SITUATION ANALYSIS REPORT

Project HERizons: Career Pathways for Women Graduates in Kenya

NOVEMBER 2024

MBAH-AMANZE, KIMANI, NGOASONG & KINYANJUI

PROJECT HERIZONS: CAREER PATHWAYS FOR WOMEN GRADUATES IN KENYA

The Project is supported by funding from the British Council's Going Global Partnerships programme.

Going Global Partnerships supports universities, colleges and wider education stakeholders around the world to work together towards stronger, equitable, inclusive, more internationally connected higher education, science and TVET.

Funded by

BRITISH COUNCIL

Table of Contents

Executive Summary

Gender inequality in the Information and Communications Technology (ICT) sector is a global issue that limits the participation of women, contributing to a persistent gap in the industry's workforce and leadership roles. Women remain significantly underrepresented despite the growing demand for digital skills and technological innovation. The underrepresentation of women in ICT can be traced to multiple root causes, starting with educational barriers. From a young age, societal stereotypes often discourage girls from pursuing careers in Science, Technology, Engineering, and Mathematics, which are foundational to ICT. Girls are less likely to receive encouragement or resources to develop their technical skills, which leads to fewer women enrolling in ICT-related courses at the higher education level.

In addition to societal stereotypes, gender stereotypes within the workplace often result in biased recruitment, promotion, and retention practices that negatively impact women. Women may face additional challenges when balancing personal and professional responsibilities due to inadequate support systems, including a lack of family-friendly policies or flexible work arrangements. Furthermore, the lack of mentorship and networking opportunities exacerbates the gap. Without female role models or mentors, many women may struggle to navigate career advancement in ICT, leading to increased dropout rates or stagnation in lower-level roles.

The absence of gender diversity in ICT has widespread implications. Economically, companies miss out on the benefits of diverse teams. Research shows that diverse teams tend to outperform homogeneous ones in innovation, problem-solving, and decision-making. By limiting women's participation, the ICT sector may fail to harness its full potential for technological advancement and innovation.

On a societal level, gender inequality in ICT exacerbates the digital divide. As the world becomes increasingly reliant on technology, women lacking ICT education and opportunities are left behind and unable to benefit from the digital economy. This widens the gap between men and women in terms of income, employment opportunities, and overall empowerment.

Achieving gender equality in ICT is a moral imperative and a strategic advantage for the industry and society. Thus, a multifaceted approach is required to tackle gender inequality. Education is a critical starting point. Schools, universities, and governments must actively work to encourage girls to pursue STEM subjects from an early age. Programs that provide scholarships, coding camps, and mentorship for young women can help bridge this gap. By fostering interest in ICT fields early on, more women can enter the workforce equipped with the skills needed to succeed.

Mentorship and networking opportunities are also essential. Women in ICT need access to role models and support networks that can guide them through their career development. By increasing visibility and providing resources for women to connect with peers, mentors, and industry leaders, employers can create a more supportive and encouraging environment.

Project HERizons recognises the causes and impact of gender inequality on women by strengthening the employment pathways for women graduates. We believe that change should happen at the earliest stage of women's career development, which begins in the education system. With a focus on higher education, the Project seeks to create a trajectory for career advancement for female students at Riara University School of Computing Science.

The Project integrates literature debating gender-lens investing, gendered (in)equity, and employment pathways with the role modelling theory to ensure female students benefit from direct mentorship and improved knowledge of the sector, employment pathways and recruitment practices, and developed skills.

This document details the research, methodology and processes followed in strengthening the employment pathways for female students at Riara University School of Computer Sciences. We believe this document provides a template for the replication of Project HERizons in different sectors and jurisdictions, with the overarching aim of tackling gender inequality in women's recruitment, retention and progression.

Dr Miriam Mbah-Amanze

Senior Lecturer

The Open University

1. Introduction

Project HERizons contributes to bridging the gender gap by integrating a gender lens into technology education to produce enterprising women graduates capable of securing employment in Kenya's fast-growing digital technology industry. Known as the Silicon Savannah,[1] Nairobi has become a key global player in the technology industry over the last few years. The Kenyan ICT (Information and Communication Technology) sector has experienced significant growth over the past few decades, propelled by technological advancements and government initiatives promoting digital innovation.[2] Kenya has emerged as a regional leader in ICT, with a vibrant tech ecosystem characterised by start-ups, innovation hubs, and a growing number of tech-savvy individuals.[3]

In recent years, there has been a concerted effort to promote gender inclusion and diversity within the Kenyan ICT sector. While women have historically been underrepresented in STEM (Science, Technology, Engineering, and Mathematics) fields globally, there has been a noticeable shift towards greater female participation in Kenya's tech industry.[4]

The Kenyan government has implemented various programs and policies to encourage women's participation in ICT. For instance, Kenya's Ministry of Information, Communication, and Digital Economy (MICDE) has launched initiatives such as the Ajira Digital Program to equip youth, including women, with digital skills for online work and entrepreneurship.[5] Furthermore, there has been a growing emphasis on providing women access to tech education and training programs. Organisations and institutions offer initiatives such as coding boot camps, hackathons, and workshops specifically targeted at women to enhance their skills and confidence in the ICT field.[6]

The increased awareness about the importance of gender diversity and inclusivity has led to advocacy efforts aimed at addressing barriers and biases faced by women in the ICT sector. Organisations and individuals advocate for equal opportunities, fair treatment, and recognition of women's contributions to the industry. Despite these positive developments, challenges remain in achieving full gender parity in the Kenyan ICT sector.

Persistent gender stereotypes, cultural norms, and structural barriers continue to hinder women's advancement in tech-related fields. Addressing these challenges requires sustained efforts from various stakeholders, including government, academia, industry, and civil society.

---

[1] A Hruby & J Bright, 'The Rise of Silicon Savannah And Africa's Tech Movement' (2015) https://techcrunch.com/ accessed 21 April 2024.

[2] Ibid.

[3] A Luvanda, 'A Policy Framework for Bridging the Gender Divide in Digital Technology Courses and Careers in Kenya' (2023) Centre for Universal Educations at Brookings https://www.brookings.edu/wp-content/uploads/2023/02/Brookings2022-KenyaFinal-WEB.pdf accessed 21 April 2024.

[4] Ibid.

[5] Ajira, 'About Ajira Program' (2024) https://ajiradigital.go.ke/#/about-ajira-program accessed 13 November 2024.

[6] Ibid.

While progress has been made, there is still work to be done to ensure that women are fully included and empowered in Kenya's dynamic ICT sector. By continuing to prioritise gender inclusion and diversity, Kenya can unlock the full potential of its tech industry and drive sustainable economic growth and innovation.

Given the context, we believe that learning needs to happen in a practical manner, adapting the successful pathways to employment by women leaders/role models, where possible. This is why Project HERizons, as a career pathway programme for women graduates in Kenya, is important and a contributor to empowering the next generation of women leaders in the ICT sector.

The Project is developed to provide female students with opportunities to develop their knowledge, skills, and provide access to networking with female leaders in diverse tech employment pathways. The situation analysis report (SAR) details Project HERizon's approach to promoting employment pathways for women graduates.

The objective of the SAR is to:

- Provide a literature analysis on the theory of change for the employment of women graduates in the tech sector
- Analyse the barriers impacting women's recruitment, retention and progression in the technology sector, focusing on Kenya.
- Outline the Project's stakeholder identification and engagement protocol.
- Detail the Project's methodology and process of enhancing the employment pathways of female graduates in Kenya.

The SAR is divided into five sections with accompanying appendices. Section 2 provides an overview of project HERizons, including its objectives, activities and methodology. Section 3 reviews gender inequality in the technology sector by summarising existing research on women's barriers and challenges in securing, retaining, and progressing in the employment pathways. It also analyses literature on the theory of change for using the role modelling approach. Then, section 4 discusses the Project's stakeholders identification and engagement protocol. Finally, section 5 provides conclusions and recommendations for future projects and research.

2. Project HERizons: Career Pathways for Women Graduates in Kenya

Project HERizons: Career Pathways for Women Graduates in Kenya is a response to the global, regional and national call to achieve gender equality and women's empowerment.

The overarching purpose of Project HERizons is to address the persistent gender inequality in women's employment in technology by strengthening a transitional pathway to women's employment through knowledge development, capacity building and role modelling.

2.1 Project's objectives

The Project's objectives are as follows:

1. Co-create and co-produce HERizons within a supportive university-led ecosystem – a safe space based on action research involving students, academics, and industry practitioners, generating high-quality tools and resources for supporting women's employment in Kenya.
2. Capacity building: Build the capacity of academics and female students through targeted training that enhances their knowledge of employment pathways and equips students with employability skills.
3. Support, evaluate and learn: To pilot an approach to role modelling pathways to employment where students mirror the career trajectory of role models in the classroom, capturing and sharing these as short case studies and thereby gaining confidence in their career aspirations.
4. Embed knowledge into practice – identify and develop a university-led ecosystem for public engagement to put the insights from the Project into practice for long-term impact.

2.2 Project's work packages

The Project consists of four work packages with clear outcomes under each package. The work packages and their expected outcomes are summarised as follows:

<u>Work package 1: Capacity development</u>

WP1 consists of co-creating an improved approach to supporting women graduates' transition to employment in Kenya. This is underpinned by strong governance, strategic oversight, and monitoring for the successful completion of the Project and reporting to the funder.

Outcome: timely delivery of each work package, strengthened relationship between the partners, and satisfactory project reporting to the British Council.

<u>Work package 2: Co-design pathways to employment for women, led by Open University.</u>

WP2 applies an action research method to develop a shared understanding amongst students, academics and industry professionals on the barriers, opportunities, and pathways to the employment of women graduates within the technology sector.

Outcome: Increased awareness of pathways to employment in the technology sector, evidenced in written Situation Analysis Report to inform WP3; direct consultation and recruitment of female students and role models.

Work package 3: Developing women graduates: role modelling and skills development, led by Riara University

WP3 consists of supporting students in experiencing the employment pathways of women leaders as professionals in the technology sector. Under this work package, the Project will:

- Allocate students to an industry mentor with whom they will collaborate to co-author a case study of their role model, highlighting their pathway to employment, the challenges they experienced, and how they overcame them.
- Provide academic support to female undergraduate students in the School of Computing Science.
- Deliver skills development training through virtual webinars and workshops.

Outcome: Increases awareness of employment pathways and improved knowledge and skills of the female students; builds capacity of academics; increased impact on the female industry professionals as role models.

Work package 4: Public engagement with pathways to employment, led by Riara University

WP4 consists of increasing the visibility of the Project through three project events that will engage the public. Such an event will include a virtual project launch, a virtual student highlighting and a final project dissemination event.

Outcome: Knowledge sharing with the public and stakeholders; increased visibility of partnership internally and externally; attendance at the online and in-person public engagement events.

2.3 The Project's Methodology

The Project adopts a mixed-method approach to strengthening the employment of women graduates in the Kenyan technology sector. The first method uses a desk-based research approach in reviewing academic and policy sources using keywords such as gender inequality, employment pathways, women empowerment, information, communication and technology, women's employability, and Kenya. The literature review identified barriers, opportunities, and pathways to employment within the technology sector, with a particular focus on the Kenya context. This will be used to design the protocol for multi-stakeholder consultation.

A second method adopted in this Project is an empirical approach. Qualitative and quantitative data was collected from stakeholders to understand their career journey, employment pathways, employment experiences, skills and knowledge gaps. The qualitative approach includes case studies, semi-structured consultations and observations. Additionally, the Project used surveys to gather quantitative data that assessed students' motivations, knowledge, skills and the Project's impact on their personal and professional development.

The Project also adopts the Kanban project management methodology to maximise efficiency and provide transparency of work. Tasks and schedules are displayed on the Project's monitoring information spreadsheet and reviewed regularly to check the progress of the work. This fostered a culture of collaboration, which accelerated the completion of tasks.

3. Gender Equity: Achieving Gender Equity Through Role Modelling and Employment Pathways

The number of women in the ICT computer sector has been steadily increasing. However, there is still significant gender inequality in the recruitment, retention and progression of women. Data from Eurostat shows that women hold 17% of leadership jobs in the technology sector.[7] The inequality experienced by women is seen across the career chain and applies to the education sector. For example, the gender disparity in the recruitment of students and staff to science, technology, engineering and mathematics degrees has been a cause for concern[8] Thus, to address the social pandemic of gender inequality in the technology sector, a cradle-to-grave approach must be adopted to bridge the gap.

Addressing women's employment in the ICT sector has profound socio-economic implications for Kenya. Increased participation of women in ICT-related professions contributes to economic growth and enhances gender equality and social inclusion. By empowering women with digital skills and employment opportunities, the ICT sector can serve as a catalyst for poverty reduction and sustainable development. Moreover, women's involvement in technology-driven initiatives fosters innovation and drives digital transformation across various sectors of the economy.[9]

This section of the report details the results from the literature review on barriers, opportunities, and pathways to employment within the technology sector, with a particular focus on the Kenya context.

3.1 Barriers and challenges for women in the technology sector

While digital technology careers are highly touted as the jobs of the future, women occupy only about 30 per cent of digital technology positions in Kenya.[10] This is due to various barriers that hinder women's participation in the ICT workforce in Kenya. The identified barriers are summarised and discussed below.

3.1.1 Gender parity and discriminatory employment practices

The state of gender parity in the labour market remains a significant challenge.

[7] World Economic Forum, 'Why bringing women into tech roles is good for society' (2022) https://www.weforum.org/agenda/2022/02/women-gender-technology-economy-representation-equality/ accessed 13 November 2024.

[8] B Casad, J Franks, C Garasky, M Kittleman, A Roesler, D Hall, & Z Petzel, 'Gender inequality in academia: Problems and solutions for women faculty in STEM (2021) Journal of neuroscience research 99(1), 13-23; T VanHeuvelen, & N Quadlin, 'Gender inequality in STEM employment and earnings at career entry: Evidence from millennial birth cohorts' (2021). Socius, 7, 23780231211064392; S Eikermann, 'Women Not Welcome: A Study of Gender Inequality and Leadership in STEM' (2019) M.A. in Leadership Studies: Capstone Project Papers. 51; S Kahn & D Ginther, 'Women and STEM' (2017) (No. w23525). National Bureau of Economic Research.

[9] Luvanda (n 3).

[10] Ibid.

At the global level and in Kenya, the few women who join the ICT workforce rarely make it to leadership positions due to phenomena known as "broken rung" and "the leaky pipeline".[11] The broken rung phenomena refer to structural and operational barriers such as lack of clear promotion guidelines, unequal pay, unfavourable working conditions and issues of sexual harassment at the workplace that disproportionately affect women. Due to the broken rung's barriers, women tend to stagnate in lower levels or ultimately leave such workplaces before they attain leadership positions.[12]

Not only has women's participation in the labour market globally slipped in recent years, but other markers of economic opportunity have shown substantive disparities between women and men.[13] While women have (re-)entered the labour force at higher rates than men globally, leading to a slight recovery in gender parity in the labour force participation rate, gaps remain wide overall and are apparent in several specific dimensions.[14]

Science, technology, engineering, and mathematics (STEM) occupations are well-remunerated and are expected to grow in significance and scope in the future.[15] LinkedIn data on members' job profiles shows that women remain significantly underrepresented in the STEM workforce.[16] Women comprise almost half (49.3%) of total employment across non-STEM occupations but 29.2% of all STEM workers.[17] While the percentage of female STEM graduates entering into STEM employment seems to be increasing with every cohort, the numbers on the integration of STEM university graduates into the labour market show that the retention of women in STEM, even one year post-graduation sees a significant drop.[18] Women currently account for 29.4% of entry-level workers; yet for high-level leadership roles such as VP and C-suite, representation drops to 17.8% and 12.4%, respectively.[19] When it comes to artificial intelligence (AI), talent availability overall has surged, increasing six times between 2016 and 2022, yet female representation in AI is progressing very slowly.[20] The percentage of women working in AI today is approximately 30%, roughly four percentage points higher than it was in 2016.[21]

Studies indicate a noticeable gender gap in Kenya's ICT sector workforce. According to the Kenya National Bureau of Statistics (KNBS), women constitute a minority of ICT professionals, with only about 30% of the workforce being female.[22] This disparity is further highlighted by the underrepresentation of women in leadership positions and technical roles within the sector. Factors contributing to this gap include social and cultural

[11] C Oyier, 'Bridging the Digital Divide: How Kenya Can Empower Girls in ICT', (2024) KICTANet https://www.kictanet.or.ke/bridging-the-digital-divide-how-kenya-can-empower-girls-in-ict/ accessed, 22 April 2024.
[12] Ibid.
[13] World Economic Forum "Global Gender Gap Report 2023" (2023) https://www.weforum.org/publications/global-gender-gap-report-2023/digest/ accessed 21 April 2024.
[14] Ibid.
[15] I Bokova, 'Cracking the code: girls' and women's education in science, technology, engineering and mathematics (STEM)' (UNESCO 2022) https://unesdoc.unesco.org/ark:/48223/pf0000253479 accessed 23rd April 2024.
[16] WEF (n 13).
[17] Ibid.
[18] Ibid.
[19] Ibid.
[20] Ibid.
[21] Ibid.
[22] Oyier (n 11).

norms, limited access to education and training opportunities, and unconscious biases in recruitment and promotion processes.[23]

Additionally, Workplace discrimination, including biased hiring practices, unequal pay, and limited opportunities for advancement, also constitute factors that may lead to a lack of representation in senior positions, thereby discouraging women from remaining in the field. There also exist instances of sexual harassment and a lack of supportive workplace policies, which enhances hostile work environments for women, thus making it challenging for women to thrive in the ICT sector.[24]

Despite the challenges, female-led startups and enterprises are emerging, driving innovation and creating employment opportunities. Moreover, women leaders in technology advocate for greater representation and gender equality in the industry. However, persistent barriers, such as access to financing and networks, continue to impede the growth and sustainability of women-owned ICT businesses.

3.1.2 Societal and cultural perceptions

A significant barrier is the prevailing societal perception that ICT is and should remain male-dominated, leading to discouragement and lack of support for women pursuing careers in technology.[25] These stereotypes are reinforced by family, the media and even educators.[26] Societal expectations that women should prioritise family responsibilities over their careers also limit their participation in demanding ICT roles, often requiring long hours and continuous professional development.[27]

3.1.3 Lack of access to education and technology

While primary education enrolment rates for girls in Kenya have improved, a significant gender gap exists in higher education.[28] Many women in Kenya face economic barriers that limit their ability to pursue higher education and training in ICT. Thus, limited access to quality education, especially in STEM (Science, Technology, Engineering, and Mathematics), is a deterrent for many women interested in ICT careers.[29] This also heightens the lack of or the presence of fewer role models and mentors in ICT, which may highly discourage the participation or education of young women in the field.[30] Mentorship is crucial for professional development and for breaking gender barriers. Scholarships, grants, and financial aid targeted at

[23] A Ponge, 'Bridging the Gender Digital Divide: Challenges in Access and Utilization of ICTs for Development at the Devolved Level in Kenya.' (2016) 5/7 International Journal of Innovative Research & Development https://www.researchgate.net/profile/Awuor-Ponge/publication/305703050_Ponge_Awuor_2016_'Bridging_the_Gender_Digital_Divide_Challenges_in_Access_and_Utilisation_of_ICTs_for_Development_at_the_Devolved_Level'_International_Journal_of_Innovative_Research_and_Development_IJ/links/579ace0b08ae024e100e4dd9/Ponge-Awuor-2016-Bridging-the-Gender-Digital-Divide-Challenges-in-Access-and-Utilisation-of-ICTs-for-Development-at-the-Devolved-Level-International-Journal-of-Innovative-Research-and-Development-IJI.pdf accessed 20 April 2024.

[24] Ibid.

[25] Ibid.

[26] ibid

[27] Ibid

[28] L Mbirianjau, F Chege & I Oanda, 'Exploring Enabling Interventions for Increasing Female Students' Access and Participation in Science, Technology, Engineering and Mathematics (STEM) Disciplines in Kenyan Public Universities' (2019) Msingi Journal 1(2), 1-6.

[29] Ibid.

[30] Ibid.

women in STEM can also help mitigate these challenges.[31]

3.1.4 Enforcement of policies and regulatory frameworks

While policy and regulatory frameworks may exist to promote gender equality, their implementations are often weak. Thus, there is a need for efficient enforcement of laws that protect women's rights in the workplace and promote their participation in the ICT sector. In addition, there ought to be policies that encourage gender diversity and provide support for women in technology, thereby addressing the existing imbalance.[32]

Efforts to overcome these barriers require a multifaceted approach, including policy reforms, educational initiatives, and cultural changes. Programs that provide scholarships and mentorships for women in ICT, enforce gender equality policies, and create supportive work environments are crucial for increasing women's participation in this sector.

Some initiatives and interventions have been implemented to address gender disparities in Kenya's ICT sector, but more is needed. Government-led programs, such as the Digital Literacy Program and the Ajira Digital Program, aim to equip women with digital skills and promote participation in the digital economy.[33] Non-governmental organisations (NGOs) and civil society groups have also launched initiatives focusing on training, mentorship, and advocacy to empower women in ICT. Furthermore, private sector initiatives, including corporate diversity programs and gender-sensitive recruitment practices, are crucial in promoting gender inclusivity within organisations.

3.2 Theory of change for role modelling pathways to employment for women graduates in the technology sector

The term' role model' was developed by Merton, who defined this concept as individuals who act as examples to others.[34] Individuals are given the term role model due to their behaviour or accomplishments, which are viewed favourably by another, the role aspirant. The role model does not necessarily need to have a personal relationship with the role aspirant; however, according to Morgenorth et al., they show others how to perform a skill, achieve a goal, and make it desirable — they are inspirations.[35] Thus, role modelling is valuable to aspirants with ambitious goals, especially those in stigmatised or vulnerable groups.[36]

Role modelling as a theory for change is adopted in many sectors, including education and employment. For example, Coleman's study on role modelling for career development found that it is valuable for career sustainability and upward career mobility.[37] The theory has also been

[31] Ibid.
[32] Ibid.
[33] Ajira (n 5).
[34] R Merton, *Social theory and social structure*. (New York, NY: Free Press, 1975).
[35] T Morgenroth, M Ryan, & K Peters, 'The Motivational Theory of Role Modeling: How Role Models Influence Role Aspirants' Goals' (2015) Review of general psychology, 19(4), 465–483.
[36] Ibid.
[37] T Coleman, 'Role Modelling as an Alternative to Mentoring for Career Development Outcomes in Organisations' in S Vidyasagar, & P Hatti, (eds) *Leadership and Role Modelling*:

explored in higher education, especially in the career development of academics and students' degree attainment or recruitment, yielding positive outcomes worth emulating.[38] Quimby's study is notable and relevant to Project HERizons as it examined the influence of role modelling on women's careers.[39] The study adopted the role modelling theory of change on 368 female undergraduate students and found that the role models influenced the career choices of the participants.[40]

The positive outcome of role modelling as a theory of change led to its adoption on Project HERizons. The theory is adopted because the Project (HERizons) seeks to enable female students (role aspirants) to achieve the goal of improving their skills and gaining employment in the Kenyan ICT sector. The role models in this Project are female Kenyan industry professionals with several professional accomplishments in their employment pathways. Adopting role modelling as a theory of change has three primary benefits to the Project:

- The industry professionals act as inspirations to the students (role aspirants) as it provides them with the possibility that gaining employment in the Kenyan technology sector is achievable.
- It allows the students to share their career goals with the role model and obtain valuable feedback that may influence their career decisions.
- The students can ask about employment pathways and network with industry professionals.

Despite the above advantages, role modelling has several limitations. For example, the role model's accomplishment may be subject to several factors unknown to the aspirant, so learning and implementing the role model's pathway may not yield the same outcome. This is mitigated in this Project by providing each student with two role models: one for the group meetings and another for the individual meetings. By learning from two role models, students can draw inferences and apply them to their circumstances.

3.3 Employment Pathways and opportunities in the ICT Sector - Kenya

The ICT sector is vital to Kenya's economy, contributing significantly to economic growth, job creation, and innovation. Various factors, including substantial investment in ICT infrastructure, a supportive policy environment, and a vibrant tech ecosystem, underpin Kenya's strategic positioning as a technology hub in East Africa.

Reviewing existing employment opportunities in Kenya's ICT sector resulted in six key employment

U*nderstanding workplace dynamics* (Palgrave Macmillan, Cham 2018).

[38] B Uslu, 'Mentoring and role modelling through the perspective of academic intellectual leadership: Voluntarily and institutionally' (2020) Research in Educational Administration and Leadership, 5(3), 921-952; J Gladstone, & A Cimpian, 'Which role models are effective for which students? A systematic review and four recommendations for maximizing the effectiveness of role models in STEM' (2021) International journal of STEM education 8, 1-20.

[39] L Quimby & A De Santis, 'The influence of role models on women's career choices' (2006) The Career Development Quarterly *54*(4), 297-306.

[40] Ibid.

pathways. The pathways are summarised in this section.

3.3.1 Software Development and Programming

- Role: Software developers design, code, test, and maintain applications and systems.
- Skills Needed: Proficiency in programming languages (e.g., Python, Java, C#), problem-solving, and software development methodologies.
- Entry requirements: Entry into this pathway typically starts with a degree in computer science or related fields, coupled with internships or coding boot camps. Self-taught programmers can also find opportunities through demonstrated skills and portfolios.

3.3.2 Network and Systems Administration

- Role: Network administrators manage and support the ICT infrastructure, ensuring network security, availability, and performance.
- Skills Needed: Knowledge of network configurations, server management, cybersecurity practices, and troubleshooting.
- Entry requirements: Information technology or network engineering degrees are common entry points. Professional certifications such as Cisco's CCNA or CompTIA Network+ enhance job prospects.

3.3.3 Data Science and Analytics

- Role: Data scientists analyse large datasets to extract insights and support decision-making.
- Skills Needed: Strong analytical skills, knowledge of statistics, proficiency in tools like R, Python, and data visualisation software.
- Entry requirements: A background in statistics, mathematics, or computer science is typical, along with specialised courses or certifications in data science.

3.3.4 Cyber security

- Role: Cybersecurity professionals protect organisations from digital threats and ensure data integrity.
- Skills Needed: Understanding security protocols, risk management, ethical hacking, and incident response.
- Entry requirements: Degrees in cybersecurity or information security and certifications such as CISSP or CEH are crucial for entering this field.

3.3.5 ICT Project Management

- Role: ICT project managers oversee the planning, execution, and delivery of technology projects.
- Skills Needed: Project management skills, knowledge of ICT systems, and leadership abilities.
- Entry requirements: A degree in business management or information systems, supplemented with project

management certifications like PMP or PRINCE2.

3.3.6 Technical Support and IT Helpdesk

- Role: IT support specialists assist users with technical issues and maintain computer systems.
- Skills Needed: Problem-solving, technical knowledge of hardware and software, and customer service skills.
- Entry requirements: Entry-level positions often require a diploma or degree in IT and on-the-job training.

In addition to the six pathways outlined above, four emerging pathways in the sector offer employment opportunities.

3.3.7 Fintech

The intersection of finance and technology, fintech, is a rapidly growing sector in Kenya, driven by innovations like mobile banking services.[41] The rise of fintech in Kenya can be traced back to 2007 when Safaricom, Kenya's leading mobile network operator, launched M-PESA.[42] Over the years, several other startups have emerged with innovations to cater to the country's diverse financial needs. With the emergence of these startups, including digital lending platforms, remittance services, and online payment solutions such as Branch, Tala and M-Kopa, employment opportunities have rapidly increased.[43] Employment opportunities include app development, cybersecurity, and data analysis within financial services.

3.3.8 E-commerce and Digital Marketing

The rise of e-commerce platforms has created demand for digital marketers, web developers, and e-commerce managers. Skills in SEO, content creation, and online sales strategies are increasingly valuable.[44]

3.3.9 Artificial Intelligence and Machine Learning

AI and ML are gaining traction, offering roles in algorithm development, data modelling, and AI ethics. The realisation of AI benefits demands advanced knowledge in AI, often through specialised courses or advanced degrees. These skills can only be developed at the education level through STEM courses offered at secondary and tertiary levels.[45]

3.3.10 Telecommunications:

The 5G and fibre optic network expansion is driving demand for telecommunications engineers and technicians who design, implement, and maintain communication systems.The ICT sector in Kenya offers diverse and dynamic employment pathways, from software development

[41] M Chitavi, L Cohen, & S Hagist, 'Kenya Is Becoming a Global Hub of FinTech Innovation' (Havard Business Review 2021) https://hbr.org/2021/02/kenya-is-becoming-a-global-hub-of-fintech-innovation accessed 3 June 2024.

[42] Ibid.

[43] I Ngugi, 'Kenya's Fintech Industry: A Vibrant and Growing Hub for Financial Innovation' (LinkedIn 3 March 2023) https://www.linkedin.com/pulse/kenyas-fintech-industry-vibrant-growing-hub-financial-isaac-ngugi/ accessed 3 June 2024.

[44] International Labour Organization, 'Unlocking the Potential of E-Commerce and Digital Financial Services in Kenya' (30 October 2023) https://www.ilo.org/resource/news/unlocking-potential-e-commerce-and-digital-financial-services-kenya accessed 5 June 2024

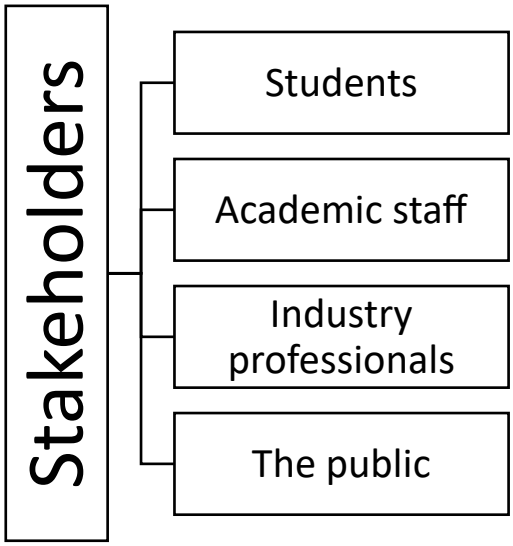
[45] Access Partnership, 'Artificial Intelligence for Africa: An Opportunity for Growth, Development, and Democratisation' (2018) https://pic.strathmore.edu/wp-content/uploads/2019/03/PIC_AI_for_Africa_Whitepaper.pdf accessed 2 June 2024.

to cybersecurity and data analytics. With continuous investment in education, infrastructure, and supportive policies, Kenya is poised to become a leading technology hub in Africa, offering numerous opportunities for ICT professionals. Addressing the challenges of skill gaps, infrastructure, and startup support will further enhance the sector's growth and sustainability.

4. Stakeholder Identification and Engagement Protocol

The Project's stakeholders are outlined in Figure 1 below. This section of the report details our protocol for identifying and recruiting the stakeholders and the findings from our multi-stakeholder consultation on employment pathways and competencies assessment.

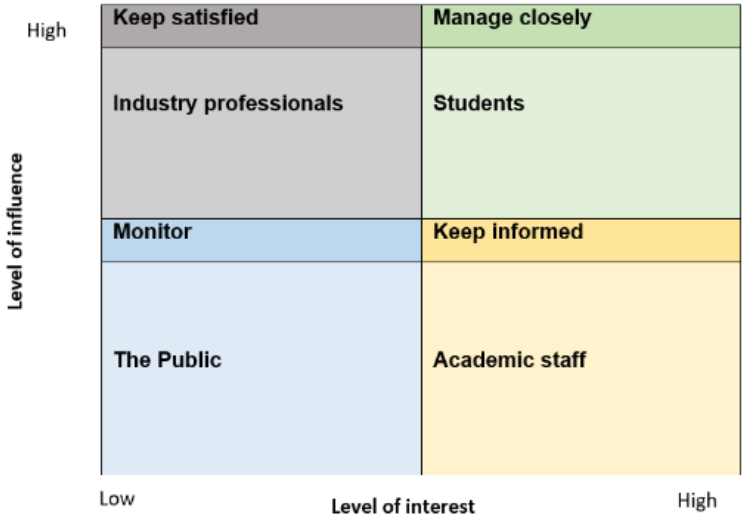
Figure 1: Project HERizons stakeholders



In this section, we identify the level of interest and influence each stakeholder has on the Project, explore the stakeholder recruitment process and explain our engagement strategy.

4.1 Stakeholders identification and recruitment

The stakeholders identified above are a combination of internal and external parties who exert different levels of influence and contribute to the success of the Project. For example, the female students are primary internal stakeholders whose participation and engagement are linked to all aspects of the Project's work package and activities. Without their contribution, the Project's outcomes will not be realised, and the impact of the Project will be limited. On the other hand, the public represents the external stakeholders whose contribution is linked to the dissemination activities under work package four. The four-quadrant stakeholders' matrix below outlines our stakeholders' level of interest and influence on project HERizons.



According to Simply Stakeholders,[46] identifying where the stakeholders reside in the matrix is essential because each quadrant requires different levels of engagement to benefit this Project. The following approach is suggested:

- High influence / high interest – Manage closely, regularly engage, and manage expectations.
- High influence / low interest – Meet their needs, keep them satisfied, and actively consult.
- Low influence / high interest – Keep informed and maintain interest.
- Low influence / low interest – Monitor and provide information as needed.

In the rest of this section, we explore the process adopted for recruiting each identified stakeholder and our engagement protocol.

4.1.1 Female students

The Project successfully recruited 47 students from Riara University who are active participants in the Project. The recruitment criteria focused on:

- Gender – only female students were required for the Project
- The subject of study – only female students enrolled at the School of Computing Sciences at Riara University.
- Year of study – second to final-year female students were recruited as some knowledge from their degree is required to engage in the study.

The female students were recruited using various communication methods, such as emails, WhatsApp messages and personal referrals.

4.1.2 Industry professionals

The Project successfully recruited ten industry female professionals based on point-based criteria that assessed their competence, areas of expertise, skills, personal attributes and commitment. ***Appendix A*** of this report sets an outline of the selection criteria for the recruitment of industry professionals.

[46] A Darzin, 'Stakeholder Mapping: Methods, Benefits & Examples ' (Simply Stakeholders 2024) 'https://simplystakeholders.com/stakeholder-mapping/ accessed 13 November 2024.

The recruited industry professionals stem from five employment pathways: cyber security, software engineering, data science, artificial intelligence, user experience (UX) and user interface (UI). The profile of the recruited industry professionals is provided in ***Appendix B*** below.

4.1.3 Academic staff

Four academic staff members at Riara University were recruited to support the project management team and students. Their primary role is to monitor students' engagement, deliver the knowledge and skills webinars, and support the project management team in public events.

Academic staff were selected based on their availability and subject knowledge. The team comprises male (n1) and female (n3) staff from the School of Computing Science and other departments. Specialism areas include cyber security, human resources, communications and media, and development studies.

4.1.4 The public

The public was invited to engage in various events, including the project launch, student showcasing and final dissemination events. These events were advertised to the public using various communication methods, such as the Project's website, email invitations, social media, personal invitations and institutional newsletters. Public participation data were collected using Google Forms and event registration.

4.2 Engagement protocol

The primary engagement strategy adopted in this Project is a multi-stakeholder consultation. Before the consultations, stakeholders were provided with a term of reference, which provided information on the Project and their roles and responsibilities. This was used to manage the stakeholders' expectations and provide crucial information about the Project's activities and timeline.

The multi-stakeholder consultation involved industry professionals, academic staff and students. The industry professionals were consulted to determine the relevant employment pathways of the Project. The academic staff were consulted in developing the skills development webinars that focus on employability skills such as self-awareness, communication, interviewing, and presentation skills.

Additionally, students were consulted by completing a student needs assessment questionnaire (SNAQ) and a project exit survey (PES). The SNAQ was used to gather information on students' motivations for participating in the Project, their current competencies and gaps in their knowledge and skills. The SNAQ results, outlined in ***Appendix C*** of this report, helped to determine the content of the webinars and workshops.

Students were also asked to complete the PES to enable the assessment of the Project's impact and review of activities. Results from the PES are detailed in ***Appendix D*** of this report. The data collected in both surveys inform the conclusions and recommendations in section 5.

5. Conclusions and Recommendations

Project HERizons successfully addressed critical barriers facing women pursuing ICT careers in Kenya by creating a supportive ecosystem for skill development, career guidance, and mentorship. By partnering with Riara University and leveraging the Going Global Partnerships program, the project aimed to bridge the gender gap in Kenya's ICT sector, fostering a more inclusive and diverse workforce. This initiative responded to structural inequalities that limit women's participation in ICT by equipping female students with the necessary tools, skills, and networks to navigate and succeed in the male-dominated technology sector.

The report's findings reveal a significant improvement in participants' technical, interpersonal, and employability skills, as evidenced by pre- and post-assessment results. Skills like problem-solving, technical proficiency in coding and cybersecurity, and soft skills such as communication and teamwork saw measurable advancements. Importantly, the project's use of role models provided students with real-world examples of successful women in technology, which positively influenced participants' confidence and career aspirations. The project's design effectively utilised mentorship to combat common issues such as low self-efficacy, lack of role models, and limited networking opportunities that often deter women from advancing in ICT careers.

Despite these successes, the report acknowledges that gender inequality in ICT remains a complex challenge that requires sustained effort across multiple sectors. Structural biases in recruitment, retention, and promotion within the industry continue to limit women's career progression. Additionally, the lack of robust industry-academic partnerships and insufficient support systems for flexible work arrangements are ongoing challenges. While HERizons made strides in addressing these issues, scaling up similar initiatives and fostering systemic changes within Kenya's ICT landscape are necessary for long-term, transformative impact.

Recommendations

A multi-stakeholder approach is required to bridge the gender divide in Kenya's technology sector. Building on the achievements of Project HERizons and addressing identified gaps, several recommendations are made to ensure the project's sustainability and expand its impact:

1. Strengthen Industry-Academic Collaboration

To bridge the skills gap between education and industry requirements, Projects like HERizons should establish deeper partnerships with tech companies and ICT-focused NGOs. These partnerships can facilitate curriculum alignment with industry needs, provide students with internship opportunities, and create a direct pathway to employment. Industry-academic partnerships should also offer scholarships or apprenticeships for female students, allowing them to gain practical experience while continuing their education.

2. **Expand Mentorship and Networking Programs**

Given the positive impact of mentorship, projects like HERizons should explore scaling the mentorship model by involving more industry professionals across various ICT pathways (e.g., software development, AI, cybersecurity). Structured mentoring programs that span several months, rather than one-off sessions, could provide more continuity and depth in guidance. Additionally, organizing annual networking events or conferences where students and mentors meet and interact with tech professionals could further enhance students' exposure to industry networks and opportunities.

3. **Develop More Targeted Skill-Building Workshops**

Addressing specific technical and soft skill gaps identified by participants, the project could incorporate workshops in advanced programming, data science, project management, and public speaking. Adding interactive components, such as hackathons or coding challenges, would provide practical, hands-on experience that reinforces learning. To ensure that soft skills are strengthened, workshops on leadership, negotiation, and resilience could be included.

Securing consistent funding is crucial to ensure HERizons' ongoing success and expansion. In addition to grants, exploring partnerships with private tech companies and international development organizations could provide additional resources. Setting up a venture fund to support female tech entrepreneurs and startups in Kenya would align with the project's goals and foster a broader ecosystem for women-led innovation in ICT.

4. **Advocate for Policy Change in Gender Equality and Inclusive Work Environments**

To combat systemic biases in the ICT sector, projects like HERizons should collaborate with policymakers to strengthen gender equality policies, focusing on flexible work arrangements, transparent recruitment processes, and family-friendly policies. Advocating for laws that support diversity in ICT and addressing issues such as gender pay gaps and workplace harassment will make the industry more inclusive and supportive for women.

5. **Monitor and Evaluate Long-Term Impact**

Developing a comprehensive impact assessment framework will allow projects like HERizons to monitor the progress of its graduates over time. Tracking participants' career trajectories and feedback can provide valuable insights into the project's long-term impact and areas for improvement. This data can also inform the scaling of similar programs and demonstrate the initiative's effectiveness to potential funders.

6. **Expand Public Awareness Campaigns to Reduce Gender Stereotypes**

Engaging the public through campaigns that highlight the accomplishments of women in technology can help challenge stereotypes and increase societal support for women in ICT. By showcasing successful female role models in ICT and sharing positive stories, projects can inspire more young women to pursue tech careers and

foster a cultural shift toward greater acceptance and encouragement of women in this field.

7. **Create an Alumni Network for Ongoing Peer Support and Collaboration**

An alumni network could provide ongoing support for past participants, offering a platform to exchange job opportunities, mentorship, and resources. This network could also be an invaluable resource for new students, who can learn from the experiences and insights of graduates, thus creating a self-sustaining ecosystem of peer support.

8. **Replicate Project HERizons Across Other Universities and Regions**

Scaling HERizons to other universities in Kenya and neighbouring countries could extend its impact. Partnering with institutions that offer computing and technology programs can help replicate the HERizons model, creating similar pathways for women graduates in different regions and contributing to gender equity in ICT on a larger scale.

Project HERizons has laid the foundation for a transformative approach to tackling gender inequality in ICT by emphasizing mentorship, practical skill development, and collaboration with industry stakeholders. The project's successful outcomes highlight the potential for broader application and sustained impact, making it a promising model for promoting gender equity in technology sectors worldwide. By implementing these recommendations, HERizons can continue to empower women, strengthen Kenya's ICT sector, and drive inclusive growth and innovation in the digital economy.

Appendix A: Role Models Selection Criteria

Passion for Empowering Women in STEM (20 points):

- Previous involvement (5 points): Demonstrated involvement in initiatives or projects to support women's participation and success in STEM (e.g., mentoring programs, workshops, committees). Provide specific examples.
- Commitment to advocacy (5 points): Strong personal belief in gender equality and actively advocate for women in STEM fields. Share your views and examples of advocacy.
- Alignment with HERizons values (5 points): Understand and embrace the values and objectives of HERizons (e.g., inclusivity, empowerment, collaboration). Articulate how your values align with the program's.

- Community engagement (5 points): Willingness to participate in HERizons community events, workshops, and networking activities. Explain your level of commitment to community involvement.

Expertise in a Relevant STEM Discipline (20 points):

- Advanced degree (5 points): Master's or PhD in a STEM field relevant to HERizons focus (e.g., computer science, engineering, data science). Specify your degree and field.
- Professional experience (10 points): Minimum of two years of professional experience showcasing expertise in your chosen STEM discipline. Share relevant experience and achievements.

- Technical skills (5 points): Proficiency in specific technical skills aligned with HERizons' needs and mentee interests. List your relevant skills and expertise.

Mentorship Skills and Communication (20 points):

- Mentorship experience (5 points): Previous experience mentoring individuals, ideally in a STEM context. Describe your experience and key learnings.

- Communication skills (5 points): Strong interpersonal and written communication skills with an inclusive and empathetic approach. Provide examples of effective communication in diverse settings.
- Active listening (5 points): Ability to actively listen and understand diverse perspectives without judgment. Describe your approach to active listening.

- Coaching and feedback (5 points): Skilled in providing constructive feedback and coaching to support mentee growth and development. Share your approach to coaching and feedback.

Work-Life Balance Advocacy (10 points):

- Personal experience (5 points): Share your experiences and insights related to achieving work-life balance in a STEM career. What challenges and strategies have you encountered?
- Support for mentees (5 points): Willingness to support mentees in navigating work-life balance challenges and advocate for flexible work arrangements. Describe your approach to supporting work-life balance for others.

Commitment to Skill Development (10 points):

- Technical skill development (5 points): Willingness to guide mentees in developing technical skills relevant to their career goals. Specify areas you can support in skill development.
- Soft skill development (5 points): Ability to support mentees in developing soft skills like communication, leadership, and negotiation. Specify your experience in supporting soft skill development.

Adaptability and Flexibility (10 points):

- Accommodating diverse needs (5 points): Flexible approach to accommodate mentees' different needs and schedules from diverse backgrounds. Describe your experience working with diverse individuals.

- Tailoring mentorship (5 points): Ability to adapt your mentorship approach based on each mentee's unique requirements and learning styles. Share examples of adapting your approach in past mentoring experiences.

Promoting Diversity in STEM Leadership (5 points):

- Commitment to diversity (5 points): Demonstrated commitment to fostering diversity in leadership positions within the STEM field. Share your experiences or initiatives promoting diversity in leadership.

Openness to feedback (5 points):

- Willingness to receive feedback (5 points): Open to receiving constructive feedback from mentees and the HERizons project team for continuous improvement. Describe your approach to receiving and implementing feedback.

Additional considerations

- Cultural competency: Assess mentors' understanding and appreciation of different cultural backgrounds and how they would incorporate this into their mentorship approach.
- Confidentiality and boundaries: Emphasise the importance of maintaining confidentiality and professional boundaries within the mentoring relationship.

Long-term commitment: Consider including a criterion assessing mentors' commitment to supporting mentees for the program's duration and potentially beyond.

Appendix B: Industry professionals' profile

No	Profile	Employment pathway
1.	A website developer, co-founder and executive director at a nonprofit organisation in Mombasa, Kenya, working to bridge the gender gap of Women in Technology. She is passionate about inspiring more girls to venture into STEM, a career where women are underrepresented, through the Technovation Challenge. This global challenge encourages girls worldwide to solve community problems by creating dedicated mobile applications. She is actively involved in STEM projects in Mombasa, such as 'Mombasa Girls in STEM'. She is working to establish the first Girl Technology Hub in Mombasa to empower girls from underprivileged backgrounds with computer programming skills.	Software Engineering
2.	The professional has 10+ years of experience in designing, developing and implementing software solutions, business processes and products. Her experience includes collecting system and process requirements, designing software, programming, analysing datasets, documentation and solving complex problems to ensure the delivery of high-quality processes, products, documentation and reports.	Data science and analytics
3.	The professional has been the principal architect of Sasakazi from the beginning and is in charge of system design and development, as well as training and administration of the system. She is a software engineer with marketing and digital skills. She has a Bachelor of Science in Information Technology from Silliman University in the Philippines. She built the current application that connects tech talent to work in the MSME and public sectors.	Software engineering
4.	The professional has worked in several areas and diversified her skills to specialise in Product Development, Project Management, ICT for Education, Research Consulting and Monitoring and Evaluation of tech projects. She has over 12+ years of experience designing and executing innovation programs. Currently, she works in product development and provides strategy and operations consulting for several local companies. She is also an ICT for Education Specialist, studying the growth and management of ICT Education implementation in mobile, eLearning and offline learning. Her previous roles in innovative organisations included	User experience design and interface

	Longhorn Publishers PLC as a product associate; Moringa School as the Nairobi Tech Week Senior manager; iHub as a product specialist designing programs at the iHub and managing the 2017 iHub 2.0 Relocation project and COO at Eneza Education who pioneered the R&D team.	
5.	The professional is a licensed legal practitioner interested in Internet Governance | Data Governance | Data Protection & Privacy | Technology Media & Telecommunications | Cybersecurity (Governance, Risk & Compliance) Audits| Audit & Compliance | Digital Rights | Information Security Management. In her current role, she advises and supports organisations in implementing data governance frameworks, further guiding them to comply with data protection laws and regulations. She organises and facilitates virtual and physical training to engage with the client, identify possible gaps, give recommendations, and provide viable solutions. She collaborates with clients' key business areas, in particular the IT Security team, to ensure data privacy issues are considered at the outset of new projects, products, and initiatives.	Cyber security
6.	Experienced professional with a demonstrated history of working in the information technology and services industry. Skilled in cybersecurity and certified Incident Handler with a keen focus on Cyber risk management.	Cyber security
7.	The professional is a dedicated and innovative professional with a passion for education & creating social impact. She has an academic background in Economics from the University of Cape Town & embarked on a career in the education technology field immediately after graduation. She has garnered extensive experience, specialising in project management in this field over the last 8 years, working on projects with several international companies. Her expertise encompasses a spectrum of responsibilities, including developing project scopes, coordinating cross-functional teams, and ensuring projects are delivered on time and within budget.	Cyber security/software engineering
8.	The professional is a technology business leader with over 15 years of experience in the ICT and telecoms sector in private, public and development organisations in Kenya and beyond. As the Chief manager of business development and innovation, she is currently working with the leadership team to bring to life the vision of Silicon Savanna in Kenya by activating a robust ecosystem of investors, industry experts, local and international partners, and key stakeholders to deliver the	Software engineering

	most ambitious fit for future Smart city in the African Region. She has extensive experience in network planning, implementing, and supporting ICT and Telecoms projects, including Data centres, ICT solutions and services, innovation programs, digital transformation projects and ICT talent development programs. Among the projects she has been involved in include NOFBI fibre commissioning for the northeastern Kenya circuit, commissioning the pioneer undersea cable in East Africa, TEAMS, the National Data Center project by Konza Technopolis, Corporate Strategy and Knowledge economy and innovation strategy lead for Konza Technopolis, ISO 9001-2015 certification, and Sustainability strategy development for Konza Technopolis among others. Academically, she holds a BSC Computer Science degree, MBA and is pursuing a PhD in Business – Entrepreneurship and small business development with a bias on research in Technology Enterprises (Startups).	
9.	The professional is an AWS Cloud Practitioner | AI Graduate Student | Cybersecurity 2022 Fellow | KeSIG 2023 fellow | Cybersecurity Consultant | Public Speaker	Artificial intelligence & cyber security
10.	The professional is the President of the Women in STEM Leaders Network President and Senior Advisor of UNESCO Emerging Technologies for Development. She is also the founder of the award-winning Regional Consortium for Development, whose experts use technology and engineering as enablers for achieving the SDGs, which operate from South Africa. She has held key roles in innovation competitions worldwide, including the $1 Million HULT Prize and the $10 Million Afri-Plastics Challenge, part of a $100 Million Fund by Canadian Prime Minister Trudeau. She is Co-founder of Women in AI for Africa and Co-Chair of Internet4Dev Global Community. She is an Ambassador for Africa Code Week by SAP/UNESCO, which has introduced over 10 million young learners to coding.	Artificial intelligence

Appendix C: Student Needs Assessment Questionnaire (SNAQ)

An online needs assessment questionnaire was sent to 47 female students using Google Forms, and their consent was obtained before answering the questions. The questionnaire sought to collect data on the participants' demographics and assess their knowledge of the sector and key technical, interpersonal, and employability skills.

The SNAQ had a 68% response rate (31 students). The analysis was carried out using the SPSS software developed by IBM for data management. The questionnaire was divided into student demographics, skills assessment, and sector knowledge.

This section reports on the findings from the SNAQ.

Section A: Students Demographics

This section of the survey sought to gather data on the students' profiles, particularly gender, age range, degree programme, year of study, and employment experience. This demographic data gathered from SNAQ corroborates existing data gathered from the recruitment of the students and provides additional insight into the student's profiles.

The data in Figure 2 below specifies the degree programmes of the students. It confirms that all participants are from the School of Computing Sciences, undertaking a Bachelor of Business in Information Technology (29%) or Bachelor of Science in Computer Science (71%).

Figure 2: Participant's degree program.

State degree program you are currently studying or have been studying

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelor of Business in Information Technology	9	29.0	29.0	29.0
	Bachelor of Science in Computer Science	22	71.0	71.0	100.0
	Total	31	100.0	100.0	

The demographic data also provides information on the participant's year of study (see Figure 3). This data shows that students across different stages of their academic studies benefit from the Project. It allows the project team to measure the immediate impact for those in the final year or recent graduates (45.2%) and a more prolonged impact for the continuing students (54.8%). With most participants identifying as continuing students, it provides additional time for them to implement the tools gained from the Project before graduation. Thus, it is likely that the Project will see a significant impact on the continuing students compared to the others.

Figure 3: Participants' year of study.

Current year of studies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Continuing student	17	54.8	54.8	54.8
	Final Year	11	35.5	35.5	90.3
	Recent Graduate	3	9.7	9.7	100.0
	Total	31	100.0	100.0	

The SNAQ also sought to assess students' current employment exposure. The data provided will help measure impact and enable the project team to appropriately tailor the skills development events. While the Project will immensely benefit all students, it will be crucial to 51.6% of the participants with no prior employment experience and 6.5% with experience linked to their family business. For example, an interview and assessment activity in the webinar will give these students insight into the job recruitment process, which may enhance their confidence.

Figure 4: Prior employment experiences of the participants.

State the Employment experience you have"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Internship	11	35.5	35.5	35.5
	Job Placement	2	6.5	6.5	41.9
	No Experience	16	51.6	51.6	93.5
	Worked in a family business	2	6.5	6.5	100.0
	Total	31	100.0	100.0	

Section B: Skills Assessment

The next section of the SNAQ focused on assessing participants' technical, critical thinking, interpersonal and employability skills. Participants were asked to rate their skills using a Likert scale of 1 to 5. 1 being poor, 2 unsatisfactory, 3 satisfactory, 4 very satisfactory and 5 outstanding.

The participants' technical skills were the first to be assessed. Participants were provided with the options of reading, writing, computer literacy (e.g., Microsoft 365, coding and programming, etc.), numeracy/mathematics, budget management (e.g., keeping spending under control, gathering financial data), and troubleshooting (ability to resolve technical issues). Figure 5 outlines the results for this skill.

Figure 5: Participants technical skills

Technical skills	Rating in %				
	Poor	Unsatisfactory	Satisfactory	Very satisfactory	Outstanding
Reading			9.7	32.3	58.1
Writing (e.g. report writing)		3.2	29.0	54.8	12.9
Computer literacy (e.g., RMS, Time & attendance, Microsoft 365, QuickBooks, etc.)	3.2	16.1	38.7	29.0	12.9
Numeracy/Mathematics		3.2	58.1	22.6	16.1
Budget management		9.7	35.5	38.7	16.1
Troubleshooting		19.4	41.9	35.5	3.2

The technical skill with the highest rating (outstanding) was reading at 58%, jointly followed by numeracy and budget management at 16%. Computer literacy was rated poorly by 3.2% of the participants. Troubleshooting has the highest unsatisfactory rating (19.4%), followed by computer literacy. The other technical skills had a less than 10% unsatisfactory rating. This data means that the two primary focus areas for students' technical skills are computer literacy and troubleshooting.

Following the technical skills, students' critical thinking skills were assessed, and the results are shown in Figure 6 below. Students were asked to rate the following indicators of critical skills:

- Analysis of facts and situations
- Negotiation (discussion aimed at reaching an agreement)
- Initiative (able to start an action or propose an idea)
- Learn new skills
- Creativity (able to create new things)
- Decision making
- Problem-solving (able to resolve general issues)
- Reflection (serious thinking or careful consideration)

Figure 6: Participants critical thinking skills.

Critical thinking skills	Rating in %			
	Unsatisfactory	Satisfactory	Very satisfactory	Outstanding
Analysis of facts and situations	6.5	38.7	32.3	22.6
Negotiation	9.7	35.5	38.7	16.1
Initiative/reasoning	12.9	38.7	35.5	12.9
Learn new skills	6.5	22.6	41.9	29.0
Creativity	9.7	38.7	35.5	16.1
Decision making	3.2	51.6	32.3	12.9
Problem-solving	3.2	38.7	35.5	22.6
Reflection	3.5	35.5	35.5	25.8

The above data shows that participants rated learning new skills (29%), reflection (25.8%), analysis of facts (22.6%) and problem-solving (22.6) as outstanding. These critical thinking skills were also highly rated as very satisfactory. None of these skills were rated poorly, indicating that participants have some competence in these areas. However, initiative/reasoning is flagged and could be an area of focus for the webinars and workshops.

Interpersonal skills were also assessed using the indicators outlined in Figure 7. The results show that emotional literacy was highly rated as outstanding, followed by communication, self-control, and resilience. On the other hand, participants' self-confidence was highly rated as unsatisfactory. This means that project activities should be geared towards improving students' confidence concerning employment.

Figure 7: Participants interpersonal skills.

Interpersonal skills	Rating in %			
	Unsatisfactory	Satisfactory	Very satisfactory	Outstanding
Oral/verbal communication	9.7	35.5	22.6	32.3
Self-confidence	12.9	38.7	35.5	12.9
Listening		16.7	45.2	38.7
Self-control	3.2	32.3	35.5	29.0
Resilience	6.5	32.3	32.3	29.0

Emotional literacy	6.5	16.1	41.9	35.5
Driven/Passionate		35.5	38.7	25.8

The final aspect of the skills assessment in the SNAQ is employability. The indicators of employability are outlined in Figure 8 below. Participants indicated that they were outstanding at teamwork (35.5%), time management (29%) and flexibility (29%). However, presentation (16%) was flagged as unsatisfactory, which may be linked to participants' self-confidence, as indicated in Figure 8.

Figure 8: Participants employability and other skills.

Employability and other skills	**Rating in %**			
	Unsatisfactory	**Satisfactory**	**Very satisfactory**	**Outstanding**
Teamwork		25.8	38.7	35.5
Adaptable/flexibility		32.3	38.7	29.0
Social networking/relationship management	9.7	45.2	32.3	12.9
Presentation	16.1	54.8	19.4	9.7
Time management	9.7	32.3	29.0	29.0
Project management	9.7	48.4	22.6	19.4

In addition to rating these skills, using an open-ended question, participants were asked to indicate the top 5 skills they possess and the top 5 they would like to develop. This question was intended to highlight additional skills unrepresented in the skills assessments while corroborating with the data supplied in that section of the questionnaire. The results were similar to the assessment. For example, students' top skills are teamwork, communication, time management, and basic technical skills such as web development, python, Power BI and user experience design.

In contrast to these top skills, participants indicated that skills such as presentation, networking and self-awareness are areas of development. Furthermore, technical skills such as coding, data management and cyber security were additional areas of development. These skills will be embedded into the skills development webinars and workshops.

Section C: Knowledge of the Sector

The final section of the SNAQ focused on assessing participants' knowledge of the ICT sector, as shown in Figure 9 below. Participants were provided with seven statements relating to their knowledge of opportunities and challenges facing women in the technology sector. They were asked to rank each statement on a scale of 1-5, where 1=strongly disagree; 5=strongly agree.

Figure 9: Participants knowledge of the sector.

Knowledge indicators	Rating in %				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I have a good knowledge of the employment or recruitment process within the technology sector.		22.6	48.4	19.4	9.7
I am aware of the employment pathways in the ICT sector.		19.4	38.7	29.0	12.9
I know the general criteria required for an entry position in the tech sector.		32.3	32.3	29.0	6.5
I am aware of the gender challenges and barriers women in the tech face.		16.1	19.4	38.7	25.8
I know where to find the information I need to enhance my knowledge of the tech sector.		22.6	22.6	32.3	22.6
I am aware of the barriers that limit my entry into the profession.	3.2	35.5	19.4	25.8	16.1
I know how to resolve challenges that may hinder my entry into the profession.	6.5	29.0	45.2	12.9	6.5

According to the data, participants know more about the gender challenges women face in the technology sector than other statements. This shows that participants know the cultural, political, or social barriers affecting women's employment, retention, and progression in the Kenyan ICT sector. Group mentoring sessions with industry professionals will develop participants' knowledge of this issue. On the other hand, participants indicated that their knowledge of the employment opportunities or recruitment process was weak. This presents an area of development for the team and could be addressed in the individual mentoring sessions and/or the skills development webinars and workshops.

Appendix D: Project Exit Survey

In addition to the Students Needs Assessment Questionnaire (SNAQ), which measured students' knowledge and skills before engaging in the Project's activities, the project exit survey (PES) measures growth, impact and engagement. The PES consists of six sections, which focus on student demographics, review the Project's activities, ecosystem support, skills reassessment, knowledge reassessment, and future aspirations.

The PES survey was sent (via WhatsApp) to students (37) who satisfactorily completed the Project's activities. The survey had 67.5% response rate. The analysis was carried out using the SPSS software developed by IBM for data management.

The rest of this appendix reports on the findings.

Section A – Student Demographics

This section collected participant profiles, particularly gender, age, disability, nationality, socio-economic status, and study status. Regarding gender, all participants indicated that they were female between the ages of 18 and 25. This supports existing data collected throughout the Project.

Disability: There was no declared disability among the participants.

Nationality: Participants were asked to declare their nationality to measure the Project's reach. The data found that 96% of the participants are Kenyan nationals, and others are international students from Nigeria. This means the Project's impact will be seen within Kenya. The data also highlighted the need to replicate the Project's methodology in other countries, especially in Africa, where gender inequality in the ICT sector is a cause for concern.

Study status: Participants 68% are final-year students, 28% are continuing students, and 4% are recent graduates. Including students from different study periods will allow for the measurement of short—and long-term impact.

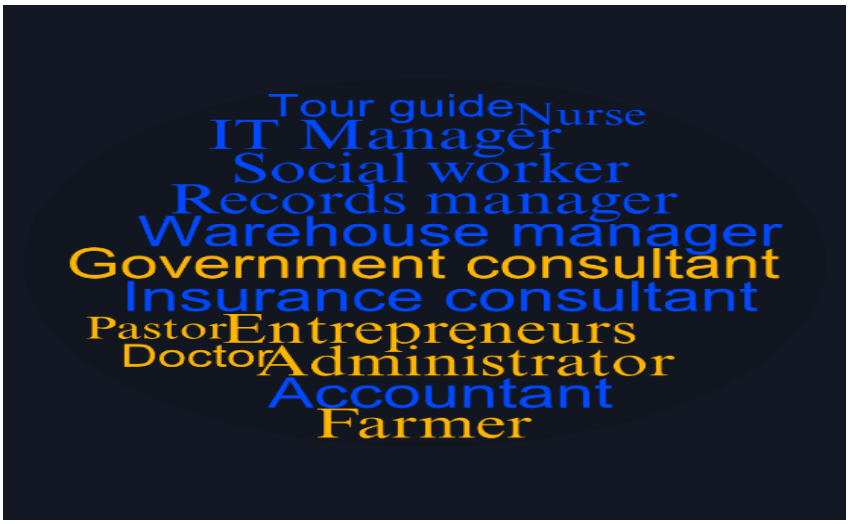
Socio-economic background: The survey sought to assess participants' socio-economic status by requesting their parent's education and occupation. The results show that 20% of the participants are the first in their family to attend University; this means that 80% are not the first to attain a higher education degree. There were varied parental educational backgrounds, ranging from secondary school to master’s degrees (see Figure 10), with occupations including teaching, doctor, nurse, pastor, logistics, farmers, and social work (see Figure 11) mentioned.

Figure 10: Parental education

What is the highest qualification of any of your parents/guardians/carers?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelor's degree	11	44.0	44.0	44.0
	I don't know	2	8.0	8.0	52.0
	Less than high secondary school	1	4.0	4.0	56.0
	Master's degree	6	24.0	24.0	80.0
	Secondary school	5	20.0	20.0	100.0
	Total	25	100.0	100.0	

Figure 11: Parental occupations (word cloud)



Section B: Participation Motivations and Project Activities

This section of the report reviews students' motivations for joining the Project and their views on its objectives and activities.

Motivations: Participants were asked to disclose their reasons for joining the Project. Responses provided include:

- Seeking guidance and training from professionals
- Seeking guidance on career paths
- Improving knowledge of the sector and job market
- Improving technical and employability skills
- Learning from the experiences of industry professionals
- Enhance networks
- Influenced by peers and family members

One of the participants said:

> I agreed to participate in Project HERizons because I wanted to bridge the gap between academic learning and real-world skills, believing that mentorship from experienced professionals would provide valuable insights for navigating my career. The Project's aim to strengthen employment pathways for female students at Riara University resonated with me; we have made great strides toward this goal. The program guided professional development and fostered a supportive network of mentors and peers, giving us the confidence and skills to enter the workforce. By focusing on both technical and soft skills, Project HERizons has equipped us with a foundation that will undoubtedly enhance our employability and help us succeed in diverse professional environments.

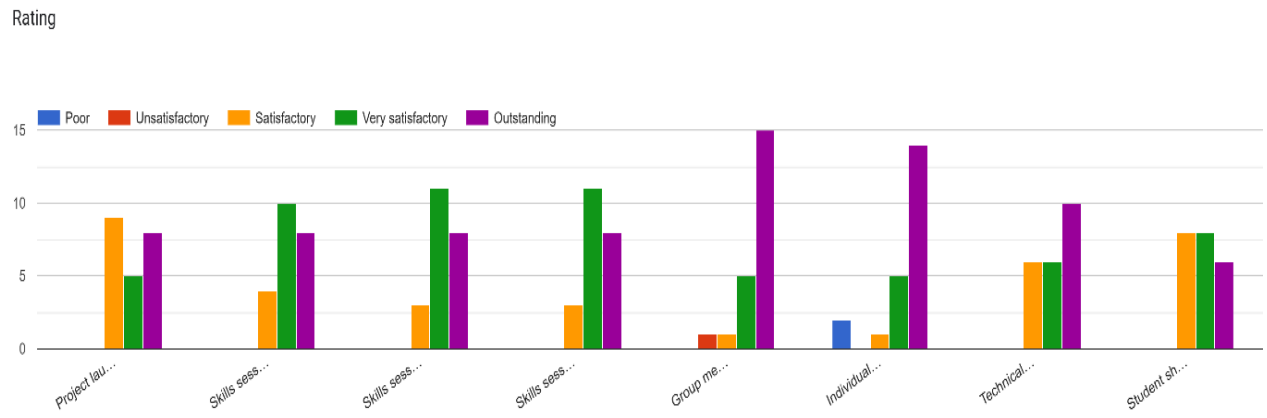
Project's aim: Participants were provided with the Project's aims and asked if, in their opinion, the Project had achieved the aim. 81.8% of the participants indicated the aim was achieved, and 18.2% were unsure. This result shows that the Project achieved its aim through the robust methodology adopted. This data is supported by additional measures of impact outlined in this report.

Project activities evaluation: Participants were provided with a list of eight project activities and asked to rate them on a scale of one to five. 1= poor and 5 =outstanding. The eight project activities are:

Project launch (in person)
Skills session: Self Awareness (webinar)
Skills session: Communications (webinar)
Skills session: Leadership (webinar)
Group mentoring sessions (online)
Individual mentoring sessions (online)
Technical workshop (in person)
Student showcasing event (online)

The results are outlined in Figure 12 below.

Figure 12: Rating of Project's activities



The results above show that the mentoring sessions were the most highly ranked activities. Participants favoured the group mentoring session more than the individual session. Comments such as “I liked getting to hear about my peers’ aspirations and the steps they are taking to achieve them and share my own” and “I enjoyed the group meetings most because they gave me a chance to collaborate and see things from others' perspectives in my field” were made concerning the group session. Participants also enjoyed the individual sessions because “they provided mentorship on an individual level”, the “individual mentor took time to listen…introduced me to a larger network of professionals and overall, it has been the best experience ever”.

Another participant said:

> Thanks to my phenomenal mentor, I enjoyed the individual mentoring sessions the most. She went above and beyond, organising talks with software engineers at Microsoft and cybersecurity analysts, providing me with incredible exposure to the industry. She was consistently supportive, checking in on me, celebrating my achievements on LinkedIn, and genuinely guiding me throughout the program. She became my biggest cheerleader, and there's something truly empowering about being encouraged by someone you admire—it pushed me to go beyond my best. I'm incredibly grateful to Project HERizons for bringing such an inspiring mentor into my life.

The mentoring session was popular, followed by the technical skills session delivered by EldoHub. One participant said, "I got to understand the difference in the data fields as well as get to experience a day in the life of a data analyst, a snippet of the work they do."

While there were no unsatisfactory ratings on all activities, two participants rated the individual mentoring session poorly. This was due to one mentor's lack of contact or miscommunication with their mentees. Better management of the mentors' communication with students will likely improve this issue.

Additionally, participants did not respond positively to the skills development sessions because the content was repetitive of the University’s curriculum, and the mode of delivery (online) did not encourage active participation. This is interesting feedback, as the skills sessions were devised based on the Student Needs Assessment Questionnaire results (see **Appendix C**).

Project’s improvements: Participants were encouraged to suggest ways to improve the Project. Responses include:

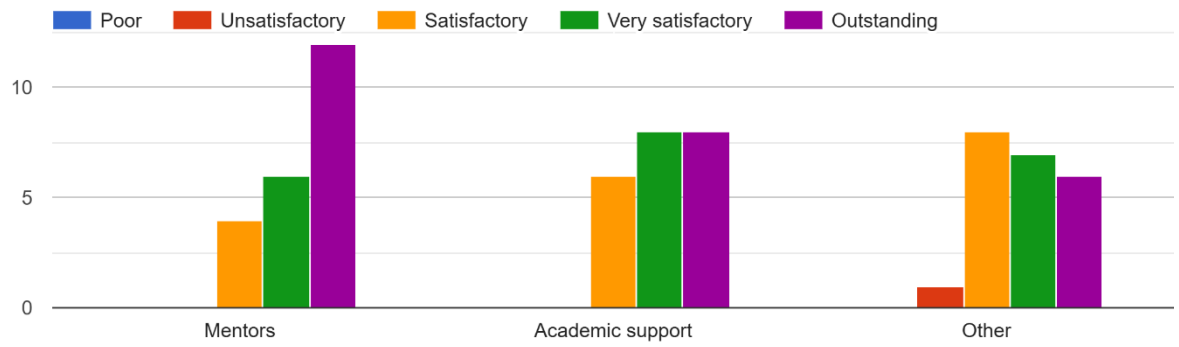
- More physical meetings to improve student engagement
- Increase Project's intensity
- Set high criteria for the selection of students
- Automate attendance reporting to avoid filing out forms
- More inclusion of industry mentors
- The immediate start of mentoring sessions after the Project's launch
- More structured mentoring sessions
- Increased number of workshops
- More clarity on completing the student’s guide
- Increased monitoring of student participation and engagement

The feedback offers valuable insight into the redesign of the Project's activities.

Section C: Ecosystem Support

This section of the survey reviewed the ecosystem support provided to the participants throughout the Project. Participants were asked to rate and evaluate each type of support. The rating results are outlined in Figure 13 below.

Figure 13: Ecosystem support review



In evaluating the support the mentors, academic staff and other team members provided, participants were asked to comment on what they liked and disliked about the individuals. Beginning with the mentors, participants said:

- I liked that she was a woman, and it was very easy to connect and communicate with her.
- They connected me to others in my area of interest and followed through to ensure we were okay. They focused not only on career development but also on personal development.
- I like that she went the extra mile by contacting industry professionals to help us in areas of interest.
- My mentors were very outgoing and easy to talk to. They did not hold back and gave me practical advice, especially regarding job and master's applications. Even after the mentorship sessions were over, they advised me to reach out in case of any issues or additional issues. They also forward any opportunities they come across.
- The way they gave their honest experience and gave me confidence about my current skill set.
- I appreciated how encouraging and informative my mentors were. They provided clear explanations when I faced challenges and always made time to address my concerns. Their advice helped me gain confidence in my work and develop a deeper understanding of the subject.
- They guided me towards a career path.
- The advice they gave and the recommendations on where you can get to learn technical skills and also what you need to learn to be marketable.
- It felt personalised to specific issues I had raised.
- The mentors gave me guidance on how to improve my skills. They emphasised taking short courses and gave me some sites that can help me learn new skills.

- My mentor also stressed the importance of keeping a record of my actions to serve as a reference in the future since cyber security is ever evolving.
- Their knowledge and advice.
- They helped me when I felt stuck.
- I enjoyed the sessions with my group mentor.
- I liked how they were involved and interested in our journeys, as well as how they allowed us into their journeys and encouraged us.
- I greatly appreciate the support I received from the mentors. They genuinely listened to my goals and challenges, tailoring their advice to my personal journey rather than offering one-size-fits-all guidance. Their support was professional and all-rounded; they encouraged me to balance my ambitions with my well-being.
- They were open about their journey and supportive; there was always room for questions and new perspectives, which made the experience better.
- They are ready to help and listen. They also introduced me to other industry professionals and advised me professionally and individually.
- The discussions we had and the advice given.
- Their feedback was constructive, and they were always available to offer insights when I needed help with specific challenges.
- Got to meet different professionals in the tech world and really enjoyed all those sessions.
- Their commitment to the Project.
- I appreciated the personalised guidance and encouragement from my professional mentors. They provided valuable insights into the cybersecurity field and practical advice that helped me build confidence and refine my career goals.
- The relatable topics we had.

Despite the positive feedback on the mentors, some participants felt that mentors needed more time and availability. While this is acknowledged, the mentors' work and personal commitments make it challenging to devote more time to the Project. Thus, there may be limited remedies to mitigate this issue. One participant highlighted the lack of communication she experienced with a mentor. This will be addressed with better monitoring of mentors' and mentees' engagement.

The participants also commented on the support provided by their academic staff. Overall, they found them extremely helpful as there was no negative feedback or improvement suggestions. Some of the positive comments are as follows:

- Ensured that every challenge I had with the professional mentor was sorted out as fast as possible.
- The academic staff was very friendly and guided me in filling out the documents.
- Their response time was fast, and they addressed any issues I had.
- The academic staff was very supportive and always available to assist with any academic challenges I faced. Their feedback was constructive, and they made sure I had the resources I needed to succeed. I truly appreciated their dedication to helping me improve and reach my goals.
- Pushing us to work on projects.

Although participants' feedback on the ecosystem support was positive, there is room for improvement. For example, better monitoring of student engagement throughout the Project, using SharePoint to create efficiency in document sharing, and organising more networking opportunities with other industry professionals will require additional funding.

Section D: Skills Reassessment

In addition to the qualitative assessment of the Project's impact on participants, the survey sought to gauge students' progression by reassessing their skills and knowledge using the same indicators found in the Student Needs Assessment Questionnaire (SNAQ). The data gathered in the PES is compared with the SNAQ to measure progression.

The participants' technical skills were the first to be assessed. Participants were provided with the options of reading, writing, computer literacy (e.g., Microsoft 365, coding and programming, etc.), numeracy/mathematics, budget management (e.g., keeping spending under control, gathering financial data), and troubleshooting (ability to resolve technical issues). Figure 14 outlines the results for this skill.

Figure 14: Participants' technical skills

Technical skills	Rating in %			
	Unsatisfactory	Satisfactory	Very satisfactory	Outstanding
Reading		16	20	64
Writing (e.g. report writing)	4	12	44	40
Computer literacy (e.g., RMS, Time & attendance, Microsoft 365, QuickBooks, etc.)	4	28	32	36
Numeracy/Mathematics	4	20	52	24
Budget management	12	20	40	28
Troubleshooting	4	28	32	36

There have been significant improvements across all the technical skills of the participants. For example, the very satisfactory and outstanding matrix for participants' writing skills, computer literacy, numeracy and troubleshooting were lower in the SNAQ, meaning that the Project has positively impacted students' technical skills in these areas. The specific areas of improvement are summarised as follows:

- In the SNAQ, 3.2% of the participants rated computer literacy poorly, followed by 16.1% unsatisfactory. The PES shows only 4% dissatisfaction with this technical skill, meaning that more participants have improved this skill during the Project.
- Troubleshooting had the highest unsatisfactory rating of 19.4% in the SNAQ. However, this has improved by 15.4%, with more participants indicating an outstanding development of this skill in the PES.
- The outstanding technical skills rated in the PES are reading, writing, computer literacy, and troubleshooting.

Following the technical skills, students' critical thinking skills were assessed, and the results are shown in Figure 15 below.

Figure 15: Participants' critical thinking skills.

Critical thinking skills	Rating in %			
	Unsatisfactory	Satisfactory	Very satisfactory	Outstanding
Analysis of facts and situations		12	64	24
Negotiation	4	36	28	32
Initiative/reasoning		36	28	36
Learn new skills	4	12	40	44
Creativity	4	12	40	44
Decision making	4	24	36	36
Problem-solving		20	44	36
Reflection		12	44	44

The above data shows a moderate improvement in the participants' critical thinking skills. Skills such as reflection, learning new skills, and creativity were highly rated under the outstanding matrix, followed by decision-making, problem-solving, and initiative. The improvement is particularly seen with initiative, which increased from 12.9% in the SNAQ to 36% in the PES.

Interpersonal skills were also assessed using the same indicators in the SNAQ. The results, outlined in Figure 16 below, show that there were no unsatisfactory ratings on all indicators, which is a significant improvement from the SNAQ. Listening and emotional literacy were also highly rated as outstanding, with improvements in other interpersonal skills. Notably, self-confidence, drive, and residence were the lowest outstanding indicators in the SNAQ, and they improved. For example, 12.9% of the participants in the SNAQ indicated that their self-confidence was outstanding. This improved to 40% in the PES.

Figure 16: Interpersonal skills

Interpersonal skills	Rating in %		
	Satisfactory	Very satisfactory	Outstanding
Oral/verbal communication	32	32	36
Self-confidence	16	44	40
Listening	8	32	60
Self-control	8	56	36
Resilience	4	48	48
Emotional literacy	4	40	56
Driven/Passionate	16	40	44

The final aspect of the skills assessment is employability. This aspect has also seen some improvements when compared with the SNAQ. For example, social networking, presentation, time management, and project management increased across the matrix. These areas were embedded into the Project's activities due to its low rating in the SNAQ.

Figure 17: Employability skills

Employability and other skills	**Rating in %**			
	Unsatisfactory	**Satisfactory**	**Very satisfactory**	**Outstanding**
Teamwork		12	40	48
Adaptable/flexibility		4	44	52
Social networking/relationship management	4	24	32	40
Presentation	4	28	28	40
Time management		8	44	48
Project management		12	44	44

Overall, the Project has made a remarkable impact on the participants' skill development. The impact is seen across all assessed skills, with significant impact shown in technical, interpersonal, and employability skills.

Section E: Knowledge Reassessment

In addition to reassessing participants' skills, the PES also reassessed students' knowledge of the sector, including opportunities and challenges facing women in the technology sector. The results of the reassessment are outlined in Figure 18 below.

Figure 18: Knowledge indicators

Knowledge indicators	Rating in %			
	Disagree	Neutral	Agree	Strongly Agree
1. I have a good knowledge of the employment or recruitment process within the technology sector.	4	16	56	24
2. I am aware of the employment pathways in the ICT sector.		12	56	32
3. I know the general criteria required for an entry position in the tech sector.		8	68	24
4. I am aware of the gender challenges and barriers women in the tech face.		4	40	56
5. I know where to find the information I need to enhance my knowledge of the tech sector.		20	32	48
6. I am aware of the barriers that limit my entry into the profession.	4	8	52	36
7. I know how to resolve challenges that may hinder my entry into the profession.	4	12	64	20
8. My perception of gender inequality has changed as a result of the Project		16	56	28
9. I know the employment pathway I'd like to follow after graduation		20	44	36
10. I am well supported by the Riara University employability services	8	36	40	16

The first seven questions repeat the SNAQ and the last three are new statements added to indicate the participants' development as a result of the Project. According to the above data, there were no strong disagreements with the statements. This is an

improvement from the SNAQ, where participants disagreed with statements 6 and 7. Furthermore, there have been developments in the students' knowledge across the seven statements. The strongly agree and agree section has increased compared to the SNAQ results.

The new knowledge statement (9) shows that participants have reasonable knowledge of the employment pathways they wish to follow after graduation. This shows that the Project has improved students' knowledge of employment pathways. However, an area of improvement lies in the support provided to students by Riara University.

Section F: Future Looking

The final section of the PES gathered further qualitative data on the Project's impact on participants. Participants were asked to provide a list of the skills they had developed as a result of the Project. The word cloud in Figure 19 outlines the skills mentioned in their responses.

Figure 19: Word cloud of skills

Regarding participant's career aspirations in the first few years following the Project's completion, their responses are as follows:

- Cloud Engineering
- My career aspiration is to work as a data analyst after this project completion and after my graduation.
- To secure an internship in the technology field. And to secure a role in the project management team.
- In the first few years after completing my Project, I aspire to enhance my career in cybersecurity by obtaining the Certified Ethical Hacker (CEH) certification, which will solidify my foundational skills in ethical hacking. Following this, I plan to pursue a master's degree to deepen my cybersecurity and information

assurance expertise, expanding my career opportunities. I will then prepare for the Certified Information Systems Security Professional (CISSP) exam to validate my knowledge in managing and protecting information systems. Throughout this journey, I aim to gain practical experience through internships or entry-level positions, allowing me to apply my learning in real-world environments and build a professional network. Ultimately, I will set specific career goals to leverage my certifications and academic qualifications, with the aim of advancing into a leadership position within the cybersecurity field.

- I'd like to kick start my career as a network engineer and steadily move up the ladder.
- I want to focus on software engineering.
- My career aspiration is to become a software engineer at Microsoft within the first few years after project completion. I aim to leverage my technical skills and project experience to contribute to innovative solutions, collaborate with top industry professionals, and continue developing my expertise in software development and engineering practices.
- I want to have a stable and well-paying job that I enjoy doing.
- To become a data scientist.
- I'd like to pursue a career in software development/engineering, as well as a bit of data engineering.
- I want to complete my bachelor's degree in computer science and major in cyber security.
- I would like to learn a variety of programming languages to understand how systems are created and to inform my decisions about keeping them secure from threats.
- I want to try out freelancing since I have skills in web development.
- Mentor young women in tech to help them identify their strengths and build on them to be outstanding.
- To be a project manager.
- I want to get a job as a product designer on Pinterest and be a mentor to others.
- I aspire to be a software engineer with experience in data science. I have ventured into these fields this year, and I am excited to see what the future holds.
- I want to be A UI/UX designer.
- To complete my computer science and Law degree as well as the certifications necessary for data science and projects.
- I aspire to get a web development internship in a startup and then a junior software development role in the next two years. In the next five years, I would love to have understood what it takes to create software and successfully launch it to the market, which would lead me on my entrepreneurial journey.
- I want to focus on Software Engineering, improve my technical and employability skills, and build myself as a brand.
- Software Engineering.
- I aspire to deepen my skills in data science and establish myself as a competent data scientist.
- As a front-end developer and UI/UX Designer, I want to work from home, travel, attend big conferences, and mentor others.
- To become a software engineer at a nonprofit organisation.

- Within the first few years of completing the Project, I aspire to secure a cybersecurity analyst role, deepen my expertise in various fields such as threat management and risk assessment, and work toward certifications that enhance my technical skills and industry knowledge.
- I am going to be a data scientist in future and will provide the best services in terms of both quality and quantity.
- I aspire to be a software engineer on the front end, working on developing systems that help industries and have positive impacts on the environment.

Finally, participants were allowed to provide additional comments on their experience with the Project, and all comments were appreciative of the Project, indicating that these participants positively impacted their career pathway. Some of the comments are:

- Thank you so much for this HERizons mentorship program. It has equipped me with knowledge on being the best I can be and being ready for the workplace. It has also given me a Networking opportunity since I have met different speakers during the workshops held at Riara.
- I'm really grateful to have been allowed to participate in HERizons. The experience has been invaluable for my personal and professional growth and equipped me with skills and confidence that will help me in my future career. Thank you for the support and resources provided throughout the program.
- I am very happy I joined this program, and I would like to thank my individual, academic, and group mentors. You all individually impacted me a lot.

In conclusion, the Project's short-term impact has been remarkable, and this indicates a positive career trajectory for the participants. The impact shown in this report is evidence that Project HERizons has contributed to bridging the gender digital gap and should be replicated in other disciplines and countries.

Appendix E: Project documentation

The students, industry mentors and staff were provided with information to guide their participation in the Project. The Guides contained several documents the participants must complete and share with the project team. The templates of these documents are provided in this appendix.

Students Facing Documents

Attendance Log

Description

Column A: Provide a brief description of the event. For example, group meeting with mentor

Column B: Provide the date of the event. For example, 01/03/2024

Column C: Your mentor or academic support staff must complete this section by adding comments on your engagement in the activities.

Column D: Your mentor must sign here.

Column E: Your academic support staff must sign your attendance log after each event.

An example has been done for you. Add more rows if needed.

A	B	C	D	E
Event	**Date and venue**	**Comments**	**Signature (Mentor)**	**Signature (Academic)**
Group mentorship meeting	21 March 2024, Zoom	Mary was attentive at the session and asked lots of questions. Mary indicated she aspired to be an information officer.	ORT	Kimani

Case Study

Complete this case study template for the mentor in your group. One case study is needed per group. Therefore, you must complete this as a group and submit one document per group. This must be completed electronically.

Name of you mentor
Identify your mentor's current job title and describe their roles and responsibilities
Describe your mentor's employment pathway (from graduation to current employment)
What challenges did your mentor experience
How did your mentor overcome the above challenges?
What would your mentor do differently if they had the chance?
What lessons have you learnt from your mentor's career journey and experiences?
Any other information

Skills Portfolio

The skills portfolio is designed to help you to identify, assess, record, and reflect on the skills that you have developed as a result of the Project's webinars or workshop. It utilises the Gibbs (1988) reflective cycle.

Session 1

Part A: Session information

Workshop/webinar title	
Date	
Presenter	

Part B – Reflections

Experience: What skill(s) did the session cover?

Feelings: What have I learnt from the session? How did you feel about the session? E.g., did it challenge existing knowledge or skills, did it refresh your memory?

Evaluate: What did you enjoy the most or least about the session?

Analysis: How will I put the skill(s) I have learnt into practice?

Part C: Action plan

This section of the portfolio seeks to identify existing skills gaps and prepare you for addressing the gaps.

Skills I need to learn/develop to progress my career	**How will I learn/develop the skills? (on the job, work shadowing, visit, mentoring, reading, stretching objective, course etc)**	**When**	**Who will help me develop these skills?**

Mentors documents

Mentoring Session Tracker

This form helps the project team to keep track of the mentoring sessions, progress and deliverables.

The mentor is responsible for filling this form. This should be done immediately after a session and sent to [details omitted]. A total of 5 completed forms per mentor should be sent to [details omitted].

Session date	
Session date	
Attendance	
Duration	
Notes/ discussions	
Signature	