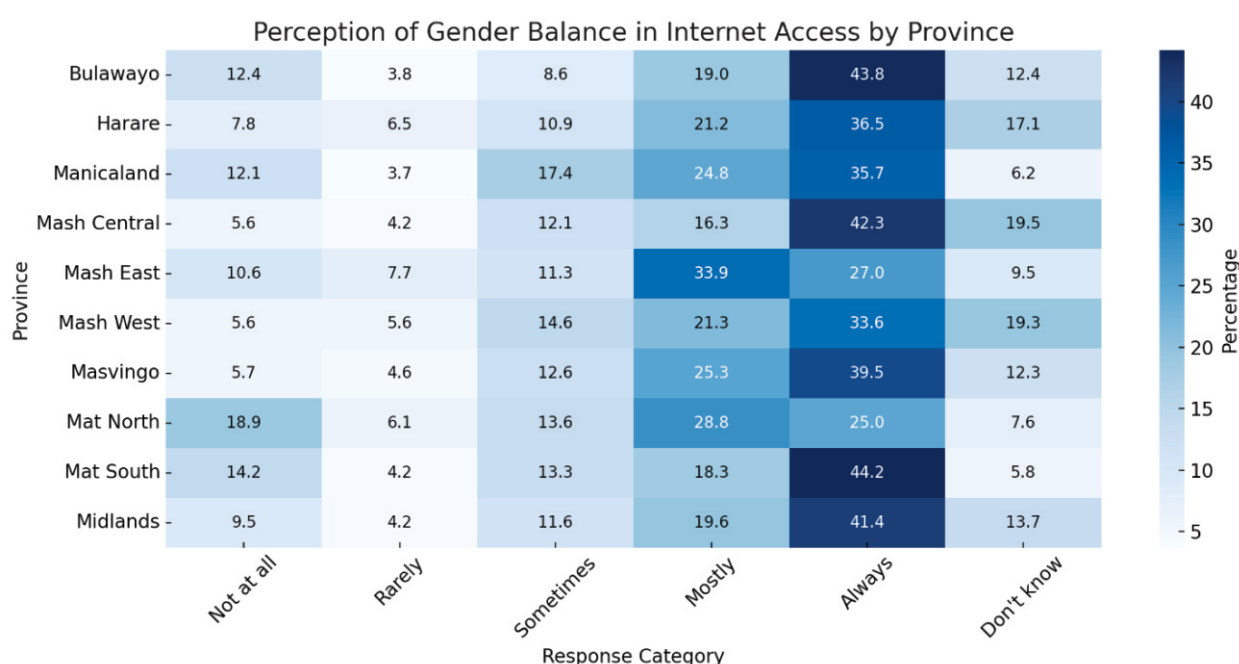


Figure 7-5: Perceptions on Gender Balance

Variation across provinces was also statistically significant.³² Provinces such as Matabeleland South (44.2%), Mashonaland Central (42.3%) and Midlands (41.4%) recorded the highest agreement on gender balance ('Always'), while Matabeleland North (25.0%) and Mashonaland East (27.0%) were comparatively lower. Bulawayo Metropolitan and Harare Metropolitan showed moderately high agreement but also higher uncertainty or neutral responses. Age-based differences³³ showed that the strongest agreement was among adults aged 31-50 (e.g. 40.5% of 31-40-year-olds), while both the youngest (10-20) and oldest (71+) groups expressed lower certainty and higher levels of 'Don't know'. These findings suggest that perceptions of digital gender balance vary not only by gender and locality but also across regional and generational lines, pointing to potential inequalities in either access or awareness.

7.2.6. Perceived Inclusion of People with Disabilities

Perceptions around the inclusion of people with disabilities in internet infrastructure development revealed significant provincial variations.

³² $\chi^2(45) = 138.69, p < .001$

³³ $\chi^2(30) = 94.42, p < .001$

³⁴ $\chi^2(45) = 233.28, p < .001$

7. ASSESSMENT OF THE DIGITAL LITERACY DIVIDE IN ZIMBABWE

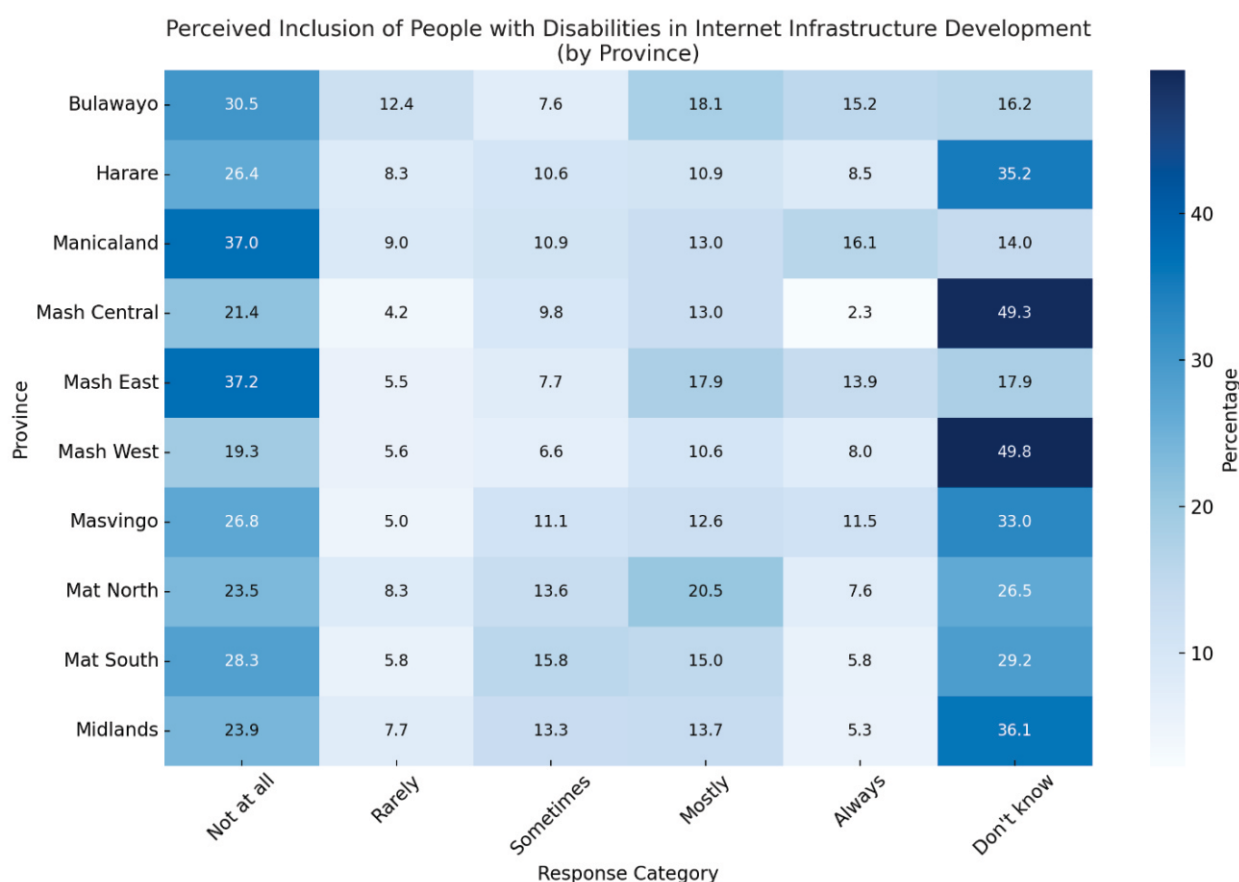


Figure 7-6: Perceptions on Perceived Inclusivity

Provinces such as Manicaland and Bulawayo Metropolitan had relatively higher proportions of respondents affirming that these needs are 'Always' or 'Mostly' considered (31.3% and 33.3% combined, respectively), while provinces such as Mashonaland Central and Mashonaland West had much higher proportions selecting 'Not at all' and 'Don't know' (49.3% and 49.8%, respectively), suggesting either a lack of visibility or low engagement in these regions. The finding suggests that, while some provinces may have more inclusive practices or at least awareness of such initiatives, others may suffer from either implementation gaps or communication failures regarding inclusive digital development.

When disaggregated by locality, urban residents were more likely to perceive disability inclusion positively, with 25.4% indicating 'Mostly' or 'Always', compared to rural residents (22.0%), though the difference was statistically significant but modest.³⁵ By sex, no statistically significant difference was found, 36 showing that men and women perceive disability inclusiveness similarly. Likewise, age-based differences were not significant, though older respondents (especially those aged 61+) were more likely to indicate 'Don't know', possibly reflecting generational gaps in awareness or visibility of disability-orientated tech initiatives.

³⁵ $\chi^2(5) = 11.69, p = .039$

³⁶ $\chi^2(5) = 1.26, p = .939$

³⁷ $\chi^2(30) = 31.30, p = .401$

7. ASSESSMENT OF THE DIGITAL LITERACY DIVIDE IN ZIMBABWE

Overall, while many respondents expressed uncertainty, there is evidence of emerging positive perceptions in specific provinces and among urban residents. However, disability issues need attention, as only 10% of websites meet Web Content Accessibility Guidelines (WCAG) standards (WebAIM, 2024) and the equipment has high assistive costs; for instance, screen readers can cost more than US\$1,000, which is unaffordable in low-income nations and, as a result, disabled individuals face extra hurdles in gaining digital skills.

7.2.7. Perception on Distribution of Internet Infrastructure

Across all respondents, only a modest portion (10.7%) believed that internet infrastructure is 'Always' equally distributed, while a significant 33.2% disagreed outright, selecting 'Not at all'.

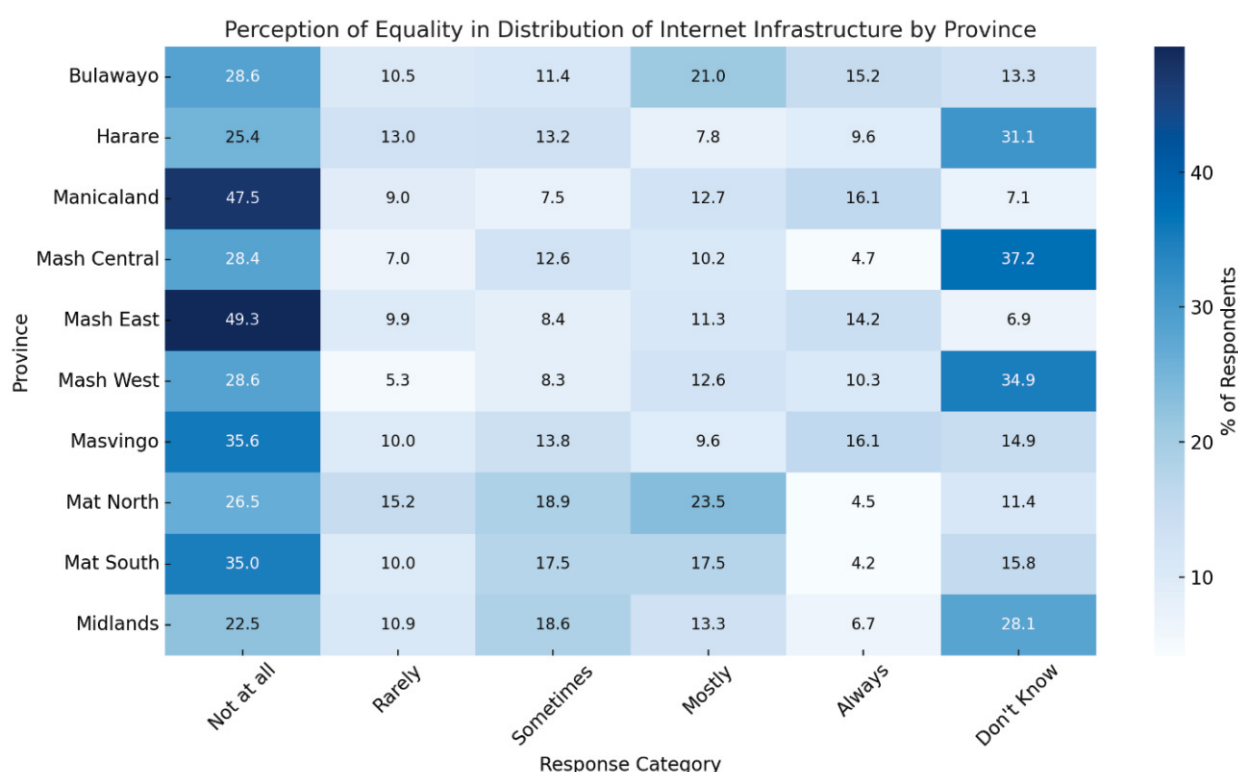


Figure 7-7: Perceptions on Infrastructure Distributions

Notably, Mashonaland East (49.3%), Manicaland (47.5%) and Harare (25.4%) had the highest proportions of respondents who felt that there was no equality in infrastructure distribution. On the other hand, provinces like Bulawayo (15.2%) and Masvingo (16.1%) showed relatively higher belief in equitable distribution. The results reflect strong provincial disparities and underline a perception gap, particularly in rural and underserved regions. Chi-square tests revealed that these differences were statistically significant. ³⁸ Examining locality and demographic breakdowns reveals deeper divides. Urban residents were more likely to believe in equal distribution ('Always', 13.0%) compared to their rural counterparts Don't Know% of Respondents 9.2%). Similarly, fewer rural respondents strongly disagreed ('Not at all', 37.5%) than urban respondents (26.3%),

³⁸ $\chi^2(45) = 332.77, p < .001$

7. ASSESSMENT OF THE DIGITAL LITERACY DIVIDE IN ZIMBABWE

but this difference may reflect more uncertainty in rural areas, as urban respondents also selected 'Don't know' more frequently. Gender differences were minimal and statistically non-significant, but age-based disparities were significant, 40 with younger respondents (ages 21-40) expressing greater dissatisfaction than older cohorts. Collectively, the results highlight that those perceptions of inequality in digital infrastructure distribution are widespread and patterned more by province and locale than by sex, reinforcing concerns about regional digital marginalisation.

7.2.8. Summary of Results on Access to Internet

The findings of this study highlight the multifaceted and deeply entrenched nature of the digital

Understanding the Digital Divide in Zimbabwe

Perceptions of digital inclusiveness in Zimbabwe reveal significant disparities among provinces, between urban and rural localities, and across different demographic groups.



Internet Access

Access to internet is lower in rural areas than urban.



Availability and Affordability of Gadgets

Availability and affordability of digital gadgets are better in urban areas (47% and 36%) than in rural areas (23% and 19%).



Gender Equality

Although overall only 21% 'Always' saw gender balance in internet access, males (27%) perceived greater balance than females (14%).



Disability Inclusion

Only a few participant in urban (11%) and much less in rural (8%) areas acknowledged that inclusive internet infrastructure development was 'Always' considered.



Government Effort

Just 12% of respondents perceived government investment in the internet to be expanding, while 38% believed it was not expanding.



Distribution of Infrastructure

Equal distribution of internet was acknowledged more in urban (14%) than rural (8%) areas.

divide across Zimbabwe. While there is growing access to internet infrastructure, significant disparities persist across province, locality, gender, age and levels of socio-economic development. Urban areas, particularly Harare Metropolitan and Bulawayo Metropolitan, show relatively higher access, better infrastructure strength, and greater affordability of digital tools. In contrast, rural provinces such as Matabeleland South, Mashonaland Central and parts of Manicaland report poor internet strength, low availability of devices, and a more acute sense of exclusion from digital services. Young adults aged 21-30 appear more digitally included, while older populations and rural youth continue to experience lower digital accessibility. Perceptions around government efforts to improve digital infrastructure are mixed. Although some progress is acknowledged, a significant portion of respondents remain unsure or disagree that government investment is increasing. Additionally, issues of gender and disability inclusion in the digital space remain critical. While some participants believe there is gender balance in access, disparities are still perceived, particularly among females in rural areas. Even more concerning is the widespread sentiment that the needs of people with disabilities are not being adequately considered in internet infrastructure planning. The distribution of infrastructure itself is also considered unequal, with many expressing concerns over inequities between urban and rural localities. These findings call for deliberate, inclusive and equity-driven strategies by stakeholders to bridge the digital divide in Zimbabwe and promote universal digital access.

Figure 7-8: Summary of Results on Digital Divide

³⁹ $\chi^2(5) = 3.69, p = .594$

⁴⁰ $\chi^2(30) = 62.08, p = .001$

7. ASSESSMENT OF THE DIGITAL LITERACY DIVIDE IN ZIMBABWE

Key findings of the observation approach include: urban-rural divide, with functional labs in cities vs idle devices in rural schools; public access challenges in which Internet cafes and Wi-Fi hotspots were underutilised due to low literacy (e.g. hesitancy towards self-service kiosks); household access differences with Wi-Fi adoption in Bulawayo/Plumtree homes vs none in remote areas. Observations also highlighted hardware gaps (e.g. outdated devices hindering efficiency); pinpointed energy challenges (e.g. power shortages crippling rural labs); uncovered demographic disparities based on age and gender gaps, with the older adults and women lagging in tech engagement. Sectoral differences were also observed in healthcare and finance-embraced tech, and education lagged behind in rural areas. Observation also validated survey data (e.g. confirming urban youth dominance in tech use), informing targeted interventions, actionable insights for POTRAZ, such as prioritising the rural infrastructure (solar-powered hubs, device upgrades), designing literacy programmes for women/older adults, expanding Wi-Fi hotspots with usability training. This provided evidence for policy (e.g. proving that rural schools need power solutions) and guided equitable resource allocation.

7.3. Digital Citizenship

7.3.1. Digital Rights and Responsibilities Awareness

The analysis reveals a relatively high self-reported awareness of both digital rights and responsibilities among participants, though with slight variations in emphasis. The analysis indicates that participants generally have a high self-reported awareness of both digital rights and responsibilities, although there are slight variations in emphasis, with relatively more confidence in their responsibilities. The distribution of responses shows strong alignment between the two constructs, with 28-29% of respondents remaining neutral on both, suggesting a shared level of uncertainty. Provincial patterns indicate that residents of Bulawayo, Harare, Masvingo and Matabeleland South report stronger agreement with both statements, while Mashonaland Central and Matabeleland North had notably lower agreement and higher levels of uncertainty or disagreement. Significant variation across provinces was confirmed (rights; responsibilities*2), indicating that regional context, digital literacy initiatives or exposure may contribute to uneven digital empowerment.

7. ASSESSMENT OF THE DIGITAL LITERACY DIVIDE IN ZIMBABWE

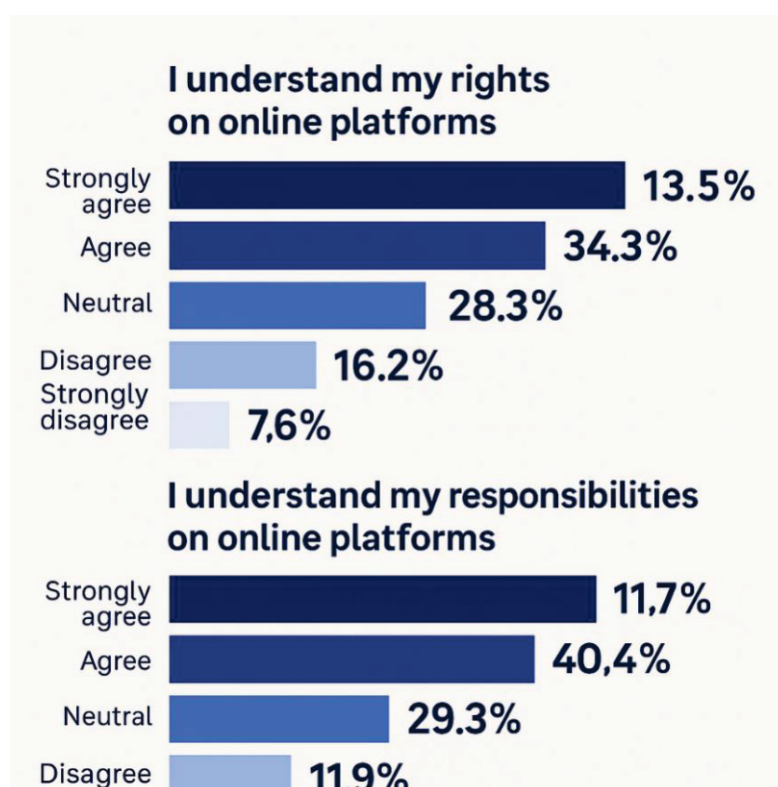


Figure 7-9: Digital Rights and Responsibilities Awareness

Participants in urban areas demonstrated a better understanding of their rights (15.7% vs 12.2%) and responsibilities (15.1% vs 9.6%) than those in rural areas. This urban-rural gap was statistically significant (rights; responsibilities**), suggesting that infrastructural or educational differences may underpin digital citizenship comprehension. Males reported slightly higher agreement levels than females, 45 while younger participants (especially those aged 21-30) showed the most confidence in understanding both aspects of digital citizenship. In contrast, older age groups (51+) were more likely to select neutral or disagreement responses, suggesting potential gaps in digital awareness or confidence. The consistent alignment in patterns across the two variables points to a strong relationship between awareness of rights and awareness of responsibilities in the digital space – those who feel informed about one tend to feel informed about the other. This coherence reflects a holistic understanding of digital citizenship among more digitally engaged groups.

⁴¹ $\chi^2(36) = 252.46, p < .001$

⁴² $\chi^2(36) = 211.15, p < .001$

⁴³ $\chi^2(4) = 30.79, p < .001$

⁴⁴ $\chi^2(4) = 31.72, p < .001$

⁴⁵ rights: $\chi^2(4) = 20.25, p < .001$; responsibilities: $\chi^2(4) = 23.85, p < .001$

⁴⁶ rights: $\chi^2(24) = 85.26, p < .001$; responsibilities: $\chi^2(24) = 99.89, p < .001$

7. ASSESSMENT OF THE DIGITAL LITERACY DIVIDE IN ZIMBABWE

7.3.2. Positive Digital Citizenship

The data reveal strong endorsements for digital citizenship values among Zimbabwean respondents, particularly in promoting positive online behaviour and supporting the safe use of internet resources.

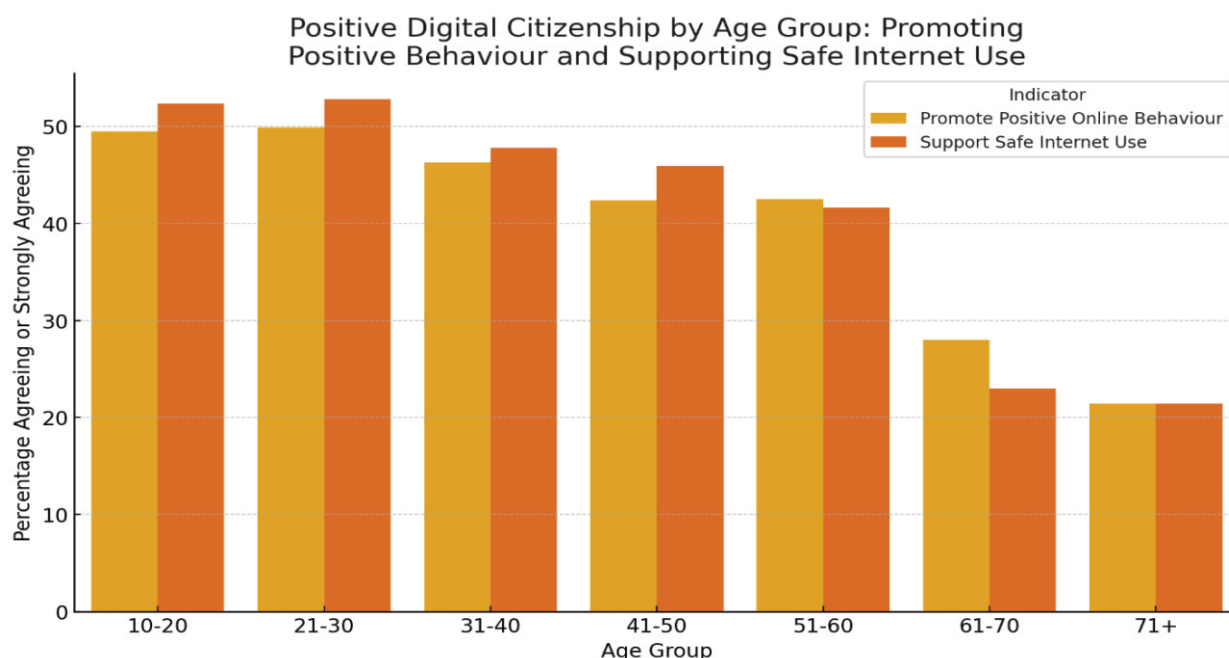


Figure 7-10 : Positive Digital Citizenship

Overall, 64.3% of respondents agreed, or strongly agreed, that they promote positive behaviour online, while 68.3% indicated support for safe internet use. Provincial comparisons show consistently high levels of support in provinces such as Harare, Manicaland and Mashonaland East, where over 70% of respondents endorsed positive digital behaviour. However, Matabeleland North and Midlands had lower proportions of respondents who strongly agreed with positive digital behaviour. Urban respondents were significantly more likely to support both behaviours strongly (behaviour: 21.8% urban vs 16.4% rural; safe use: 23.7% urban vs 18.6% rural), a pattern reinforced by chi-square tests showing statistically significant associations across province,⁴⁷ locality,⁴⁸ and sex.⁴⁹

Demographic patterns further highlight generational and gendered dynamics in digital citizenship. Males showed stronger agreement than females both in promoting positive behaviour (21.4% vs 15.9%) and in supporting safe internet use (23.4% vs 18.0%). Age stratification revealed that younger respondents (10–40 years) were much more likely to agree or strongly agree with both statements (e.g. ages 21–30: 70.7% promote positive behaviour; 73.4% support safe use), whereas those aged 61 and above showed the lowest support, with strong agreement dropping below 20% and disagreement or neutrality rising sharply.

⁴⁷ $\chi^2(36)=162.3, p<.001$

⁴⁸ $\chi^2(4)=38.3, p<.001$

⁴⁹ $\chi^2(4)=19.5, p=.001$

7. ASSESSMENT OF THE DIGITAL LITERACY DIVIDE IN ZIMBABWE

The decline suggests gaps in digital engagement and confidence among older populations, highlighting the need for targeted awareness and training for seniors to promote safer and more responsible digital behaviour across generations.

7.3.3. Summary on Digital Citizenship

The findings on digital citizenship in Zimbabwe paint a complex picture of growing awareness mixed with notable demographic disparities. On the one hand, a significant portion of the population – particularly urban, younger and male respondents demonstrates high levels of understanding of both digital rights and responsibilities. For instance, 50% or more of participants agreed or strongly agreed that they understood their digital responsibilities, while 48% expressed similar confidence about their rights. However, this confidence diminishes notably among older age groups and rural populations, where neutrality or uncertainty was more common, reflecting gaps in digital literacy and empowerment.

Complementing this, perceptions of positive digital behaviour and safe internet use are also relatively strong, with over 60% of respondents stating that they either agree or strongly agree that they uphold positive conduct and support safe internet practices. Still, this sense of proactive digital citizenship is more pronounced among urban and younger users and less evident among the elderly and those in rural areas, indicating potential vulnerabilities in cyber safety knowledge. Chi-square tests revealed statistically significant differences across sex, locality and province for all digital citizenship items, suggesting that structural, cultural and access-based factors continue to shape how Zimbabweans experience and participate in digital spaces. To ensure an inclusive digital transformation, interventions must address these gaps through targeted education, infrastructure development, and public-awareness campaigns.

7.3.4. Conclusion



Figure 7-11 : Summary on Digital Citizenship

The findings of this research generally point to the fact that the digital literacy divide is not just about skills it is shaped by structural inequalities in internet infrastructure, device access, afford ability, government policies, gender disparities and disability inclusion. There search also note dare that, globally, if there challenges of availability and afford ability of devices (smartphone/PCaccess), this may limit learning when individuals share or use outdated devices.

8. THE CURRENT DEMAND AND SUPPLY OF DIGITAL SKILLS ACROSS THE COUNTRY'S KEY ECONOMIC SECTORS – A GAP ANALYSIS.

8.1. Introduction

This section examines the disparities between the demand for and supply of digital skills in Zimbabwe's key economic sectors, identifying critical gaps that hinder digital transformation. Drawing on qualitative insights from institutional stakeholders – including government, academia, private enterprise and civil society, the analysis explores sectoral digital readiness, prevalent technologies and workforce competencies.

8.2. Readiness and Skills Levels

8.2.1. Use of Digital Technologies in Sector Operations

Digital technologies are transforming industries worldwide, but adoption varies significantly by sector, region and economic development. There are high-adoption sectors such as finance and banking. In developed countries, there is near-universal digitisation for mobile payments. In China, 89% of adults use mobile payments are widely used, with Alipay being popular in various regions and 82% of people in Kenya using M-Pesa. In the Western world, there is a strong adoption of blockchain and AI, with the USA/Europe having 75% of banks using AI for fraud detection (McKinsey, 2024). During and after the COVID-19 period, healthcare has seen a rapid growth in the use of digital technologies, with telemedicine being used in 60% of clinics globally (WHO, 2023). India is leading in this area with more than 250 million people undertaking e-consultations a year.

The EU adopted AI diagnostics, with 40% of radiology using AI-assisted imaging (Frost and Sullivan, 2023). The principle of hybrid learning is also gaining traction in education as the new normal. E-learning platforms are increasing with the global EdTech market blooming. By the end of 2025, estimates suggest it will grow into a \$400 billion business (HolonIQ, 2023). In sub-Saharan Africa, 30% of schools use digital tools (UNESCO, 2022). The moderate-adoption sectors include agriculture precision farming is rising). These sectors continue to experiment with IoT technology and drones for agricultural purposes. However, the USA and EU are seeing 50% of large farms using sensors to monitor crops (FAO, 2023). Owing to a lack of infrastructure, Zimbabwe's adoption rate is only about 10%. Elsewhere, India's 20 million farmers are getting SMS weather alerts (Digital Green, 2023). Industry 4.0 in advanced economies is using robotics and automation in manufacturing, with 65% of Germany's factories using smart systems (Boston Consulting Group (BCG), 2023).

The sectors with low adoption rates include the public sector, which is lagging behind, particularly in e-government services. This situation exists despite countries such as Estonia having 99% of their services available online. Zimbabwe's digital adoption rate remains at 20%, primarily due to poor digital ID systems. The informal sector is worse off with minimal tech use. In Africa and Asia, less than 5% of street vendors use digital tools.

8. THE CURRENT DEMAND AND SUPPLY OF DIGITAL SKILLS ACROSS THE COUNTRY'S KEY ECONOMIC SECTORS – A GAP ANALYSIS.

Emerging Themes

Widespread Adoption: Most sectors reported regular or full reliance on digital technologies. Digital integration is widespread but varies in depth and sophistication.

Common Technologies Mentioned: Microsoft Office software, SAP systems, databases, digital communication tools, and sector-specific systems (e.g. TelOne infrastructure, EMA monitoring tools). Basic digital tools such as Microsoft Office and communication platforms are commonly used.

Sector Variability: The public-service sector tends to use technology for administration and planning, while the private and technical sectors employ more specialised tools. Sector-specific technologies (e.g. SAP, fibre optic systems, environmental monitoring tools) are emerging in select industries. Some rural or smaller institutions remain digitally under-resourced or partially transitioned.

Across nearly all interviewed institutions, there was a clear affirmation that digital technologies are integral to daily operations. The nature and intensity of digital integration, however, varied considerably between sectors and even among institutions within the same domain. Many organisations saw digital technologies as foundational tools for administration, communication, planning and service delivery. One respondent explained: 'Office computers are used. The International Certification of Digital Literacy (ICDL) is a common certification', reflecting both the routine presence of digital tools and the institutional effort to certify basic ICT competency among staff. Similarly, a representative from an institution of higher learning confirmed that 'starting from the student registration system to online lectures, most operations are now digitised', illustrating the pervasive role of technology in higher education.

In technical and infrastructure-based sectors, digital usage is tied closely to operational efficiency. For instance, one respondent noted that 'to a large extent, skills required include data analysis and fibre optics handling, indicating the need for specialised digital infrastructure skills in the telecommunications sector. Even in environmental regulation, technology plays a key role. In addition to this, another respondent reported that 'the use of digital tools for monitoring and enforcement is now standard', though they admitted that the sophistication of tools varies by region.

Some sectoral organisations also acknowledged an ongoing transition to digital platforms, although many faced infrastructure or capacity limitations. One remarked, 'Microsoft tools are common. It's easy to get started, but full adoption is uneven', highlighting the gap between availability and effective use. Meanwhile, in the legal and policy domain, a respondent described how digital tools are used inconsistently: 'In my constituency, we use WhatsApp groups to communicate issues, but beyond that, there's no structured use of technology.'

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These examples show a broad endorsement of digital technologies across sectors. However, these examples also highlight the underlying disparities in the level of integration, as some institutions are only beginning to explore digital ecosystems, while others are actively developing them

Table 8-1: Common Tools and Technologies Used in the Government Sector

E-health	Electronic Health Record (EHR) systems Electronics Logistics Management Information System (ELMIS) used in Pharmacies Laboratory Information Management System (LIMS) Impilo HR Stock Management Template (SMT)
E-education	Computer laboratories with the ICT equipment such as computers, printers, projectors, white boards and internet to enable students, lectures and teachers to have access to online courses, degree programmes, educational resources and materials, virtual classrooms.
E-agriculture	Agricultural Extension Officers have been equipped with digital tools such as tablets, to facilitate the dissemination of information and best practices to farmers . The use of mobile applications, drones to assist farmers in monitoring crop and livestock health.
Digital Innovation Centres (DICs)	Offering services such as printing, photocopying, gaming, and basic digital literacy training is also offered at these centres.
Other systems within government departments	Systems Applications and Products in Data Processing,(SAP) Customer Relationship Management and Human Resources Management Information Systems. Public Finance Management Systems (PFMS) Platform. PFMS kiosks have been established in the districts nationwide for the same purpose.
Other technologies	Cloud computing

8.2.2. General Supply of Digitally Skilled Labour

The world faces a critical imbalance in digital skills supply, with high concentrations in tech hubs and severe shortages in emerging economies. There are 5.4 billion people (69% of the global population) with basic digital literacy. Only 500 million of individuals possess job-ready digital skills. However, advanced skills (AI, cloud computing, etc.) are held by just 50 million professionals. Critical shortages are in cybersecurity, with 3.5 million unfilled jobs; AI/Machine Learning, with a one million gap globally (Stanford AI Index, 2024); and in cloud computing, with a gap of 600,000 needed to be filled (ITU, 2024; World Bank 2023; Amazon Web Services; ISC2, 2023). Key challenges causing gaps include the education gap, contributing to 60% of employers reporting skills mismatch; the gender divide, showing that women hold just 22% of AI jobs; and geographic inequality, showing that 80% of African tech talent is concentrated in cities (WEF Gender Gap Report 2024; AfDB, 2024).

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Notwithstanding the above, in Zimbabwe the following emerged:

- General Shortages Noted: Many participants report insufficient qualified digital personnel to meet sector demands.
- Uneven Distribution: Skills availability varies by location and type of institution. Urban-rural disparities and institutional differences affect supply.
- Sector-driven Training Efforts : Some institutions and firms are upskilling internally or collaborating with training providers. Some sectors rely on internal upskilling or external training partnerships to close the gap.
- Basic ICT Skills: Are common , but advanced competencies are scarce.

A recurring theme across interviews was the insufficient supply of qualified individuals to meet the growing digital demands within sectors. Participants emphasised a mismatch between available skill sets and the complexity of tasks now required in increasingly digital workplaces.

In academia, one key informant reported of a limited pool of qualified digital professionals, stating, 'Qualified personnel mostly have basic skills. Programming and data analysis are only now being introduced. This reflects a broader challenge, where institutions are only beginning to expand their digital training capacity. Another respondent confirmed this concern, noting, 'For technical roles, the supply is not sufficient. Generally, students have basic familiarity, but deeper skills are lacking!' The government sector reported growth, but this growth is limited to basic skills in digitally skilled labour, stating that it is growing but remains restricted particularly in rural areas.

'This is because the graduates from the institutions provide a moderate supply of digital skills such as data entry, basic networking, software use and digital administration, whereas in rural areas it is even much lower due to limited access to ICT training facilities. Both the government and its stakeholders provide digital innovation centres; some NGOs provide basic digital literacy training, but this is not enough in technical and professional settings. This is not enough to meet the demand '

Other sectors echoed similar sentiments and admitted that their digital capabilities were constrained by a lack of talent: 'Not enough trained people, especially in intermediate digital skills.' Similarly, another respondent stated, 'We have basic IT skills and basic database knowledge, but more advanced applications and advanced proficiency are not there at all.' Even where there were skilled individuals, they were often in short supply.

Some institutions noted efforts to bridge these gaps through internal training or partnerships. One indicated: 'We are definitely training students to meet labour-market needs. These professionals are not yet sufficient, but we are making progress. However, that situation was more the exception than the norm. In several instances, the challenge was not only about technical skills but also about digital literacy and confidence among older staff or those in rural settings. One key informant highlighted this clearly: 'Mostly manual systems are still in use due to a lack of skills', reflecting a deep-rooted reliance on analogue systems that hinder digital transitions.

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It emerged that, in terms of infrastructure, there were shortages of digitally skilled labour, given that only one IT person was servicing the entire province. One key informant noted: 'The other employees are digitally literate, especially in basic skills, but we cannot really say there are adequate numbers of skilled personnel. In the education sector, it was also noted that there were acute shortages, especially in schools within districts: 'Not sufficient numbers in skilled teachers and officers in terms of digital literacy.

8.2.3. Required Digital Skills and Proficiency Levels

The demand for digital skills is growing rapidly across all industries, driven by digital transformation, automation and AI adoption. Globally, digital skills are required, and their proficiency levels range from Basic to Advanced. At the Basic level, all professionals, including those in non-tech roles, need these skills for basic computer operations (file management and software installation); internet navigation and online safety (cybersecurity awareness); email and communication tools (Microsoft Outlook and Gmail); and word-processing and spreadsheets (Microsoft Office and Google Workspace). At intermediate levels, office workers, marketers, analysts and managers require data literacy for spreadsheet analysis (Excel/Google Sheets) and data visualisation (Tableau, Power BI); digital collaboration using cloud tools (Google Drive, Microsoft 365, Slack, Zoom); social media and digital marketing skills for content creation (Meta, Google Ads); and basic coding and automation. At Advanced level, the IT professionals, engineers, data scientists and developers should be acquainted with advanced AI modelling and robotic process automation (RPA), understanding of quantum algorithms, 3D modelling (Unity, Unreal Engine) and energy-efficient computing, and be able to perform carbon footprint analysis.

This research noticed the emerging themes for Zimbabwe notably:

- Basic to Intermediate Skills Most Common: Sectors emphasise proficiency in MS Office, data entry, emailing, and internet navigation.
- Emerging Demand for Advanced Skills: There's a growing need for data analytics, SAP systems, digital communications and specialised software.

Sector-specific Digital Skills were in:

- Finance/Banking: Data management, risk analysis tools
- Health: Digital patient records, basic diagnostics
- Education: E-learning platforms, content digitisation

The spectrum of digital skills required across sectors was wide-ranging, though certain patterns emerged. Most sectors highlighted the importance of foundational competencies in Microsoft Office (Word, Excel and PowerPoint), email usage, and general internet navigation. These were considered essential even in non-technical roles. Beyond the basics, there was a growing call for Intermediate to Advanced skills, particularly in areas such as data analysis, digital communication and enterprise resource planning (ERP) tools. For example, one respondent noted that 'Every staff has basic training, but more complex skills like data analytics are still rare', while another emphasised a shift towards more specialised competencies: 'Supply is high for basic operations. The sector now demands Power Platform and SAP proficiency.'

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Sector-specific demands were also apparent. In the mining sector, one participant reported: 'In mine planning, there are specialised tools. There's a gap between training institutions and what the mines need. Similarly, another key informant described how digital monitoring tools were increasingly critical for research purposes but added, 'Not sufficient staff are able to fully operate them.'

In health and environmental management, the expectation is also evolving. It was submitted that 'Using health information systems is now standard. There is a general shortage of those who can do data analysis', pointing to a need for health informatics. Environmental agencies' key informants reiterated the need for sector-tailored digital skills: 'Advanced skills like environmental modelling software are required but not yet widespread.

A few participants, particularly those from civil society, noted that digital skills were not just technical but also social and organisational. One participant explained: 'For basic tasks we manage, but for record-keeping and communications, people need to be retrained.' Overall, the required skill levels ranged from basic operational knowledge to advanced data and system management, but the majority of respondents indicated that their organisations were not yet sufficiently staffed to meet these evolving demands.

8.2.4. Summary Remarks on Readiness and Skills Levels

This analysis reveals a Zimbabwean workforce and institutional landscape in the midst of digital transition. While digital technologies have become near universal in organisational operations, their depth of use and effectiveness vary widely. The supply of digitally skilled labour remains uneven, with most institutions managing only with foundational skills and expressing concern about gaps in more advanced capabilities.

As digital demands continue to rise across sectors, from education and health to public administration and mining, there is a growing urgency to build sector-specific digital capacities, strengthen partnerships with training institutions, and invest in upskilling existing staff. This is not just a question of infrastructure but of strategic human-resource development, aligned to the digital future.

8.3. Digital Skills Gaps in Zimbabwean Sectors

This analysis explores perceptions and experiences regarding digital skills shortages, skill gaps, root causes, and the sectoral impacts of these challenges across various sectors in Zimbabwe. The findings are derived from institutional stakeholders' responses to four key questions.

8. THE CURRENT DEMAND AND SUPPLY OF DIGITAL SKILLS ACROSS THE COUNTRY'S KEY ECONOMIC SECTORS – A GAP ANALYSIS.

8.3.1. Areas of the Sector Exhibiting Digital Skills Shortages

Emerging Themes:

Shortages are widespread, cutting across Basic, Intermediate and Advanced levels depending on the sector.

Advanced digital skills shortages are more frequently reported, especially in specialised fields (e.g. AI, cybersecurity, programming, statistical analysis).

Public-sector and education institutions highlight Basic and Intermediate shortages, especially in rural or underfunded departments. Respondents identified digital skills shortages at multiple levels, with particular emphasis on advanced digital competencies. One key informant cited 'Security Services and AI' as domains with high skills demand but low supply, and said that 'Advanced digital skills are lacking. There's a general lack of training and exposure.'

Some participants noted shortages even in foundational areas. One key informant stated that 'Basic spreadsheet and PowerPoint use is still weak in some departments,' indicating that digital illiteracy is not confined to technical or specialist roles. The key informant observed gaps at the intermediate level, particularly in data analysis and reporting: 'Intermediary skills for statistical tools are lacking. Meanwhile, another informant expressed concern over the 'manual nature of operations in some departments', which requires a transition to digital systems that staff are not yet trained for. In some sectors, like health, shortages were reported in skills for data entry and analytics, particularly among nurses.

8.3.2. Digital Skills Gaps Identified in the Sector

Emerging Themes:

Most frequently cited gaps include:

- Cybersecurity
- Data analytics and interpretation
- Artificial Intelligence and automation
- ERP and SAP systems
- Cloud computing and system integration

Cross-cutting soft digital skills such as troubleshooting, digital ethics and online collaboration were also mentioned as underdeveloped.

Participants outlined a wide range of digital competencies that are currently underdeveloped in their workforce. The most consistent concern was data-related skills. One respondent explained: 'Statistical tools and data visualisation platforms are not widely understood.' This sentiment was echoed by another respondent, who said: 'Inadequate knowledge of how to work with spreadsheet-based data is common, especially among senior staff.'

Cybersecurity also emerged as another critical area. One respondent shared: 'Mostly specialised cybersecurity skills are lacking. We are vulnerable in some areas. Furthermore, advanced systems such as SAP, AI integration and cloud platforms were also noted as unmet needs. Another respondent reported that 'AI and cloud systems are essential now, but there's a brain drain and gaps in training.'

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Even in tourism and service sectors, it was said that 'Advanced skills in digital payment systems and bookings' were said to be limited, indicating how broad the scope of these gaps has become.



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Table 8-2: Digital Skills Gap per Sector

Sector	Digital Skills Gaps Mentioned	
Government	Advanced Data Analytics, Cybersecurity skills Health diagnostics management skills Virtual modelling skills Remote sensing skills	Digital marketing skills Monitoring and evaluation digital skills Programming and coding skills Technical support skills (hardware and software support)
Regulatory Authorities	Advanced Data Analytics Cybersecurity skills Computer vision experts Graphic design and visual communication experts	Blockchain skills Data management skills Drones software management skills Skills in ERP systems,
Education (Higher)	E-learning management systems skills Content digitisation Big Data analytics skills AI skills Cybersecurity Virtual reality, internet skills Cloud computing	Social media analytics Hardware and network management skills Digital communication tools skills Content creation and digital marketing skills Collaboration tool skills
Education (Lower)	E-learning skills Hardware and software management skills	Software training skills Digital communication tools Cybersecurity skills
Private Sector	Data management Risk analysis tools Neural networks Remote sensing skills Fibre splicing skills Cybersecurity skills AI skills	Social media analytics Cloud computing Networking and software development skills Programming and coding skills Advanced skills in digital payments
Civil Society	Cybersecurity skills Social media analytics Big Data analytics; AI skills	Digital project management skills Collaboration tools skills Digital content creation skills

8.3.3. Causes of the Digital Skills Shortage and Mitigation Strategies

Emerging Themes:

- Education institutions are suffering from a lack of structured digital training and outdated curricula.
- Insufficient funding, particularly in public-sector departments, is a major issue.

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- Rapid technological change is accelerating the development of skills.
- The urban – rural divide is limiting access to training in remote areas.
- Brain drain as skilled professionals migrate to better opportunities.
- Infrastructural challenges such as access to internet and digital technologies.
- Poor investment in digital technologies by different sectors.
- Poor incentives, lack of career progression, and limited equipment both in urban and rural areas.
- Resistance to change.

Several factors were cited as contributing to the persistent digital skills gaps across sectors. A common concern was the disconnect between training institutions and sector needs. One key informant remarked: 'The skills gap is growing. Training is not aligned to new technologies.'

Funding constraints were cited by multiple respondents. For instance, one respondent said: 'We need advanced programming skills, but the lack of funding makes training challenging. Since the shift to electronic records, it's been hard to get personnel trained because of financial limitations.'

Another key cause was brain drain. One participant pointed to 'missing talent due to skilled people leaving the country. Limited skills are compromised by the migration of professionals.'

Rapid technological evolution has also forced many institutions to keep up with the latest developments. 'Rapid tech changes make it hard for staff to keep up unless we invest in continuous development. Infrastructure challenges and the rural-urban divide were noted. 'Poor road networks and lack of infrastructure in our rural areas, since our province is very remote; these technologies reach our province after all other provinces have had services?'

Resistance to change was noted as another factor: 'Some leaders both in government and public organisations are resistant to change and lack digital literacy themselves. Thus, it was suggested that mitigation strategies include:

- Curriculum reform and alignment with digital trends
- Industry – academic partnership
- In – service training and digital refresher programmes
- Increased budget allocations for digital transformation

Curriculum reform and alignment with digital trends Industry-academic partnership In-service training and digital refresher programmes Increased budget allocations for digital transformation Curriculum reform was the major theme in mitigating the digital skills gap, as highlighted by a key informant in one of the provinces: 'Revise and align curricula so that it becomes in line with sector needs. The key informant also noted the need to mandate regular digital skills training for everyone. Over and above curriculum reform, there is a need for in-service training: 'Train managers and department heads in digital transformation and leadership. This was supported by another key informant:'

Introduce digital tools from the lower grades, such as ECD. Expand and upgrade broadband connectivity such as mobile base stations, fibre optics and satellites with modern equipment, and ensure that all government offices and training institutions have basic and modern ICT facilities.'

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Other key strategies given were: 'Incentivise skilled professionals by introducing provincial or district allowances for ICT staff, and 'Secure budget for digital skills development and work with NGOs and development partners and the private sector for funding technical support!

8.3.4. Impact of the Digital Skills Gap on the Sector

Emerging Themes:

- Reduced productivity and efficiency .
- Delays in digital transformation efforts .
- Security vulnerabilities .
- Loss of competitiveness and innovation .
- Dependence on external consultants or imported talent.
- Delays in communication .
- Missed opportunities .

The consequences of digital skills gaps are felt widely, particularly in operational inefficiencies and missed opportunities. It was mentioned that 'the shortage delays digital transformation. The impact is felt in operations and customer experience.' Similarly, one key informant reported: 'Poor presentation of data and delays in reporting are common because of low digital skills. One respondent pointed out: 'Efficiency is compromised in terms of servicing our clients, and we end up losing clients. Lack of digital literacy among planners and policy-makers leads to missed opportunities for using dashboards and GIS tools for informed tools.'

One key informant flagged security vulnerabilities, with a representative admitting, 'I don't think there are internal cyber security protocols. It's a risk. Sectors that rely on technical processes, such as research or mining, are facing setbacks. Another participant explained that 'It affects competitiveness and slows progress. We lack people to process data or automate processes. In service sectors, the loss is in customer satisfaction and revenue. It was presented that 'The sector is missing out on e-bookings, digital payments and marketing opportunities.' Ultimately, the shortage is considered to be limiting innovation and growth. The key informant concluded: 'Lack of trained personnel reduces our ability to innovate or shift operations online. Service delivery delays and inefficiencies in accessing and processing public services, e.g. e-passports, e-licensing and also under utilisation of digital platforms.'

8.3.5. Summary Insights on the Gap

This thematic analysis reveals that Zimbabwean institutions across sectors are navigating a complex landscape marked by serious digital skills shortages. These shortages are especially acute in advanced and specialised domains such as AI, data science, cybersecurity and cloud computing, though basic and intermediate gaps remain prominent in certain areas, particularly in the public and rural sectors. The root causes are systemic, stemming from underinvestment in training, outdated curricula and the migration of skilled talent. Without targeted interventions, such as reformed digital training ecosystems, ongoing staff development and cross-sector collaboration, these gaps will continue to impede sectoral growth, digital transformation and national competitiveness.

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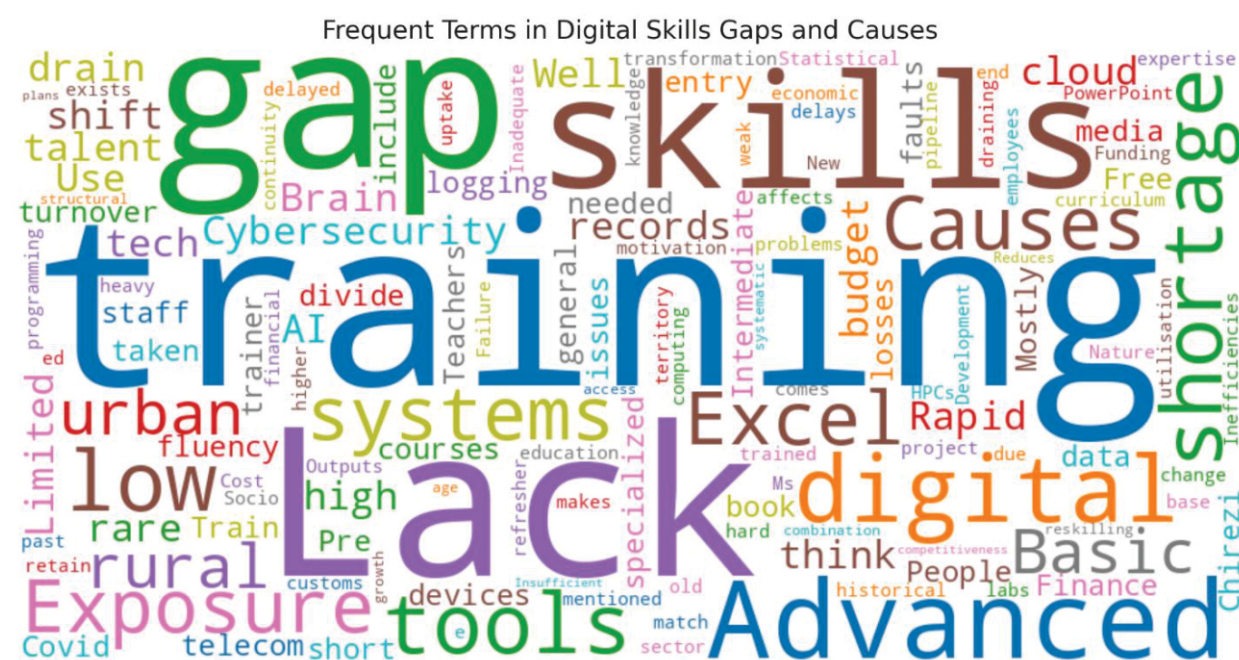


Figure 8-1: Insights on the Gap

The 'cloud visualisation' (Figure 8-1) summarises the most frequent words that appeared in participants' responses regarding digital skills gaps and their causes. Dominant terms such as 'training', 'skills', 'gap', 'lack' and 'shortage' underscore the central concern with insufficient digital competencies. Terms such as 'Excel', 'advanced', 'cybersecurity', 'AI' and 'systems' reflect the specific digital skills that are most lacking. Causes include references to the 'rural-urban divide', 'exposure', 'budget', 'turnover' and 'brain drain', indicating both systemic and logistical barriers.

8.4. Government Policies and Programs Addressing Digital Skills Gaps

This section presents an analysis of institutional stakeholders' perceptions regarding the existence, effectiveness and impact of government policies or programmes designed to bridge digital skills gaps in Zimbabwe.

Emerging Themes

- Acknowledgement of Existing Policies and Programmes

Many participants are aware of specific policies, such as Vision 2030, NDS 1,50 Smart Zimbabwe 2030, and the National ICT Policy. Some respondents also mentioned government-led training initiatives or curriculum reforms.

- Gaps in Awareness and Implementation

Several participants stated that they were not aware of any policies or were uncertain about their application. Others suggested that policy frameworks exist but are poorly implemented or ineffective at the sectoral level.

- Perceived Effectiveness

Where known, the impact of policies is seen to be limited, often due to lack of resources, inconsistent follow-through or urban bias in implementation.

⁵⁰ This was before its expiry in 2025.

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- Consequences of Policy Gaps

In sectors or regions where no clear policy is perceived, participants noted reliance on outdated systems, slow innovation, and limited access to digital training especially in rural or under served areas.

8.4.1. Acknowledgement of Existing Policies and Programmes

Across multiple sectors, participants demonstrated an awareness of government frameworks that aim to strengthen digital competencies. Notable among these were Vision 2030, National Development Strategy I (NDSI), Smart Zimbabwe 2030, and the National ICT Policy.

For example, one informant referenced the NDS: 'We have been using it to guide internal skills audits and upgrading plans,' indicating that this strategic framework plays a role in how institutions align their internal capacity-building efforts. Similarly, another acknowledged Vision 2030, saying: 'Vision 2030 is a guiding framework we use when planning ICT curriculum updates,' demonstrating policy reach into educational reforms.

Government initiatives are also recognised in specific sectors, such as healthcare and education. An informant in the health sector remarked: 'Telemedicine is now integrated with the help of policy guidelines, though training still lags,' suggesting a policy presence even in specialised service- delivery areas.

These reflections illustrate that, at least at a conceptual level, national policy is present, understood and, in some instances, applied in institutional planning and strategic direction. The policy architecture exists, and some stakeholders are beginning to internalise and respond to this directive in their day-to-day operations.

8.4.2. Gaps in Awareness and Implementation

Despite the formal existence of digital strategies, a significant number of respondents expressed uncertainty or unfamiliarity with government efforts. In some cases, individuals were entirely unaware of any policy, while others were unsure how existing policies applied to their context. For instance, one participant admitted that their staff 'doesn't talk much about government programmes', while another respondent stated: 'I am not really aware of any direct policies? This situation reflects a gap in communication and knowledge dissemination. Even institutions that might be strategically aligned, such as universities or government departments, sometimes reported only limited knowledge of national ICT initiatives.

This lack of clarity contributes to low policy uptake and reduced implementation fidelity. Where policies are not actively promoted or localised, institutions are left to operate in silos and make ad hoc decisions that may diverge from national priorities.

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8.4.3. Perceived Effectiveness of Policies and Programs

Among those who acknowledged the presence of digital skills policies, a recurring sentiment was that implementation remains weak. Participants described existing programmes as theoretically sound but practically ineffective, citing issues such as under funding, urban bias and a lack of skilled trainers.

One key informant said: 'Government has initiatives, but implementation is limited by resource availability,' pointing to the financial constraints that hinder scaling up. Furthermore, there was concern with follow-through: 'Such government strategies exist, but they don't always translate into action at our level', underlining a common disconnect between policy creation and execution. Participants acknowledged the existence of these strategies and pointed out that, despite the policies and programmes, several challenges hinder their full effectiveness. For instance, limited funding affects the roll-out of ICT infrastructure, especially in rural areas, which impedes access to digital training and resources. Additionally, educational institutions often lack updated curricula that align with current digital skills requirements, leading to a mismatch between training and industry needs as well as implementation delays.

Participants also raised issues related to centralised resources. One respondent noted: "Yes, they are there, but they don't reach grassroots. Impact is minimal," highlighting a disparity between urban and rural institutions in terms of access to training, infrastructure and support mechanisms. Even where specific programmes such as the digital upskilling of teachers or telemedicine integration exist, there is concern that coverage is shallow and not sustained, leading to short-term gains but long-term stagnation.

8.4.4. Consequences of Policy Gaps or Ineffectiveness

Where policies are absent, poorly communicated or ineffectively applied, institutions report a range of negative consequences for digital literacy and workforce readiness. The most frequently mentioned outcomes include:

- Continued reliance on outdated systems
- Poorly digitised administrative workflows
- Lack of innovation capacity
- Reduced institutional efficiency

One key informant reported: 'Policy exists, but exposure and training are still missing. We continue to rely on analogue documentation.' Similarly, another respondent shared: 'We lack advanced Excel knowledge. It affects the cash system', illustrating how insufficient training trickles down into day-to-day inefficiencies.

In certain instances, the absence of clear policies can demotivate staff and administrators. One comment was 'I have very little information', signalling how the limited visibility of policy direction can disengage sector actors from proactive digital development.

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The absence of effective policy uptake also hampers innovation, especially in data-heavy sectors. As one respondent put it, 'Data protection and use are still not well regulated at the local level. It slows digital transformation. In essence, weak or absent policy integration results in uncoordinated development, inequitable access to digital resources, and loss of competitiveness, especially for smaller or rural institutions.

8.4.5. Concluding Remarks on Government Policies

The analysis of government policy responses reveals a multi-layered challenge: while Zimbabwe has put forward strategic frameworks to address digital skills gaps, many institutions remain unaware, disconnected or under-resourced to implement these policies meaningfully. The analysis reveals a patchwork of awareness, effectiveness and impact of government digital skills policies across Zimbabwean sectors. While blueprints were acknowledged by some, there is considerable variation in awareness and application, especially in rural sectors, civil society and some private institutions. The policy-to-practice pipeline is fragile, and this undermines the country's broader digital transformation goals.

To create a more effective digital upskilling landscape, the following will be required:

- Targeted dissemination of national policy objectives
- Localised and inclusive training programmes
- Monitoring and accountability mechanisms
- Bridging the urban-rural digital divide

Even where policies are known, their practical impact is frequently constrained by funding, coordination gaps, and a lack of local delivery mechanisms. The consequences include persistent digital literacy deficits, uneven innovation uptake and low digital resilience, particularly in underserved areas.

8.5. Impact of Infrastructural Challenges on Digital Skills Development

This section analyses perceptions from institutional stakeholders about the extent to which infrastructural challenges, such as unreliable electricity supply, limited internet access, vandalism and maintenance costs, are hindering digital literacy and upskilling in their sectors.

Emerging Themes

- Electricity Instability Severely Undermines Digital Access

Unreliable or absent electricity was the most frequently cited obstacle, directly affecting access to ICT tools and disrupting scheduled trainings.

- Internet Access Limitations Hinder Digital Fluency

Bandwidth limitations, connectivity outages and lack of coverage in remote areas limit both individual and institutional digital learning efforts.

- Maintenance and Infrastructure Vandalism Compromise Reliability

Frequent breakdowns, lack of repair services, and vandalism of ICT infrastructure (e.g. routers, solar systems, cables) reduce confidence in digital uptake and deter investment in training systems.

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- Overall Effect: Reduced Digital Confidence and Skill Absorption

The combined effect of infrastructure issues results in interrupted learning, low digital exposure and slow skills transfer, especially in rural and low-income institutions.

8.5.1. Electricity Instability Severely Undermines Digital Access

Electricity challenges were referenced in over half the responses. Many institutions identified electricity as the primary reason for their inability to implement or sustain digital initiatives. For example, one participant succinctly stated, 'Electricity theft and outages remain a major barrier', while another one explained: 'Power outages mean we have to suspend computer lab sessions. It's unpredictable.' Particularly hard hit are education and health institutions. It was noted that their environment is 'unreliable for consistent ICT training', and another respondent echoed, saying: 'Power outages mean learners cannot complete even basic ICT modules.'

8.5.2. Internet Access Limitations Hinder Digital Fluency

In addition to electricity issues, internet connectivity was flagged as a major bottleneck. Responses indicate that institutions may have infrastructure in place but lack stable or fast internet service to fully leverage it. One respondent explained: 'The extent of poor connectivity limits digital literacy training and staff participation in virtual sessions.' Similarly, another highlighted the fact that 'unreliable networks make it difficult to roll out digital tools or collect data online'. The issue is especially pronounced in rural areas. One rural informant said: 'Yes, they really affect us. Poor internet coverage means even updates and content downloads are delayed or skipped.'

8.5.3. Maintenance and Infrastructure Vandalism Compromise Reliability

Another pattern emerging from responses was the lack of maintenance and the protection of existing infrastructure. 'Infrastructure has been vandalised and not replaced in some districts; it stalls learning', said one informant, and another observed: 'They affect training plans and reduce morale since we always wait for repairs. A few institutions acknowledged the cost burden of maintenance as a deterrent to full digital engagement. One reported: 'It greatly limits digital programmes. Maintenance costs are not planned for?'

8.5.4. Overall Effect: Reduced Digital Confidence and Skill Absorption

The cumulative impact of these infrastructural issues is a deep sense of digital stagnation in some sectors. One informant observed that 'to a great extent, infrastructure weakens digital momentum', while another emphasised that 'power outages disturb routine training and systems integration'. More broadly, the combination of unreliable power, poor internet and inconsistent maintenance is causing institutions to scale back their ambitions. 'Infrastructure is a barrier to automating more functions, let alone training, remarked one key informant, while others focused on efficiency: 'The infrastructure deficit affects e-learning systems and real-time transaction training', revealing how even well-resourced sectors are vulnerable to infrastructure shortcomings.

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8.5.5. Concluding Remarks

This analysis confirms that infrastructural constraints are a primary limiting factor in the development of digital literacy and skills across Zimbabwean sectors. Lack of reliable electricity, limited internet coverage, and neglected or vandalised ICT assets have produced widespread disruptions to training programmes, undermined digital confidence, and slowed institutional digital transitions.

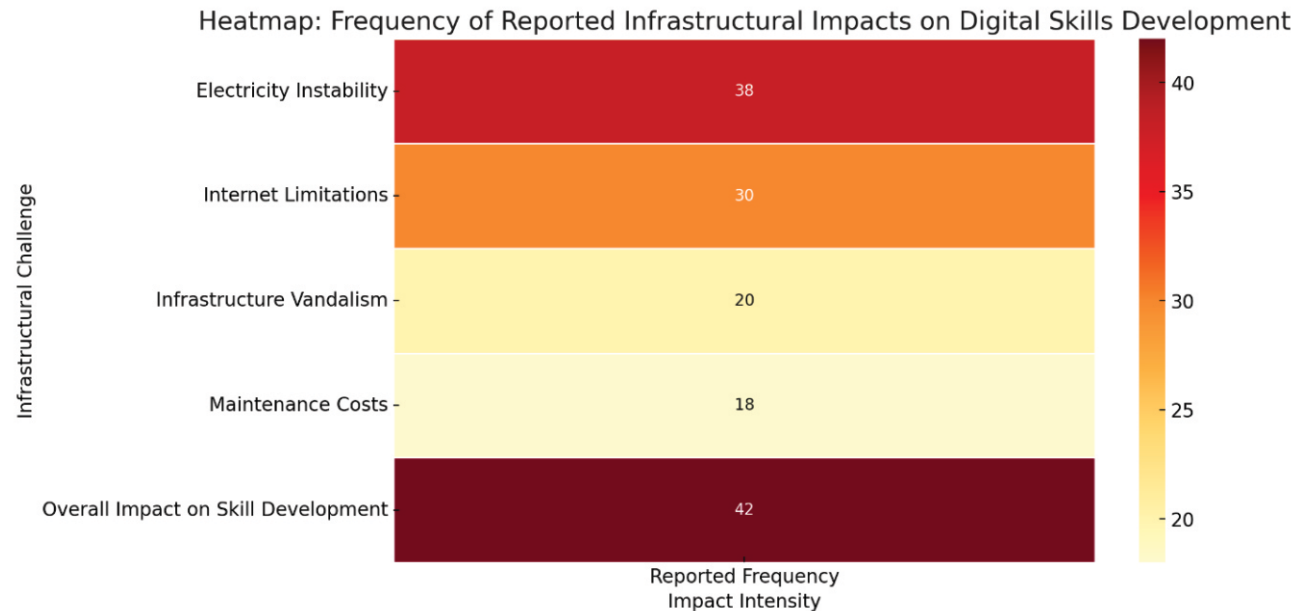


Figure 8-2: Infrastructure Impacts

The heatmap (Figure 8-2) illustrates the frequency and intensity of infrastructural challenges affecting digital skills development. Electricity instability and internet limitations are among the most frequently reported barriers among the key informants. Maintenance costs and infrastructure vandalism are less frequently mentioned but still present major hurdles. The overall impact on digital skills development is the most affected, reflecting how these issues add up to slow progress. Addressing these barriers will require:

- Strengthened investment in off-grid energy solutions (e.g. solar back-ups)
- Reliable internet roll-out in rural and public-sector zones
- Community engagement and protection of ICT assets
- Integration of maintenance costs into ICT programme budgeting

8.6. Affordability and Currency Effects on Digital Skills Development

This analysis integrates two interconnected factors: the affordability and pricing of digital tools, services and training, and the influence of Zimbabwe's currency regime on digital access and upskilling. Together, these financial dimensions significantly shape sectors' abilities to adopt and sustain digital literacy efforts.

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Table 8-3: Affordability and Currency Effects on Digital Skills Development

<i>Theme</i>	<i>Summary</i>
Cost barriers	Digital tools, internet and training remain prohibitively expensive for many sectors
Pricing of training programmes	Training is viewed as financially out of reach for both institutions and individuals
Currency volatility worsens affordability	Exchange-rate fluctuations and a weak local currency hinder planning and procurement
Currency duality and inflation deter access to skilled labour	Skilled professionals demand US dollar – based payments, creating recruitment bottlenecks
Overall financial instability stifles innovation	Institutions delay or scale back digital initiatives due to uncertain pricing and funding

8.6.1. Cost Barriers: Digital Tools, Connectivity and Infrastructure

Stakeholders consistently described the high cost of digital hardware, software licences and reliable internet as a major structural barrier. One noted that 'the cost of data, hardware and licences keeps going up, making even small-scale upgrades unaffordable.' Similarly, another observed: 'The sector is completely price-sensitive. We often abandon digital plans due to pricing changes. The same concern extended to internet service. 'Internet connectivity is becoming unaffordable for many of our teams,' said one, and another said plainly: 'The cost is the main inhibitor to scaling digital tools.

Institutions that rely on public budgets – such as government departments local authorities and rural schools – reported particular difficulty. 'Costly equipment deters us. It's not part of regular budgets. Even in more resourced sectors, the burden remains. The pricing models of e-learning platforms and licensing are not cost-effective for large-scale training' 'High costs of hardware and software licences can deter government, public organisations, SMEs, institutions, etc., from implementing digital technologies

.A recurring theme was that affordability not only delays adoption but also creates disparities between departments, institutions and geographical regions. 'The cost has been a serious barrier for us to introduce even basic computer literacy', and other informants reported: 'Few modern tools reach our unit due to cost prioritisation: 'Cost is a very real barrier. It locks out the marginal zones. An informant in the health sector said: 'No budget means some clinics go without digital health records while others have full suites. This phenomenon contributes to a tiered system of digital access, where well-funded institutions advance while others lag.

8.6.2. Training Costs Limit Participation and Widen Inequality

The second most frequent concern was the inaccessibility of digital skills training due to cost. 'Training costs are too high. We can't sponsor staff for every course', reported one informant, while another noted: 'We budget for salaries, but rarely for digital training. The costs are prohibitive. Multiple respondents stressed that digital training, both in-house and external, is often beyond the reach of staff or employers.

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'Yes,' said one, 'affordability affects all levels, courses, tools and even the data needed for online learning. The situation creates a reinforcing cycle: low training leads to poor digital readiness, which in turn prevents institutions from fully adopting affordable or open-source tools. Another respondent explained how the situation affects strategic initiatives noting that 'cost leads to selective training. Only a few people receive the support they need. This creates bottlenecks in skills transmission, especially where peer-to-peer learning is underutilised.

8.6.3. Currency Volatility Worsens Affordability and Procurement Planning

The country's unstable currency regime emerged as a central financial disruptor. Institutions highlighted how currency depreciation, dual pricing (Zimbabwe Gold Currency (ZWG) and United States Dollars (USD)), and unaligned payment systems make it difficult to plan for or sustain digital investment. One institution remarked: 'The currency regime means tools priced in USD fluctuate weekly. The cost structure becomes unsustainable. Similarly, others said: 'Overpriced goods and services due to exchange volatility delay implementation. 'The current regime has completely destabilised the procurement of ICT components. 'Pricing in forex makes bulk purchases impossible. We can't forecast costs reliably: This uncertainty also affects vendors and service providers, who adjust prices frequently or withdraw long-term contracts.

8.6.4. Currency Duality and Inflation Deter Access to Skilled Labour

Institutions that require high-level digital talent, such as banks, telecoms and universities, reported that currency instability has made it difficult to attract or retain skilled professionals. One noted that 'Foreign pricing and the weak Zimbabwean dollar mean digital talent asks for USD. We often can't offer that. Another added: 'Most hardware specialists prefer to freelance in forex markets rather than take institutional jobs.' This wage misalignment results in the loss of local talent to external gigs, contributing to brain drain and operational strain.

8.6.5. Overall Financial Instability Stifles Digital Innovation

The pricing of digital solutions is also considered highly sensitive to external market fluctuations, which makes strategic planning difficult. 'The cost of IT equipment and subscriptions varies wildly, and we cannot always keep up. 'Beyond recent grants, there is no long-term provision for digital procurement. Others concurred that core budgets do not incorporate digital planning: 'I'd like the school to go digital, but every quote we get is too expensive. 'Well-financed institutions may afford it. We can't.' 'Yes, affordability is a big issue. Most of our digital programmes remain on paper? The compound effects of high prices and currency uncertainty have led many institutions to delay or abandon digital initiatives. One respondent summarised it thus: Currency regimes and infrastructure costs jointly slow our innovation. Another added simply that pricing kills innovation. Everything becomes reactive instead of strategic.

Some institutions reported hesitation even to engage vendors: 'This requires too much quote chasing. We can't keep up with changing prices.' Even where policy support exists, as previously discussed, the economic environment undermines implementation and prevents scaling.

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8.6.6. Concluding Remarks

The findings confirm that affordability is a central constraint in digital skills development across Zimbabwe's sectors. The high cost of hardware, software, connectivity and training disproportionately affects:

- Public institutions with rigid or insufficient budgets
- Rural and peri-urban sectors
- Staff in need of professional upskilling but lacking institutional sponsorship

This cost sensitivity slows digital adoption and widens inequity, hampers innovation, and limits the scale and sustainability of digital transformation efforts. The interplay between high costs and a volatile currency regime presents a formidable challenge to digital transformation across Zimbabwean sectors. Institutions face:

- Delayed procurement cycles
- Underinvestment in training and infrastructure
- High staff turnover due to salary instability
- Reduced appetite for innovation or experimentation

8.7. Adoption and Impact of New Digital Technologies across Sectors

This synthesis explores how different sectors in Zimbabwe have introduced or adopted new digital technologies and the extent to which these technologies have impacted operations, productivity and digital transformation.

Emerging Themes

- *Widespread Adoption of Specific Technologies*

Artificial intelligence (AI), online platforms, Starlink internet, mobile money and data collection tools are among the most frequently cited new technologies, especially in education, government services and research institutions.

- *Impact Concentrated in Communication, Data Management and Remote Access*

Technologies have enhanced remote meetings, e-learning, digital transactions and monitoring and surveillance functions in several sectors.

- *Variation in Uptake Based on Institutional Capacity*

Some institutions are high adopters (e.g. banks, universities, research agencies), while others are lagging due to infrastructure, awareness or institutional inertia.

- *Sectors with Stronger Trends*

Education, research and academia, government statistics and telecommunications show the strongest and most consistent trends in digital adoption.

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8.7.1. Widespread Adoption of Emerging Digital Tools and Services

Across many institutions, new technologies such as AI, Starlink, geospatial tools and mobile money platforms have been introduced recently. The banking sector was highlighted by one informant: 'The banking sector has introduced new e-systems for client on boarding and digital transactions. Likewise, another shared: 'Online learning platforms and collaboration software have been fully adopted.' Two institutions mentioned the deployment of Starlink and remote-sensing tools, while others discussed the use of data platforms such as Open Data Kit, Kobo Toolbox and Geospatial Artificial Intelligence.

8.7.2. Tangible Operational Benefits across Sectors

The new technologies are contributing to more efficient communication, faster data capture and greater continuity of operations, particularly in remote and rural contexts. For instance, an informant in the health sector reported: 'Starlink for rural sites and the use of tablets for data entry, this has transformed how we track patients. Another noted the shift to digital meetings: 'Online meeting platforms have made it easier to coordinate across districts. Similarly, another highlighted: 'We have adopted WhatsApp for communication. It's quick, reliable, and works in low- connectivity zones. These cases illustrate that digital technologies are improving sector performance, especially where connectivity and digital readiness allow for usage.

8.7.3. Institutional Capacity Shapes Degree of Impact

However, not all respondents reported successful integration. One responded bluntly: 'Not aware! Another stated: 'It impacted the operations of the entire system negatively.' These perspectives highlight the unequal distribution of digital integration, often shaped by awareness, leadership and technical capacity. Some institutions are in the early stages of adoption. One said it was adopting, and another said: 'To a certain extent. The 2022 census used tablets, but not everyone is trained? This demonstrates the importance of continued roll-out and staff digital literacy.

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8.7.4. Notable Sectoral Trends

From the responses, the following sector-based trends emerged .

Table 8–4: Notable Sectoral Trends

Sector	Adoption Trend	Tools Mentioned
Government	Varied	Communication; Human Resources; Automated Data Collection; Financial & Accounting; Surveillance; Civil Registration
Regulatory Authorities	Robust	Spectrum Management System; Drone; A cumatica; Tax and Revenue Management System; e-tariff; Automated System for Customs Data
Education (Higher)	Very Strong	Staff and Student Portals; Registry System; Pastel Evolution; Procurement.
Education (Lower)	Varied	Online Learning and Teaching; Basic Administration
Private Sector	Advanced	GIS and Remote Sensing; AI; Data Analytics; Cybersecurity
Civil Society	Strong	Microsoft Packages; Social Media Management

While these sectors are using technology to boost efficiency, there are still gaps in rural institutions, policy communication and training.

8.7.5. Concluding Remarks

Zimbabwean sectors are actively embracing new digital technologies, with positive operational impacts where implementation is supported by infrastructure, budget and training. Strong momentum exists in research, education, banking and telecoms, but adoption is uneven and hampered in some areas by institutional inertia , the lack of digital culture, and limited skills. Continued progress depends on:

- Scalable digital training programmes
- Sustained ICT infrastructure investment
- Leadership and change management at institutional level

8.8. Sectoral Reactions to Emerging Technologies

This analysis explores how different sectors in Zimbabwe perceive and react to the integration of emerging digital technologies –AI, cloud services, Big Data and immersive technologies like VR and AR – based on sectoral experiences, readiness and digital maturity.

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Emerging Themes

- *Cautious Optimism in Most Sectors*

Many stakeholders express supportive or welcoming attitudes, but often paired with conditions, uncertainties or resource caveats.

- *Promising Uptake in Academia, Research and ICT*

Universities, research institutions, and telecom sectors show the most positive and actionable engagement with AI and cloud technologies.

- *Concerns over Readiness, Risk and Regulation*

Responses reflect concerns about ethical risks, infrastructure inadequacies, and slow regulatory catch-up, especially with AI and Big Data.

- *Sector-specific Hesitations or Excitement*

Perceptions vary based on each sector's infrastructure maturity, digital literacy and exposure to use cases.

8.8.1. Cautious Optimism in Most Sectors

Many respondents acknowledged the importance of emerging technologies, even if adoption is still limited. 'These are tools we must adapt to. We train students to understand both the benefits and risks of AI.' 'The adoption is welcome, though we still need broader training and access: 'We welcome AI and Big Data, especially for monitoring and forecasting.' 'My reaction is supportive. We are now building capacity internally

8.8.2. Promising Uptake in Academia, Research and ICT

Institutions involved in data analytics, geospatial science and education reported greater exposure and utility from emerging technologies. For example, one noted: 'The uptake of GEOAI and cloud platforms is strong. It supports real-time analytics and research collaboration. Another was similarly optimistic: 'More can be done, but we are already using cloud storage and data visualisation tools', pointing to a trend of gradual integration. In telecoms and ICT ministries, adoption is more advanced. One respondent noted: 'These are mainstreaming fast. We're working on policy guidance,' and another identified AI and Big Data as essential: 'The emerging digital stack is now foundational for banking competitiveness.

8.8.3. Concerns Over Readiness, Risk and Regulation

Despite positive sentiments, many responses were tempered by caution or concern. One highlighted ethical risks: 'It's coming, but we fear unintended consequences, especially with child rights and surveillance.' A respondent from a high school gave a more critical view: 'The government is reacting slowly. We lack frameworks to guide AI and VR in education.' Another respondent stated: 'It is not equitable. These tools widen digital divides when unregulated. These responses reflect a common theme – interest in innovation but discomfort about the rate and scope of roll-out without safeguards.

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8.8.4. Sector-specific Hesitations or Excitement

Reactions often depended on the sector's exposure, budget and leadership appetite for tech integration.

- **Education Sector**

Mixed. In Matabeleland North, a respondent from the Ministry of Education said: 'We have engaged with some tech pilots, but scale-up remains a challenge. Others, like Manicaland-PSC, described it as 'a positive development, though some ministries lag in understanding'.

- **Local Government and Administration**

The response from local government and administration was either cautious or indifferent: 'It is individual-based. Some departments use the cloud; others don't. A participant from another province warned: 'Very critical. These are not yet practical for us.

- **Civil Society**

SocietyThoughtful but constrained. 'I'd say uptake is useful, but cloud costs are high and data safety is a worry.'

- **Agriculture**

Curious but lagging. A respondent described a 'very slow roll-out. We rely on WhatsApp more than AI systems.'

8.8.5. Concluding Remarks

Remarks Across Zimbabwean sectors, there is growing recognition of the strategic value of emerging technologies like AI, cloud, Big Data and immersive tools. Most institutions express cautious support or guarded enthusiasm, often qualified by:

- Infrastructure constraints
- Policy and regulation gaps
- Equity and affordability concerns

Table 8-5: Summary Table of Sectoral Sentiment

Sector	Sentiment	Highlights
Research & Academia	Positive & active	Cloud, GEOAI, analytics support real-time decision-making
Private Sector	Positive & innovation-driven	Focused on standard-setting and tech integration
Education	Mixed	Enthusiastic but under-resourced
Government/Local Admin	Uneven	Disconnected uptake; leadership-dependent
Civil Society	Cautious	Emphasis on data privacy, ethics and affordability

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8.9. Influence of Zimbabwe's Regulatory, Economic and Social Environment on Digital Skills Development

This analysis explores institutional stakeholders' views on the enabling or constraining role of the national regulatory frameworks, economic realities and social dynamics in shaping the roll-out and uptake of digital literacy and skills across sectors.

Emerging Themes

- *Regulatory Uncertainty or Inadequacy Slows Progress*

Many respondents cite gaps in policy, outdated frameworks or a lack of enforcement as key obstacles to institutional digital transformation and capacity development.

- *Economic Constraints Undermine Implementation*

Zimbabwe's economic volatility, inflation and forex shortages are widely viewed as structural barriers to funding digital tools, infrastructure and training programmes.

- *Social Factors Create Mixed Environments for Digital Skills*

Skills Social barriers include resistance to change, digital literacy gaps in communities, and youth dependency on informal systems (e.g. WhatsApp), though some cultural openness to tech is emerging in specific sectors.

- *Fragmentation of Responsibilities and Overlaps in Governance*

Several participants noted unclear mandates, bureaucratic overlap or lack of coordination across ministries and parastatals, leading to inefficiencies in digital roll-out.

8.9.1. Regulatory Uncertainty or Inadequacy Slows Progress

A dominant theme was the inadequacy or absence of strong, modern digital regulations. One informant pointed out: 'Regulatory ambiguity means no one knows how to proceed confidently with training programmes involving AI and cloud tools.' Similarly, another respondent remarked: 'Regulatory processes are slow and not agile enough to match digital demands.' Others criticised outdated laws: 'The regulatory framework is still paper-based. It doesn't align with digital needs. Several respondents expressed the view that progress is often personality- or leadership-driven rather than systemic.

8.9.2. Economic Constraints Undermine Implementation

Economic issues, particularly cost, inflation and currency instability, are viewed as crippling forces against meaningful digital investment. One respondent commented: 'Economic policies remain a barrier. Funding for digital literacy is last on the budget list.' Another echoed this, stating: 'The social and economic climate discourages ICT expansion. A number of respondents highlighted how the weak Zimbabwean dollar reduces the purchasing power of institutions and individuals, making devices, software and online certifications increasingly inaccessible. It was noted that 'Zimbabwe's economic conditions make importing ICT hardware too expensive.'

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8.9.3. Social Factors Create Mixed Environments for Digital Skills

On the social front, responses reflected both latent potential and persistent barriers. A high-school respondent noted: 'We promote ICT, but there is resistance from older teachers and community leaders who still prefer analogue systems. However, in some areas, the youth and community actors are engaging more readily with digital innovations. One respondent reported: 'Economic pressures are pushing youths to embrace digital tools like WhatsApp and Facebook for learning.' On the flip side, there was this concern: 'It's complicated. Many children are online but unsupervised and not learning constructive skills.' This situation highlights the social gap between access and meaningful digital engagement.

8.9.4. Fragmentation and Poor Policy Coordination

Several institutions expressed frustration with the lack of clear policy ownership and inter-agency coordination. One participant said: 'While rules exist, they are either duplicated or not enforced. SS stated: 'Regulation exists, but agencies contradict each other.' Another participant made a similar point: 'The economic policies exist in isolation from ICT goals. There is no integrated vision. The fragmentation affects public trust and slows collaboration, even when individual departments show a willingness to engage.

8.9.5. Concluding Remarks

The overall regulatory, economic and social landscape in Zimbabwe presents a mixed but mostly challenging environment for the development of digital literacy and skills. While digital ambition exists in institutions, it is often undermined by:

- Chronic economic instability and budget shortfalls
- Cultural inertia and uneven digital literacy
- Fragmented governance with poor interdepartmental alignment

To foster real digital capacity building, Zimbabwe would benefit from:

- Clear, enforceable ICT and digital training policies
- Economic support mechanisms (e.g. ICT grants or subsidies)
- Social campaigns to promote a digital learning culture
- Cross-ministerial digital transformation coordination units

8.10. Cultural Influences on Digital Skills and Technology Uptake

This analysis examines institutional perspectives on the cultural enablers or barriers affecting digital literacy and technology adoption. While some responses pointed to neutral or non-cultural influences, others revealed critical deep-seated cultural dynamics shaping digital transformation in Zimbabwean sectors.

Emerging Themes

- *Widespread Perception of Low Cultural Resistance*

The majority of respondents denied the presence of cultural barriers, often using phrases like 'no cultural issue', 'none' or 'not really' to characterise their setting.

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- ***Pockets of Cultural Inertia or Resistance among Older Generations***

Several respondents pointed to age-related resistance, particularly among older professionals, who prefer traditional methods and are slow to adopt new systems.

- ***Religion, Gender Norms and Local Beliefs Affect Some Regions***

A few participants cited local traditions, religious conservatism or gender expectations that constrain women, youths or rural residents from engaging with technology.

- ***Gradual Cultural Shift and Youth -led Openness***

In contrast, there is a noticeable positive shift among the youth, with digital skills increasingly considered aspirational and linked to modernity and economic opportunity.

8.10.1. Widespread Perception of Low Cultural Resistance

Widespread Perception of Low Cultural Resistance Many institutions reported little to no cultural resistance to digital skills or technology uptake. Others offered clear rejections of cultural influence, responding with statements such as 'no', 'none' or 'not to my knowledge'. This response indicates that, in many settings, structural or economic barriers are more salient than social or cultural ones.

8.10.2. Pockets of Cultural Inertia Among Older Professionals

Despite many institutions denying widespread cultural issues, a significant number pointed to age-related reluctance as a barrier. One key informant from a high school commented that there are generally no cultural factors, but that older staff do not engage well with ICT. It was added that 'generally, older people still prefer paper, but younger staff are more flexible. This trend suggests that intergenerational differences, rather than cultural taboos per se, may underlie resistance in practice.

8.10.3. Religion, Gender Norms, and Local Beliefs Affect Some Regions

In some responses, cultural conservatism or religious influences were explicitly mentioned. One participant stated: 'Mentality and beliefs in some remote areas discourage technology', while another noted: 'Culture has slowed things down. Some rural areas don't believe girls should focus on tech. These comments emphasise the cultural norms that interact with social identity (gender, age, class) to shape access and uptake in complex ways.

8.10.4. Gradual Cultural Shift and Youth-Led Openness

Positive cultural shifts are also apparent in responses. One key informant shared: 'In some communities, youth culture is driving digital change. Social perceptions are shifting. ICT is considered modern and empowering. Even traditionally cautious sectors such as civil society acknowledged this trend. The normalisation of WhatsApp, Facebook and mobile devices is acting as a bridge to more formal digital skills training.

8. THE CURRENT DEMAND AND SUPPLY OF DIGITAL SKILLS ACROSS THE COUNTRY'S KEY ECONOMIC SECTORS – A GAP ANALYSIS.

8.10.5. Concluding Remarks

This analysis reveals nuanced cultural landscape with generational, regional and social identity- based factors influencing digital skills uptake. While overt cultural resistance is minimal, inertia among older staff, gendered access limitations, and conservative social values still constrain progress in some contexts.

Table 8-6: Summary by Influence Category

Cultural Factor	Nature of Influence
Age/Generational Gaps	Older professionals prefer traditional tools
Gender Norms	Women face more access barriers in rural areas
Religious/Traditional Beliefs	Inhibit ICT trust or use in conservative communities
Youth Culture	Increasingly pro-digital and adaptive

8.11. Sectoral Responsiveness to Emerging Technologies

Emerging Themes

- **Slow or Partial Sectoral Response**

Most sectors acknowledged slow or uneven response, citing bureaucratic inertia, lack of funding and infrastructure barriers.

- **Some Movement in Academia, ICT and Finance**

A few sectors particularly higher education, telecommunications and banking were noted as responding proactively, often through digital curriculum reform, automation and partnerships.

- **Suggested Strategies to Accelerate Responsiveness**

Respondents recommended: government-led policy and training mandates; in-house training; youth innovation hubs; digital infrastructure subsidies

8.11.1. Slow or Partial Sectoral Response

A predominant narrative across responses was that most sectors are not reacting swiftly to the demands of emerging technologies. Respondents cited several constraints, including lack of urgency, bureaucratic inertia, poor resource allocation and limited training exposure. One key informant noted: 'Not fast enough. Most digital policies remain on paper. Similarly, a sluggish pace was acknowledged: 'I would say we are behind. We need structured change management and training. 'Participants attributed delays to both infrastructure and skills: 'The sector is lagging. Virtual and cloud training is minimal. Most staff lack basic familiarity.' These responses point to a broader issue of institutional sluggishness, where policies exist but execution and adoption are delayed. The Problem is more acute in public service, agriculture and civil-society sectors, where implementation is either inconsistent or reactive.

8. THE CURRENT DEMAND AND SUPPLY OF DIGITAL SKILLS ACROSS THE COUNTRY'S KEY ECONOMIC SECTORS – A GAP ANALYSIS.

8.11.2. Some Movement in Academia, ICT and Finance

While slow uptake dominates the landscape, some pockets of responsive innovation were identified, particularly in the banking sector, telecommunications, research institutions and universities. One key informant stated that 'the banking sector is leading. Automation and mobile platforms are now the norm. Mobile info-learning platforms are now used, especially after COVID- 19: This shift reflects a more structured response where cost-efficiency and competitiveness are key drivers. This trend also shows that sectors directly affected by international benchmarks, client satisfaction or research competitiveness are more likely to act faster on tech integration.

8.11.3. Suggested Strategies to Accelerate Responsiveness

Respondents offered multiple proposals to correct the sectoral lag:

- Governmentmandated training programmes
- In-house and grassroots upskilling
- Digital literacy in schools and youth hubs
- Public- private partnerships and tech incentives

These suggestions highlight a desire for decentralised, flexible and context-sensitive strategies to enable digital readiness across the board.

8.11.4. Concluding Remarks

Across most sectors, the speed of adoption was perceived as insufficient. One key informant noted: 'Enacting digital strategies is still a future goal, not a reality. All policies exist, but execution lags due to funding and buy-in. On the other hand, it was noted that the banking sector was leading, where automation and mobile platforms were the norm, and that implementing tools like Kobo and ODK has helped track agricultural shifts. Strategies proposed to close the reaction gap include:

- Training programmes through partnerships with colleges (e.g. 'We're trying to develop modules with local institutions.')
- Use of local champions and innovators (e.g. 'Support local tech hubs to train youth in WhatsApp-based platforms.')
- Mandatory publicsector training (e.g. 'In-house sessions must be part of annual plans.')

9. SUMMARY OF KEY FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

9.1. Introduction

Zimbabwe is navigating a pivotal 'digital window' in the Fourth Industrial Revolution. While the 4IR presents unprecedented opportunities for economic growth, innovation and social development, Zimbabwe risks deepening digital exclusion if it fails to close the current digital skills gap. With digital literacy at 32.8% (those who scored at or above Basic level), and disproportionately lower among women, rural communities and PWDs, targeted interventions are no longer optional, they are urgent and foundational for national transformation.

This section presents a summary of key findings, conclusions and a comprehensive set of policy and strategic recommendations designed to accelerate Zimbabwe's digital literacy and digital skills development. These recommendations are not merely aspirational but actionable, measurable and sustainable. Their successful implementation demands strong political will, multistakeholder collaboration, and adaptive policy-making to keep pace with technological advancements. By adopting a roadmap, Zimbabwe can democratise digital access, empower its workforce, and position itself as a competitive player in the digital economy.

9.2. Key Findings and Conclusions from the NDLSA 2025

9.2.1. Current State of Digital Literacy and Skills

Of the sampled participants, 32.8% possess basic digital literacy, with significant disparities across provinces, gender, age and locality. Males (38.1%) outperform females (28.0%) in digital literacy, with rural women being the most excluded. Urban areas (47.8%) have nearly double the literacy rate of rural areas (23.4%), and the younger populations (ages 10–30) show higher digital literacy, while older adults (50+) lag behind significantly. In conclusion there are low digital literacy and skills levels in Zimbabwe.

It can be concluded that the Zimbabwean digital literacy and skills landscape has pervasive digital skills deficit. Zimbabwe exhibits critically low levels of functional digital literacy, with acute shortages in advanced skills which are essential for a technology driven economy.

9.2.2. Determinants of Digital Literacy and Digital Skills in Zimbabwe

The assessment findings show the complexities associated with digital skills acquisition in Zimbabwe. Formal computer training, access to internet services, and higher educational attainment were the most powerful predictors of skills advancement. These factors highlighted the importance of targeted investments in education and digital infrastructure in yielding substantial returns in national digital literacy outcomes.

The research also found the prevalence of urban–rural divide, with urban residents showing higher skill levels. Gender disparities were present, showing that female populations still face underlying barriers to digital inclusion. The research confirms that closing Zimbabwe's digital divide will require not only educational and technological interventions but also structural equity and gender-responsive strategies.

9. SUMMARY OF KEY FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

The research is able to conclude that advancing digital literacy and skills in Zimbabwe should hinge on addressing three critical factors: education, infrastructure and equity. The strong correlation between formal computer training, internet access and higher education with digital skill proficiency highlights the need for targeted investments in schools and connectivity, particularly in under-served rural areas. However, the persistent urban-rural divide and gender disparities reveal deeper structural barriers that demand policy interventions beyond technology alone.

9.2.3. The Zimbabwe Digital Literacy Index (ZDLI)

The ZDLI was successfully computed as a composite index, combining basic, intermediate and advanced skills. The National Average ZDLI is at 37.3%, with urban males scoring highest (50%) and rural females lowest (30%). The proposed indicators that track the progress in digital literacy and skills metrics include technical and employability skills, infrastructure and access indicators that measure digital inclusion and connectivity as well as economic and employment impact indicators that measure the digital skills effect on livelihoods.

9.2.4. Digital Literacy Divide in Zimbabwe

Zimbabwe's urban-rural digital gap persists. Urban areas score higher levels of digital capabilities, with 38.8% having internet access, more than rural areas, with 10.8%. The digital divide is also gendered, showing that men (39.76%) outperform women (34.97%). Marginalised groups such as older adults, persons with disabilities and rural populations face severe exclusion due to infrastructure deficits, affordability issues and cultural barriers. Despite the physical establishment of community information centres (CICs) across the country, many centres remain underutilised, due to a lack of critical digital infrastructure.

It can be concluded that a multidimensional digital divide in Zimbabwe is shaped by geographic, economic, educational, and gender disparities, which collectively hinder equitable participation in the digital economy. The divide is compounded by infrastructural gaps.

9.2.5. Demand and Supply of Digital Skills Across the Country's Economic Sectors

gaps.9.2.5. Demand and Supply of Digital Skills Across the Country's Economic Sectors The findings reveal a mismatch between labour-market demands and the digital capabilities of the workforce. Uneven adoption of digital tools, shortages in advanced skills and systemic barriers were noted. Another key finding was that tertiary institutions continue to produce graduates with predominantly basic abilities, falling short of the evolving industry needs. There are sectoral gaps, with finance and telecoms having relatively advanced internal skills, but agriculture, small to medium enterprises, and public institutions lagging behind.

Zimbabwe's education system faces systemic challenges, with public schools lacking digital tools and tertiary institutions yielding graduates with only basic skills.

9. SUMMARY OF KEY FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

9.3. Policy Recommendations for Advancing Digital Literacy and Skills in Zimbabwe

9.3.1. Establishment of a National Digital Skills Council

Addressed Objectives:

- Establishing the current state of digital literacy and digital skills in Zimbabwe,
- Investigating the determinants of digital literacy and digital skills in Zimbabwe,
- Developing applicable indicators to track progress in digital literacy and skills overtime,
- Assessment of sector skills present in government, regulatory authorities, education, the private sector and civil society.
- Identifying key areas for improvement to enhance digital literacy rates in the country

Zimbabwe's digital landscape suffers from fragmented strategies across ministries, leading to inefficiencies in implementation and poor alignment with national development goals. To address this, the government should establish a multi-stakeholder Digital Skills Council under POTRAZ, comprising representatives from key ministries, private-sector players, academia and civil society. This council will be mandated to coordinate all digital literacy initiatives, ensuring harmonised implementation across all sectors.

A unified National Digital Literacy Framework should be developed, explicitly aligned with Vision 2030 and the Smart Zimbabwe Master Plan. This framework will standardise digital competency benchmarks and provide clear guidelines for sectoral adoption. Additionally, the mandatory inter-ministerial digital implementation plans should be introduced, requiring each ministry to integrate digital skills development into their annual strategic plans, with progress reviewed quarterly by the Council.

9.3.2. Deployment of Inclusive Digital Infrastructure

Addressed Objectives:

- Establishing the current state of digital literacy and digital skills in Zimbabwe,
- Determining the digital divide in Zimbabwe,
- Identifying key areas for improvement to enhance digital literacy rates in the country

Persistent disparities in digital access, particularly along rural-urban, gender and disability lines, remain a major barrier to nationwide digital literacy. To bridge this gap, the government should prioritise the installation of 500 solar-powered community digital hubs in underserved districts by 2028, ensuring reliable internet and device access in off-grid areas.

The telecommunications regulator is encouraged to mandate zero-rated access for essential educational, health and government service platforms, removing cost barriers for low-income users. Furthermore, targeted device-subsidy programmes should be implemented, offering discounted tablets and smartphones for women, the elderly and people with disabilities, supported by tax incentives for manufacturers and retailers. All hubs should adhere to universal design standards and be interoperable with educational platforms.

9. SUMMARY OF KEY FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Maintenance partnerships with local youth entrepreneurs should ensure sustainability.

9.3.3. Comprehensive Education Curriculum Reform

Addressed Objectives:

- *Establishing the current state of digital literacy and digital skills in Zimbabwe,*
- *Investigating the determinants of digital literacy and digital skills in Zimbabwe*
- *Developing applicable indicators to track progress in digital literacy and skills overtime,*
- *Determining the current demand and supply of digital skills across the country's economic sectors*
- *Assessing sector skills present in government, regulatory authorities, education, the private sector and civil society*
- *Identifying key areas for improvement to enhance digital literacy rates in the country.*

Zimbabwe's current education system lacks integration of Fourth Industrial Revolution competencies, leaving graduates ill-prepared for a digital economy. The national curriculum must be revised to embed coding (Python), AI fundamentals, and cybersecurity as core subjects from primary to tertiary levels.

To support this transition, a large-scale teacher upskilling programme should be launched, certifying existing 10,000 educators in digital pedagogy by 2028 through partnerships with universities and tech firms. Schools must also be equipped with ICT labs maintaining a 1:10 device-to-learner ratio, ensuring hands-on exposure for all students. Also, digital content must be localised, aligned with UNESCO's Digital Competency Framework for Educators (DCF-E), and adapted for multilingual instruction (e.g. Shona, Ndebele and English among the 16 recognised languages in the country).

9.3.4. Sector-specific Upskilling Initiatives

Addressed Objectives:

- *Determining the current demand and supply of digital skills across the country's economic sectors,*
- *Assessing sector skills present in government, regulatory authorities, education, the private sector and civil society.*
- *Developing applicable indicators to track progress in digital literacy and skills overtime,*
- *Identifying key areas for improvement to enhance digital literacy rates in the country,*

Critical sectors such as agriculture, healthcare and SMEs face acute shortages of mid-career professionals with intermediate-to-advanced digital skills. An annual sectoral skills gap analysis should be conducted to identify priority areas, followed by funding for 100 specialized bootcamps annually (e.g. lot for agriculture, telemedicine for health, e-commerce for SMEs). A National Digital Skills Observatory should be created to publish annual demand-supply heatmaps by sector, guiding bootcamp funding and curriculum adjustments

9. SUMMARY OF KEY FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

9.3.5. Targeted Programmes for Marginalised Groups

Addressed Objectives:

- Establishing the current state of digital literacy and digital skills in Zimbabwe,
- Investigating the determinants of digital literacy and digital skills in Zimbabwe
- Developing applicable indicators to track progress in digital literacy and skills overtime
- Determining the digital divide in Zimbabwe
- Identifying key areas for improvement to enhance digital literacy rates in the country.

Women, the elderly and people with disabilities (PWDs) consistently exhibit the lowest digital literacy rates, exacerbated by cultural and accessibility barriers. Voice-based learning platforms in Shona, Ndebele, and other local languages should be developed to cater to non-literate users.

To promote economic inclusion, 30% of digital entrepreneurship grants should be reserved for women-led initiatives. Government platforms must also comply with WCAG accessibility standards, ensuring that PWDs can fully participate in the digital economy. WCAG compliance should be audited annually across all government platforms, with non-compliant agencies subject to ICT development fund penalties.

9.3.6. Real-time Monitoring and Data Systems

Addressed Objectives:

- Establishing the current state of digital literacy and digital skills in Zimbabwe,
- Investigating the determinants of digital literacy and digital skills in Zimbabwe,
- Developing applicable indicators to track progress in digital literacy and skills overtime,
- Identifying key areas for improvement to enhance digital literacy rates in the country.

The lack of disaggregated data hampers evidence-based policy-making. An annual Zimbabwe Digital Literacy Index (ZDLI) should be implemented, measuring literacy across provinces, age groups and genders. These metrics must be integrated into ZIMSTAT's quarterly labour surveys for ongoing assessment.

A publicly accessible dashboard should track real-time progress on digital hub usage, training completion rates, and literacy improvements, enabling transparent accountability. The dashboard should include an open API to enable civic tech actors and researchers to track digital inclusion progress and propose data-driven policy adaptations.

⁵¹ WCAG (Web Content Accessibility Guidelines) are internationally recognised standards developed by the World Wide Web Consortium (W3C) to ensure digital content is accessible to people with disabilities. These guidelines provide a framework for making websites, apps, and other digital platforms usable for individuals with visual, auditory, motor, or cognitive impairments.

9. SUMMARY OF KEY FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

9.3.7. Strengthened Public–Private Partnerships

Objectives Addressed:

- Determining the current demand and supply of digital skills across the country's economic sectors
- Assessing sector skills present in government, regulatory authorities, education, the private sector and civil society.

Private-sector engagement in upskilling remains limited. To incentivise participation, companies investing in digital training should receive tax deductions. A digital innovation fund should be established to match grants for NGO-tech collaborations, scaling proven models like WhatsApp microlearning to one million users by 2030. Corporate digital training tax deductions should be linked to outcome-based Key Performance Indicators (KPIs). A private-sector digital inclusion scorecard should be published annually by POTRAZ.

9.3.8. National Digital Citizenship Campaign

Objectives Addressed:

- Investigating the determinants of digital literacy and digital skills in Zimbabwe,
- Determining the digital divide in Zimbabwe.

Cybersecurity and digital rights awareness are alarmingly low. A 'Digital Zimbabwe' campaign should educate citizens on online safety, complemented by mandatory 20-hour annual ethics training for civil servants. A gamified mobile application could engage youths in learning cybersecurity basics. Decentralising through local governments is also essential; local authorities should co-deliver digital citizenship events alongside national agencies, promoting trust and contextual relevance in cybersecurity education.

9.4. Strategic Recommendations for Advancing Digital Literacy and Skills in Zimbabwe

9.4.1. National Digital Literacy Campaign

With only 32% digital literacy and minimal structured programmes for rural and informal sectors, Zimbabwe must urgently scale accessible, certified training to achieve its 70%+ literacy target.

Proposed actions include Mobile-First Microlearning, in which POTRAZ and government will partner with telecommunication providers (Econet, NetOne, Telecel) to deliver free USSD/SMS courses on basic digital skills, such as mobile banking and internet safety. The partnership will develop gamified apps like DigiSkills ZW for low-bandwidth environments. POTRAZ will introduce Mass Media Outreach and broadcast digital literacy programmes on ZBC and StarFM in local languages (Shona, Ndebele) to reach non-literate populations. POTRAZ will carry out Public Awareness, national campaign via social media, community radios, and town halls to promote digital rights and training opportunities, prioritising rural youth and women.

9. SUMMARY OF KEY FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

9.4.2. Expansion of Public Wi-Fi and Digital Hubs

Limited free Wi-Fi (mostly urban) and underutilised Community Information Centres (CICs) are exacerbating the rural-urban divide. The initiative by POTRAZ to convert redundant post offices into CICs represents a strategic intervention aimed at enhancing digital inclusion and promoting equitable access to ICT services across the country. This approach aligns with national development priorities and the broader goals of Vision 2030, particularly in addressing the urban- rural digital divide. However, results from the assessment revealed a critical implementation gap. Many CICs currently lack essential digital infrastructure, particularly Wi-Fi connectivity and hotspot capabilities. This deficiency significantly limits the functionality of these centres, impeding their ability to provide meaningful access to online services, digital skills training and e-government platforms – especially for rural youth, entrepreneurs and marginalised populations. To fully realise the potential of CICs as engines of digital empowerment and socio-economic transformation, the initiative must move beyond physical refurbishment and focus on full digital enablement. This includes ensuring reliable high-speed internet, user support services, and integration with other national broadband and e-service strategies. Moreover, a sustainable funding model and maintenance framework should be established to support long-term operational efficiency and local engagement.

Despite the physical establishment of CICs across the country, many centres remain under utilised, particularly in rural areas, due to a lack of critical digital infrastructure, specifically, Wi-Fi connectivity and hotspot facilities.

POTRAZ and the government may consider to support 2000+ Free Wi-Fi Zones, by deploying hotspots in schools, clinics and rural business centers by 2030 as opposed to its target of 1000 additional free Wi-Fi zones by 2030. In rural areas POTRAZ may introduce Mobile Tech Vans or roving units to deliver hands-on training in remote areas. All repurposed post offices must include at least one disability-accessible terminal and support multilingual trainers.

9.4.3. Education System Overhaul

Outdated curricula are lacking in coding/IT, and teachers lack digital proficiency. Curriculum reform should integrate coding (Python, Scratch), cybersecurity and digital citizenship infused into primary and secondary education, teacher training programme targeting to certify 1000 teachers annually in digital pedagogy through partnerships with universities and technology firms; increasing device access by distributing low-cost tablets with localised content to schools, targeting a 1:10 device-learner ratio. will improve digital proficiency.

9. SUMMARY OF KEY FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

9.4.4. Gender and Disability Inclusion

Rural women are 50% less likely to own smartphones, while PWDs face exclusion. Women focused initiatives such as girls' coding clubs, women-only tech hubs (e.g. Women in Tech Zimbabwe), and rural digital ambassadors (NGOs can support these) and accessibility compliance through mandating WCAG standards for government platforms, incorporating sign language and braille tools for PWDs will broaden inclusion of other marginalised communities.

9.4.5. Private Sector Engagement

There is limited corporate participation in upskilling initiatives. Through tax incentives such as tax deductions for companies that train employees in digital skills, donate refurbished computers to schools, sponsor hackathons and apprenticeships, or Adopt-a-School programmes to fund IT labs in rural schools, increase private-sector participation.

9.4.6. Digital Entrepreneurship Push

POTRAZ can partner with ZimTrade to train youth in e-commerce, freelancing and AI/blockchain applications and launch AI chatbots (WhatsApp/Facebook) to guide entrepreneurs in business development. Integrate Zimbabwe Youth Council or Innovation Hubs into the delivery model for stronger youth engagement.

9.4.7. National Certification Framework

The absence of standardised digital certification limits workforce mobility. POTRAZ can develop a Zimbabwe Digital Skills Certification aligned with employer needs and link the certifications to job placements through partnerships with local and global firms.

9.4.8. Leveraging on Emerging Technologies

POTRAZ can pilot Virtual Reality laboratories in universities for advanced skills training in AI and cybersecurity and partner with Google and Microsoft to offer free cloud skills programmes.

9.4.9. Policy and Infrastructure Reforms

Fragmented strategies across ministries hinder progress in advancing digital literacy and skills. POTRAZ is recommended to establish a Digital Skills Steering Council to harmonise policies with Vision 2030 to enforce ministerial digital transformation scorecards to track compliance and accountability.

References

QUESTIONNAIRE: DIGITAL LITERACY AND DIGITAL SKILLS SURVEY

POTRAZ is the regulatory authority for postal and telecommunications in Zimbabwe. It is also the designated Data Protection Authority in Zimbabwe. Pursuant to its role as a regulatory authority, POTRAZ is conducting a national market survey with the objective of assessing the level of digital literacy and digital skills in Zimbabwe. You have been identified as a respondent for this survey. Please answer the following questions as honestly as possible.

Date and Time

If Tool Selection is QUESTIONNAIRE:

Select the Participant Profile as assigned.

Hint: You were specifically given specific IDs whose profiles you need to access before starting this interview. Please access that profile before commencing your interview.

Province Name

Female Sample Target

Male Sample Target

Total Sample Target

Participant ID

Sex of Participant

If Are you willing to participate? is Yes and Tool Selection is QUESTIONNAIRE:

SECTION A: DEMOGRAPHICS

In this section, we would like to find out more about the profile of users or potential users of digital services in Zimbabwe. Please place a cross (X) in the appropriate block or write in the space provided.

A1: Confirm the Gender of the participant.

Hint: This has to be consistent with the profile above

- ☐ Female
☐ Male

A2: Age

- ☐ 10-20
☐ 21-30
☐ 31-40
☐ 41-50
☐ 51-60
☐ 61-70
☐ 71+

A3: Do you have any disabilities?

- ☐ No
☐ Yes - (specify in the popup options below)
☐ Deaf (D)
☐ Hard of hearing (HoH)
☐ Blind (B)
☐ Low vision (LV)

- ☐ Deafblind (DB)
- ☐ Learning disabilities (LD)
- ☐ Intellectual Disability (ID)
- ☐ Physical impairment
- ☐ Communication difficulty
- ☐ Emotional Behavioural Disorders (EBD)
- ☐ Multiple disabilities
- ☐ Other (please specify)

A4: Ethnic Group

- ☐ African
- ☐ Caucasian
- ☐ Asiatic
- ☐ Mixed race
- ☐ Other (please specify)

GPS

A6-7: Employment status

- ☐ Unemployed
- ☐ Self Employed
- ☐ Formally Employed - (Specify Sector in the popup options below)
- ☐ Civil Society
- ☐ Government (please specify)

- ☐ Private sector (please specify)

- ☐ Other (please specify)

A8: Highest Educational Qualification

- ☐ None
- ☐ Some Primary
- ☐ Primary Completed
- ☐ Some Secondary (Form 1-4)
- ☐ Secondary Completed
- ☐ Some High School
- ☐ High School Completed

- ☐ Certificate
- ☐ Diploma
- ☐ First Degree
- ☐ Masters
- ☐ PhD
- ☐ Other (please specify)

A8.1: Have you ever received any formal training on how to use computers (e.g Introduction to computers, ICDL, ICT classes, or technical programs like Java, Adobe or analytical programs)?

- ☐ No
- ☐ Yes – Please Specify below in the popups
- ☐ Short Computer courses – (Ms Word, Excel, PowerPoint, Intro to Windox, Linux, etc)
- ☐ ICDL
- ☐ ICT/Computer Science classes
- ☐ Technical programs – (Java, Adobe or analytical programs)
- ☐ Other (please specify)

A9: Do you have access to Internet services?

- ☐ Yes ☐ No

If Do you have access to Internet services? is Yes:

A10: Select the Internet Service Provider (s) Hint: (multiple mentions possible)

- ☐ Econet
- ☐ NetOne
- ☐ Telecel
- ☐ Liquid /Zol
- ☐ Utande
- ☐ Africom
- ☐ Powertel
- ☐ Starlink
- ☐ Telone
- ☐ Other (please specify)

If Do you have access to Internet services? is Yes:

A11: Where do you normally

access internet Hint:

(multiple mentions possible)

- ☐ Home

- ☐ School
- ☐ Internet Cafe
- ☐ Community Information Centre
- ☐ Workplace
- ☐ Hotspots Zones
- ☐ Mobile Data (on the go) or out and about
- ☐ Other (please specify)

If Do you have access to Internet services? is Yes:

A12: Which device(s) do you use to access the internet?

Hint: Multiple response possible

- ☐ Mobile phone
- ☐ Tablet
- ☐ Laptop
- ☐ Desktop
- ☐ Smart TV
- ☐ Game Console
- ☐ Smartwatch
- ☐ Other (please specify)

If Do you have access to Internet services? is Yes:

A13: Reason(s) for Internet use

Hint: Tick appropriate (Multiple response possible)

- ☐ Work (E-mails, Meetings etc)
- ☐ Entertainment (music, film, games)
- ☐ Education (Research, Learning)
- ☐ Social (WhatsApp, TikTok, Instagram, Facebook etc) ☐ News
- ☐ Other (please specify)

If Tool Selection is QUESTIONNAIRE and Are you willing to participate? is Yes:

SECTION B: BASIC DIGITAL LITERACY AND SKILLS

In this section, we would like to assess your level of basic digital literacy and skills. May you indicate the extent to which you agree or disagree with each statement by encircling the corresponding number from 1 (Not at all), 2 (Rarely), 3 (Sometimes), 4 (Mostly) to 5 (Always).

	Score (1-5)
BDLS1 I am able to use a computer	
BDLS2 I am able to create Word documents using software such as MS Word	
BDLS3 I am able to create spreadsheets using software such as Ms Excel	
BDLS4 I am able to download documents from online platforms.	
BDLS5 I am able to search for information on the Internet.	
BDLS6 I am able to create email account.	
BDLS7 I am able to install and uninstall applications on my phone/device	
BDLS8 I am able to use my email for communication purposes.	
BDLS9 I am able to use the internet to access government and private services.	
BDLS10 I am able to use the internet for information sharing.	
BDLS11 I am able to participate on online platforms.	
BDLS12 I am able to use a social media account.	
BDLS13 I am able to prepare a presentation using software such as PowerPoint	
BDLS14 I can configure setting on a computer.	
BDLS15 I know that some information on the Internet is false (e.g. fake news).	
BDLS16 I can use different storage media (e.g. internal or external hard disk, USB memory).	

BASIC DIGITAL LITERACY AND SKILLS SCORE:

	Percentage Score	Is the score 60% and Above?
Score		

Please reenter the BASIC DIGITAL LITERACY AND SKILLS percentage (%) score as shown above

If BASIC DIGITAL LITERACY AND SKILLS SCORE: Score – Is the score 60% and Above? is Yes and Please reenter the BASIC DIGITAL LITERACY AND SKILLS percentage (%) score as shown above (magnitude) is greater than or equal to 60:

SECTION C: INTERMEDIATE DIGITAL LITERACY AND SKILLS

We would like to find out more about your digital competence. Please indicate the extent to which you agree or disagree with each statement by encircling the corresponding number between 1 and 5, where 1 (Not at all), 2 (Rarely), 3 (Sometimes), 4 (Mostly), and 5 (Always).

	Score (1-5)
IDLS1 I know how to create and share digital content.	
IDLS2 I know how to organise digital content (e.g. documents, images, videos).	
IDLS3 I am able to collaborate with others to create digital content.	
IDLS4 I am able to use a computer to secure my data.	
IDLS5 I am able to teach others how to use digital technologies.	

IDLS6 I am able to use digital technologies as communication tools.	
IDLS7 I know the dangers of cyberbullying.	
IDLS8 I understand the importance of cybersecurity.	
IDLS9 I am able to transact on e-government services platforms.	
IDLS10 I am able to disable tracking cookies on sites and apps	
IDLS11 I am able to Search, understand & approve privacy policy statements of apps & websites	

INTERMEDIATE DIGITAL LITERACY AND SKILLS SCORE:

	Percentage Score	Is the score 50% and above?
Score		

Please reenter the INTERMEDIATE DIGITAL LITERACY AND SKILLS percentage (%) score as shown above

If INTERMEDIATE DIGITAL LITERACY AND SKILLS SCORE: Score - Is the score 50% and above? is Yes and Please reenter the INTERMEDIATE DIGITAL LITERACY AND SKILLS percentage (%) score as shown above (magnitude) is greater than or equal to 50:

SECTION D: ADVANCED DIGITAL LITERACY SKILLS

CB0: Are you a data controller or processor?

Hint: Note: There is a threshold for one to be regarded as a data controller with a minimum of 50 data subjects, inclusive of employees that they do business with.

☐ Yes

☐ No

If Are you a data controller or processor? is Yes:

Data Controllers

We would like to find out more about your understanding of cybersecurity. Please indicate the extent to which you agree or disagree with each statement by encircling the corresponding number between 1 (Not at all), 2 (Rarely), 3 (Sometimes), 4 (Mostly), and 5 (Always).

	Score (1-5)
CB1 When it comes to data protection, I always comply to data protection laws as outlined in the Cyber and Data Protection Act (2021).	

CB2: As a data controller or data processor, I ensure that personal information is :

	Score (1-5)
CB2.a (a) Processed in accordance with the right to privacy of the data subject.	
CB2.b (b) Processed lawfully, fairly and in a transparent manner in relation to any data subject.	

CB2.c. Collected for explicit, specified and legitimate purposes and not further processed in a manner incompatible with those purposes.	
CB2.d. Adequate, relevant, limited to what is necessary in relation to the purposes for which it is processed.	
CB2.e. Collected only where a valid explanation is provided whenever information relating to family or private affairs is required.	
CB2.f. Accurate and, where necessary, kept up to date, with every reasonable step being taken to ensure that any inaccurate personal data is erased or rectified without delay; and kept in a form which identifies the data subjects for no longer than is necessary for the purposes for which it was collected	

We would like to find out more about your understanding of cybersecurity. Please indicate the extent to which you agree or disagree with each statement by encircling the corresponding number between 1 (Not at all), 2 (Rarely), 3 (Sometimes), 4 (Mostly), and 5 (Always).

	Score (1-5)
CB3 I am always careful when opening an email with an attachment.	
CB4 I am able to identify a phishing attack on my email.	
CB5 I always log off my application after use	
CB6 I regularly change my password.	
CB7 I do not install free software on my devices from an untrusted source.	
CB9 I have a reliable back-up system for my data.	
CB10 My devices are firewall enabled.	
CB11 I always know when my device is hacked or infected.	
CB12 I always remove personal, confidential or sensitive data before sending my devices for repairs.	

We would like to find out more about your understanding of big data and artificial intelligence. Please rate your proficiency by encircling the corresponding number between 1-5: 1= poor, 2= fair, 3= good, 4= very good, 5= excellent)

	Score (1-5)
BD1 Data Management and Architecture i.e. data modelling, database management, data warehousing.	
BD2 Data Processing and Analysis i.e. data cleaning and preparation and statistical analysis.	
BD3 Able to use the Internet of Things (IoT)	
BD4 Machine learning and Artificial Intelligence (i.e machine learning algorithms and frameworks).	
BD5 Data visualisation and communication (i.e. data visualisation tools and storytelling with data.)	
BD6 Use of artificial intelligence to enhance the efficiency of business.	

BD7 Use of Data mining tools (Data mining and scraping)	
BD8 Use of social media measurement/listening tools. (e.g. Google analytics, nCapture and Brand Watch)	
BD9 Programming and deployment of data collection technologies (e.g. Survey Monkey, SurveyToGo, KoBo, Solstice)	
BD10 Use of 5 types of Big Data. (i.e. Prescriptive Analytics, Diagnostic Analytics, Cyber Analytics, Descriptive Analytics, and Predictive Analytics.)	

We would like to find out more about your understanding of digital entrepreneurship. Please rate your proficiency between 1-5 in the following; 1= poor, 2= fair, 3= good, 4= very good, 5= excellent.

	Score (1-5)
DE1 Digital content creation	
DE2 Buying from suppliers using online platforms.	
DE3 Selling products and/ services on online platforms.	
DE4 Using virtual reality to market products/services.	
DE5 Technology Skills (i.e. web development and application development).	
DE6 Participation in generating new ideas and solutions.	

Advanced Digital Literacy Skill Score:

	Advanced Digital Literacy Skill Score	Is the score 50% and Above?
Score		

Please reenter the Advanced Digital Literacy Skill percentage (%) score as shown above

If Tool Selection is QUESTIONNAIRE and Are you willing to participate? is Yes:

SECTION E: ASSESSMENT OF DIGITAL LITERACY DIVIDE

In this section, we would like to find out a little more about the availability of internet infrastructure in your area. May you indicate the extent to which you agree or disagree with each statement by selecting the corresponding number between 1 (Not at all), 2 (Rarely), 3 (Sometimes), 4 (Mostly) and 5 (Always).

III It is easy to access the internet in my area. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
(Not at all) (Rarely) (Sometimes) (Mostly) (Always) Not sure/Don't Know

II2 The Internet network in my area is strong. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
(Not at all) (Rarely) (Sometimes) (Mostly) (Always) Not sure/Don't Know

II3 My internet service provider(s) are reliable. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
(Not at all) (Rarely) (Sometimes) (Mostly) (Always) Not sure/Don't Know

II4 Internet access gadgets are readily available.	☐ 1 (Not at all)	☐ 2 (Rarely)	☐ 3 (Sometimes)	☐ 4 (Mostly)	☐ 5 (Always)	☐ Not sure/Don't Know
II5 Internet access gadgets are affordable.	☐ 1 (Not at all)	☐ 2 (Rarely)	☐ 3 (Sometimes)	☐ 4 (Mostly)	☐ 5 (Always)	☐ Not sure/Don't Know
II6 Government investment in Internet infrastructure is increasing.	☐ 1 (Not at all)	☐ 2 (Rarely)	☐ 3 (Sometimes)	☐ 4 (Mostly)	☐ 5 (Always)	☐ Not sure/Don't Know

In this section, we would like to find out a little more about your perception of digital inclusiveness. May you indicate the extent to which you agree or disagree with each statement by selecting the corresponding number between 1 (Not at all), 2 (Rarely), 3 (Sometimes), 4 (Mostly) and 5 (Always).

DI1 There is a gender balance in terms of internet access.	☐ 1 (Not at all)	☐ 2 (Rarely)	☐ 3 (Sometimes)	☐ 4 (Mostly)	☐ 5 (Always)	☐ Not sure/Don't Know
DI2 There is fairness in accessing internet services.	☐ 1 (Not at all)	☐ 2 (Rarely)	☐ 3 (Sometimes)	☐ 4 (Mostly)	☐ 5 (Always)	☐ Not sure/Don't Know
DI3 Needs of people with disabilities are considered when developing internet infrastructure.	☐ 1 (Not at all)	☐ 2 (Rarely)	☐ 3 (Sometimes)	☐ 4 (Mostly)	☐ 5 (Always)	☐ Not sure/Don't Know
DI4 There is equality in the distribution of internet infrastructure.	☐ 1 (Not at all)	☐ 2 (Rarely)	☐ 3 (Sometimes)	☐ 4 (Mostly)	☐ 5 (Always)	☐ Not sure/Don't Know

We would like to find out more about your understanding of digital citizenship. Please indicate the extent to which you agree or disagree with each statement by encircling the corresponding number between 1 (Strongly disagree), 2 (Disagree), 3 (Neutral), 4 (Agree) and 5 (Strongly agree).

DC1 I understand my rights on online platforms.	☐ 1 (Strongly disagree)	☐ 2 (Disagree)	☐ 3 (Neutral)	☐ 4 (Agree)	☐ 5 (Strongly agree)
DC2 I understand my responsibilities on online platforms.	☐ 1 (Strongly disagree)	☐ 2 (Disagree)	☐ 3 (Neutral)	☐ 4 (Agree)	☐ 5 (Strongly agree)
DC3 I promote positive behaviour on online platforms	☐ 1 (Strongly disagree)	☐ 2 (Disagree)	☐ 3 (Neutral)	☐ 4 (Agree)	☐ 5 (Strongly agree)
DC4 I support the safe use of internet resources	☐ 1 (Strongly disagree)	☐ 2 (Disagree)	☐ 3 (Neutral)	☐ 4 (Agree)	☐ 5 (Strongly agree)
DC5 It is important to respect the internet use laws of my country.	☐ 1 (Strongly disagree)	☐ 2 (Disagree)	☐ 3 (Neutral)	☐ 4 (Agree)	☐ 5 (Strongly agree)

We would like to find out more about perceptual barriers which are associated with the use of Internet services. Please indicate the extent to which you agree or disagree with each statement by encircling the corresponding number between 1 (Strongly disagree) 2 (Disagree) 3 (Neutral) 4 (Agree) and 5 (Strongly agree).

PB1 The internet is useful.	☐ 1 (Strongly disagree)	☐ 2 (Disagree)	☐ 3 (Neutral)	☐ 4 (Agree)	☐ 5 (Strongly agree)
PB2 Digital platforms are easy to use.	☐ 1 (Strongly disagree)	☐ 2 (Disagree)	☐ 3 (Neutral)	☐ 4 (Agree)	☐ 5 (Strongly agree)
PB3 I fear for my privacy when using digital platforms.	☐ 1 (Strongly disagree)	☐ 2 (Disagree)	☐ 3 (Neutral)	☐ 4 (Agree)	☐ 5 (Strongly agree)
PB4 The use of digital platforms is risky.	☐ 1 (Strongly disagree)	☐ 2 (Disagree)	☐ 3 (Neutral)	☐ 4 (Agree)	☐ 5 (Strongly agree)
PB5 People who are close to me use digital platforms.	☐ 1 (Strongly disagree)	☐ 2 (Disagree)	☐ 3 (Neutral)	☐ 4 (Agree)	☐ 5 (Strongly agree)

PB6_1: If you have any of the following messaging and social applications; what purposes do you typically use? (Check all answers that apply to each platform, app or medium.)

Hint: If other specify in the comments

	Information	Entertainment	Education	Communication	Activism	Storage	Business/Transactions/Services	Other (Specify in Comments)	I don't use	Comments
WhatsApp										
Telegram										
YouTube										
Facebook										
X (Twitter)										
Instagram										
TikTok										
Snapchat										
Twitch										
Discord										
FaceTime										
Other (Specify in comments)										

**PB6_2: If you have any of the following videotelephony and professional/business digital platforms, for what purposes do you typically use?
(Check all answers that apply to each platform, app or medium.)**

Hint: If other specify in the comments

	Information	Entertainment	Education	Communication	Activism	Storage	Business/Transactions/ Services	Other (specify in Comment s)	I don't use	Comments
ZOOM										
Teams										
Google Meet										
Skype										
Google Classroom										
Google Maps										
Podcasts										
LinkedIn										
ChatGPT										
Reddit										
Transportatio n application										
TV/News Application										

Online/Mobile Banking Application										
Online storage application										
Other (Specify in comments)										

PB7: Are you part of any organisations or associations that you usually interact with virtually using digital platforms?

- ☐ No
- ☐ Yes (Select which ones below)
- ☐ Sports
- ☐ Religious
- ☐ Cultural
- ☐ Social
- ☐ Recreational club
- ☐ Hiking
- ☐ Charitable or supportive
- ☐ Civic (involving neighbours or consumers)
- ☐ Pacifist
- ☐ Defence of human rights
- ☐ Environmentalist or nature defense
- ☐ Student/Academic
- ☐ Professional association or college
- ☐ Political party or organisation
- ☐ Union
- ☐ Activists
- ☐ Mukando - e.g ISALS, SACCOs, VSLAs
- ☐ Other (please specify)

Thank you for your time and your cooperation. Your views are much

INTERVIEW GUIDE FOR DIFFERENT SECTORS (GOVERNMENT, REGULATORY AUTHORITIES, EDUCATION, PRIVATE SECTOR AND CIVIL SOCIETY)

Interview Guide for Different Sectors

POTRAZ is the regulatory authority of the postal and telecommunications in Zimbabwe. Pursuant to its role as a regulatory authority, POTRAZ is conducting a national survey with the objective of assessing the level of digital literacy and digital skills in Zimbabwe.

Classification information

Pseudonym/ Name	Organisation Name	Position		Years with Organisation		Sector	
Province	District	Contact Details	Interviewer's Name	Date	Start Time	End Time	Date of Transcription

Questions

1. Does your sector rely on or use any digital technologies in its operations? if so, briefly name and explain the common ones.
2. Of late, has the sector introduced or adopted any new digital technologies? To what extent are these making an impact on the development, operation or otherwise of the sector?
3. Based on your submissions earlier and experience within the sector, which digital skills could you say are a requirement for one to be functional, operate, service or even benefit fully in or from the sector?
4. Which specific digital skills, and at what level, do the professions require?
5. What are the digital skills gaps in your sector? (Probe)
6. What is the impact of the digital skills gap to specific areas of the sector and the sector as a whole?
7. With regard to employees or professionals servicing the sector more specifically which parts or areas of the sector exhibit digital skills shortages? Are these basic or intermediate?
8. What do you attribute to be the cause of the shortages of the digital skills required by the sector or specific key areas of the sector? How can this be mitigated?
9. Which common digital skills training does the sector provide and how frequent?
10. What is your reaction to emerging technologies such as cloud computing, Artificial intelligence, big data or Virtual and Augmented reality in relation to the sector you operate from?
11. Is the sector swiftly reacting to the demands of emerging technologies, if yes kindly share strategies being used in this regard; if NOT, what are the challenges and how can this be rectified?

Thank you for your time and your cooperation. Your views are much appreciated.

FGD GUIDE FOR PROVINCES

FOR GOVERNMENT, REGULATORY AUTHORITIES, EDUCATION, PRIVATE SECTOR AND CIVIL SOCIETY)

Each group should be universally unique, therefore use the unique code given to guide your users. Each group should be lettered, and participants numbered after the same letter. For example, group Harare (H) should have participants numbered H1, H2, H3 ... in that order. Points of consensus should be named HA representing all. The Moderator in that group will also be named HM and the notetaker HN after the group letter. The contributions of the moderator and the notetaker are also tracked with their unique IDs for each group. The moderator and notetaker participations should be unique across different groups. In the transcript your observations and comments on non-verbal communication should be in brackets and italicized. For each province, follow the given letters (Bulawayo (B), Manicaland (Man), Mash Central (MC), Mash East (ME), Mash West (MW), Mat North (MN), Mat South (MS), Midlands (Mid), Masvingo (Mas) and Harare (H)).

Classification information

Pseudonym	Province	Sector or Org	Moderator's Name	Notetaker	Date of Interview	Start Time

Guide for Different Sectors

POTRAZ is the regulatory authority of the postal and telecommunications in Zimbabwe. Pursuant to its role as a regulatory authority, POTRAZ is conducting a national market survey with the objective of assessing the level of digital literacy and digital skills in Zimbabwe.

1. What is the state of digital skills and digital literacy in your province? (Probe)
2. Describe the importance of digital literacy and digital skills to your province.
3. Which digital technologies is your province using to promote development? (*Probe: Which digital technologies has the province been relying on for the past five years?*)
4. Have there been any additional new digital technologies adopted by the province? (*Probe: If not, which ones are required and what could be hindering the province from adopting them? If yes, which ones; what triggered the need and what strategies did the province employ in adopting such digital technologies.*)
5. Are you experiencing any digital skills gaps in the province? (Probe)
6. If yes, what could be attributed to the cause of these shortages?
7. What strategies is the province employing in dealing with gaps?

**National Digital Literacy and Skills Assessment
Observation Sheet**

ORGANISATION BASED

Observer Name:

Date of Observation:

Industry/Sector:

Organization Name:

Department/Team Observed:

Observation Duration:

	Observation Notes
1. Infrastructure and Equipment Computers	
Are computers shared or individually assigned?	
Type of computers (e.g. desktop, laptop, tablet).	
Condition of devices (e.g. old, modern, well-maintained).	
Presence of Peripheral Devices	
Printers, scanners, monitors, etc.	
Type of computers (e.g. desktop, laptop, tablet).	
Condition of devices (e.g. old, modern, well-maintained).	
Internet Connectivity	
Visible routers, Switches, cables, or Wi-Fi indicators.	
Are employees using wired or wireless connections?	
2. Workspace Setup	
Computer Workstations:	
Are workstations organized and ergonomic (comfortable)?	
Are there multiple monitors or single screens?	
Shared Spaces:	
Are there shared computers or devices in common areas?	
Are there visible signs of collaboration (e.g. shared screens, group huddles around a device)?	
Digital Tools in Use:	
Are employees using smartphones, tablets, or other handheld devices?	

Are there visible digital tools like projectors, smartboards, or video conferencing equipment?	
3. Employee Behavior and Usage	
Computer Usage:	
Are employees actively using computers, or are they idle?	
Are employees typing, browsing, or using software tools?	
Collaboration Tools:	
Are employees using visible communication tools (e.g. headsets for calls, video conferencing on screens)?	
Printing and Scanning:	
Are employees using printers or scanners?	
Are there visible stacks of printed materials or digital files being scanned?	
4. Training and Support	
Visible Training Materials:	
Are there posters, manuals, or guides related to digital tools?	
Are employees referring to physical or digital instructions?	
Support Availability:	
Do employees wait for technical assistance?	
5. Challenges and Barriers (Visible)	
Technical Issues:	
Are there visible signs of frustration or difficulty (e.g. employees struggling with devices)?	
Are computers or devices visibly outdated or malfunctioning?	
Are employees waiting to use shared equipment?	
6. Overall Observations	
General Atmosphere:	
Are employees comfortable using digital tools, or do they seem hesitant?	
Is there a visible divide between tech-savvy and less tech-savvy employees?	
7. Observer Comments	
Summary of Key Observations:	

GENERAL OBSERVATION SHEET GUIDE**Observer Name:****Date of Observation:****Observation district:****Observation Duration:**

	Observer notes
1. Public Access to Digital Infrastructure	
Public Internet Access Points:	
Are there visible internet cafes, public Wi-Fi hotspots, or community digital centers?	
Are these facilities well-maintained and actively used?	
Are there self-service kiosks for government services (e.g. tax payments, ID renewals)?	
Are citizens using these kiosks confidently?	
2. Educational Institutions	
School Computer Labs:	
Are computer labs present in schools, and are they equipped with functional devices?	
Are students actively using computers for learning?	
E-Learning Tools:	
Are teachers using projectors, smartboards, or tablets in classrooms?	
Are students accessing digital textbooks or online resources?	
3. Healthcare Facilities	
Are hospitals and clinics using digital patient records (Electronic Health Record) or telemedicine platforms?	
Are healthcare workers using tablets or computers for patient management?	
Are digital tools (e.g. screens, tablets) used for health education in public spaces?	
4. Workplaces Across Industries	
Are employees using computers, tablets, or smartphones?	
Are there visible signs of collaboration tools (e.g. video conferencing, shared screens)?	
Are digital tools visibly improving workflow (e.g. barcode scanners in retail, farm management software in agriculture)?	
5. Retail and Service Sectors	

Are businesses using digital POS systems or cash registers?	
Are employees comfortable using these systems?	
Are businesses advertising their websites or social media pages visibly (e.g. on signage, receipts)?	
6. Transportation and Logistics	
Are public transport systems using digital ticketing (e.g. QR codes, contactless payments)?	
Are passengers using these systems confidently?	
Are delivery services using digital tracking tools (e.g. GPS, barcode scanners)?	
7. Financial Services	
Are banks and ATMs equipped with modern digital interfaces?	
Are customers using mobile banking apps or online banking services?	
Are digital payment options (e.g. mobile wallets, card machines) available and used?	
8. Public Spaces and Community Centers	
Are there digital billboards or screens displaying information in public areas?	
Are these signs interactive or static?	
Are there visible posters or announcements for digital literacy training programs?	
Are community members attending these programs?	
9. Government Services	
Are government websites or apps being used by citizens for services (e.g. tax filing, permits)?	
Are there visible kiosks or help desks for digital services?	
Are citizens using digital IDs or e-signatures for transactions?	
10. Household Observations	
Are households equipped with visible routers or modems?	
Are families using smartphones, tablets, or computers at home?	

Are households using streaming services, gaming consoles, or smart TVs?	
11. Visible Digital Divide	
Are there visible differences in digital infrastructure between urban and rural areas?	
Are older adults or women visibly less engaged with digital tools compared to younger individuals or men?	
12. Cybersecurity Awareness	
Are there visible signs of cybersecurity practices (e.g. password-protected devices, antivirus software)?	
Are public Wi-Fi networks secured with passwords?	
13. Observer Comments	
Summary of Key Observations:	

