Digital Jobs and Women in the MENA Region – Exploring the Challenges, Opportunities, and Best Practices

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1. Executive Summary

Women's participation in the digital economy presents a critical opportunity for the Middle East and North Africa (MENA) region to address its persistent challenges of youth unemployment and gender disparities in the workforce. Despite increasing educational attainment, women in the region remain underrepresented in digital jobs due to cultural norms, workplace barriers, and structural constraints. This study, "Digital Jobs and Women in the MENA Region – Exploring the Challenges, Opportunities, and Best Practices" conducted in Egypt, Jordan, Tunisia, and Morocco, examines how digitally-enabled jobs can create sustainable employment opportunities for women, identifies key barriers to access and retention, and provides actionable recommendations for ecosystem actors.

Key Regional Findings and Recommendations

This study findings are structured around five critical pillars affecting women's participation in digital jobs in the MENA Region.

The prioritisation of key findings and recommendations presented in this section is based on the data collected throughout the study. However, it is important to acknowledge the inherent limitations of the data, given the study's scope, sample size, and focus on specific implementing partners. As such, the ranking reflects insights drawn from the research rather than a definitive assessment of national or regional priorities. While the findings offer valuable indicative trends, they should be interpreted as part of a broader dialogue on improving women's access to digital jobs in the MENA region. The recommendations, along with their designated priority countries and key actors, aim to provide a strategic starting point for further action and refinement based on continued engagement and evolving market dynamics.

1. Education and Digital Skilling

Priority Level: (Low)	Priority Countries: Egypt, and Morocco	Key Actors: Academic Institutions, Digital Companies, Digital Skilling Companies

Key Findings

- **Limited market-aligned education programmes** leave graduates unprepared for digital jobs.
- **Cultural norms deter women from IT careers**, advocating "safer" options like teaching.
- **Early STEM exposure is lacking**, reducing women's entry into digital fields.

Recommendations

- **Align curriculum with market needs**, ensuring digital skills are embedded in STEM and non-STEM fields.
- **Introduce early exposure to tech careers** through competitions and mentorship for young women.

2. Job Readiness and Career Pathways

Priority Level: (Medium)	Priority Countries: Egypt, Morocco, Jordan, and Tunisia	Key Actors: Digital Skilling Companies, International and Local Donors

Key Findings

- **Male-dominated language in job advertisements** discourages women from applying.
- **Few career-switching pathways exist**, limiting women's access to digital jobs.
- **Soft skills training is crucial**, as confidence is often a greater barrier than technical skills.

Recommendations

- **Ensure gender-inclusive outreach** by using neutral language in job ads and training promotions.
- **Expand career-switching pathways** through bootcamps and re-skilling programmes targeting women.
- **Prioritise soft skills training**, including confidence-building, negotiation, and leadership.

3. Workplace Culture and Retention

Priority Level: (High)	Priority Countries: Egypt, Morocco, Jordan, and Tunisia	Key Actors: Digital Companies, and acceleration programmes aimed at tech entrepreneurs

Key Findings

- Rigid work structures exclude women, particularly mothers.
- Poor maternity and paternity policies make career continuity difficult for women.
- Lack of reintegration programmes prevents women from returning after career breaks.

Recommendations

- Implement flexible work models that accommodate women's career-life balance.
- Strengthen maternity and paternity leave policies to support working parents.
- Develop reintegration programmes to upskill women returning from career breaks.

4. Women in Leadership and Entrepreneurship

Priority Level: (High)	Priority Countries: Morocco and Jordan	Key Actors: International and Local Donors, Acceleration programmes, Investors/financial institutions

Key Findings

- Female-led businesses face funding barriers, despite policy improvements.
- Few women in leadership roles reinforce gendered career expectations.
- Family businesses often undervalue women's contributions, limiting promotions.

Recommendations

- Promote female leadership through targeted mentorship and sponsorship programmes.
- Expand funding access for women-led businesses, reducing gender bias in investment decisions.
- Encourage family businesses to recognise and advance women in leadership roles.

5. Post-Maternity Career Reintegration

Priority Level (Medium)	Priority Countries: Morocco, Egypt, and Jordan	Key Actors: Digital Companies, International and Local Donors, Digital Skilling Companies

Key Findings

- Career breaks can result in skill erosion, making re-entry into high-tech jobs difficult.
- Lack of structured returnship programmes for upskilling after maternity leave.
- Flexible work models improve retention, yet many companies are rolling them back

Recommendations

- Introduce returnship programmes that help women re-enter high-tech jobs after maternity leave.
- Offer phased reintegration models, allowing gradual return with upskilling support.
- Maintain flexible work options, ensuring career continuity for working mothers.

2. Introduction

The MENA region faces significant challenges in providing meaningful employment opportunities for its youth population, particularly for young women. Youth unemployment rates average over 30% across the region[1], with women's labour force participation at just 25%, far below the global average of 47% for women in developing regions[2]. Despite achieving higher levels of education compared to their male counterparts, women in MENA continue to face structural barriers such as restrictive cultural norms, legal limitations, and limited mobility, which hinder their ability to access and succeed in the workforce.

A promising avenue lies within the digital economy, which has created new opportunities through digital platforms, remote work, online freelancing, e-

[1] **Mottaghi, Lili.** (2018). Disruptive Technology: New Growth Engine for MENA? World Bank, Quick Note No. 169. https://openknowledge.worldbank.org/entities/publication/e37f6c0f-6dd0-5997-b0b1-c26c6d7364ef

[2] **World Bank.** (2012). Opening Doors: Gender Equality in the Middle East and North Africa. Quick Note No. 60. https://documents.worldbank.org/en/publication/documents-reports/documentdetail/546801468299700356/opening-doors-gender-equality-in-the-middle-east-and-north-africa

commerce, and digital services. These digitally enabled jobs offer flexibility in terms of working hours and location, enabling women to balance work with family responsibilities and navigate restrictive social norms. Technology driven solutions also provide access to global markets, allowing women to engage in economic activities beyond their immediate geographic constraints. However, barriers such as legal frameworks, cultural practices, and limited access to digital skills training continue to impede women's full participation in the digital economy.

This study, titled **"Digital Jobs and Women in the MENA Region – Exploring the Challenges, Opportunities, and Best Practices,"** examines how digitally-enabled jobs can create decent, sustainable employment opportunities for women in Egypt, Jordan, Tunisia, and Morocco. The research focuses on two types of digital jobs: (1) "Direct" Digital Jobs within the IT sector (2) "Digitally Enabled Jobs" (full definitions included in the methodology section).

In this way, the study aims to:

- Strengthen the evidence base on digital and digitally enabled jobs for women.
- Identify barriers and opportunities for women in accessing and succeeding in digital jobs.
- Synthesise and build upon best practices from the Challenge Fund for Youth Employment (CFYE) portfolio and other relevant initiatives.
- Provide actionable recommendations for stakeholders to scale digital job opportunities for women.

While the study's sample may not fully represent all job categories, it emphasises a broader understanding of digitally enabled jobs, digitally enabled observations across the four digitally enabled job models where applicable. The findings also contribute to CFYE's mission of addressing youth unemployment by leveraging the potential of the digital economy to create sustainable, gender-inclusive employment.

CFYE's Take on Digital Jobs

Digital Jobs and Digitally Enabled Jobs
CFYE categorises digital jobs based on the business models that create them, distinguishing between direct digital jobs and digitally enabled jobs. Direct digital jobs include all employment or self-employment roles within the ICT sector. Digitally enabled jobs, on the other hand, exist across various sectors where organisations or implementing partners use digital tools or platforms to facilitate job creation. There is some overlap between these categories when direct digital jobs in the ICT sector rely on externally focused digital platforms for mediation or delivery.

Digitally Enabled Jobs – CFYE's 4 models

CFYE considers JobTech – or simply said digitally enabled jobs- to be the Future of Work. Digitally enabled employment models have huge potential to create large job numbers, and their way of working is generally attractive to youth due to its innovation and flexibility. More than half of the projected jobs in the CFYE portfolio (About 65%) will be digital jobs. 47 out of 74 currently ongoing projects by their Implementing Partners either create, match or improve jobs with a digital component. CFYE have labelled all of their projects up to call five to distinguish between four digital business models[3*]

- **Platforms for offline work (10 projects):** Workers provide non-digital services (e.g., cleaning, plumbing, driving) but find clients or employers through digital platforms.
- **Platforms for online work (15 projects):** Digitally skilled workers offer services remotely (e.g., data labelling, customer support, BPO, content creation) and connect with clients via digital platforms.
- **Projects digitising micro-enterprises (18 projects):** Self-employed individuals or micro-businesses use digital platforms to enhance market reach, business performance, and productivity, primarily focusing on product sales rather than services.
- **Platforms for digital skill building (31 projects):** Young men and women receive training through digital platforms and are later matched to employment or entrepreneurial opportunities. Most programmes integrate skill-building with access to digital platforms for work.

[3] * CFYE Projects can consist of more than one digital business model.

3. Methodology

Overview

The study methodology integrated desk reviews, primary data collection, and thematic analysis to provide a comprehensive understanding of the below job types and their potential to empower women.

This study focused on understanding the two main categories of digital jobs in Egypt, Jordan, Tunisia, and Morocco[4]:

1. **Direct Digital Jobs**: Roles within the IT sector requiring specialised skills.
2. **Digitally Enabled Jobs**: Roles across sectors facilitated by jobtech platforms, categorised into four models:
    - **Digitising Microenterprises**: Supporting small businesses and independent sellers through e-commerce platforms, sales and marketing tools, and supply chain solutions to foster job creation and economic opportunities.
    - **Platforms for Offline Work**: Facilitating jobs performed offline (e.g., transportation, logistics, home services) by connecting workers to clients through digital platforms.
    - **Digital Skill Building**: Building competencies in IT, digital marketing, and other in-demand areas, enabling women to enter and thrive in digitally enabled roles.
    - **Platforms for ICT/Online Work**: Enabling fully online jobs, such as freelancing, microtasks, and creative digital work, offering flexibility and remote work options.

Research Design and Approach

This study adopted a mixed-methods, qualitative research approach which integrates multiple data collection methods to ensure a comprehensive analysis of barriers, opportunities, and best practices through:

- **Desk Review**: Analysing existing literature, reports, and case studies on digitally enabled jobs and women's employment in Egypt, Jordan, Tunisia,

[4]Challenge Fund for Youth Employment, *Future of Work:Digitally Enabled Jobs*, https://fundforyouthemployment.nl/future-of-work-digitally-enabled-jobs/.

and except for the foundation for understanding the regional context and informed the development of data collection tools.

- **Key Informant Interviews (KIIs)**: 14 Semi-structured interviews conducted with CFYE implementing partners (IPs) and other stakeholders to gather insights into organisational experiences, strategies, and challenges in creating digitally enabled jobs for women.
- **Focus Group Discussions (FGDs)**: 7 FGDs were held with women beneficiaries of IPs to capture their lived experiences, challenges, and successes in accessing and succeeding in digitally enabled jobs.
- **Site Visits**: 7 Observational visits to IP locations allowed for an in-depth understanding of workplace environments, inclusivity, and accessibility for women in digital roles.

For data sampling approach and analysis coding structure, please refer to ***Annex 1.***

4. Cross-Country Regional Analysis

Based on insights gathered from primary data collected under this study, the regional findings were structured around five critical pillars that shape women's participation in digitally enabled jobs in Egypt, Jordan, Tunisia, and Morocco. These pillars reflect the key challenges and opportunities women face at different stages of their education and careers, from early exposure to digital skills to long-term career progression and leadership.

1. **Education and Digital Skilling:** Examining how curriculum-market alignment, gender perceptions in STEM fields, and access to foundational digital skills shape women's entry into the digital workforce.

2. **Job Readiness and Career Pathways**: Assessing the effectiveness of training programmes, outreach strategies, and barriers that prevent women from fully engaging digital skilling opportunities.

3. **Workplace Culture and Retention**: Understanding how company policies, workplace flexibility, and inclusivity affect women's ability to thrive and advance in digital jobs.

4. **Women in Leadership and Entrepreneurship**: Exploring how the lack of female role models, limited access to funding, and societal biases impact women's progression into leadership roles within the digital sector or their likeliness of pursuing self-employment in digital fields.

5. **Post-Maternity Career Reintegration**: Investigating the challenges which women face in returning to digital jobs after career breaks, the effectiveness of reintegration programmes, and the policies that support women's continued career growth.

Each of these pillars provides a lens through which to analyse the structural and cultural barriers affecting women's participation in digitally enabled jobs while identifying successful strategies that can be scaled regionally.

1. Education and Digital Skilling

Across the MENA region, women are highly represented in STEM-related higher education fields, yet this does not translate into proportional workforce participation in digital jobs[5]. Countries like Tunisia, and Jordan boast high numbers of female ICT graduates, but deep-seated gender norms still steer women away from careers in tech. Meanwhile, In Egypt and Morocco, societal perceptions discourage women from considering high-risk or high-growth digital jobs, nudging them toward employment in perceptibly "safer" sectors for women such as roles in education, administration, or banking instead.

[5] Moussawi-Haidar, L. (2024). Women in Stem in the Middle East and North Africa. *Routledge Handbook on Business and Management in the Middle East* (pp. 158-170). Routledge. https://www.taylorfrancis.com/chapters/edit/10.4324/9781003044604-17/women-stem-middle-east-north-africa-lama-moussawi-haidar

Moreover, primary data collected under this study revealed that many university curricula remain disconnected from labour market needs, leaving graduates—especially women—ill-prepared for digital jobs. Soft skills, applied technical training, and career guidance are often lacking, making it harder for women to transition into the workforce. Initiatives that integrate digital skills earlier in women's education, such as school-level competitions and coding bootcamps, have proven effective in sparking early interest among women. However, these early exposure programmes remain limited in reach and are not available at scale.

2. Job Readiness and Career Pathways

While digital skilling programmes exist across the region, women's participation remains uneven due to financial constraints, mobility barriers, and outreach strategies that fail to engage women effectively. Women in rural areas, even when despite being highly motivated and skilled, often struggle to access training programmes due to geographical limitations or family responsibilities disproportionately placed on women. As such, even when online skilling opportunities are available, a lack of digital literacy and inadequate infrastructure hinder accessibility.

In Jordan, Tunisia, and Egypt, this study found that the ways in which digital skilling is marketed plays a crucial role in women's level of engagement shaping perceptions. Many training programmes and job advertisements use male-oriented language or imagery, reinforcing the perception that fields like cybersecurity, software development, and data science are not meant for women. However, there is some evidence that when outreach materials or job announcements use language which is specifically female-oriented (ex: the female pronoun for "you" or "you all" in Arabic), there is a significant uptick in women's responses and participation.

Additionally, programmes that support career-switching into digital fields—such as coding bootcamps and short-term technical upskilling—are largely missing, particularly in Egypt, where career transition pathways are scarce.

3. Workplace Culture and Retention

Even when women enter the digital workforce, this study found that workplace cultures in the target countries often fail to support their long-term retention and career advancement. Across all four countries, rigid work hours, lack of workplace flexibility, and unsupportive management structures routinely push women out of digital jobs. The shift back to in-person

work post-COVID-19 pandemic has also disproportionately impacted women, with many ultimately leaving roles that previously accommodated remote or hybrid work arrangements.

Moreover, companies often overlook gender-specific challenges that women face, such as mobility restrictions, caregiving responsibilities, and biases in performance evaluations. Women in IT fields, for instance, report feeling isolated in male-dominated teams and often struggle to gain recognition for their contributions. In Tunisia and Jordan, many women interviewed reported opting for remote freelancing positions over traditional employment to avoid what they described as toxic or exclusionary work environments.

One further critical gap in workplace policies is the absence of strong maternity and paternity leave provisions, such that having children typically results in negative career consequences for women. Furthermore, companies which do not offer gradual reintegration programmes for women post-maternity leave often experience high attrition rates for women, particularly in fast-moving digital sectors where skills must be continuously updated. Companies that invest in gradual reintegration pathways on the other hand—such as part-time return options and structured upskilling programmes—see higher retention of women in digital roles.

4. Women in Leadership and Entrepreneurship

The absence of visible female leaders in the digital sector remains a persistent barrier across the MENA region, including in the study target countries. Broadly, this study found that women often lack role models who demonstrate viable career paths in IT and tech entrepreneurship, leading to decreased aspirations of women to enter the field entirely or, once in the field, to lowering their aspirations when it comes to pursuing leadership positions. In Morocco and Jordan, for example, female entrepreneurs in digital businesses reported struggling to access funding, as investors and financial institutions remain hesitant to back women-led enterprises. Even within corporate settings, interviewed women reported frequently finding themselves stuck in middle-management positions and not being promoted into senior leadership. Meanwhile, in family-run businesses, the study found a recurring trend where women do substantial work but are rarely promoted to decision-making roles, as leadership remains within the male members of the family.

Networking and mentorship programmes tailored to women, however, have demonstrated some proven effectiveness in boosting female participation in leadership roles. In Jordan, for example, companies with strong female leadership see higher retention rates among women employees, as they perceive clearer career growth opportunities. However, such programmes

remain limited across the region, necessitating more targeted efforts to build leadership pipelines for women in digital fields.

5. Post-Maternity Career Reintegration

One of the most significant barriers to long-term career sustainability for women in digital jobs is the challenge of returning to work after maternity leave. Across all four countries, any career gap, including maternity leave, is viewed as a major setback, particularly in fast-evolving tech fields where continuous on-the-job learning and upskilling is crucial. Women who step away from full time work, even for short periods, report struggling to reintegrate into their position, due to real and perceived perceptions that their skills are no longer up to date. Moreover, women struggle to be hired for high-tech roles after career breaks, as hiring managers often perceive them as having outdated skills.

In Jordan and Egypt, some companies are beginning to recognise the value of structured reintegration programmes by offering upskilling opportunities for returning mothers. However, such initiatives are not widespread and without clear pathways for women to re-enter the workforce after career breaks, many talented professionals exit the digital economy, often permanently.

5.Country-Specific Analysis

This section integrates insights from existing literature, reports, and case studies with primary research findings to provide a holistic view of the challenges and opportunities facing women in digitally enabled jobs across the region.

The desk review examined the socio-economic conditions shaping women's employment in digital sectors, identifying key barriers and enablers. These insights informed the study's research design, data collection tools, and analytical framework.

The country-level findings build on this foundation by presenting primary research results from interviews, focus group discussions, and site visits. Each country section highlights unique and overlapping trends in women's access to digital jobs, workforce participation, and employment barriers, ultimately shaping the study's regional analysis and recommendations.

5.1 Egypt

Desk Review

Women Employment and Unemployment

Women's labour force participation in Egypt has remained persistently low, reflecting deep-seated structural barriers exacerbated by the COVID-19 pandemic. Despite comprising 56% of university graduates in 2015, women's participation in the labour force was a mere 23.1% in 2017[6]. The pandemic further exacerbated gender disparities in employment, disproportionately affecting women in both formal and informal sectors and underscoring long-standing societal and economic challenges.

The decline in female labour force participation over recent years highlights the systemic issues women face in the workforce. From 23.1% in 2017 to 14.9% in 2022, societal norms and unpaid care responsibilities have emerged as key barriers[7]. These responsibilities often limit women's ability to seek or maintain employment, creating a cycle of reduced opportunities. Furthermore, women's underrepresentation in leadership roles—only 7% of managerial positions in 2021 compared to a global average of 28%—reflects the entrenched gender biases in professional advancement[8]. The situation is even more precarious for the 62% of women employed in the informal sector, where a lack of social protection and decent work standards compounds their vulnerabilities[9].

Sector-specific trends reveal nuanced challenges and opportunities. While sectors like ICT have shown promise–with women's employment in the field growing by 6.4% annually and doubling their share from 1% in 2009 to 2.3% in 2021[10]--other domains such as STEM continue to face barriers. Only 36% of female STEM graduates transition into the workforce,

[6] World Bank. (2018, March). *Women Economic Empowerment Study.* Retrieved from https://documents1.worldbank.org/curated/en/861491551113547855/pdf/134846-WP-PUBLIC-march-2-WB-Women-Study-EN.pdf

[7] National Council for Women. (2022). *Monitoring the implementation of Egypt's national strategy for women empowerment.* Retrieved from https://en.enow.gov.eg/Report/35.pdf

[8] Wagdi, O., & Fathi, A. (2023). *Women at top management levels in emerging markets between obstacles and repercussions: Evidence from Egyptian corporations*. *The Academic Journal of Contemporary Commercial Research*, *3*(1), 61-84. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4406026

[9] UN Women. (2020, April). *Assessing the potential impact of COVID-19 on women and girls in Arab states.* Retrieved from https://www.undp.org/sites/g/files/zskgke326/files/migration/arabstates/3-Assessing-the-potential-impact-of-COVID-19-on-women-and-girls-in-Arab-States_8-Dec-Final.pdf

[10] Selwaness, I., Assaad, R., & El Sayed, H. (2023). *Supporting ICT employment opportunities for women in Egypt*. Open Access Government. Retrieved from https://www.openaccessgovernment.org/article/supporting-ict-employment-opportunities-for-women-in-egypt/162367

signifying hurdles in bridging academia and industry[11]. Married women are particularly disadvantaged, with only 13% participating in the labour force, often due to caregiving responsibilities and cultural expectations[12].

The expansion of ICT jobs in Egypt has played a critical role in creating employment opportunities for women, particularly in urban areas. Between 2009 and 2021, the number of women working in ICT roles more than doubled, growing at an average annual rate of 6.4%, with even faster growth in the private sector at 10% year[13]. However, much of this growth has been concentrated among unmarried women, highlighting potential challenges related to work-life balance and caregiving responsibilities.

A key driver of this employment shift has been the increasing demand for tertiary-educated workers in ICT fields. The proportion of ICT employees with tertiary degrees rose from 43% in 2009 to 63% in 2021[14], reinforcing the link between higher education and access to digital jobs.

The COVID-19 pandemic acted as a magnifier for existing inequalities. Women were disproportionately affected, particularly in informal and care sectors. Across the Arab Region, including Egypt, a total of 1.1 million women lost their jobs during the pandemic, and an additional 600,000 exited the labour force entirely[15].This stark loss of employment underscores the vulnerability of women's economic positions during crises.

Cultural and structural barriers further hinder women's employment prospects. A significant portion of men in Egypt hold reservations about women working in certain environments, limiting women's access to higher-paying and managerial roles. According to a survey, 92% of Egyptian men agreed with the statement, *"When jobs are scarce, men should have more right to*

[11] Women in Engineering Journal. (2023). *Egyptian Women in Science, Technology, Engineering, and Mathematics Education and Industry: Experience and Analysis. Retrieved from* *http://ieeexplore.ieee.org/iel7/74/10432958/10433107.pdf*

[12] Economic Research Forum. (2021, November). *Why do so few married women work in Egypt?* Retrieved from https://erf.org.eg/publications/why-do-so-few-married-women-work-in-egypt/

[13] Selwaness, I., Assaad, R., & El Sayed, M. (2023). The Promise of Information and Communication Technology (ICT) Jobs in Egypt. In *Economic Research Forum Policy Research Report, SPRR* (Vol. 3).https://erf.org.eg/publications/the-promise-of-information-and-communication-technology-ict-jobs-in-egypt/

[14] Ibid

[15] UN Women. (2020, April). *Assessing the potential impact of COVID-19 on women and girls in Arab states.* Retrieved from https://www.undp.org/sites/g/files/zskgke326/files/migration/arabstates/3-Assessing-the-potential-impact-of-COVID-19-on-women-and-girls-in-Arab-States_8-Dec-Final.pdf

a job than women"[16]. Such societal perceptions contribute to reinforcing traditional gender roles and restricting women's economic participation, particularly in male-dominated industries. Gender stereotypes are reinforced through recruitment practices, with job postings often targeting men for technical roles while relegating women to administrative positions[17]. Workplace challenges further exacerbate these issues; many women exit the workforce after marriage due to a lack of childcare, inflexible work environments, and unsafe per transportation options[18]. These obstacles contribute to a persistent wage gap, with men in the private sector earning on average 21% more than women[19]. The gender wage gap in the private sector narrowed from 30% in 2010 to 21% in 2015, but disparities remain significant, particularly for women in informal and low-skilled jobs[20].

Despite these challenges, emerging trends and initiatives present a glimmer of hope. Digital transformation has introduced flexible work systems, such as remote work and digital freelancing, which have opened new opportunities for women, particularly in ICT and creative industries[21]. Similarly, financial inclusion has seen significant strides, with women's access to financial services rising from 9% in 2015 to 57.6% in 2022, largely driven by mobile payments and e-wallet initiatives[22]. These developments highlight the potential for systemic changes to improve women's economic participation in Egypt.

Digitalisation Policies

Egypt has positioned digitalisation as a cornerstone of its national development, aligning with global trends to foster innovation, enhance access to digital tools, and reduce the gender digital divide. These strategies are central to Egypt's Vision 2030 and the National Strategy for Women Empowerment, emphasizing inclusive growth and gender equity. Digital initiatives

[16] Pew Research Center. (2010). Gender equality universally embraced, but inequalities acknowledged. Pew Research Global Attitudes Project. Retrieved from https://www.pewresearch.org/global/2010/07/01/gender-equality/

[17] National Council for Women. (2022). *Monitoring the implementation of Egypt's national strategy for women empowerment*. Retrieved from https://en.enow.gov.eg/Report/35.pdf

[18] Egyptian Urban Planning Journal. (2023). *Gender and mobility: Enhancing the Egyptian working women's travel pattern. Retrieved from https://www.researchgate.net/publication/362023432_Gender_and_mobility_enhancing_the_Egyptian_working_women's_travel_pattern*

[19] National Council for Women. (2022). *Monitoring the implementation of Egypt's national strategy for women empowerment*. Retrieved from https://en.enow.gov.eg/Report/35.pdf

[20] National Council for Women. (2022). *Monitoring the implementation of Egypt's national strategy for women empowerment*. Retrieved from https://en.enow.gov.eg/Report/35.pdf

[21] Masaar. (n.d.). *The role of the ICT sector in empowering Egyptian women*. Masaar Technology and Law Community. Retrieved from https://masaar.net/en/the-role-of-the-ict-sector-in-empowering-egyptian-women/

[22] National Council for Women. (2022). *Monitoring the implementation of Egypt's national strategy for women empowerment*. Retrieved from https://en.enow.gov.eg/Report/35.pdf

have been designed to improve digital literacy, enhance financial inclusion, and create opportunities for women in emerging technology sectors.

Government-led programmes such as the Digital Egypt Initiative aim to equip citizens, particularly women and youth, with advanced digital skills while fostering innovation and developing ICT infrastructure[23]. Within this initiative, programmes like the Digital Egypt Builders Initiative (DEBI) and Next Technology Leaders (NTL) focus on upskilling in AI, robotics, and software engineering, explicitly addressing gender gaps in tech education and careers[24]. Another critical component is the National Strategy for Women Empowerment 2030, which promotes digital financial inclusion. By expanding the use of Meeza cards[25] and mobile payments, women's financial access has increased from 9% in 2015 to 57.6% in 2022. These initiatives also encourage teleworking systems and e-wallets, facilitating economic participation and flexible work opportunities for women[26].

Additionally, as of the second quarter of 2018, microfinance beneficiaries in Egypt reached 2.9 million, with 70% being women[27]. This suggests that a substantial number of women are actively engaging in micro and small enterprises. The proportion of microcredit directed to women stood at 47.2% in 2021[28], further highlighting the increasing role of financial tools in fostering women's economic participation.

Despite these advancements, gender gaps in technology remain pronounced. While digital education programmes are expanding, women continue to be underrepresented in STEM and digital careers. Only 35% of STEM graduates in Egypt are women, reflecting barriers to entering and thriving in these fields[29]. These disparities are more severe in rural areas, where

[23] Moussa, A., & Tarek, S. (2023). *Digital transformation and its impact in Egypt: A comprehensive literature review. International Journal of Professional Business Review, 8*(8), 01-20. https://doi.org/10.26668/businessreview/2023.v8i8.2755

[24] Moussa, A., & Tarek, S. (2023). *Digital transformation and its impact in Egypt: A comprehensive literature review. International Journal of Professional Business Review, 8*(8), 01-20. https://doi.org/10.26668/businessreview/2023.v8i8.2755

[25] Meeza is the Egyptian National Payment Scheme developed under the supervision of the Central Bank of Egypt, that enables financial institutions to meet the needs of consumers who expect to make payments and access funds wherever, whenever and however they choose. https://meeza-eg.com/

[26] National Council for Women. (2022). *Monitoring the implementation of Egypt's national strategy for women empowerment.* Retrieved from https://en.enow.gov.eg/Report/35.pdf

[27] Gueguen, C. (2019, January 28). Fintech for women: Scaling the financial inclusion pyramid in Egypt. BEAM Exchange. Retrieved from https://beamexchange.org/community/blogs/9999/1/1/fintech-for-women-egypt/

[28] National Council for Women. (2022). Monitoring the implementation of Egypt's national strategy for women empowerment. Retrieved from https://en.enow.gov.eg/Report/35.pdf

[29] UN Women & UN DESA. (2024, September). *Progress on the sustainable development goals: The gender snapshot 2024.* Retrieved from https://www.unwomen.org/en/digital-library/publications/2024/09/progress-on-the-sustainable-development-goals-the-gender-snapshot-2024

only 41% of women access the internet compared to 52% of men[30]. Investments in digital literacy programmes have begun addressing these issues, but significant gaps remain[31].

Various initiatives are bridging the divide, creating pathways for women to enter the digital economy. programmes such as AI Empower Egypt and Women in Data Science (WiDS) provide training in AI and data analytics, empowering women to participate in emerging sectors[32]. Additionally, the COVID-19 pandemic accelerated the adoption of teleworking and digital platforms, creating opportunities in creative industries like graphic design, content creation, and digital marketing[33].

Policies supporting digital entrepreneurship have further contributed to women's economic inclusion. The Technology Innovation and Entrepreneurship Centre (TIEC) offers mentorship, incubation, and funding for women-led tech startups, fostering entrepreneurial growth and innovation[34]. Initiatives like InnovEgypt also encourage women to participate in the startup ecosystem, while L'Oréal-UNESCO Fellowships provide financial support to female scientists, promoting innovation in academia and industry[35].

Digital tools are also playing a significant role in supporting workplace ecosystems. Platforms such as Taskedin help women balance work-life responsibilities and foster remote work environments by eliminating biases through performance-based evaluations[36]. Online

[30] UN Women. (2020, April). *Assessing the potential impact of COVID-19 on women and girls in Arab states.* Retrieved from https://www.undp.org/sites/g/files/zskgke326/files/migration/arabstates/3-Assessing-the-potential-impact-of-COVID-19-on-women-and-girls-in-Arab-States_8-Dec-Final.pdf

[31] Moussa, A., & Tarek, S. (2023). *Digital transformation and its impact in Egypt: A comprehensive literature review. International Journal of Professional Business Review*, *8*(8), 01-20. https://doi.org/10.26668/businessreview/2023.v8i8.2755

[32] Women in Engineering Journal. (2023). *Egyptian Women in Science, Technology, Engineering, and Mathematics Education and Industry: Experience and Analysis. Retrieved from http://ieeexplore.ieee.org/iel7/74/10432958/10433107.pdf*

[33] Daily News Egypt. (2023, March 8). *Digital transformation empowers women, creates new jobs.* Retrieved from https://www.dailynewsegypt.com/2023/01/03/digital-transformation-empowers-women-creates-new-jobs-experts/

[34] Moussa, A., & Tarek, S. (2023). *Digital transformation and its impact in Egypt: A comprehensive literature review. International Journal of Professional Business Review*, *8*(8), 01-20. https://doi.org/10.26668/businessreview/2023.v8i8.2755

[35] Women in Engineering Journal. (2023). *Egyptian Women in Science, Technology, Engineering, and Mathematics Education and Industry: Experience and Analysis. Retrieved from http://ieeexplore.ieee.org/iel7/74/10432958/10433107.pdf*

[36] European Commission. (2023). *Women in digital.* Retrieved from https://digital-strategy.ec.europa.eu/en/policies/women-digital

recruitment platforms have highlighted the importance of gender-inclusive language in job postings, helping to combat stereotypes and encourage women to apply for diverse roles[37].

On a global scale, Egypt's Women in Digital Strategy aligns with frameworks like the Global Digital Compact, promoting policies for equitable access to digital education and entrepreneurship. programmes such as WE Hubs and Digital Skills Awards celebrate and encourage women's contributions to the tech economy[38].

Additionally, access to digital financial services and e-commerce platforms has enabled women entrepreneurs to scale businesses and enhance sustainability[39]. Moving forward, scaling rural outreach programmes, expanding mentorship networks, and promoting flexible digital workplaces will be essential to close the gender digital divide and empower more women in Egypt.

Programmes and Ecosystem Support Vehicles

Egypt has made significant strides in empowering women through targeted programmes and ecosystem initiatives. These efforts have focused on enhancing women's economic participation by fostering entrepreneurship, expanding access to digital tools, and leveraging both direct digital and digitally enabled job models. Such programmes address structural barriers while capitalizing on the potential of technology to create new opportunities for women.

The Rabeha programme has been a transformative initiative, training 7,563 women entrepreneurs and job seekers across seven governorates. This programme generated 670 new jobs, 94% of which were filled by women, while also supporting green entrepreneurship and circular economy practices through the integration of digital tools for innovation and sustainability[40]. Similarly, the FEMpower Initiative has provided career readiness and digital training to 2,582 women in STEM and creative industries. By focusing on networking and

[37] Soliman, F. (2023). *A content analysis of the gendered language used in online recruitment in Egypt.* Queen Mary's OPAL #48, Queen Mary, University of London. Retrieved from https://www.qmul.ac.uk/sllf/media/sllf-new/department-of-linguistics/documents/Soliman-QMOPAL-48-2023.pdf

[38] European Commission. (2023). *Women in digital.* Retrieved from https://digital-strategy.ec.europa.eu/en/policies/women-digital

[39] Daily News Egypt. (2023, March 8). *Digital transformation empowers women, creates new jobs.* Retrieved from https://www.dailynewsegypt.com/2023/01/03/digital-transformation-empowers-women-creates-new-jobs-experts

[40] UN Women. (2024). *Women's economic empowerment for sustainable and inclusive growth in Egypt: Rabeha achievements 2023*. UN Women Egypt. Retrieved from https://egypt.unwomen.org/en/digital-library/publications/2024/07/womens-economic-empowerment-for-sustainable-and-inclusive-growth-in-egypt-rabeha-achievements-2023

mentorship, this initiative bridges the education-to-employment gap for women in these sectors[41].

programmes like "Our Future is Digital" have played a vital role in equipping young Egyptians, including women, with in-demand ICT skills such as website design, data analysis, and digital marketing. This initiative aims to train 100,000 individuals, fostering a more digitally skilled workforce and improving women's access to digital job opportunities[42]. Additionally, the "Digital Egypt Project" is enhancing the country's digital infrastructure by expanding fiber-optic connectivity across government entities, facilitating broader digital transformation[43]. These initiatives contribute directly to strengthening the digital jobs ecosystem and increasing women's participation in tech-driven employment.

The Village Savings and Loans Associations (VSLA) initiative has also empowered over 300,000 women in rural Egypt by providing access to savings and credit through digital platforms. These platforms enable women entrepreneurs to secure microloans, fostering business growth and financial independence[44].

Aligned with the CFYE digital models, these programmes have targeted various work modalities. Offline work opportunities have been created through initiatives like FEMpower and Rabeha, which facilitate jobs in transportation and green entrepreneurship. For instance, women-led logistics startups now leverage digital apps to coordinate local deliveries. Similarly, digitally delivered work has expanded significantly through IT training and coding boot camps, equipping women with market-ready digital skills. Egypt's digital skills ranking is 44th out of 141 globally, but it remains below the MENA regional average[45]. To bridge this gap, bootcamps have played a crucial role in rapidly upskilling workers, particularly in

[41] UN Women & ILO. (2024). *Promoting productive employment and decent work for women in Egypt, Jordan, and Palestine.* Retrieved from https://www.ilo.org/projects-and-partnerships/projects/promoting-productive-employment-and-decent-work-women-egypt-jordan-and

[42] U.S. Department of Commerce. (2024, September 20). Egypt country commercial guide: Digital economy. International Trade Administration. Retrieved from https://www.trade.gov/country-commercial-guides/egypt-digital-economy

[43] U.S. Department of Commerce. (2024, September 20). Egypt country commercial guide: Digital economy. International Trade Administration. Retrieved from https://www.trade.gov/country-commercial-guides/egypt-digital-economy

[44] UN Women. (2021, March). *Women at the centre of COVID-19 response*. UN Women Egypt. Retrieved from https://egypt.unwomen.org/en/news-and-events/stories/2021/03/women-at-the-centre-of-covid19-response

[45] World Bank. (2023). Digital economy country assessment: Egypt. Retrieved from https://thedocs.worldbank.org/en/doc/b7a35868206ace761909f9bd2daa1f91-0200022021/original/Digital-Economy-Country-Assessment-May-26-Final.pdf

cybersecurity, cloud computing, data analytics, and digital design, helping women enter remote and platform-based jobs[46].

Digital services for micro-enterprises have also seen growth, with programmes providing tools like e-commerce platforms, supply chain management systems, and marketing solutions. Female entrepreneurs have adopted these tools to scale their businesses effectively.

Key Findings

1- Job Creation and Sustainability

Barriers

Women in Egypt's tech and digital sectors face significant challenges rooted in socio-cultural norms and systemic issues. These obstacles hinder their career progression and limit opportunities.

Firstly, the absence of digital skills training and employment opportunities in governorates outside of urban economic centres also limits women's ability to leverage their skills, thus creating the need to relocate leading to a significant barrier in relocation and the pursuit of suitable employment. A participant of an FGD for a digital skill-building firm expressed,"[some] governorates don't have opportunities or the vacancies that suit them. The barrier becomes their inability to relocate".

Mobility and accessibility issues significantly impact women's participation in the workforce, especially in rural areas. With strong family and cultural preferences against women physically relocating to find a position, relocation is not an option for many women, despite having the educational background for the job. The same participant added: "Even if they learnt the skills, there are no opportunities to apply their knowledge within their cities. Remote jobs would be ideal, but they are not [widely] available".

A private sector interviewee noted, "women, specifically in our part of the world, do have some mobility restrictions…these are realities in the Arab world in general." This challenge is further intensified by cultural norms that influence women's career aspirations, with another private sector interviewee explaining, "accessibility and relocation are a big challenge, so the aspirations [of women] are lower not because she is less, but because the culture is affecting

[46] World Bank. (2023). Digital economy country assessment: Egypt. Retrieved from https://thedocs.worldbank.org/en/doc/b7a35868206ace761909f9bd2daa1f91-0200022021/original/Digital-Economy-Country-Assessment-May-26-Final.pdf

her." These statements underscore the complex interplay of social and cultural factors that restrict women's opportunities in certain geographic areas.

The challenges intensify outside the metropolitan hubs like Cairo, where cultural and familial constraints are more pronounced. As a digital skilling interviewee puts it: "There are challenges for governorates as the culture is a bit closed and there are family constraints".

A female digital skilling interviewee also pointed out the influence of cultural norms on women working in positions associated primarily with men, particularly working in close proximity with many or entirely male colleagues. As she further explained women working primarily or in close proximity with men or during times outside of typical working hours, often face strong societal reproach, stating, “If it is 8 men and only 2 women in a night shift, she will not come, her husband wouldn’t approve, and her family wouldn’t approve". Additionally, the burden of familial responsibilities disproportionately affects women, as an FGD participant described, "There is still a lot of stigma around working women and pressure on mothers especially, and the social aspect of abandoning your children, especially in the rural areas."

“Even if they learnt the skills, there are no opportunities to apply their knowledge within their cities. Remote jobs would be ideal, but they are not [widely] available.”

- A Female FGD Participant working at a Digital Skilling Centre in Cairo

Educational and career paths, including those in the tech and digital sectors, are often shaped by gender norms. Societal perceptions frequently steer women toward fields considered more suitable for their gender. Female FGD respondents shared that some degree paths, such as engineering, are typically male-coded, whereas domains such as design or art are more female-coded, thus driving many women away from the technical fields typically needed for digital jobs. A private sector professional highlighted the gendered nature of educational and career paths in Egypt. She noted that: "when someone gets into universities – connotation of engineer is male-oriented – women tend to go to something more relevant to design or art." This gendering bias is also mirrored in employment practices, where men are often favoured for roles that are perceived to require late hours or more direct communication, reflecting a cultural bias that also influences hiring decisions.

Many women in tech also expressed that navigating personal milestones or major life events, such as marriage, the birth of a child, or family care obligations, can directly disrupt their career progression. As one female digital sector worker described, "For software engineering,

things can change overnight... I know that if I chose a certain point of time to take a career gap, even if it's months in less than six months, seven months, and that would drop me a lot versus if I'm a product manager, if I'm a UI, UX." The same interviewee further elaborated on how personal milestones affect career trajectories for women in tech, saying, "I think also maybe there is a percentage [of employers], who think that my growth track has a lower probability versus a male person. I might take a career gap. I might get married, I might have kids, and so forth."

Overcoming Barriers

As the digital landscape evolves, strategies to dismantle barriers and enhance access, particularly for women in tech, are becoming increasingly vital. The global shift towards remote work catalysed by the COVID-19 pandemic has been a significant game-changer, particularly for women facing traditional workplace entry barriers. The pandemic, as noted by a private sector interviewee "actually validated the remote work or work from home formula. It gave it weight, and it normalized it for women, especially in our part of the world, where there are barriers to get to the workplace." This newfound acceptance of remote work has opened doors that were previously shut, enabling women to engage more fully from the confines of their geographical or societal limits. The call to look beyond Cairo is another crucial strategy, particularly encouraging companies to recognize that talent resides across the entire country, not just in its capital.

"Some companies... are very narrow-minded. They have a very narrow perspective on finding talents only in Cairo. And that's not true at all. We have lots of gems, like gem regions outside Cairo for women and for men from everywhere."

- A Private Sector Interviewee in Cairo

Despite being limited in numbers, online platforms also serve as crucial enablers for women working in the digital sector, particularly for those in remote or conservative areas where women's physical movement is often restricted. A co-founder of a platform for ICT/online work explained, our model makes it easier than normal, because, again, it can be done remotely [...] it does not require any sort of relocation or physically going to an office on a daily basis".

The shifts to online training can also address accessibility issues, particularly related to mobility and costs. As explained by a digital skilling professional," online training is important, because commuting or relocation is a big challenge. If I am a girl in Matay in Minia [a

governorate in Upper Egypt], my parents will not allow me to commute every day to take a course. This is something they cannot afford due to the cost and effort. I am unable to reach these girls, or I would need to be in their cities. That's why we try to train girls online." However, the effectiveness of remote work hinges on the availability of essential infrastructure, such as stable internet and electricity. Addressing these needs is critical for ensuring remote work is a viable option, suggesting an area where both public and private sectors could collaborate to enhance accessibility.

"Normalising and enabling work situations that are fluid and that are more forgiving to the norms and issues that we have here works."

- A Private Sector Interviewee in Cairo

Flexibility in work arrangements is another key element that attracts more women to the tech field, with many respondents raising this point loud and clear. Statements like "flexibility is a major attraction as well as working remotely, and women don't have to commute to submit their tasks etc.," expressed by an FGD participant and "normalizing and enabling work situations that are fluid and that are more forgiving to the norms and issues that we have here works," by a private sector interviewee, underline the importance of adaptable work environments in enhancing female participation in tech. Additionally, offering equal employment benefits to both men and women, rather than disproportionate benefits to men because they are perceived as family breadwinners, helps to provide women with much-needed support to succeed in their position. For example, implementing policies such as providing schooling allowances for both male and female employees, inclusive medical insurance for family members, and paternity leave alongside material leave are essential. As a private sector employer described, "we shouldn't focus solely on women; these benefits make sense for everyone and cater to a broader role within the organisation."

Finally, ensuring women have a voice in leadership is critical for advocating necessary changes within organisations.

"There are special considerations that are needed in our environment to accommodate women to be able to join the workforce, and this cannot happen without a woman's voice on the leadership team to be advocating for it."

- A Private Sector Interviewee in Cairo

This underscores the importance of female perspectives in decision-making processes to create a more inclusive and supportive workplace for everyone, this ensures workplace policies and culture adhere to women's needs, and position women leaders as role models to inspire young women to enter the digital sector.

2- Attraction and Retention Strategies

Attracting Women

Attracting women to the tech industry involves a multi-faceted approach that centres on visible female representation, inclusive messaging, and understanding the unique challenges and desires of women in the workplace. As noted by a private sector interviewee, "it does not make sense to say that we are empowering women and that we are supporting women in the workspace, and all of the people on the board are men." The presence of women in leadership roles not only serves as a beacon for aspiring females but also affirms the reality that women can achieve high positions while balancing personal commitments. Another private sector interviewee illustrated this point by noting, "you know that they're here, they're doing this or running this company. And they are mothers themselves, and they're busy moms…it's a perfect example of what her life can be like right in front of her. Look at them and you can get there."

Celebrating the achievements and qualities of women within the industry is also important, particularly highlighting the contributions of working mothers and women in various phases of their careers. programmes that build role models for women are vital in shifting perceptions and boosting confidence. By spotlighting successful women in tech and fostering women's early exposure to tech careers, initiatives can transform the narrative around women's capabilities in this sector. A digital skilling interviewee highlighted that "there is a belief that I can't learn technology, this is a major barrier of entry – so stakeholders need to work mainly on confidence, women's ability to use tech and AI". Additionally, targeted training programmes for women help to create future role models for women in the field. As one digital skilling manager elaborated, "I will train girls on supply chain in this male-dominated field so when women see female factory managers, their aspirations will go up."Moreover, promoting more female role models in traditionally male-dominated fields like cybersecurity can help mitigate the fear and intimidation women might feel due to the lack of visible female leaders.

"I don't think cybersecurity is not suitable for women, but the field itself is just dominated by men. Women just need an extra push to enter or be famous in the

field. Most of the famous figures in the field are men. So, even though flexibility is there in this field, the lack of figures is what keeps women away. Women get scared because of this."

- A Female FGD participant working at an ICT Company in Cairo

Furthermore, it is crucial to present role models not just as success stories but as relatable human beings with their own struggles and personal stories. By sharing the "human factor" behind each success, women can see the realistic paths these role models have taken, making the journey seem more attainable and authentic. As an FGD participant illustrated, “I don't want to only see the image. The professional part is often displayed on LinkedIn, where you see their achievements but not the journey they took to get there or what they did along the way…These examples reveal the reality behind the human aspect, helping me accept myself in my own circumstances.”

Understanding the inner obstacles that women face, such as the fear of imperfection, can also guide more supportive policies and practices. As a private sector professional explains, "we prefer women, we think they are more committed, and the only bottleneck is their fear of perfection. They are too perfectionist and don’t like to make mistakes, so they don’t venture."

Finally, as elaborated in the previous section on “Barriers” flexibility is often cited as a high priority for many women and offering remote work options can be a compelling reason for them to choose or stay with a company, As a private sector interviewee pointed out: “when you have a remote-first or remote-only work environment, it becomes more attractive to women. In fact, we often find that women are willing to sacrifice a portion of their salary for the opportunity to work remotely. For instance, they might be employed at another company with a specific compensation package, yet they tell us they are prepared to accept less in exchange for greater flexibility. This illustrates how they value the flexibility of remote work over the financial aspects of their roles”.

Inclusive Work Practices and Retention

Creating an inclusive workplace that effectively retains talent, especially women, hinges on implementing nuanced work practices that recognize and respect the range of needs and contributions of a company’s employees. The fine line between creating initiatives specifically for women and treating all employees equitably, regardless of gender, is crucial. As described in the previous section, many companies have found that they do not necessarily need to create specific benefits for women, as much as to simply extend employment benefits offered to male employees to their female employees as well, particularly around family allowances or

insurance coverage. As a female private sector leader puts it, "I think the most important thing is the environment or the mindset of balancing between catering things for women, and treating women as equal inside the organisation."

“Working in tech, giving birth used to be the end of your career. Now, you take your maternity leave and work remotely with your child next to you, you feel safe.”

- A Female Private Sector Interviewee

Flexibility also contributes to women’s retention, particularly when measures are in place to ensure that employees are judged on their results rather than their time spent at the office. A private sector professional pointed out, "if you’re a female currently a mom or have other things like doing your masters, we’re not measuring your performance by how much you spend at work but what your results achieved. Not where you stay at work and how much you stayed at work.” Adding to this, the adaptability of work arrangements is crucial, especially for women who might find in-person night shifts challenging due to cultural norms around women’s mobility at night but can very much perform this position remotely from their home.

Moreover, this flexibility contributes significantly to a sense of security and continuity for women in the tech industry, especially when they can continue working after significant personal milestones. A private sector interviewee highlighted "Working in tech, giving birth used to be the end of your career. Now, you take your maternity leave and work remotely with your child next to you.” This flexibility has also proven beneficial to men, especially in recent years, where the shift from a strict office presence to more remote work has been embraced widely. As noted by a private sector interviewee, "This flexibility helped dads and males as well”. This highlights the broader impact of flexible work policies, which can support all employees in balancing work and personal responsibilities more effectively, while particularly reducing some of the prohibitive barriers faced by women seeking or currently working within the digital field or in digitally enabled positions.

Finally, understanding the psychological and life changes women go through is vital for creating a supportive workplace and companies that recognize these challenges can significantly reduce stress levels and increase retention: “How the employer sees the family as a mindset, affects her psychological factors she will go through in her different phases and reduces the stress level – if they understand what I am going through or not makes a huge difference" an FGD participant clarified.

The pressures of balancing work and personal life are particularly acute for women who may feel disenchanted with their jobs if their personal challenges are not acknowledged.

"Women work with an immense amount of pressure, company pressure, and the pressure of becoming a mother [...] I am not passionate about the company or work anymore if you don't understand what I'm going through [...] work is not a bubble; what happens outside of my work will interfere with my work. We have to accommodate for it and take the good days and the bad days."

- A Female FGD Participant working at an ICT Company in Cairo

The study also found that many women feel great loyalty to their workplaces if they cater to their needs, in particular, that this loyalty is not necessarily primarily driven by salary but can be motivated by a sense of belonging and comfort within the workplace culture: "Women stay for years. I [women] feel comfortable about the place and the culture; I feel home then why change? They're not trying too hard to find another job. The personal motive for women is not always the salary," a female digital skilling professional added.

3-Digital Skilling

Digital Skilling for Women

In today's rapidly evolving job market, the nature of work has significantly transformed, highlighting the need for digital skills, especially for women seeking to engage in remote work. Reflecting on changes from previous generations, one FGD participant remarked, "The type of jobs are so different now! For mothers (10 years older than me) who had a dream of working from home, it used to be only manual work. There were no digital jobs.

However, even with these changes, women often face significant hurdles in keeping pace with digital advancements, especially if they take career breaks. The absence of supportive initiatives to keep skills current during such gaps is a notable challenge, leading many women to conclude that career breaks would be a career ender, or at least set them back significantly. As highlighted by a private sector interviewee, "there's nothing telling me that if I'm taking this career gap, I can, for example, be part of different initiatives that would keep me up to date. If I take a gap, I will drop, not pause."

"Graduates are certainly not job-ready in terms of digital skills. This necessitates comprehensive training programmes that range from basic to advanced levels, addressing needs as fundamental as teaching someone how to write or send an email, and as complex as operating sophisticated ophthalmology machinery."

- A Private Sector Interviewee in Cairo

The misalignment of educational institutions with market needs exacerbates this issue significantly. Universities often fail to equip students with essential digital skills, let alone continued sector developments, like artificial intelligence. An FGD participant highlighted: "Universities do not have this awareness or the AI tools and how to use them. Universities don't teach these basic skills". This significant educational gap drives many to seek out specialized training programmes offered by certain companies, which are recognized for their practical focus: "People like to come to our company because these skills are not available through universities, they only focus on their curriculum with zero soft skills. Our company helps women be prepared while they are still at university" an FGD participant emphasized. This emphasizes the need for training that bridges the divide between academic preparation and real-world demands.

A digital skilling interviewee further highlighted that core competencies that enhance career readiness include creating dashboards, automating work, visually presenting data, and utilizing AI and various communication tools within team management. These skills are not just technical but extend into digital literacy, which is broadly lacking yet crucial in the modern workplace. As such, the study found that it is important to differentiate between deep tech skills and broader digital literacy. While deep tech involves more specialized knowledge like core programming, which fewer women pursue, especially those without a technical background, digital literacy encompasses a wider array of more accessible skills that are critical across various job functions.

recognising the value of digital empowerment for women, initiatives that address this specific focus are vital. They aim to level the playing field, ensuring that women can stand out with their digital prowess: "Now, digital skills are the most important thing for our company. I want women to be digitally empowered. So, if she is compared with another man with the same qualifications, she will easily impress others digitally, thus giving her unique value proposition" a digital skilling interviewee stated. This focus on digital empowerment reflects a strategic approach to enhancing women's career prospects and overall presence in the digital economy.

Best Practices

To effectively boost digital empowerment for women, it is crucial that training programmes incorporate and adhere to best practices in digital skilling and career development. These strategies enhance the relevance and impact of the programmes by ensuring they are customised to address the specific needs of female participants.

One foundational approach includes meticulous planning, where programmes are developed based on detailed feedback and participants' needs assessment: "We build training programmes based on feedback and surveys and are customized/tailored to our audience" a digital skilling interviewee explained. This ensures that each programme is responsive to the specific needs and preferences of those enrolled.

Moreover, engagement levels can vary, especially in free programmes where commitment might naturally wane. "Another challenge is that commitment is lower if it's free. You need to work on retention within the programme with a clear timeline and agenda," a digital skilling interviewee remarked. To address this, alongside group coaching, structured timelines and clear agendas are implemented to maintain engagement throughout the duration of the programme.

Group coaching should also be introduced as a complementary practice to support participants further, especially when they encounter difficulties with online materials as a digital skilling interviewee elaborated. "This [group coaching] helps them if they face difficulties in the online materials - offline support is very important, we support both sides." This method enhances the learning experience by providing additional layers of support and facilitating a more engaging and interactive environment.

A digital skilling company interviewed highlighted that one-to-one sessions were the most effective form of support they offered followed by group coaching. These sessions are provided to offer more personalised guidance on career paths and application processes, particularly beneficial for individuals who might be reticent in group settings. These one-to-one meetings/individual mentoring sessions are particularly valuable for those who are shy or reluctant to speak out in group environments, allowing for the creation of customised solutions that address their individual needs. This approach ensures that each participant receives the specific assistance they need, enhancing their ability to successfully navigate the job market.

"We prefer that whoever gives the training is a woman and looks familiar to those I am giving the training to."

- A Digital Skilling Interviewee in Cairo

The role of female trainers and coordinators is also pivotal, particularly when they share demographic characteristics with their trainees. A digital skilling interviewee highlighted, "We prefer that whoever gives the training is a woman and looks familiar to those I am giving the training to," enhancing relatability and comfort. Female trainers are notably successful in making personal connections and bridging gaps between themselves and the participants, thereby facilitating more effective learning outcomes.

Additionally, the presence of female coordinators in training programmes adds a layer of comfort and security, fostering a supportive environment. The same interviewee added, "She [female coordinator] can also be very strict and take control, when necessary, which is generally more acceptable than if a man were in her position, where there might be sensitivity and greater difficulty". This dynamic ensures that training sessions are not only educational but also secure and accommodating, allowing participants to engage fully and openly with the material and their instructor.

Moreover, women-only cohorts have been effective in creating environments that foster open communication, deeper connections, and a sense of safety among participants. These cohorts, tailored exclusively for women, enhance the comfort level, allowing participants to form stronger bonds and communicate more freely and confidently. This approach, as noted by a digital skilling interviewee, significantly contributes to a safer and more supportive learning atmosphere.

Exploring innovative fields such as low code/no code technology opens new pathways for women, especially those in remote areas, to participate in globally trending digital careers. "One of the initiatives we are building is to create the first low code no code academy in Egypt, a technology where you digitize and automate lots of things using plugins and workflows through which we managed to build 42 apps." a digital skilling interviewee commented.

Community support also plays a critical role in enhancing these programmes. As expressed by an FGD participant, "The best thing about having a community is providing solidarity that I am not going through something which has not been experienced before, I am going through something natural, there are people on the other side who can elevate my pain. That's very very important". This sense of community helps participants feel supported and less isolated in their challenges.

4- Ecosystem and Support Opportunities

Gaps in Support

There are significant gaps that need addressing to enhance the ecosystem's effectiveness, particularly in fostering digital skills and employability.

Students are advocating for more integrated and practical approaches to their education, emphasising the need for real-world application of their studies. An FGD participant explained the necessity of hands-on experience: "We need practical projects or at least 2 internships to be able to graduate. We need a separate department to reach out to companies. I need to learn specific digital tools customized to my industry besides google packages etc. before graduating. Anyone who graduates from Computer Science, for example, knows this; they need to graduate fast to be able to take the courses that would help them actually work in companies". This statement underscores the urgency for educational institutions to bridge the gap between academic studies and practical, industry-relevant skills: especially important for women who, as the study found, often have to strongly prove their technical and soft skills capacity to be considered compelling candidates for digital and digitally enabled positions, compared to their male counterparts.

The gap between theoretical knowledge and its practical application continues to be a significant hurdle. An FGD participant pointed out that "we want basics such as the google package, creating email and whatnot – applying what is covered theoretically is extremely important [...] Digital tools cannot be an option anymore for students in universities. There needs to be a policy from the Ministry of Education – But it shouldn't be just another added, theoretical course. Not just another book. I want applied knowledge, not just theoretical". Furthermore, the challenge is not only in teaching these skills but in applying them in a way that promotes proactive problem-solving and communication, especially critical for female students who may face additional societal barriers. A digital skilling interviewee added that "the importance is placed on the theoretical part. Graduates have no proactivity and no ability to think freely, so you need to start from scratch".

Additionally, there are several promising initiatives currently enhancing digital skills, particularly among women. programmes like the ITI programme[47] have shown considerable success in graduating skilled participants who are well-prepared for the tech industry. However, in Egypt there is a notable gap in the popularity and availability of bootcamps—a popular skilling and upskilling option around the world—compared to their prevalence internationally. Expanding these programmes could significantly benefit individuals at various

[47] The ITI an affiliate of Egypt's Ministry of Communications and Information Technology (MCIT), The programme offers a full scholarship to Egyptian university graduates within five years of graduation, aiming to bridge the skills gap between talent supply and market demands. The programme develops ICT talent through industry-aligned training in fields like software development, cybersecurity, and data analytics. With 30+ years of experience, it maintains an 85% graduate employment rate and collaborates with academia to reach talent nationwide. https://iti.gov.eg/home

career stages, including those looking to shift careers, start new ones, or re-enter the workforce after a break.

Collaboration Opportunities in the Egyptian Tech Ecosystem

The role of influencers in building strong, cohesive communities cannot be overstated, particularly in Egypt's dynamic tech landscape. Emphasising the impact of leadership figures, "One of our team members, the CTO, is a very impactful figure in the tech community. [...] he was active all over the governorates, in events and giving sessions and doing different talks." These efforts by influential community leaders help open new opportunities and foster a culture of inclusivity and growth. Additionally, the personal stories of those influenced by such community leaders underscore their significant impact. One FGD participant shared how her interaction with this same prominent figure transformed her career trajectory: "My environment places limitations on me especially when I used to live in Menoufia. We didn't have access to opportunities like in Cairo [...] Events helped me take the step to enter the digital field. I had a talk with a [prominent tech community leader] to ask him to give a talk at our university" which later encouraged her to work in the digital field and he came and engaged with our student activity.

Community networks play a crucial role in amplifying support and spreading best practices. "When women join communities, they speak up for their rights, it either helps them leave and find better opportunities, or it's a wakeup call for other companies to know that people are not afraid to ask for what they think they deserve" explains a participant. Additionally, the sharing of ideas and strategies within these networks can lead to broader implementation and adaptation across the industry. An HR personnel and FGD participant pointed out: "In my own community, I see other companies sharing examples and their own knowledge with each other, and open ideas to implement in other companies. So, I see that another company did it, why not implement it in my company? This gives me inspiration to implement in my own company." This exchange of innovations fosters a dynamic environment where proactive changes enhance support for women in the digital sector.

5- Recommendations and Best Practices

This section presents actionable recommendations for the private sector, designed to realistically enhance women's participation and advancement in Egypt's tech industry. These suggestions draw from industry insights and aim to foster a more inclusive and supportive environment for women in the tech and digital sector.

Implement Career Transition Bootcamps: Initiate and support bootcamps that not only facilitate career transitions into technology but also offer upskilling for individuals returning from career breaks. "If I was working as an HR, and I want to shift my career, I will find a boot camp that would work for me... There were many bootcamps in Egypt like Makinah but they're now closed," highlighted a private sector interviewee. These bootcamps can bridge the skills gap and open new career pathways, providing essential training for individuals looking to pivot careers or re-enter the workforce after a break: breaks which many women take after the birth of a child or other family responsibilities.

Understand and Support Women's Career Motivations: Develop internal programmes that explore and support the unique motivations of women in the workplace. One effective approach is tailoring work arrangements to individual needs and fostering open conversations about workplace support systems. For instance, some companies use discussions around benefits, such as childcare allowances, to engage employees in identifying additional ways to support their career progression—especially after career breaks. Tailored support can also include flexible working conditions, mentorship programmes, that consider the diverse life stages and career aspirations of female employees. recognising and aligning with these motivations can lead to strategies that better support women's career progression and work-life balance.

Promote Geographic Diversity: To promote geographic diversity effectively within the private sector, companies can adopt several strategic initiatives without relying on government support. Firstly, developing robust remote work policies and management tools enables access to talent pools in less urbanised areas, allowing for efficient operation without the need for physical relocation. Companies can also implement decentralised recruitment strategies, such as online recruitment campaigns and virtual career fairs, to actively seek out talent across diverse geographic locations, particularly women who cannot necessarily move to other geographic locations for a job but have the right skill sets for a position. Internally, setting performance metrics that include geographic diversity goals encourages hiring managers to expand their search beyond traditional talent hubs to further widen the talent pool. Similarly, enhancing employee referral programmes to reward the referral of candidates from non-urban areas can achieve a similar goal. Additionally, hosting localised virtual events and networking opportunities can showcase the company's culture and opportunities to

prospective employees in underrepresented regions. Finally, documenting and sharing success stories of geographically diverse hiring practices can highlight their benefits, encouraging broader adoption and demonstrating the business value of a diverse workforce.

Foster Genuine Community and Storytelling in the Workplace: In response to strong feedback from women in the workforce, private sector organisations should prioritise fostering a genuine sense of community and encourage the sharing of personal success stories. This initiative should go beyond polished narratives and include the real, unfiltered experiences that women face daily, such as the challenges of working mothers or how women navigate career transitions. Women have emphasised the importance of these communities for more than just career connections; they seek emotional support, mentorship, and a space for authentic conversations that make them feel understood and less isolated.

Organisations can facilitate this by creating platforms—both online and offline—where employees are encouraged to share their less polished, behind-the-scenes stories. These stories should not only celebrate successes but also openly discuss the struggles and setbacks, providing a more comprehensive view of professional life. The strong demand for such genuine interaction indicates that this could significantly enhance women's engagement, satisfaction, and retention, creating a workplace where everyone feels more connected and supported.

Leverage Labour Market Insights for Programme Design: Organisations should utilise comprehensive labour market insights to tailor training and hiring programmes that align with industry demands and gender-specific career pathways. A key consideration is expanding access to digital jobs for women in rural areas who face mobility constraints and have limited access to traditional training programmes. One effective approach is the integration of accessible tech training initiatives, such as low-code and no-code platforms, which allow individuals without extensive technical backgrounds to quickly gain digital skills. These training programmes can be delivered remotely, enabling women to upskill without needing to commute, and leading to job opportunities that can also be performed remotely. By leveraging labour market data and adopting inclusive technological training, companies can bridge geographic and gender gaps, unlocking new career pathways for women in rural areas and integrating them into the digital economy.

Implement Gender-Specific Training Initiatives: Establish and support training programmes that are facilitated by female trainers and coordinators, specifically tailored to groups sharing similar demographic traits. The presence of female trainers not only enhances relatability and comfort but also fosters effective learning outcomes. Such programmes should also incorporate women-only cohorts to create a safe, supportive, and open environment, enabling participants to form stronger bonds and engage more fully with the training material. This

approach can significantly improve the efficacy of training sessions by fostering a comfortable and secure atmosphere conducive to learning: an essential aspect for women in environments where traditional gender norms may otherwise inhibit their educational opportunities.

Launch Targeted Mentorship and Soft Skills Workshops: To actively promote greater female participation in the tech industry and mitigate feelings of intimidation and fear of imperfection, private organisations should initiate a combined programme of mentorship and workshops focused on soft skills. This initiative would connect women interested in technology with seasoned professionals, providing a structured environment for sharing knowledge and experiences that emphasize growth and resilience over perfection. Concurrently, workshops tailored specifically for women would concentrate on developing essential soft skills, and addressing fears of imperfection, fostering an interactive learning environment where making mistakes is valued as a crucial part of the educational journey.

5.2 Jordan

Desk Review

Women Employment and Unemployment

Women's employment in Jordan is notably constrained by systemic, cultural, and structural barriers, leading to one of the lowest female labour force participation rates globally, between 14% and 15%, compared to 54% for men[48] and a MENA regional average of 25%[49]. For example, barriers such as high unemployment generally (30.8% for women vs. 21.2% for men[50]), restricted mobility for women also hinder their contributions to Jordan's economy.

Women's representation in the workforce is further challenged by childcare costs that have been found to account for 77%–123% of women's wages[51], limited transportation options[52], and entrenched cultural norms that prioritise men for jobs and limit women to fields perceived as supportive or nurturing, such as health sciences and education[53]. Despite over half of ICT graduates in Jordan[54] being women, they make up only 30% of the IT workforce[55], highlighting significant barriers to transitioning from education to employment. Moreover, women are underrepresented in core technical positions like software development (10%) and technical operations (5%)[56], with leadership roles especially sparse—only 5% of board members in publicly listed companies are women, and 78% of boards lack female representation entirely[57]. A lack of visible female role models in tech leadership perpetuates the misconception of technology as a male-dominated field, a sentiment echoed by one in four companies surveyed, which claimed that tech jobs "do not suit women"[58].

Regional and sectoral disparities also highlight inequalities; while 61% of enterprise employees in urban Amman are women, this figure plummets in less urbanised regions like Zarqa (7%) and Mafraq (9%)[59]. The ICT sector, a growing contributor to Jordan's GDP, holds potential for women's economic empowerment, yet gender gaps persist in technical and leadership roles. Additionally, women's dropout rates are significantly influenced by domestic responsibilities, with 35% of women citing increased household workloads as their reason for leaving jobs, a trend exacerbated by the COVID-19 pandemic[60]. Gender expectations further shape career trajectories, with women favouring caregiving fields and men dominating competitive disciplines like engineering, where female enrolment in subfields such as mechanical and civil engineering remains minimal[61].

Digitalisation Policies

Jordan's digitalisation policies seek to position the nation as a regional tech hub while fostering inclusivity and economic growth, particularly through the ICT sector. The Economic Modernization Vision 2022–2033 in Jordan aims to boost the digital economy's contribution to GDP by 13% annually and expand ICT-related jobs from 25,000 in 2021 to 101,000 by 2033[62]. Strategic initiatives like Reach 2025 focus on developing e-services, digital payment

systems, and robust IT infrastructure, while projects such as the National Broadband Network aim to provide affordable internet access to 1.3 million households[63]. The Ministry of Digital Economy and Entrepreneurship (MoDEE) spearheads programmes like Jordan Source, which

[48] International Labour organisation (ILO). (2022). *Gender Equality and Decent Work in Jordan*. Retrieved from https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40arabstates/%40ro-beirut/documents/publication/wcms_787222.pdf

[49] Anderson, A. J. (2022). *Jordanian Women and the Digital Economy During COVID-19*. ACOR Jordan Publications. Retrieved from https://publications.acorjordan.org/2022/06/21/jordanian-women-and-the-digital-economy/

[50] International Labour organisation (ILO). (2022). *Gender Equality and Decent Work in Jordan*. Retrieved from https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40arabstates/%40ro-beirut/documents/publication/wcms_787222.pdf

[51] International Monetary Fund. (2022). *Boosting Female Employment Opportunities in Jordan*. Retrieved from https://www.elibrary.imf.org/view/journals/002/2022/222/article-A001-en.xml?ArticleTabs=fulltext#A001fn1

[52] Bitar, N. (2024). *Empowering Women in Tech*. Jordan Times. Retrieved from https://jordantimes.com/opinion/nidal-bitar/empowering-women-tech

[53] International Monetary Fund. (2022). *Boosting Female Employment Opportunities in Jordan*. Retrieved from https://www.elibrary.imf.org/view/journals/002/2022/222/article-A001-en.xml?ArticleTabs=fulltext#A001fn1

[54] Al Kabarity, A. (2020). *Jordanian Women Want Tech More Than the Tech Industry Wants Them*. Amman Net. Retrieved from https://ammannet.net/english/jordanian-women-want-tech-more-tech-industry-wants-them

[55] Bay Area Council Economic Institute. (2022). *Assessing Jordan's Potential as a Middle East Business and ICT Base*. Retrieved from https://www.bayareaeconomy.org/report/assessing-jordans-potential-as-a-middle-east-business-and-ict-base/

[56] Al Kabarity, A. (2020). *Jordanian Women Want Tech More Than the Tech Industry Wants Them*. Amman Net. Retrieved from https://ammannet.net/english/jordanian-women-want-tech-more-tech-industry-wants-them

[57] UN Women & ILO. (2023). *Updated Guidelines for Skills Development and Leadership of Women in the Private Sector*. Retrieved from https://arabstates.unwomen.org/en/digital-library/publications/2024/04/guidelines-for-womens-leadership-and-skills-development-in-the-private-sector-in-jordan

[58] SheCodes Foundation. (2024). *SheCodes Foundation for Jordanian Women*. Retrieved from https://www.shecodesfoundation.org/jordan

[59] Karbala, G., & Kern, J. (2022). *COVID-19 and Women's Labour Force Participation: A Look into Women's Labour Force Participation Through the Lens of the Pandemic*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and UN Women. Retrieved from https://www.giz.de/de/downloads/giz-2023-study-on-covid-19-impact-on-women-economic-participation.pdf

[60] Ibid.

[61] Bataineh, O., Qablan, A., Belbase, S., Takriti, R., & Tairab, H. (2022). *Gender Disparity in Science, Technology, Engineering, and Mathematics (STEM) programmes at Jordanian Universities*. Sustainability, 14, 14069. https://doi.org/10.3390/su142114069.

[62] Bay Area Council Economic Institute. (2022). *Assessing Jordan's Potential as a Middle East Business and ICT Base*. Retrieved from https://www.bayareaeconomy.org/report/assessing-jordans-potential-as-a-middle-east-business-and-ict-base/

[63] The World Bank. (2020). *Jordan Youth, Technology, and Jobs Project*. Retrieved from https://documents.worldbank.org/en/publication/documents-reports/documentdetail/544751585015347579/jordan-youth-technology-and-jobs-project#:~:text=The%20objective%20of%20the%20Youth,digitised%20government%20services%20in%20Jordan.

integrates digital skills and entrepreneurship into the economy[64]. Meanwhile, the Education Reform for Knowledge Economy (ERfKE) project as long as the Jordan Vision 2025 complement these efforts by enhancing STEM education and fostering interdisciplinary approaches, although challenges remain in addressing gender gaps in these fields[65].

Jordan's digitalisation agenda also makes significant overtures towards inclusivity, with targeted efforts to empower women. Initiatives such as the ICT Association of Jordan's (int@j) Women in Tech pillar and the Tech Women Economic Empowerment Unit, supported by GIZ, advocate for increased female representation in ICT at all levels[66]. The introduction of flexible work arrangements, including teleworking and part-time work policies[67], alongside government-mandated childcare for employers, aims to alleviate barriers for women balancing professional and domestic responsibilities, though enforcement remains weak[68].

The shift toward digital platforms has created opportunities for women to access remote work in fields such as graphic design, programming, and consulting, while formalizing informal online businesses and connecting to high-value supply chains[69]. Regulatory gaps, such as inconsistent e-commerce laws and insufficient support for digital literacy programmes, however, continue to impede progress. Furthermore, stakeholder disconnects between policy creation and awareness among employers reduce the effectiveness of these initiatives[70]. By addressing these challenges and building on existing policies, Jordan's digital economy has the potential to significantly enhance women's economic participation, align workforce skills with

[64] Bay Area Council Economic Institute. (2022). *Assessing Jordan's Potential as a Middle East Business and ICT Base*. Retrieved from https://www.bayareaeconomy.org/report/assessing-jordans-potential-as-a-middle-east-business-and-ict-base/

[65] Bataineh, O., Qablan, A., Belbase, S., Takriti, R., & Tairab, H. (2022). *Gender Disparity in Science, Technology, Engineering, and Mathematics (STEM) programmes at Jordanian Universities*. Sustainability, 14, 14069. https://doi.org/10.3390/su142114069.

[66] Bitar, N. (2024). *Empowering Women in Tech*. Jordan Times. Retrieved from https://jordantimes.com/opinion/nidal-bitar/empowering-women-tech.

[67] International Labour organisation (ILO). (2022). *Gender Equality and Decent Work in Jordan*. Retrieved from https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40arabstates/%40ro-beirut/documents/publication/wcms_787222.pdf.

[68] Hausheer Ali, S. (2021). *Here's How Amman Can Boost Women's Workforce Participation*. Atlantic Council. Retrieved from https://www.atlanticcouncil.org/blogs/menasource/heres-how-amman-can-boost-womens-workforce-participation/

[69] Anderson, A. J. (2022). *Jordanian Women and the Digital Economy During COVID-19*. ACOR Jordan Publications. Retrieved from https://publications.acorjordan.org/2022/06/21/jordanian-women-and-the-digital-economy/

[70] Karbala, G., & Kern, J. (2022). COVID-19 and Women's Labour Force Participation: A Look into Women's Labour Force Participation Through the Lens of the Pandemic. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and UN Women. Retrieved from https://www.giz.de/de/downloads/giz-2023-study-on-covid-19-impact-on-women-economic-participation.pdf

market demands, and position the nation as a leader in the digital transformation of the MENA region.

Programmes & Ecosystem Support Vehicles

Jordan has implemented a comprehensive suite of programmes and ecosystem support vehicles to advance digital skills, foster entrepreneurship, and promote workforce inclusivity, particularly for women and youth. The National Youth, Technology, and Jobs (YTJ) Project exemplifies these efforts, aiming to create 30,000 digitally skilled youth by 2025 through technology hubs and freelance opportunities for women in underserved areas[71]. Complementing this initiative, the SheCodes Foundation offers free coding education in HTML, CSS, and JavaScript to financially struggling Jordanian women, empowering them to break into the tech workforce[72]. Programmes like the SHETECHS Forum, led by Int@j, connect women to mentorship opportunities and business growth initiatives, helping amplify their participation in the digital economy[73]. Further bolstering entrepreneurship, UNIDO's LevelUp Accelerator supports startups and SMEs with a focus on sustainability and inclusivity[74], while the Digital Jobs programme by DOT Jordan equips marginalized groups with essential digital skills in remote communication, data analysis, and collaboration to boost employability[75]. Flexible working arrangements and initiatives like the Bus Rapid Transit (BRT) system aim to reduce commute challenges for women, although enforcement and reach remain limited[76]. Companies like Tanasuk Technologies also play a vital role by introducing remote work options and other flexible working arrangements to address barriers such as transportation and childcare, which frequently hinder women's workforce participation[77].

[71] Bay Area Council Economic Institute. (2022). *Assessing Jordan's Potential as a Middle East Business and ICT Base*. Retrieved from https://www.bayareaeconomy.org/report/assessing-jordans-potential-as-a-middle-east-business-and-ict-base/

[72] SheCodes Foundation. (2024). *SheCodes Foundation for Jordanian Women*. Retrieved from https://www.shecodesfoundation.org/jordan

[73] Jordan Times. (2024). *Princess Sumaya Advocates for Women in Tech at SHETECHS Forum 2024*. Retrieved from http://vista.sahafi.jo/art.php?id=ae8dcc5eb6415320e679f4c0190abefae94fbd96

[74] United Nations in Jordan. (2023). *Women in Jordan Utilize Technology to Address Challenges in Their Communities and Households*. Retrieved from https://jordan.un.org/en/222079-women-jordan-utilize-technology-address-challenges-their-communities-households

[75] Digital Opportunity Trust (DOT) Jordan. (2024). *Empowering Youth with Digital Skills: DOT Jordan's Digital Jobs programme*. Retrieved from https://jordan.dotrust.org/empowering-youth-with-digital-skills-dot-jordans-digital-jobs-programme/

[76] International Monetary Fund. (2022). *Boosting Female Employment Opportunities in Jordan*. Retrieved from https://www.elibrary.imf.org/view/journals/002/2022/222/article-A001-en.xml?ArticleTabs=fulltext#A001fn1

[77] Al Kabarity, A. (2020). *Jordanian Women Want Tech More Than the Tech Industry Wants Them*. Amman Net. Retrieved from https://ammannet.net/english/jordanian-women-want-tech-more-tech-industry-wants-them

Larger national initiatives reflect a strategic approach to digital transformation. Jordan Source and REACH 2025 aim to establish Jordan as a regional hub for IT outsourcing and entrepreneurship by attracting international firms and incentivizing domestic digital capacity through grants and market expansion[78]. The Mashreq 2.0 initiative, supported by the World Bank, promotes broadband reforms and digital skill-building, while Huawei ICT Academies train thousands of public employees and students in advanced ICT skills. Startups are nurtured by accelerators like Oasis500, which support innovation in the tech and creative sectors, though only 3% of Jordan's GDP currently comes from the digital economy[79]. However, at the university level, efforts to encourage women's participation in STEM remain fragmented and lack targeted gender-specific initiatives, underscoring a critical gap between education policies and workforce outcomes.[80]

Limited awareness among employers and employees about specific government measures to enhance women's employment continue to constrain access to digital opportunities[81]. Despite these challenges, Jordan is making strides with impactful reforms such as enhanced maternity protections under Regulation No. 93 of 2020[82], subsidies for licensed childcare centres, and the introduction of paternity leave to foster shared family responsibilities[83]. International partnerships have played a significant role in driving these efforts, with donors like Sida and AICS funding gender-responsive recovery initiatives and the Economic Modernization Vision 2022–2033 targeting the inclusion of 1 million youth and women into the workforce by 2033[84]. These multifaceted programmes underscore Jordan's commitment to creating a more

[78] Bay Area Council Economic Institute. (2022). *Assessing Jordan's Potential as a Middle East Business and ICT Base*. Retrieved from https://www.bayareaeconomy.org/report/assessing-jordans-potential-as-a-middle-east-business-and-ict-base/ .

[79] Langendorf, M. (2020). *Digital Stability: How Technology Can Empower Future Generations in the Middle East*. European Council on Foreign Relations. Retrieved from https://www.jstor.org/stable/resrep24718 .

[80] Bataineh, O., Qablan, A., Belbase, S., Takriti, R., & Tairab, H. (2022). *Gender Disparity in Science, Technology, Engineering, and Mathematics (STEM) programmes at Jordanian Universities*. Sustainability, 14, 14069. https://doi.org/10.3390/su142114069.

[81] Karbala, G., & Kern, J. (2022). *COVID-19 and Women's Labour Force Participation: A Look into Women's Labour Force Participation Through the Lens of the Pandemic*. Amman, Jordan: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and UN Women. Retrieved from https://www.giz.de/de/downloads/giz-2023-study-on-covid-19-impact-on-women-economic-participation.pdf

[82] International Labour organisation (ILO). (2022). *Gender Equality and Decent Work in Jordan*. Retrieved from https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40arabstates/%40ro-beirut/documents/publication/wcms_787222.pdf

[83] UN Women & ILO. (2023). *Updated Guidelines for Skills Development and Leadership of Women in the Private Sector*. Retrieved from https://arabstates.unwomen.org/en/digital-library/publications/2024/04/guidelines-for-womens-leadership-and-skills-development-in-the-private-sector-in-jordan .

[84] Karbala, G., & Kern, J. (2022). *COVID-19 and Women's Labour Force Participation: A Look into Women's Labour Force Participation Through the Lens of the Pandemic*. Amman, Jordan: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and UN Women. Retrieved from https://www.giz.de/de/downloads/giz-2023-study-on-covid-19-impact-on-women-economic-participation.pdf

inclusive digital economy. However, achieving the full potential of these initiatives requires stronger alignment between policy design and execution to systemic barriers hindering women's participation in the digital sector.

Key Findings

1. Job Creation and Sustainability

Contribution to Digital Employment

In Jordan, the digital sector presents both challenges and opportunities for women, reflecting a dynamic yet uneven landscape of participation and advancement. A public sector organisation interviewee highlighted that despite the women comprising nearly half of computer science graduates in Jordan[85], their contribution to the workforce in the IT sector was notably lower at 23% before the COVID-19 pandemic. However, the pandemic has acted as a catalyst for change, increasing the involvement of women in this sector to 33%. This marks a significant improvement, though it still falls short of the graduate ratio, highlighting a persistent underutilisation of female talent in technical roles.

The same interviewee noted the specific distribution of women within the sector, saying: "Out of the 33%, 16% are in technical positions, the rest are in tech companies but not in technical roles". This indicates a broader trend where women are employed in tech companies but often in non-technical capacities. More critically, the representation of women in leadership roles within the sector is alarmingly low, with only 4% occupying such positions. This stark discrepancy suggests a 'glass ceiling' that continues to hinder women's full potential and career progression in the IT industry.

"Out of the 33% [in the IT sector], 16% are in technical positions, the rest are in tech companies but not in technical roles."

- Public Sector Organisation Interviewee in Amman

Despite these challenges, there is evidence of specific demand for female workers in certain projects and roles within the sector across the region. An interviewee from an HR outsourcing firm in Jordan shared their experience working on a project with a Content Monitoring Center in Saudi Arabia, which primarily employs women, both remotely and on-site. This demand varies across departments, with some, like training departments, being entirely female. Such

[85] Al Kabarity, A. (2020). *Jordanian Women Want Tech More Than the Tech Industry Wants Them*. Amman Net. Retrieved from https://ammannet.net/english/jordanian-women-want-tech-more-tech-industry-wants-them

instances underscore the potential for targeted initiatives to enhance female participation in the tech workforce.

An interviewee from a public organisation highlighted ongoing efforts to increase women's participation through various strategic initiatives led by their organisation. They explained that when the organisation is tasked by the government to participate in an international exhibition, it is mandated to ensure that a certain number of booths in the Jordanian pavilion are allocated to female-owned businesses, promoting greater visibility and inclusion of women entrepreneurs on a global stage.

According to the same interviewee, the startup ecosystem, particularly in the e-commerce sector, presents a more promising landscape for female entrepreneurs. The interviewee indicated that 36% of startups now led by women, this segment of the digital economy appears to be more inclusive. The interviewee noted that many female founders leverage flexible work environments, such as cafes, to drive their businesses forward, reflecting a shift toward greater equity and opportunity in the tech sector. The interviewee further indicated that financial awards are available to startups that are at least 50% female-owned and employ a minimum of 30% women, highlighting efforts to cultivate an environment that actively supports female entrepreneurship and leadership in the industry.

Moreover, the adaptability of the digital employment market during major disruptions highlights its potential for resilience and inclusivity. An FGD participant emphasised this point, stating, "our company was the only company in Jordan that was hiring during COVID," illustrating how the digital sector was able to sustain operations and continue job creation despite widespread economic challenges. This flexibility, particularly in enabling remote work, has contributed to the increasing participation of women in digital jobs and underscores the sector's capacity to offer flexible employment opportunities with the right support.

Barriers to Access

In Jordan, challenges can be broadly categorised into financial, socio-cultural, and logistical/systemic issues. Each category contains specific obstacles that together create a complex environment for female professionals in the ICT sector.

Financial Barriers

Economic factors play a critical role in shaping opportunities for women in the digital jobs landscape. Despite the high level of education and skills in Jordan, the job market does not provide financial rewards that adequately reflect women's qualifications and expertise. One FGD participant explained, "We have a problem in Jordan; the economy is bad. We study hard, the education is great, but when we enter the job market, we find the income is very

low, so we gain experience and then leave the country." This economic disenfranchisement is compounded by historical financial practices, as highlighted by an interviewee from a public organisation who stated, "banks at some point used to require a male credit holder to give a loan to a female business owner." Although recent changes have begun addressing these discriminatory practices, their long-term impact continues to affect women's access to financial resources and business opportunities. This historical exclusion has also contributed to the limited number of successful female entrepreneurs, reducing the visibility of women-led businesses and reinforcing investor scepticism about their viability. As a result, the perception that women-led organisations are less successful persists, further hindering access to funding and support.

Adding to these financial challenges, disparities in educational support further reinforce barriers for women in the workforce. According to the same public organisation interviewee, some training centres offer lower scholarships for women compared to men, reinforcing the perception that women are less reliable hires. These policies not only reflect existing biases but also create additional barriers to women's access to training and career development in the digital sector.

Socio-Cultural Barriers

Socio-cultural norms play a significant role in shaping workplace dynamics and perceptions of women's career choices in Jordan. For example, this study found that traditional views continue to confine women to sectors such as care and education, reinforcing outdated stereotypes about what is considered "suitable" for women. A prevailing assumption also persists that women either commit fully to work or leave the workforce altogether, leaving little room for balanced career progression. As one FGD participant noted, "in Jordan, there is the assumption that women either work for a bit or don't work at all, so that needs to be changed."

Moreover, the expectation that women should prioritise family over their careers remains a significant barrier. Many women internalise this belief, making career advancement seem incompatible with personal life responsibilities. As one participant expressed, "I do believe that you either grow in your career, or you choose to start a family, but I don't see myself balancing both". Another echoed this concern, highlighting the challenges of managing professional and family obligations: "Balancing the quality of work would be difficult; you have more challenges and responsibilities. Even marriage—before kids, it should be fine, but with kids, I'd stop."

According to a public organisation interviewee, these gender-based perceptions are also present at the employer side as companies assume women will eventually leave the

workforce due to family responsibilities. The interviewee explained how this perception affects hiring decisions, saying that it amplifies the assumption that women are not going to commit due to societal barriers. Companies don't want to hire women because of family challenges, having kids, etc., so they actively avoid them". As a result, many businesses pre-emptively exclude female candidates, further entrenching gender biases and limiting women's access to digital jobs, training opportunities, and career advancement.

Moreover, the same interviewee highlighted that women in family-run businesses face additional hurdles to career advancement, despite their significant contributions. According to a public sector representative, family businesses account for at least 60% of IT companies in Jordan, yet traditional structures often prevent women from reaching senior positions. As the interviewee explained, "She would be doing a lot of work, but she won't have the chance to make it to a senior position, as she won't be replacing her husband or brother". This entrenched dynamic reinforces gender hierarchies, limiting women's leadership opportunities even in businesses where they play a critical role. Additionally, the physical infrastructure of these businesses is often not designed to accommodate women, particularly outside of the immediate family. The same interviewee elaborated that these family-run SMEs tend to "grow very slowly, and with not a lot of money, so when they were preparing the office spaces and started adding people, the environment they built wasn't very attractive for females. We have companies that would have one bathroom, for example, because it started as being only men. How would they hire a female? And they don't have the funds to relocate to a better office environment." This lack of adequate facilities, combined with limited financial resources, creates additional barriers for women seeking to enter or advance within the sector, further contributing to gender imbalances in digital employment.

Cultural expectations in Jordan continue to shape women's job choices and workplace experiences, with societal restrictions on mobility, late working hours, and commuting distances posing significant barriers. These constraints are further compounded when job roles require women to work outside traditional office settings. As one FGD participant explained, "Some jobs require women to visit client offices, and that is more difficult".

Beyond logistical challenges, family expectations also play a defining role in women's workforce participation. The lack of workplace policies accommodating these cultural realities places women in difficult positions. One participant shared a striking example: "I had a team member come to me one day and said if I don't leave early, I will get divorced, so I let her go. Her husband had family visiting and she had to prepare food". This underscores the need for greater workplace flexibility, ensuring that professional advancement does not come at the cost of personal stability.

Cultural and workplace barriers not only affect women's entry into the workforce but also hinder their ability to advance or transition into new roles. Many women face higher levels of scrutiny compared to their male counterparts, making career progression an uphill battle. As one FGD participant expressed, "I think as a woman, it's more difficult for me to prove myself in a new spot in comparison to a man." This additional pressure discourages women from seeking new opportunities, leading many to prioritise job stability over professional growth. Another participant reinforced this challenge, sharing, "For me, it's very clear—I had an experience where they wanted a man over my position, and I had to prove myself. And I am choosing not to go through that again at the cost of developing my skill."

This reluctance to move between jobs due to the fear of having to prove oneself again highlights a critical gender disparity in workplace acceptance and advancement. Women who have built security and familiarity in their current roles often feel constrained by the risks associated with starting anew. As one woman explained, "I have no uncertainties in my work, I know everything [...] but I can't get myself to leave and go somewhere else".

Job security is another significant factor influencing women's career decisions. One FGD participant shared, "I have a permanent contract, so I have a career. I have a plan with this salary. I know what my kid's life is going to be with this salary. I wouldn't go to a new place if I don't get the security I have now". Consequently, for many women, this sense of security is crucial for long-term career planning and stability, especially for those with familial responsibilities, and thus reflects a preference for job stability as opposed to exploring new fields, like digital sector jobs, or looking to advance significantly within a digital field.

Shifting economic responsibilities within households, however, presents an opportunity for change. More women are stepping into primary breadwinner roles, challenging traditional gender expectations and creating space for more flexible career trajectories. As one participant noted, "It's not a men-women thing, I feel it's more of a responsibility thing. I know females that are the breadwinners, and the husband just stays at home". While these shifts are not yet widespread, they signal a gradual transformation in societal attitudes, reinforcing the importance of workplace policies that support diverse career paths and family structures.

Logistical or Systemic Barriers

The concentration of the ICT sector in Amman creates substantial logistical challenges for women living outside the capital. The lack of reliable transportation and affordable housing options makes it difficult for many to pursue career opportunities in the city. As one FGD participant noted, "Like the rest of the sectors, the ICT sector is focused in Amman, and universities are all over the country, so you have a lot of ICT female graduates outside of Amman who cannot commute or move to the capital." This geographic centralisation

discourages many potential candidates from even considering pursuing studies or a career in IT; as another participant explained, "most IT companies are in Amman, so people outside don't even choose IT because it's too far".

For those who do attempt to overcome these barriers, the strain of commuting and long working hours often leads to attrition. One FGD participant shared a telling example: "We had a new joiner who needed two hours to commute; she couldn't last for more than two months."

"Most IT companies are in Amman, so the people outside don't even choose IT because it's too far."

- A Female FGD participant working at an ICT Company

Despite legislation in Jordan promoting flexible work arrangements, implementation remains slow, and many companies remain resistant to change. A public organisation interviewee noted, "we have in Jordan a legislation for flexible work that the government has announced. But some traditional companies push against this, despite research showing productivity is at times better with flexible and fewer work hours". Even when policies exist, companies struggle with implementation, the same interviewee explained, "there was talk about remote hiring and flexible working hours, but they were not implemented by the employer… they didn't know how to implement them and how to monitor and track work being done and have certain KPIs". This lack of structured implementation creates a major barrier to progress in gender-inclusive employment.

This study also found that, for many women, flexibility is not just a preference—it is essential for remaining in the workforce. One FGD participant described her flexible work arrangement, "we get paid the average salaries, and it used to be great to work from home, so it was very helpful. If I was joining today without working flexibly, I wouldn't have joined." However, the slow adoption of flexible work policies means that many women continue to face rigid work expectations, which significantly impact their career decisions and even discourages highly qualified individuals from entering demanding professions. As one FGD participant shared, "My sister has a master's degree and speaks four languages, but she looks at my life [working hours and commute] and she refuses to go to work.".

Overcoming Barriers

The COVID-19 pandemic, while posing global challenges, served as a turning point for women's participation in Jordan's ICT sector by accelerating the adoption of remote work. For example, companies that were previously hesitant about flexible work policies were forced to move online, leading to a lasting shift in hiring and management practices. A public organisation interviewee noted, "With remote hiring, things changed. Before, companies would question if she was actually working, if she checked in online, etc. But COVID forced them to trust remote management tools, and in the two years post-pandemic, we saw a 10% increase in women's participation in the ICT workforce."

A digital skilling interviewee echoed this sentiment, emphasising that remote work has become ingrained in company operations, saying "COVID forced everyone to move online and hire remotely. This became part of the DNA of companies, and it removed a major barrier. It allowed companies to reach more females, offering flexibility with shifts and working from home". This newfound flexibility enabled many women to balance work with personal responsibilities, driving greater female workforce participation.

However, as pandemic restrictions eased, some companies began rolling back remote work options, raising concerns about sustaining these gains. An FGD participant noted, "at that time, we were still working from home. Now there is no work-from-home option, so it's more difficult. As team leaders, we try to be more flexible". Despite this shift, some sectors, particularly e-commerce, continue to offer opportunities for women, as they can work from home, set their own schedules, and sell services or products based on their personal interests or areas of expertise.

With respect to digital skilling and upskilling, the expansion of online education and remote work during and following the pandemic era, has necessitated a re-evaluation of training formats. While online learning remains favoured for its convenience and accessibility, there is a growing recognition of the benefits of in-person training, particularly for subjects that require hands-on learning and direct interaction: presenting a challenge once again when it comes to reaching women, who tend to face greater mobility restrictions than their male counterparts A digital skilling interviewee noted, "Online was better, especially after COVID, but now we are also seeing a large demand for offline training, as it is deemed easier to retain information in person." This shift reflects the balancing act between digital convenience and the effectiveness of traditional learning environments. In response to this demand, the same interviewee described efforts to enhance accessibility by establishing physical training centres across different regions: "We created an office in each district to target the regions. Students go there for interviews to join the training, and at times, even the training happens in these centres". This decentralised approach has made training opportunities more accessible to

learners outside urban hubs, reducing some barriers to ensuring that more women can engage with digital skilling programmes.

Finally, there is a growing recognition among increasing recognition of the value women bring to the ICT sector, particularly as companies engage with international partners. A public organisation interviewee highlighted that "They [companies] started seeing that if they want to work with international companies, those companies ask for diversity numbers. These figures reflect on a company's branding, and they began realising that diversity enhances creativity and fosters healthy competition within the company". This growing awareness has encouraged more businesses to prioritise workforce diversity, not only as a branding advantage but also as a strategic asset for innovation and competitiveness.

2. Digital Skilling and Gender Dynamics

Gender Specific Dynamics

The evolving landscape of the ICT sector reflects both progress and ongoing challenges in achieving gender inclusivity. As the demand for skilled professionals continues to rise, companies are increasingly prioritising competence over gender. A digital skilling interviewee emphasised this shift, stating, "Because today ICT is hungry for talent, companies and business owners do not care if you are male or female, all they care about is that you have the skills to do the job". This growing focus on expertise suggests a more inclusive hiring approach; however, systemic barriers still hinder women's participation and advancement in the sector.

One of the most persistent challenges is the confidence gap between men and women when applying for jobs. A public organisation interviewee noted, "Females don't submit to a certain job unless they have 10/10 of the needed requirements, while males will apply if they tick 6/10, going for it with confidence. I think this goes across all sectors". This hesitation not only limits women's access to opportunities but also reduces their participation in competitive skill-based environments that are critical for professional growth.

"Females do not submit to a certain job unless they have 10/10 of the needed requirements, rather than males that would apply if they ticked 6/10, they would go for it with confidence."

- Public Sector Organisation Interviewee in Amman

This lack of engagement is particularly visible in domains like cybersecurity, where competitions such as Capture the Flag (CTF) play a major role in developing practical skills. However, female participation remains minimal. A digital skilling interviewee observed, "As hackers, we do Capture the Flag (CTF) competitions, which are open to all youth, not just women. We run multiple competitions, and we've noticed that about 95% of participants are men". This stark gender disparity highlights the need for targeted initiatives designed to encourage female participation, as generalised opportunities tend to attract predominantly male participants. Without deliberate efforts to include women, these competitive spaces remain male-dominated.

Beyond skill acquisition, gender biases also affect women's experiences in leadership roles within the ICT sector. Women in managerial positions often face resistance, particularly from male colleagues who are unaccustomed to female authority. One FGD participant recalls a situation where she encountered difficulties managing a group of men during a training session: "Some barriers for women come from the acceptance that a woman is responsible for men. Some of the participants were older than me, and they were difficult to handle. I didn't want to offend anyone, but the men were being rude, and that was difficult. I had to ask the women to leave so I could set boundaries with the men. After that, everything went great".

She further emphasised the importance of establishing authority early on, explaining, "Building mindset starts on day one. If I didn't set boundaries from the beginning, the women might not know how to handle this moving forward". This underscores the need for structured support and leadership development programmes that equip women with the confidence and strategies to navigate male-dominated environments.

Market Alignment

The rapid evolution of technology fields, such as cybersecurity, has further highlighted gaps in current educational offerings. The digital skilling interviewee emphasised the need for curriculum reform, stating, "Cybersecurity is a new field, so the skills gap is big. We need to also improve the education system. In Jordan, we have only had two batches of cybersecurity graduates so far. It's also a field where you need both training and practical experience". Given the fast-paced nature of digital fields, universities often struggle to keep up with industry demands, leaving graduates with knowledge that is too theoretical and lacking in real-world application. The interviewee explained, "The university gives them separate courses, but the training combines both together and makes them applicable in real-world scenarios". Many students find themselves needing additional specialised training after graduation, as they realise that "To get a job, you need additional courses to help you get hired". The reliance on self-directed learning is also a challenge, as an FGD participant pointed

out: "In university, you study theory and a few examples, but a lot of it requires you to do extra work on your own".

Despite these challenges, emerging fields present significant opportunities for new entrants, as they offer lower competition and greater potential for innovation. Cybersecurity, in particular, has been identified as a promising sector for career growth. The digital skilling interviewee stated, "[Cybersecurity is] a new and demanding field, so it's helpful to be the leader and the first in this field". The practical nature of this sector makes skill application a key factor in training effectiveness. The same interviewee elaborated, "Some people have skills but can't apply them, so that's how we do the training—we provide the practice". These insights highlight the need for training programmes to incorporate more applied learning methodologies, ensuring that women in the digital workforce are equipped with both theoretical knowledge and practical expertise to succeed in high-demand fields.

Best Practices

Innovative approaches to digital skilling have emerged as key drivers of successful training programmes, ensuring not only skill acquisition but also sustained engagement and real-world applicability.

One effective strategy for maintaining high participation and commitment is the implementation of strict accountability measures. A digital skilling interviewee explained, "We had a system in place that if you miss, you have to pay for part of the training." This model reinforces responsibility among trainees, ensuring they remain engaged and complete their programmes.

"We had a system in place that if you miss you have to pay for part of the training."

- Digital Skilling Interviewee in Amman

Flexibility in training delivery has also proven to be essential, particularly in accommodating large numbers of students and adapting to evolving participant needs. The same interviewee highlighted the importance of blending online and offline components, stating, "some programmes need to be in-person, but when the numbers are too high, we adapt them to offer an online option as well". This hybrid model allows for greater accessibility without

compromising the quality of instruction. Additionally, the interviewee noted that "we are agile and flexible for changes that occur throughout the course. We also provide online recordings so that people can continue even if they miss a session or two." This approach helps maintain continuity in learning, ensuring that participants who face scheduling conflicts can still progress.

Beyond accessibility and retention, integrating practical, real-world applications into training curricula has been a crucial factor in improving job readiness. A digital skilling interviewee emphasised, "In our training, we mimic real-life experiences and provide practical examples so that students gain hands-on experience". By simulating workplace scenarios, training programmes help bridge the gap between theoretical learning and industry demands, equipping participants with the skills they need to succeed in the job market.

Job retraining programmes are also crucial, especially for staff returning from career breaks. A private sector interviewee explained, "we have most of the support our staff need. Once they take a vacation, once they get back, we do a retraining, in one day we cover all what they've missed, cover all the updates, then we give another retraining, and then if we missed something they can tell us and we provide additional training," a practice that ensures employees remain updated on the latest developments.

According to a public organisation interviewee, one of the key initiatives identified in digital skilling programmes is the effort to support women who have been forced to leave the workforce due to personal circumstances, such as childcare responsibilities or caregiving for a sick parent. Recognising the rapid evolution of the ICT sector, training providers must offer more reskilling programmes and bootcamps specifically designed to help these women re-enter the workforce after career gaps. By equipping them with updated skills and connecting them to employment opportunities, these programmes ensure that women can reintegrate into the job market and continue advancing in their careers.

Outreach efforts also play a critical role in bridging the gap between training and employment, particularly for new entrants into the job market. A digital skilling interviewee emphasised that many job seekers struggle with understanding where and how to apply for opportunities, prompting organisations to hold events that guide them through the application process. These efforts are further reinforced by participation in job fairs and informational sessions aimed at educating upcoming graduates on how to navigate the job search landscape.

According to the same interviewee, such initiatives have had a measurable impact, with a significant increase in the number of applications received after these events. Beyond quantity, the quality of applicants has also improved, demonstrating that targeted outreach not only expands access to opportunities, but also enhances the overall talent pool. By

ensuring that job seekers are equipped with the knowledge and resources needed to access employment, these initiatives help to create a more inclusive and effective pathway into the digital workforce.

"Typically, we get 30 applications per day, and now [after the events] we have 70 per day, and then we've noticed we get even higher skills [among the applicants]."

- Digital Skilling Interviewee in Amman

3. Ecosystem Support and Opportunities

Gaps in Support

In the evolving landscape of IT and tech, persistent gaps in support continue to hinder the full integration of women into the sector, despite notable advancements in policy and education. A digital skilling interviewee emphasised the importance of visible role models in encouraging more women to pursue careers and leadership roles in tech, stating that there is a growing need to showcase successful female professionals to demonstrate that career growth is attainable. A public organisation interviewee further noted that female representation remains disproportionately low at senior leadership and entrepreneurial levels.

"Today I would say they might need more role models, to show [women] that they can grow."

- Public Sector Organisation Interviewee in Amman

According to a public organisation interviewee, despite women comprising more than 50% of IT graduates, their representation in the workforce remains disproportionately low. The interviewee noted, "There is definitely a gap, 33% is still better than all other sectors, but we have more than 50% IT female graduates". The interviewee further emphasised the need for targeted interventions to bridge this disconnect, ensuring that more women successfully transition from education to employment in the tech sector.

Moreover, a lack of investor confidence in female-led businesses has posed a significant challenge to women entrepreneurs, limiting their access to critical funding opportunities. A public organisation interviewee reflected on this issue, stating, "Investors also had issues with

this, they did not trust investing in female-owned businesses, the ecosystem was confused at the time." This reluctance has hindered the establishment and expansion of women-led startups, ultimately stifling innovation and reducing diversity within the sector.

Jordan has made notable progress in implementing legislative measures to support women in the workforce, as highlighted by a private sector interviewee who pointed to recent advancements such as extended maternity leave from 70 days to four months, restrictions on working past 7 PM, and an additional hour off for pregnant employees—policies that companies are actively implementing. However, a public organisation interviewee noted that flexible work arrangements, while introduced as an option, remain difficult to enforce, as the government cannot mandate which positions in the IT sector should allow flexibility. "The flexible work policy is there, but it's not imposed by law, it's an option, the government can't determine if a position in the IT sector can be flexible or not, so not all companies do it", the interviewee explained. This distinction highlights how, while some legislative reforms have successfully improved workplace conditions for women, others remain dependent on employer discretion, limiting their overall impact.

Scholarships for training programmes are crucial in encouraging more women to enter IT careers. A digital skilling interviewee suggested that increasing the scholarship allocation for women from the current 30% to 50% or even 70% of the costs could signal greater inclusivity and boost female participation. "If we keep the same, we have low attendance of women", the interviewee noted, emphasising the need for targeted financial support.

Beyond scholarships, improving access to technology in schools—particularly in rural areas outside the capital—can foster early interest in IT careers. An FGD participant highlighted this gap, stating, "Schools [in rural areas] don't have computers, so if they start giving schools computers, women would be more interested in IT [at early ages]." This underscores the importance of addressing regional disparities in digital infrastructure to create equal opportunities for young women across different governorates.

4. Attraction and Retention Strategies

Attracting Women

To effectively attract more women to the ICT sector, especially in non-traditional technical positions, organisations have developed strategic approaches encompassing inclusive messaging and targeted recruitment strategies. These efforts aim to counteract prevalent gender stereotypes and make the field more accessible and appealing to women.

One of the critical elements in attracting women to ICT roles has been the refinement of job descriptions and outreach communication. A public organisation interviewee shared their strategy, stating, "we have non-traditional technical positions, like networking [cable network connections]. These positions the females are not attracted to, so we did a new full programme, we went to the governorates, we announced it online, and we opened a recruitment page, with these types of positions and they speak to females in the way the description is written." This approach led to a noticeable increase in applications from women, ultimately resulting in more female hires in these traditionally male-dominated roles. The success of this initiative highlights how the language used in job postings can significantly influence who feels encouraged to apply and, in turn, better facilitate women's access to digital and digitally enabled jobs.

Targeted language in outreach efforts also plays a crucial role in shaping perceptions and influencing participation. A digital skilling interviewee explained, "a good practice is in the way we phrase the outreach. When the post is in general plural Arabic, mainly men come, mainly due to the perception that IT and cybersecurity is a men's field. Once we designed a programme specifically outreaching to women, we had a great turnaround." They further elaborated on the linguistic barrier, noting, "women needed awareness, they needed an event specific for them on this subject [...] and this is an Arabic language thing—the dominant phrasing for plural is a male voice, so the women keep on thinking that this event is only for men. So we did an event with the women-voice phrasing, and it was successful [in attracting women]" These insights highlight the need for more intentional communication strategies in recruitment, training, and outreach efforts. Simple yet strategic adjustments, such as explicitly addressing women in job postings and event promotions, have proven to significantly shift women's participation rates in digital and cybersecurity fields.

Innovative recruitment strategies that intentionally address communication, workplace perception, and access to women leaders at the company have proven effective in attracting women to non-traditional technical roles. A public organisation interviewee described how they supported a private sector company in implementing such an approach. The company launched a dedicated page called *Hello Women*, using gender-inclusive language to directly engage female candidates. It spotlighted the company's inclusive work environment and provided a live chat feature where applicants could connect with female leaders for guidance. "We created awareness about how comfortable and female-supportive the company is and set up a live chat for direct engagement with female leaders," the interviewee explained. By incorporating these three elements—intentional communication, workplace visibility, and direct mentorship—the company successfully increased female applicants and met its goal of hiring 40 women over two years in traditionally male-dominated positions.

Inclusive Work Practices

The culture of a company and the focus of its leadership are pivotal to fostering an inclusive workplace that actively supports gender diversity. The visibility of female leaders within a company serves as a powerful motivator for current and prospective employees. It signals that women have substantial opportunities for growth and advancement. As highlighted by a public organisation interviewee, "if the company has a good number of females in leadership positions, like we showcased with Hello Women, then it gives hope that whatever investment of time you put in this company, you can grow in it". This aspect of corporate culture is not only encouraging but becomes a core part of the company's DNA, reflected in equitable practices such as equal pay for positions, and clear salary scales. Such policies are instrumental in making the organisation more attractive to female professionals, illustrating a commitment to fairness and opportunity for all.

Supportive management and an inclusive company culture play a crucial role in retaining female employees by fostering a sense of belonging and understanding in the workplace. As one FGD participant explained, "I would say it's good management that retains people. We have supportive leaders, and if someone can balance, then we try our best to cater to their needs."

Another participant echoed this sentiment, emphasising the role of workplace culture in retention: "When a team leader is flexible and supportive, the women are more likely to stay." This suggests that when women feel valued, heard, and accommodated, they are more likely to remain in their roles. A strong culture of care and managerial support not only improves retention but also enhances overall workplace satisfaction.

Retaining Women

To retain women effectively in the workplace, particularly in the ICT sector, a comprehensive approach that encompasses policies, cultural sensitivity, flexibility, and growth opportunities is essential.

This study found that a shift in workplace perceptions is emerging, with some companies increasingly recognising the value that women bring to their roles. A private sector interviewee highlighted this change, stating, "the nice thing is when we did the survey in early stages with IT companies, they all preferred to hire females. They say that they are committed, dedicated, and they don't have a high rate of turnover…if she is comfortable in a place she stays." This marks a departure from traditional biases that often portrayed women as less reliable hires. Instead, it has been observed that companies are beginning to appreciate

their dedication and long-term commitment, indicating a gradual shift toward a more inclusive and supportive work culture.

Clear career pathways are also essential for retaining women in digital jobs, providing them with opportunities for growth and leadership. Multiple FGD participants emphasised that structured career development fosters motivation and long-term commitment. One participant shared how they progressed from a technical support role to a leadership position, citing clear growth opportunities and workplace support as key motivators. "The motivation at the start is the opportunity for growth, there is a clear path and fast growth, and the support we have to grow, it was helpful", she explained.

Merit-based promotions also play a significant role in encouraging women to pursue leadership roles. Another FGD participant described overcoming initial gender biases in leadership selection, successfully proving her capabilities despite the preference for a male candidate. These examples demonstrate how transparent career advancement structures, coupled with equitable, structured promotion policies, suggest encouraging women to stay in their roles and also empowering them to aspire to leadership positions. Pathways for internal promotions demonstrate potential for supporting women's career advancement in ICT, especially given the finding that women often prefer to stay in companies where they feel comfortable and valued and the perceived barriers that they must constantly prove and reprove their capacities if they join a new company.

Providing constructive feedback and fostering employee confidence are key strategies for retaining talent and creating a supportive work environment. A private sector interviewee described their company's approach, stating, "When someone gets accepted, we give feedback on where they can improve, and we try to boost their confidence". This emphasis on professional development helps employees feel valued and motivated to grow within the organisation, especially if they face challenges. Additionally, maintaining open and responsive feedback channels further strengthens retention efforts. The same interviewee highlighted, "Feedback channels are good, they are anonymous. Some mothers have issued complaints, and the complaint team follows up with these and addresses them as needed". By ensuring that employees, particularly working mothers, feel heard and supported, these feedback mechanisms contribute to higher job satisfaction and long-term retention.

Beyond work hours, financial support for childcare is another policy that can significantly ease the burden on working mothers. While direct childcare services may not be mandated by law, some companies offer additional compensation to help cover childcare costs, ensuring that family obligations do not become a barrier to career continuity. A private sector interviewee noted about their company, "there is no childcare, but they get paid extra for it". These

policies reflect a growing recognition that retaining women in the workforce requires practical solutions that address both professional and personal responsibilities.

Adapting remote and flexible work policies alongside effective management tools is essential for fostering an inclusive work environment while maintaining productivity. A digital skilling interviewee emphasised that while flexible and remote jobs offer significant benefits, they require proper structuring to ensure efficiency. To address this, companies are increasingly integrating task management tools that help balance flexibility with accountability. The same interviewee explained, "we use a variety of task management software that helps us ensure the workload is distributed well, and to monitor KPIs. They have the tasks, and they finish it on their own flexible time." By leveraging these tools, businesses can support employees, especially women who report valuing flexible and remote work, in managing their workloads autonomously while maintaining clear performance expectations.

Moreover, organisations are increasingly implementing targeted programmes to support the retention and advancement of women, particularly at the managerial and executive levels. These structured training opportunities help women develop the competencies needed to advance within their organisations, increasing retention by fostering long-term career growth.

Finally, beyond training, companies are also investing in platforms that amplify women's visibility and professional influence. By facilitating mentorship, networking, and advocacy, such initiatives not only help retain female talent but also position them as role models in the industry. This, in turn, helps inspire younger generations of women to pursue careers in the digital sector, addressing gender gaps in leadership and ensuring a more inclusive future for the field.

5. Recommendations and Best Practices

Building on the key findings, the following recommendations highlight actionable steps that can be taken to amplify existing initiatives and address critical gaps to enhance women's participation in digitally enabled jobs in Jordan.

1. Strengthen Digital Skilling and Career Pathway Programmes for Women

- **Expand Executive-Level Leadership programmes**: Existing programmes that provide managerial and executive training for women should be scaled up, ensuring more female professionals can transition into leadership roles. These initiatives should also include mentorship and visibility opportunities, positioning women as role models to inspire future generations.
- **Improve Early Access to Digital Education**: Programmes should target young women at earlier educational stages to introduce them to the digital sector, particularly in rural areas. Equipping schools with computers and digital labs and expanding coding and cybersecurity competitions in girls' schools can help shift perceptions around tech careers.
- **Support Career Transition and Re-Skilling Initiatives**: Initiatives such as bootcamps for women returning to the workforce after career breaks should be further developed and widely promoted. Given the rapid evolution of ICT fields, training programmes should offer upskilling opportunities tailored to industry needs.

2. Enhance Workplace Flexibility and Support Policies

- **Expand Flexible Work Policies and Structured Remote Work Implementation**: Companies should formalise flexible work arrangements with well-structured remote work policies supported by task management tools. This ensures productivity while also accommodating the needs of women balancing professional and family responsibilities.
- **Improve Support for Working Mothers**: Financial incentives for childcare should be expanded beyond select companies, particularly in male-dominated industries. Encouraging companies to integrate structured support for mothers, such as flexible work hours and parental leave policies, will enhance retention.

3. Bridge the Gap Between Education and Employment

- **Align University Curricula with Market Needs**: Strengthening collaboration between universities, training centres, and private sector companies can help bridge the digital

skills gap. Universities should integrate more practical, hands-on training in tech fields and increase exposure to real-world applications.

- **Increase Visibility of Digital Career Opportunities for Women**: Digital job opportunities must be better communicated to female graduates, particularly in rural areas, through targeted outreach campaigns, career fairs, and partnerships with universities.
- **Refine Job Descriptions to Attract More Women**: Companies should ensure job postings use inclusive language to attract female applicants. Outreach strategies that specifically highlight women-friendly workplaces and offer direct engagement with female leaders have proven successful in breaking industry stereotypes.

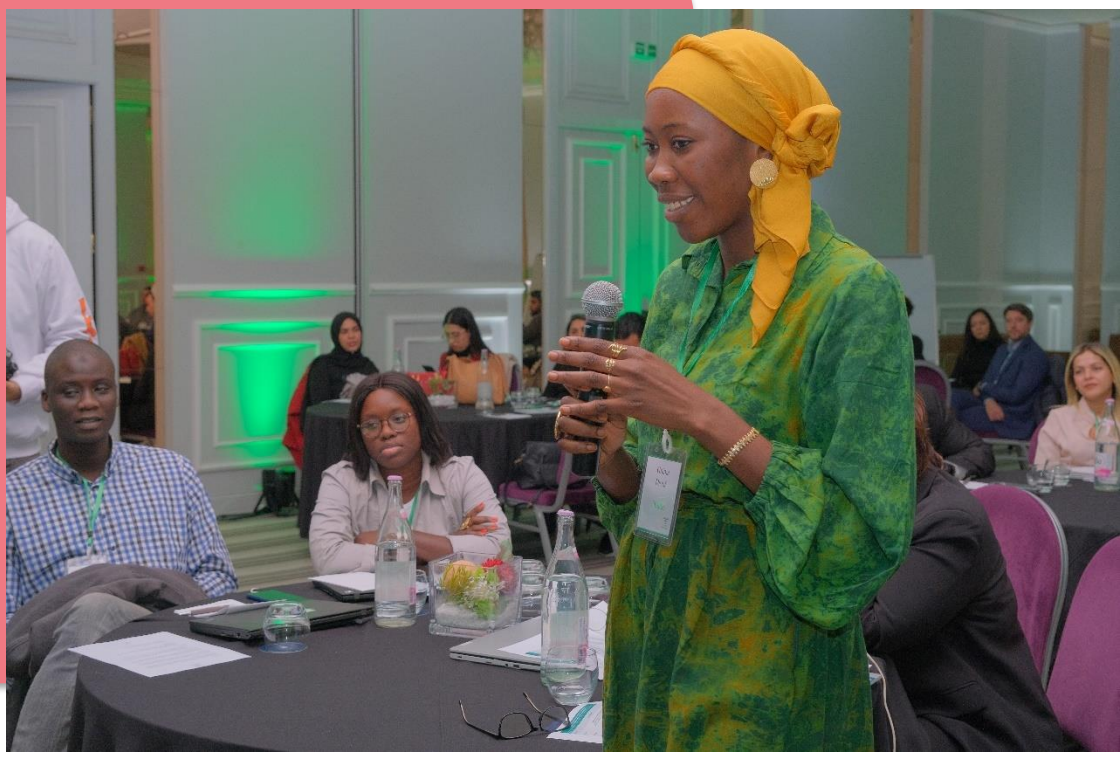
4. Increase Women's Access to Investment and Entrepreneurship Support

- **Expand Funding for Female Entrepreneurs**: Existing biases in investment decisions should be addressed by increasing financing programmes for female-led businesses, particularly in tech and e-commerce sectors.

5. Strengthen Ecosystem Collaboration for Long-Term Impact

- **Leverage Intermediary Organisations for Policy Advocacy**: Organisations that act as bridges between the government and private sector should continue to play a role in identifying industry challenges, advocating for policy improvements, and ensuring resources are distributed effectively.
- **Scale Up Female-Focused Professional Networks and Councils**: Establishing more industry-wide networks for women in tech will support knowledge-sharing, business growth, and advocacy efforts while amplifying success stories that inspire the next generation.

5.3 Tunisia



Desk Review

Women Employment and Unemployment

The digital landscape in Tunisia is characterised by unequal access, usage, and opportunities particularly for women, despite significant advancements in connectivity. Connectivity has seen a gradual increase, with the number of subscribers to the fixed telephone network increasing from 950 000 in 2014 to 1 659 000 in 2021, reflecting an increase of 42,7% over the seven-year period[86]. Access to technology at home has also expanded significantly. While in 2011, only 21% of households had a computer, and 16% had internet access, by 2019, both figures surpassed 50%[87]. Furthermore, by 2019, nationwide coverage of at least a 3G network reached 100%, and in January 2020, Tunisia had 7.55 million internet users, an internet penetration rate of about 64%.[88]

However, these advancements mask an ongoing digital divide, particularly for women, who suffer from Tunisia's uneven connectivity and lack of opportunities in digital employment more severely than men. While 72.5% of men had regular access to the internet in 2019, the percentage of women with internet access was 61,1%[89]. Although women outpace men in educational attainment, the labour market figures reveal a mismatch in employment opportunities for women. World Bank data from 2021 shows that 90.1% of girls completed lower secondary school, compared to 71.4% of boys, illustrating higher education rates for women[90]. Despite this advantage, women face higher unemployment among post-secondary graduates with unemployment rates fluctuating between 20% and 60%[91], despite representing about 30% of the total workforce[92]. In 2023, women's labour force participation was 26.9% compared to 69% for men. Moreover, in early 2024, the unemployment rate for women in Tunisia was 22%, surpassing the male rate by about 8 percentage points[93]. Tunisia faces a gap in the integration of women of all levels of education into the formal labour market with limited training and welfare systems available.[94] A pronounced rural-urban gap, with job and educational opportunities heavily concentrated in major cities such as Tunis, further complicates the chances of women accessing digital employment opportunities.

Addressing women's participation in the digital field begins with tackling Tunisia's high unemployment rate, with a particular emphasis on creating opportunities for highly qualified female graduates entering the workforce. Female entrepreneurship in Tunisia drives economic and social development by creating jobs, reducing poverty, and offering distinct managerial approaches compared to a male-dominated workforce.[95] Although efforts to support women's entrepreneurship are growing, limited representation in leadership positions still remains a significant barrier to progress in this direction.[96]

Digitalisation Policies

The information and communications technology (ICT) sector has become an increasingly important driver of Tunisia's economy, contributing approximately 7.5% to the national GDP, a figure comparable to the tourism sector.[97] This growth highlights the industry's strong potential for fostering economic development and job creation. The OECD highlights the significant potential of ICT services to generate high-quality jobs in Tunisia, particularly for tertiary graduates. Nevertheless, despite employment growth in high-skill fields such as ICT, many tertiary graduates are under-employed or overqualified, underscoring the urgent need for digital sector roles that better match the country's highly educated workforce.[98]

[86] Institut National de Statistiques de la Tunisie, Telephone Networks & Density. https://www.ins.tn/sites/default/files/publication/pdf/infrastructure%202021.pdf?utm_source=chatgpt.com

[87] DataReportal. (2021). *Digital 2020: Tunisia.* DataReportal – Global Digital Insights. Retrieved from https://datareportal.com/reports/digital-2020-tunisia

[88] DataReportal. (2021). *Digital 2020: Tunisia.* DataReportal – Global Digital Insights. Retrieved from https://datareportal.com/reports/digital-2020-tunisia

[89] Adel Ben Youssef. Digital Transformation in Tunisia: Under Which Conditions Could the Digital Economy Benefit Everyone?. 2024. Halshs-03506136 https://shs.hal.science/halshs-03506136/file/1637495187_570_734598_1512%20%283%29.pdf

[90] Luflade, M., & Zaiem, M. (n.d.). Do elite schools improve students' performance? Evidence from Tunisia. *Economics of Education Review*. Retrieved from https://www.elsevier.com/locate/econedurev

[91] Deeb, R., Tvedt, J., & Yelgezekova, Z. (2020). *Women's economic empowerment in Jordan, Oman, and Tunisia*(Humphrey School Capstone Report). The Hubert H. Humphrey School of Public Affairs, University of Minnesota. https://conservancy.umn.edu/server/api/core/bitstreams/9da876ef-0112-4c0b-9703-37c651e0d4ae/content

[92] AllAfrica Global Media. (2023, September 6). Tunisia: ECA to train trainers to improve women's digital expertise in Tunisia. https://allafrica.com/stories/202309060367.html?utm_source=chatgpt.com

[93] Statista Research Department, "Quarterly Unemployment Rate in Tunisia 2017-2024, by Gender," published June 27, 2024. https://www.statista.com/statistics/1178576/unemployment-in-tunisia-by-gender/

[94] Luflade, M., & Zaiem, M. (n.d.). Do elite schools improve students' performance? Evidence from Tunisia. *Economics of Education Review*. Retrieved from https://www.elsevier.com/locate/econedurev

[95] Salim, M., & Jarboui, A. (2021). Has female entrepreneurship been a formidable engine of economic and social development in Tunisia? Journal of Global Entrepreneurship Research, 11(3), 489–503 https://ideas.repec.org/a/spr/jglont/v11y2021i1d10.1007_s40497-021-00280-3.html

[96] Luflade, M., & Zaiem, M. (n.d.). Do elite schools improve students' performance? Evidence from Tunisia. Economics of Education Review. Retrieved from https://www.elsevier.com/locate/econedurev

[97] Fricke, S. (2023, July 27). Tunisia's ICT sector in 2021-23. ICT Africa Journal https://ict-africa.org/tunisias-ict-sector-in-2021-23

[98] Grundke, R., & Cassimon, S. (2022, October 3). *Improving skills and employment opportunities in Tunisia* (Economics Department Working Papers No. 1727). OECD Economics Department. https://www.oecd.org/en/publications/improving-skills-and-employment-opportunities-in-tunisia_51e7a341-en.html

Furthermore, digitally delivered work, or jobs performed entirely online, are still limited. As of 2020, only 17% of jobs were amenable to telework.[99]

Tunisian women comprise over 60% of ICT-related students[100] and account for close to 41% of workers in the ICT sector[101]. The World Economic Forum reports that tertiary students in Tunisia have some of the highest graduation rates in STEM fields, 40% in Tunisia earning degrees in these areas, only second to Malaysia in 2022[102]. Although improvements can be noted in addressing the gender gap, as highlighted by Tunisia's improvement in the Global Gender Gap Index with a +13 increase in rank from 2023 to 2024[103], efforts are still needed to harness the talent of Tunisian women in the digital sector and close the gender gap effectively.

While the digital landscape and job market is expanding and digital platforms are developing, the full potential of the IT sector is limited by Tunisia's socio-economic context and policy level barriers. Onshore firms struggle with high tariffs and complex customs processes for importing ICT equipment, raising costs and stifling local ICT production and job creation. Additionally, market entry is hampered by burdensome administrative requirements and limited competition in the telecom sector, which restrict innovation and job growth.

Programmes & Ecosystem Support Vehicles

In the MENA region, entrepreneurship programmes often focus on unemployed youth, particularly educated graduates who face the highest unemployment rates, despite stark contrasts between the typical profiles of the unemployed—young, highly educated, and predominantly women—and entrepreneurs, who are generally older, less educated, and mostly men[104]. Tunisian women entrepreneurs face challenges such as limited access to

[99] AlAzzawi, S. (2021, April). *Lives versus livelihoods: Who can work from home in MENA?* (Working Paper No. 1471). Economic Research Forum https://erf.org.eg/app/uploads/2021/04/1618393182_770_533560_1471.pdf

[100] Fricke, S. (2023, July 27). Tunisia's ICT sector in 2021-23. ICT Africa Journal https://ict-africa.org/tunisias-ict-sector-in-2021-23

[101] Colomo-Palacios, R., Ben Yahia, N., & Larrucea, X. (2019). *Gender diversity among computing students: Reflections from Norway, Spain, and Tunisia* https://dl.acm.org/doi/10.1145/3362789.3362796

[102] World Economic Forum. (2023, March 20). *Which countries' students are getting most involved in STEM?* World Economic Forum. https://www.weforum.org/agenda/2023/03/countries-students-most-involved-in-stem/

[103] World Economic Forum. (2024) Global Gender Gap Report 2024 https://www.weforum.org/publications/global-gender-gap-report-2024/

[104] Krafft, C., & Rizk, R. (2020). The promise and peril of youth entrepreneurship in the Middle East and North Africa. *Economic Research Forum*. https://carolinekrafft.com/wp-content/uploads/2021/07/Entrep.-IJM-Manuscript-2021.06.18-CLEAN-POSTPRINT.pdf

funding, inadequate support systems, and social barriers, which hinders business growth and scalability and concentrates their ventures to predominantly low-growth sectors.[105]

Tunisia's ecosystem promoting women in the digital sector includes several initiatives aimed at enhancing their skills, entrepreneurial capacity, and participation in the digital economy. The public employment agency ANETI offers wage and training subsidies, job placement services, and entrepreneurship programmes, but its effectiveness is hindered by an underperforming IT system that fails to match job seekers' skills with market requirements. Furthermore, a lack of oversight of registration further limits access to job placement services and subsidies for the unemployed[106]. The National Chamber of Women Entrepreneurs (CNFCE) Academy, established in 2018, helps provide training for women business owners in areas like financial management, marketing, and labour law.[107] The 2018 Start-Up Act simplifies processes for ICT startups, though challenges such as complex tax incentives and limited access to finance persist. Furthermore, the Economic Commission for Africa (ECA) has partnered with Tunisia's Ministry of Women and Ministry of Communication Technologies to launch digital upskilling workshops for women and girls. This initiative focuses on training female trainers in cybersecurity, digital marketing, artificial intelligence, and workflow automation, building a network of digitally proficient women to contribute to Tunisia's information economy, and aimed to expand in 2024 to include e-commerce, digital finance, space science, and remote sensing[108]. Other institutions, such as Tunisia's network of 10 Technoparks and 18 Cyberparks, support ICT services by fostering innovation, business incubation, and collaboration between private companies, educational institutions, and research centres.[109] Finally, private training centres in digital skills such as Go My Code or ReBootKamp (RBK) play a key role in enhancing digital skills to meet the demands of the evolving labour market and play a critical role in mitigating regional inequalities by operating with training locations across the country including in underserved regions. Nevertheless, their engagement remains limited due to the cost associated with these private programmes.

[105] Salim, M., & Jarboui, A. (2021). Has female entrepreneurship been a formidable engine of economic and social development in Tunisia? Journal of Global Entrepreneurship Research, 11(3), 489–503 https://ideas.repec.org/a/spr/jglont/v11y2021i1d10.1007_s40497-021-00280-3.html

[106] Grundke, R., & Cassimon, S. (2022, October 3). *Improving skills and employment opportunities in Tunisia* (Economics Department Working Papers No. 1727). OECD Economics Department. https://www.oecd.org/en/publications/improving-skills-and-employment-opportunities-in-tunisia_51e7a341-en.html

[107] Ferrant, G., & Lunati, M. (2023). *The potential of digitalisation for women's economic empowerment in MENA countries*. https://policycommons.net/artifacts/4743958/joining-forces-for-gender-equalitythe-potential-of-digitalisation-for-womens-economic-empowerment-in-mena-countries/5569175/

[108] AllAfrica (2023, September 6). Tunisia: ECA to train trainers to improve women's digital expertise in Tunisia. https://allafrica.com/stories/202309060367.html

[109] Fricke, S. (2023, July 27). Tunisia's ICT sector in 2021-23. ICT Africa Journal. https://ict-africa.org/tunisias-ict-sector-in-2021-23

While Tunisia's ecosystem provides some support for women in the digital sector at different levels, barriers in addressing challenges related to women's engagement remain.

Key Findings

This analysis draws on a series of KIIs and FGDs with representatives from coding schools and upskilling training programmes in Tunisia. These findings are primarily linked to digital skilling, which provided valuable insights into upskilling opportunities for women. However, the data is limited to the context of digital skills development, as the women interviewed currently enrolled in upskilling programmes and did not speak as thoroughly about the broader challenges women face in seeking or obtaining digitally enabled jobs. To further complement our findings, a third KII was conducted with a representative from a Tunisian digital platform connecting parents with qualified caregivers and babysitters, offering flexible online work opportunities, and shedding light on alternative digital employment pathways for women via online platforms.

1. Job Creation and Sustainability

Equipping Tunisia's Workforce for Digital Employment

To effectively address barriers related to gender disparities, limited digital opportunities, socio-economic constraints, and high unemployment rates in Tunisia, a concerted effort is needed not only to improve access to opportunities for digital upskilling and work and but also to ensure that the workforce is adequately prepared for the demands of the growing digital economy.

Some companies are leveraging digital solutions to create flexible employment opportunities, particularly online platforms which facilitate gig economy opportunities. These digitally enabled platforms empower women by providing access to jobs that can be managed remotely and, especially when the positions are targeted at women (though not always exclusively), create new avenues for women to enter the workforce through digital solutions that foster inclusive and adaptable employment strategies.

Data collection also found that coding centres in Tunisia play a role in equipping the country's workforce with the market-demanded essential digital skills, either for first-time female job seekers or women interested in changing careers. For example, women enter training programmes for upskilling to transition out of their current jobs, shift careers, re-enter the workforce after dropping out of college, or seek alternative employment opportunities in the growing digital space. In addition to technical skills, these centres typically also emphasize the

importance of soft skills for enhancing employability, by offering job search support, such as working with trainees on strategies such as leveraging LinkedIn or other digital platforms or preparing them with complimentary soft skills like writing a good CV or leading a good interview.

In fact, these institutions do not only focus on technical proficiency but also emphasize the importance of soft skills for enhancing employability. As one instructor highlighted; “a job requires other skills that are not just technical… you also need to learn how to speak, present yourself, and look for information on your own to become a problem solver.” A holistic approach to digital skilling is essential for preparing men and women to keep up with the evolving expectations of the job market. This is especially crucial in an economy where an increasing number of qualified STEM graduates in Tunisia are driven by high unemployment rates in traditional STEM fields to seek alternative career paths in areas such as web development and data science. STEM students have strong technical skills and an educational background that allows them to more easily acquire digital skills, however, individuals generally lack the soft skills necessary to enter the job market or embark on a career switch.

“A job requires other skills that are not just technical. [...] you cannot just focus on the technical part but need to also learn how to speak, present yourself, and look for information on your own to become a problem solver.”

- A Digital Skilling Instructor, Tunisia

Barriers to Access

While digital (up)skilling, accessed in Tunisia through training programmes offered by coding schools, and digitally enabled jobs, such as online work platforms, represent two distinct opportunities for women’s employment in digital fields, several barriers remain. Digital skilling programmes can offer long-term career benefits by opening doors to digital employment through the acquisition of new certifications and skillsets, but they can be expensive and require a significant time investment from the participant. Meanwhile, digitally enabled jobs lower the cost of entry by removing traditional barriers like commuting or fixed hours, and discrimination in the workplace, however, they are often limited by the specific fields they offer opportunities in and often require additional training or certifications to be competitive.

There are several barriers that hinder access to digital employment opportunities in Tunisia. First, some online platforms, like nanny-matching services, require applicants to have specific educational qualifications, limiting access for those without the necessary skills. This creates a

sector-specific barrier for individuals who do not meet these requirements. Second, digital skilling opportunities and jobs are primarily concentrated in the capital, Tunis, and while services exist in other major cities, they are often limited in rural areas, making it harder for people in those regions to access digital jobs. Finally, mobility presents a significant barrier, as many training centres require individuals to move to larger cities, which can be especially difficult for women due to societal pressures. A participant in a digital training programme shared the personal challenge of being away from her family for the first time, highlighting the emotional and logistical difficulties involved. Even when training centres are available across the country, the digital job market is still mostly centred in Tunis, so many trainees need to relocate there for employment, further complicating access. As one participant noted, “even if they receive training in a city outside of Tunis, they will need to move to the capital to get a job”.

Mobility barriers for digital skilling opportunities in Tunisia are often coupled by additional logistical and financial barriers. One key barrier is the opportunity cost associated with taking time off work to pursue a course to obtain an additional certification. Several informants noted the difficulty of leaving their jobs to attend full-time training at the centres. As one participant shared; “it wasn’t very challenging in terms of how to enrol. It was really easy to register and start studying here. The challenging part was to take the decision to leave my work.” For some, the trade-offs extend beyond just work. A participant without family responsibilities stated, “I don’t have a family or children, so I don’t mind being full time as I have no other responsibilities other than studying.” However, others face more significant challenges related to the family, as the same informant described the situation of a married woman with two children who struggled with being away from her home.

Financial constraints further exacerbate the barriers mentioned above, as many of the private digital skilling programmes come with high costs, and participants are expected to have their own personal computers. As one participant noted; “trainings are not ‘not’ accessible, but because it is private and you need to pay for the courses, it is limited to those who can afford it.” Similarly, an informant mentioned; “you have to own a computer to be able to join the training programme,” a condition that restricts the pool of potential students. These financial constraints are particularly limiting for those seeking certifications to improve their job prospects, as multiple informants pointed out that a main “barrier is the money necessary to improve your skills by needing to pay for the required certifications.” Several interviewees pointed out the gap in available financial assistance for digital training programmes: "there is currently no support from organisations. For everyone here, it is self-financed education, or your parents help you study. I do not believe there is an organisation that will help you access these trainings." The lack of external support limits access, especially for individuals who may not have the financial means to afford tuition or access essential tools such as laptops.

"Trainings are not 'not' accessible, but because it is private and you need to pay for the courses, it is limited to those who can afford it."

- A Female FGD Participant studying at a Digital Skilling Centre

While owning a computer for digital upskilling is a barrier faced by both men and women, financial constraints are higher for women. Funding is usually self-financed through the families who have a tendency to invest more in the future of their sons as it is perceived to lead to a higher return. Women are also less likely to move for jobs as they have more of a social expectation to be present in the household.

Overcoming Barriers

To expand women's access to digital jobs in Tunisia, it is essential to overcome the barriers related to financial constraints that limit access to digital skill acquisition, and mobility challenges that prevent women individuals from relocating to acquire both qualifications and digitally enabled job opportunities.

Financial support can play a pivotal role in enabling broader access. A trainer interviewed suggested that additional support for financially constrained students would be to have more IT support and help students who cannot afford a laptop on their own. Next, the option to pay enrolment fees in instalments for training programmes, for example, helps alleviate the financial strain for those who cannot afford the costs upfront. Regarding sources of financing, the majority of informants claimed that their parents helped them in paying for their digital skilling programmes. To overcome the barrier associated with the gender-perceived dynamic that investing in men's education is more worthwhile than women, a change in perspective on women in digital jobs. Tunisian women are already at the forefront of driving this change, with interviewees highlighting the strong will, personal drive, and ambition of young Tunisian women to overcome challenges. As one interviewee stated, "It's a personal challenge so I will make it myself." Many women expressed a clear sense of determination, with one participant noting "you need to have goals, you have one life, and you need to go for it." These sentiments underscore the importance of cultivating a mindset focused on achievement, where the pursuit of education and career development is seen as a vital part of personal growth, and encouraged specifically for women. Informants' recommendations at the end of discussions highlighted this proactive approach, urging others to "be motivated," "go for it" and "don't listen to people telling you not to study here because it's too hard."

Next, for digital skilling opportunities to be expanded and inclusive, training centres need to adapt to Tunisia's socio-economic and geographic realities by addressing barriers such as regional disparities and mobility, which affect women stronger than men. Informants noted that the training centres' online programmes provide a possible alternative for women with other commitments such as work or family obligations. Decentralising training opportunities is also an effective solution mentioned by several informants for including people from all backgrounds. For instance, while the first coding school interviewed for this study has expanded its reach through 14 regional offices, some centres have not. An informant interviewed during one of our focus group discussions stated: "There should be more offices in the country. We have a lot of people coming from the south who come here and live in a dorm or have to rent a room to participate. Having more franchises around the country would help people access the trainings better."

In terms of digitally enabled jobs, creating a conducive business environment in Tunisia that encourages more companies to offer online employment opportunities for men and women at scale, across various levels and skill sets, would be highly beneficial, as it would enable a broader group of women from all backgrounds, including rural areas, to access flexible, remote work opportunities, empowering them to contribute to the digital economy while balancing personal and professional responsibilities.

Retention Challenges and Solutions

This section's findings are limited in scope and understanding, as data was collected from women currently still participating in digital skilling training programmes. As such, their perspectives do not give testimonies to the experiences of young professionals seeking and securing digitally enabled employment in Tunisia.

Digital employment offers effective solutions to the challenges women face in retaining their positions in the workforce, particularly by providing flexible work arrangements that allow for better work-life balance and reduce exposure to discrimination. Many women identified freelancing and remote work as critical solutions for balancing professional obligations with family responsibilities. One informant emphasised: "freelancing helps women navigate these barriers by being able to handle both family obligations and jobs," while another shared, "as a future mom and future wife, I prefer to work remotely so I don't neglect my family. I want to do both and have time to do my part as a wife and a mom." These sentiments reflect the growing preference for work that offers flexibility and hybrid options, enabling women to manage both their career and family life effectively. For some, the opportunity to work remotely or in a hybrid model was a major factor in their decision to pursue careers in digital fields like web development. An informant explained that for her, "web development can grant the opportunity to work remotely. [...] I would like to do a hybrid, both from home and

the company. It gives us the opportunity to be present at home and do what your family needs while also being at the office when needed or when you want to build connections."

"As a future mom and future wife, I prefer to work remotely so I don't neglect my family. I want to do both and have time to do my part as a wife and a mom."

- A Female FGD Participant studying at a Digital Skilling Centre

In addition to offering work-life balance, remote work can also help mitigate issues of workplace discrimination and harassment, which was noted to be a significant barrier for women to employment. One informant shared that her decision to leave her past job was driven by the need to escape constant stress and discrimination, saying, "the working environment I was in was toxic and male dominated. The only escape was to do this training and improve my portfolio to do a better remote job to not deal with a stressful job or bad work environment." Remote digital jobs provide an avenue for women to participate in industries they are passionate about without the fear of facing gender-based discrimination. In fact, one informant noted that the IT field is more gender-neutral compared to other industries, saying "the IT field is both for women and men. If it was for any other field like my background in electrical, it would need special training on how to deal with angry men and discrimination…there does not need to be special training for women because it's the IT field." By addressing both the work-life balance and safety concerns through flexible work options, digital employment in Tunisia is creating a more inclusive and supportive environment for women in the workforce.

2. Digital Skilling and Gender Dynamics

Effectiveness of Skill Building programmes & Market Alignment

Skill building programmes in Tunisia are playing a critical role in bridging the gap between education and the evolving demands of the digital economy. Despite ongoing challenges related to national employment trends and the underrepresentation of women in digital roles,

these initiatives are making significant strides in job placement. Training centres address the needs of Tunisia's youth by providing quality, affordable tech education.

Aligning curriculum with global industry standards rather than solely local needs is particularly effective in preparing students for the future, as it helps overcome local market barriers and equips students for employment both within and outside of Tunisia. By focusing on the future skills that major tech companies require, some training centres ensure their graduates are ready for the global job market. This forward-thinking strategy helps create a workforce that is adaptable and equipped to meet the challenges of the digital transition, positioning Tunisia's young professionals for success in the increasingly digital world.

Gender-Specific Dynamics

The gender dynamics highlighted by informants that shape Tunisia's digital workforce reflect larger cultural expectations and societal roles in the country. Women, as primary caregivers and heads of households are often seen as more unreliable or less committed to their careers by employers due to the potential for pregnancy and family obligations that may require them to interrupt their professional paths. Even for highly skilled women, there is a bias toward hiring men because of these gender norms, which makes it harder for women to secure positions. As a woman from the focus group at a coding centre explained; "there are a lot of people with a lot of competences, but men are seen by companies as more cost-effective and worthwhile. Men are seen as more efficient and available because women are seen as having much more responsibility because they share their time with the home." This reflects a broader stereotype that women, due to their family roles, are less dependable, or more costly to employ, despite being equally or better qualified.

In the IT sector, these gender dynamics are particularly pronounced. Although Tunisia has one of the highest percentages of female engineers and STEM students in Africa[110], the gap between women's representation in education and the workforce is still substantial. "There are more women engineers than male engineers in Tunisia", one informant pointed out, "and 70% of biology engineers are women." Despite this, the perception that IT is a male-dominated field persists, with one informant noting that, "IT is seen as only for men and not for women." Although more than half of IT students are women, they make up only 41% of

[110] World Economic Forum. (2023, March 1). *Which countries' students are getting most involved in STEM? World Economic Forum. https://www.weforum.org/stories/2023/03/which-countries-students-are-getting-most-involved-in-stem/?utm_source=chatgpt.com

the workforce in the IT sector[111], which underscores the cultural barriers women face in breaking into and advancing in this field.

Gender dynamics are also sector-specific, so online platforms can both open up as well as constrain employment opportunities for women, depending on whether the positions advertised are perceived as oriented towards men over women, or vice versa. For example, sectors observed for this study, such as babysitting, illustrate a more female-dominated landscape. As one interviewee observed, "all [of our employees] are women because there is not really a culture of having male babysitters." This highlights the sector-specific nature of gender roles in Tunisia's labour market, where some industries remain predominantly female, while others, like IT, still face significant gender-related obstacles.

Finally, despite these challenges, some informants argued that gender does not pose significant barriers in Tunisia's digital job market. One participant noted that "challenges are for both genders," while another added, "companies don't really consider if you are a woman or a man in this field. The most important element is soft skills and your profile. It's no longer all about technical skills, but about how you excel and grab their attention during interviews." These statements highlight a belief that the IT sector is more merit-based than other sectors focusing increasingly on candidates' overall competencies, both technical and soft skills, which overshadows the inequalities based on gender perceptions. In fact, one woman emphasized that "companies always search for competitive employees with many skills, both technical and soft, so when you have the experience and a good background, you can get this job, no matter if you are a woman or a man". This observation was also supported by one informant's own experience in the field in which she stated to have witnessed a lack of gender discrimination in hiring processes, particularly in IT departments where it was based on what skills you brought.

"Companies don't really consider if you are a woman or a man in this field. The most important element is soft skills and your profile. It's no longer all about technical skills, but about how you excel and grab their attention during interviews."

- A Female FGD Participant studying at a Digital Skilling Centre

[111] Colomo-Palacios, R., Ben Yahia, N., & Larrucea, X. (2019). *Gender diversity among computing students: Reflections from Norway, Spain, and Tunisia* https://dl.acm.org/doi/10.1145/3362789.3362796

3. Ecosystem Support and Opportunities

Current Support Mechanisms

Support mechanisms play a critical role in expanding access to digital skilling opportunities in Tunisia, particularly in addressing financial barriers that often prevent individuals from participating in these programmes. An informant highlighted the significant impact of collaborations and partnerships that facilitate the distribution of scholarships support is an important element of the ecosystem's overall support structure, as it helps reduce the financial burden of digital skilling and scaling, promising digitally enabled employment structures in the form of scholarships or grants for both students and companies. Such financial support is vital for enabling a broader range of individuals, especially those from lower-income backgrounds, to access high-quality digital training and pursue careers in the digital economy. These scholarships not only ease the financial burden but also make digital skilling more inclusive, helping to bridge the gap for those who may otherwise be excluded from these opportunities.

Gaps in Support

While financial support is a critical gap, there are also several other challenges related to the broader support mechanisms available for digital skilling in Tunisia. One informant pointed out that, beyond financial constraints, there is a lack of guidance in navigating the resources that are available: "It's tricky to look for information and documentation online to understand the course load better. There is a lot out there—videos, documents, etc.—so the tricky part is finding the right channel for you to understand". This highlights that, while there is no shortage of resources or opportunities for digital learning, women still face significant barriers in accessing and utilising them effectively. The issue lies in the nature of available content, the difficulty of finding the most relevant information, and the absence of clear pathways to navigate these resources and access them financially. These gaps in support mechanisms hinder the ability of many to fully benefit from the opportunities offered by digital skilling programmes.

Collaboration Opportunities

Informants emphasised the critical role of NGOs and foundations in scaling the ecosystem of digital skilling opportunities in Tunisia. One informant suggested that NGOs and foundations could help build different financial vehicles to help students fund their trainings and "de-risk" their skills investment, such as "scholarships, hybrid funding, pay when you get a job, income share agreements like in the US, given that most value is created once the person is placed in

a job". This highlights the importance of innovative financial models to bridge the gap for students who may otherwise be excluded due to financial constraints.

Building on this idea, an informant proposed that the role of data skilling centres, NGOs and companies working in the digital field to extend their input beyond financial support directly to students by actively lobbying to bring major global tech companies—such as Google and Spotify—to Tunisia and expanding the job opportunities available in the country. "These companies are mostly based in Dubai, Lagos, and Nairobi," he explained, "but there is a need to create models that attract big tech to Tunisia. So far, no one has done the work to convince them to come here." Despite Tunisia having strong ecosystems, particularly from French companies, he argues that it is not enough to fuel long-term growth and there is work needed to attract more companies to the country. collaboration is needed to attract international tech giants that could significantly amplify opportunities for local talent and foster a more dynamic digital economy in Tunisia.

4. Attraction and Retention Strategies

Attracting Women

Recruitment strategies for digital skilling training centres in Tunisia seem to be increasingly focused on inclusivity. One informant noted that "Tunisia has always been organic in marketing or catering towards women", suggesting that there has been a natural progression toward addressing the gender gap and women partaking in the economy and workplace opportunities. This approach is reflected in the training centres' branding, which have adopted a "women-positive" message that speaks to both genders. Their communication strategy emphasises gender diversity, showcasing a balanced representation of men and women to ensure that all potential candidates feel welcomed and supported. By adopting this inclusive and diverse messaging, training centres help make digital skilling and the digital field more appealing and accessible to women, challenging traditional gender norms and encouraging greater female participation in the tech industry.

Retaining Women

Inclusive work practices are key for retaining women in digital skilling centres in Tunisia. Some training centres have made deliberate efforts to rethink their workspaces to ensure inclusivity. For example, at one training centre where the majority of students attend in-person, the centre has implemented various measures to foster a safe and welcoming atmosphere through anti-harassment, anti-bullying, and anti-violence policies, with clear communication of these practices across the company. To further support women, they provide both central and local support lines, creating a "double support line" to ensure

accountability. In addition, they offer the flexibility of remote options for those who prefer it and even provide medical spaces that address female hygiene needs. Similarly, training spaces have created "localities catering to women", including the use of anti-harassment apps within their spaces. The centres also practices "positive discrimination in hiring," ensuring that more women are recruited than men, further reinforcing their commitment to gender equality within the company; one training centre boasted that 70% of its training staff are women These efforts are part of a broader strategy to create supportive, inclusive environments that empower women to thrive in digital skilling programmes and beyond.

Once graduated, the broader unemployment context in Tunisia plays a significant role in the retention of skilled workers in jobs, with many employees remaining in their roles once they have secured job opportunities. As one informant shared, "there is a segment of people enrolled who are angry against the system [specifically the high unemployment in the country], so once they get an opportunity to land a job, they take it really seriously and will do good at their jobs and retain them." This reflects a strong motivation to perform well and build a stable career once they land a job given the high unemployment rates in the country. The focus group testimonials from beneficiaries of coding centres further emphasise this drive. Many expressed that their primary goal in joining these training programmes was to gain employment opportunities: "it doesn't matter where it leads, I need to work and I'm hoping this training leads to work opportunities".

Freelancing was highlighted as an appealing option in gaining a range of experience in a short period of time, with one participant noting that, "as a freelancer, you can gain experience you won't get in an IT developer role in a traditional company, where you're limited to one project with the same tasks. As a freelancer, you build many types of projects and learn how to communicate with many different people". In fact, needing to diversify their skillset for better job opportunities is a primary motivation: "I didn't find a job in Tunisia in language, so I want to get certifications here to combine my background in Spanish linguistics with IT. I know that in the future there will be less work in linguistics, so I wanted to get another certification to secure a job in the future, maybe in IT".

Overall, these testimonies to why women are seeking skills in digital literacy highlight the challenges in the Tunisian economy and limited employment opportunities which are forcing people to seek alternative forms of employment, such as in the growing sector of IT. Hence, retention of digital skilling graduates in jobs after training do not seem to be a problem as this is the primary motivation of joining the programmes in the first place. Furthermore, companies also play a crucial role in ensuring job retention. For instance, an informant from an online employment platform highlighted that, "we have contracts with both the babysitters and families", a contractual arrangement that not only facilitates job security for the workers

but also ensures that the employment relationship remains stable and streamlined through the company's support system.

“As a freelancer, you can gain experience you won’t get in an IT developer role in a traditional company, where you’re limited to one project with the same tasks. As a freelancer, you build many types of projects and learn how to communicate with many different people.”

- A Female FGD Participant studying at a Digital Skilling Centre

5. Recommendations and Best Practices

Increase Funding for Digital Skilling: Expanding digital skills opportunities in Tunisia requires seeking out additional funding. As one informant emphasised, "It's all about funding - when you allocate funds to create women jobs, you create women jobs. We need more funding." This highlights the direct link between financial support and the ability to create more employment opportunities for women.

Expand Digital Employment Platforms: Current digital employment platforms are primarily confined to specific sectors and tend to cater to particular skill sets and backgrounds. Expanding these platforms to various industries would broaden access to digitally enabled job opportunities in Tunisia and help address gender-based discrimination in the workplace. Creating a conducive business environment in Tunisia that encourages more companies to offer online employment opportunities at scale, across various levels and skill sets, would be highly beneficial, as it would enable a broader group of women from all backgrounds, including rural areas, to access flexible, remote work opportunities and participate in the digital economy.

Decentralise Training Opportunities: Expanding digitally enabled jobs requires an expansion of digital skills training programmes to meet the demands of emerging digital roles. Additional training centres and technical and soft skilling programmes need to be created to help complement the skills of young graduates shifting into the digital workforce. Decentralising these training opportunities to other cities than Tunis and making more training programmes online would allow people from all backgrounds who may be limited by mobility barriers to access digital skilling opportunities.

5.4 Morocco

Desk Review

Women Employment/Unemployment (COVID-Present)

Morocco's labour force is characterised by significant gender disparities, with women's participation rate standing at 19.8% as of 2022—far below the global average of 46%[112]. This gap is pronounced across both urban and rural areas, where urban women's activity rates are just 20%, while rural participation is slightly higher at 30%-40%, though predominantly informal and unpaid[113]. The COVID-19 pandemic further deepened these disparities, resulting in an estimated 432,000 job losses in 2020. Women, particularly those in informal sectors such as agriculture, domestic work, and cooperatives, bore the brunt of these losses, with female unemployment climbing to 15.6% and youth unemployment reaching an alarming 33.4%[114].

Structural inequalities affecting women's participation in the workforce have significant economic consequences, with gender inequality costing Morocco between 15%-37% of its GDP annually[115]. Although educational opportunities have improved at the primary level, with 97% of girls enrolling, access drops drastically in higher education, with post-secondary enrolment at only 35.7%[116]. This limits women's access to higher-paying jobs, especially in digitalised sectors.

Entrepreneurship presents further challenges. While 22% of entrepreneurs are women, most are concentrated in low-productivity sectors like commerce (45%), agriculture (14%), and hospitality (12%). High informality rates, complex formalization processes, and limited access to financing exacerbate these challenges, with only 6.3% of necessity-driven women entrepreneurs and 10.6% of opportunity-driven women entrepreneurs able to secure funding[117]. These structural barriers underscore the urgent need to leverage digital solutions to create formal, inclusive opportunities for women in Morocco.

Emerging digital employment models such as remote work and outsourcing are expanding accessibility, particularly in IT services, e-commerce, and customer support. However, rural women face additional barriers to digital employment due to limited infrastructure, digital literacy gaps, and socio-cultural restrictions[118]. The urban-rural digital divide remains significant, with rural women having lower internet penetration rates and fewer opportunities for digital skill development[119]. While mobile connectivity has helped bridge some gaps, affordability and accessibility continue to hinder widespread participation.

While digital tools and telework, opportunities are expanding in Morocco, access alone is insufficient to bridge the gender digital divide. Social norms, mobility constraints, and unpaid care responsibilities continue to limit women's participation in the digital economy. For

instance, women spend approximately 20.8% of their time on unpaid domestic chores and care work, compared to 3% for men[120].

Digitalisation Policies

Digitalisation policies in Morocco aim to address gender gaps in financial and technological access, though significant barriers remain. Only 40% of women in Morocco have a bank account, compared to 80% of men, and rural women face even greater exclusion due to limited access to financial services and digital tools[121]. Initiatives such as "Digital Morocco 2020" and "Morocco Digital 2025" laid the groundwork for expanding digital infrastructure, while the more recent "Digital Morocco 2030" strategy takes a notably inclusive approach. This includes plans to deploy Digital Relay centres and enhance connectivity in 1,800 rural

[112] Boucetta, M. (2023). *Women's accessibility to economic opportunities in Morocco*. Policy Center for the New South. Retrieved from https://www.policycenter.ma

[113] International Labour organisation. (2023). *Sectoral potential for the creation of female jobs and proposed avenues to achieve gender equality on the labour market*. Retrieved from https://www.ilo.org/publications/sectoral-potential-creation-female-jobs-and-proposed-avenues-achieve-gender

[114] Rahmouni, B. (2021). *Economic empowerment of Moroccan women beyond the drive for compassion*. Policy Center for the New South. Retrieved from https://www.policycenter.ma/sites/default/files/PB_08-21_Rahmouni%20EN.pdf

[115] Rahmouni, B. (2021). *Economic empowerment of Moroccan women beyond the drive for compassion*. Policy Center for the New South. Retrieved from https://www.policycenter.ma/sites/default/files/PB_08-21_Rahmouni%20EN.pdf

[116] Boucetta, M. (2023). *Women's accessibility to economic opportunities in Morocco*. Policy Center for the New South. Retrieved from https://www.policycenter.ma/sites/default/files/2024-06/PB_18-23_Mounia%20Boucetta%20EN.pdf

[117] Agence Nationale pour la Promotion de la Petite et Moyenne Entreprise. (2024). *Profil entrepreneurial du Maroc*. Rabat: ANPME. Retrieved from https://www.finances.gov.ma/Publication/dtfe/2023/Note%20synthetique_Profil-Entrepreneurial-Maroc.pdf

[118] Dany, H. (2024). Connecting the Unconnected: Bridging the Digital Divide in Rural South Morocco. SMEX. Retrieved from https://smex.org/wp-content/uploads/2024/04/Hanaa-Dany-Fellowship-Report.pdf

[119] Dany, H. (2024). Connecting the Unconnected: Bridging the Digital Divide in Rural South Morocco. SMEX. Retrieved from https://smex.org/wp-content/uploads/2024/04/Hanaa-Dany-Fellowship-Report.pdf

[120] UN Women. Morocco: Gender data snapshot. UN Women Data Hub. Retrieved from https://data.unwomen.org/country/morocco

[121] Abdelkhalek, T., Ajbilou, A., Benayad, M., Boccanfuso, D., & Savard, L. (2021). *How can the digital economy benefit Morocco and all Moroccans?* Economic Research Forum Working Paper No. 1503. Retrieved from https://erf.org.eg/app/uploads/2021/11/1637566122_724_832622_1503.pdf

localities by 2026[122]. However, cultural norms, low digital literacy, and the affordability of digital tools and broadband continue to hinder progress[123].

The pandemic demonstrated the potential benefits of telework for women, particularly those in skilled professions, by offering flexibility to balance work and domestic responsibilities. However, these opportunities were primarily accessible to urban and educated women, leaving many in underserved regions excluded[124]. Sectors such as freelancing, IT-enabled services, and digital entrepreneurship hold significant potential for women, provided systemic barriers like mentorship gaps, cultural expectations, and digital illiteracy are addressed[125].

Programmes and Ecosystem Support Vehicles

Several programmes and platforms have emerged to support women entrepreneurs in Morocco, though scalability remains a key challenge. Government initiatives such as INTELAKA, FORSA, and INDH aim to provide financial and mentorship support to entrepreneurs, but their reach is limited to 40,000 annually—far below the demand of over two million established and potential entrepreneurs[126]. Platforms like fdar.ma and Sookoa demonstrate the potential to empower microenterprises by enabling local producers and cooperatives to access markets, though digital skill gaps and access barriers constrain their impact.

Digital tools such as e-commerce platforms, mobile payment solutions, and online business registration services offer pathways for women in informal sectors—particularly in agriculture and handicrafts—to transition into formal economic activities. Online platforms such as KASBUY have enabled Moroccan cooperatives, particularly those led by women, to market their handicrafts internationally, improving their income and sustainability[127]. Similarly,

[122] Digital Watch Observatory. (2024). *Digital Morocco 2030: Strategies and action plans*. Retrieved from https://dig.watch/resource/morocco-digital-strategy-2030

[123] Digital Talent Review. (2021). *Bridging the gap: Matching digital skills and the employability pipeline in Morocco*. Retrieved from https://en.ichei.org/Uploads/Download/2021-06-23/60d2e8159c9c8.pdf

[124] Abdelkhalek, T., Ajbilou, A., Benayad, M., Boccanfuso, D., & Savard, L. (2021). *How can the digital economy benefit Morocco and all Moroccans?* Economic Research Forum Working Paper No. 1503. Retrieved from https://erf.org.eg/app/uploads/2021/11/1637566122_724_832622_1503.pdf

[125] Hanafi, M. D., Lali, K., Kably, H., & Chakor, A. (2023). *The English proficiency and the inevitable resort to digitalisation for women entrepreneurs*. *Data & Metadata*, *2*(42). https://doi.org/10.56294/dm202342

[126] Agence Nationale pour la Promotion de la Petite et Moyenne Entreprise. (2024). *Profil entrepreneurial du Maroc*. Retrieved from https://www.finances.gov.ma/Publication/dtfe/2023/Note%20synthetique_Profil-Entrepreneurial-Maroc.pdf

[127] Leghris, C. (2018, December 19). Empowering Moroccan cooperatives to participate in the digital economy. Internet Society. Retrieved from https://www.internetsociety.org/blog/2018/12/empowering-moroccan-cooperatives-participation-in-digital-economy/

initiatives like the SheTrades Morocco project, launched by the International Trade Centre (ITC), focus on increasing the participation of women-led businesses in trade by enhancing their digital literacy and strengthening their competitiveness in the market[128].

In rural areas, digital inclusion initiatives have played a critical role in strengthening women's cooperatives. A USAID-funded project has supported women-led cooperatives in Morocco by providing digital tools and business training, helping them adapt to economic disruptions and become more resilient[129]. The World Bank has also introduced a $450 million Development Policy Financing initiative to enhance financial and digital inclusion, with a strong focus on underserved populations, including rural women. Expanding mobile money services and improving financial literacy training are crucial steps toward integrating more rural women into the digital economy.

Personal branding has proven to be a transformative tool for some Moroccan women. One of the women interviewed, for example, transitioned from unemployment to earning between $2,000 and $10,000 monthly by creating Moroccan cuisine content on YouTube. Similarly, Abir Berrani utilised affiliate programmes to launch e-commerce ventures like Abir Allure Lashes, achieving steady income and market presence[130]. Programmes like "Women in Tech Morocco" also aim to address gaps by mentoring and training five million women in STEM fields by 2030[131]. Despite these initiatives, indigenous entrepreneurship continues to struggle due to limited local resources and funding[132]. Expanding the reach of these programmes and fostering better regional integration is critical to driving meaningful inclusion[133].

Digitally enabled jobs offer significant opportunities for women in Morocco, spanning various categories. Platforms supporting microenterprises, such as fdar.ma, help women

[128] International Trade Centre. (2022, October 21). Empowering women entrepreneurs in Morocco through the SheTrades project. ITC News. Retrieved from https://www.intracen.org/news/empowering-women-entrepreneurs-in-morocco-through-the-shetrades-project/

[129] U.S. Agency for International Development. (2022, October 17). Women-led cooperatives drive resilience in Morocco. USAID. Retrieved from https://medium.com/usaid-2030/women-led-cooperatives-drive-resilience-in-morocco-d15239d98374

[130] El Idrissi Amiri, C., & Ghourdou, T. (2024). Beyond the screen: Moroccan women crafting digital empowerment through personal branding in social media. *Open Journal of Social Sciences*, *12*(3), 293–314. https://doi.org/10.4236/jss.2024.123021

[131] Naim, F. (2024). Bridging the gap: Women in Tech Global launches Morocco initiative. *Morocco World News*. Retrieved from https://www.moroccoworldnews.com/2024/07/363942/bridging-the-gap-women-in-tech-global-launches-morocco-initiative

[132] Wentrup, R., Nakamura, H. R., & Ström, P. (2019). *Closing the digital entrepreneurship gap: The case of returnee entrepreneurs in Morocco*. *Journal of Entrepreneurship and Innovation in Emerging Economies*, *6*(1), 140–162. https://doi.org/10.1177/2393957518816225

[133] Digital Talent Review. (2021). *Bridging the gap: Matching digital skills and the employability pipeline in Morocco*. Retrieved from https://en.ichei.org/Uploads/Download/2021-06-23/60d2e8159c9c8.pdf

entrepreneurs scale their businesses by reducing traditional market constraints[134]. However, rural and underserved women remain limited by digital literacy gaps and affordability[135]. Similarly, platforms facilitating offline work, such as ride-hailing and logistics services, connect women to clients but face cultural resistance in some communities[136].

Digital skill building is another critical area, with programmes focusing on equipping women with competencies in IT, digital marketing, and other in-demand areas. For instance, vocational training and MOOCs offer pathways for women to enter digitalised roles, though better scalability is needed to reach rural and underserved regions[137]. Platforms for ICT and online work, such as freelancing websites, further enable women to engage in flexible, remote opportunities.

Key Findings

1. Job Creation and Sustainability

Contribution to Digital Employment

The emergence of digital job opportunities in Morocco has provided women with alternative pathways to employment. This study found that government initiatives and private sector efforts have expanded women's access to digital jobs. For example, increasing numbers of training programmes now focus on both technical and soft skills, ensuring that women are prepared for digital employment. As one participant explained, "Training focuses on youth with technical skills who need more assistance to develop their soft skills: communication skills, public speaking, teamwork, self-confidence—skills that are needed but many people with an engineering background are missing."

However, there remains a persistent gap in women's representation in certain tech and entrepreneurial roles, with women in Morocco still underrepresented in high-growth digital fields. The disparity stems not from a lack of competence but from deeply embedded societal

[134] Hanafi, M. D., Lali, K., Kably, H., & Chakor, A. (2023). *The English proficiency and the inevitable resort to digitalisation for women entrepreneurs*. *Data & Metadata, 2*(42). https://doi.org/10.56294/dm202342

[135] Abdelkhalek, T., Ajbilou, A., Benayad, M., Boccanfuso, D., & Savard, L. (2021). *How can the digital economy benefit Morocco and all Moroccans?* Economic Research Forum Working Paper No. 1503. Retrieved from https://erf.org.eg/app/uploads/2021/11/1637566122_724_832622_1503.pdf

[136] Digital Talent Review. (2021). *Bridging the gap: Matching digital skills and the employability pipeline in Morocco*. Retrieved from https://en.ichei.org/Uploads/Download/2021-06-23/60d2e8159c9c8.pdf

[137] Digital Talent Review. (2021). *Bridging the gap: Matching digital skills and the employability pipeline in Morocco*. Retrieved from https://en.ichei.org/Uploads/Download/2021-06-23/60d2e8159c9c8.pdf

norms dictating career paths, such that many women still remain excluded due to socio-cultural and economic constraints.

Barriers to Access

Despite the promise of digital employment, women face persistent barriers. Firstly, Moroccan women encounter rigid gender roles that limit their career mobility. This in part stems from the widely held expectation that women prioritise family responsibilities over career ambitions continues to shape professional choices. As one participant shared, "there are many barriers to access to entrepreneurship for women stemming from social perceptions. A woman entrepreneur is not valued at her true worth at the societal level."

Geographic constraints further exacerbate these challenges. While urban women often have some access to digital training and employment, rural women often struggle with limited infrastructure and mobility constraints, "some women travel 80-100km to join our training. The concentration of opportunities in urban centres makes it difficult for rural women to participate." Gendered career expectations, namely jobs which are seen as more suitable for men or more suitable for women, continue to limit women's engagement in tech fields. "Young girls that are brilliant and may be attracted to scientific studies will be pushed to seek higher-paying jobs in law, medical studies, or business rather than entrepreneurship," an interviewee highlighted.

While many women are able to start small businesses—particularly in e-commerce and social media—scaling these businesses remains significantly more difficult due to limited funding access. Investors and banks remain sceptical of female-led businesses, making it harder for women to secure capital and expand. As one investor noted, "a woman entrepreneur is not valued at her true worth at the societal level. Clients, producers, and partners are more open to giving confidence to male entrepreneurs."

This scepticism is reinforced by male-dominated investment networks, where funding decisions often favour established connections that exclude women entrepreneurs. Without access to financial backing, many women-led startups struggle to move beyond micro-businesses into larger-scale operations.

Overcoming Barriers

For some women, digital marketplaces have become a means of overcoming existing employment barriers. Online platforms, for example, enable women to sell products and services to a greater number of customers. Digital marketplaces can also extend employment generation opportunities to women without requiring physical mobility: often a challenge for women from more traditional communities which discourage women from traveling for work or women who live in rural or remote areas. Yet while these platforms do extend newfound opportunities for women's employment, women's access remains uneven. The effectiveness of digital platforms is contingent on women's ability to leverage technology—something that remains a privilege rather than a widespread reality. Many women, particularly in rural areas, face limited access to smartphones, reliable internet, and digital literacy training. High costs of data and devices, along with gender gaps in digital education, further restrict their ability to participate in online marketplaces.

Effectiveness of Skill Building Programmes

The digital skills gap is a critical factor in women's economic participation, including in Morocco. programmes that integrate technical and business skills have had measurable success in enhancing women's employability. One training provider explained, "our mission is digitisation to promote social and economic inclusion. It builds an ecosystem around financial, social, economic, and digital inclusion."

While these programmes offer valuable opportunities, there remains a persistent gap between training availability and workforce integration. Women may receive digital skills training and develop the necessary skills for existing job positions. However, training alone is not sufficient to secure women's placement in ICT roles, as they continue to face gender-based discrimination in hiring and promotions.

Additionally, many digital training programmes fail to account for structural barriers that limit women's participation, such as time constraints due to unpaid care responsibilities, limited mobility, and a lack of childcare support. Most programmes also heavily emphasize technical skills while neglecting soft skills such as leadership, negotiation, and confidence-building, which are critical for career advancement. These factors contribute to persistent gender disparities in digital employment, reinforcing the need for more inclusive training models that go beyond technical skilling.

Market Alignment

Another challenge facing women's integration into the ICT field remains one of representation and advancement into leadership positions. Although women increasingly pursue technical education trajectories in Morocco, their presence in company leadership positions remains scarce. As one interviewee observed, "the democratisation of NSEA (national applied schools) has allowed women to reach managerial roles, but there are still very few female CEOs." This study also found that women in Morocco often face glass ceilings, even in sectors where their technical expertise matches that of their male counterparts.

Gender-Specific Dynamics

The interplay between cultural norms and career decisions also continues to shape women's employment trajectories. This study found that many women are still encouraged to, as well as opt for perceptibly "safer" career paths, rather than taking risks by engaging in entrepreneurship or going after high-level leadership roles within a company. As one participant stated, "women may not be as prone as men to risk-taking in entrepreneurship. They'd rather go into IT divisions of banks than start their own businesses." This sentiment aligns with the desk review's findings that while entrepreneurship is a viable pathway for women's increased engagement in the ICT sector, it remains unappealing to many women due to the level of risk required, as well as the financial demands for starting a business.

3. Ecosystem Support and Opportunities

As Morocco's digital economy expands, entrepreneurship presents a key avenue for women to participate in and benefit from the ICT sector. By leveraging digital tools and online marketplaces, women entrepreneurs can overcome traditional employment barriers and create new opportunities in digitally enabled businesses.

Current Support Mechanisms

Women entrepreneurs in Morocco are increasingly accessing financial support through government programmes, the INDH initiative[138] has directed significant funding towards cooperatives and female-led businesses, particularly in artisan crafts and agriculture. One interviewee acknowledged the extent of programmes targeting sectors or employment activities typically favoured by women, saying "a lot of money has gone into supporting women in craftsmanship and agriculture."

[138] https://diplomatie.ma/en/node/851

Beyond government programmes, NGOs are offering tailored business assistance relevant to creating digital or digitally enabled jobs, including financial literacy and digital marketing support, helping women scale their businesses in an increasingly digital landscape. This includes financial literacy training, digital marketing support, and business incubation programmes.

Gaps in Support

Despite these initiatives, structural barriers persist in funding, investment, and ecosystem accessibility, including for women who may start ICT ventures or create digital or digitally enabled jobs for other women. While some programmes have improved financial inclusion, such as EBRD funding guarantees and Crédit Immobilier et Hôtelier's fee-free banking for women, many female entrepreneurs still struggle to access financing. As one investor observed "there's a positive bias towards women in VC and tech, but not enough female-led businesses to benefit from it". This highlights the need for not only financial inclusion but also a stronger pipeline of women-led enterprises that can capitalize on existing support structures.

Additionally, a major barrier to growth is the lack of accessible and centralised information about support for entrepreneurs. Entrepreneurs in general struggle to navigate available resources, limiting their ability to secure funding and training opportunities. As one participant described, "government support programmes exist but are difficult to navigate due to the lack of centralised and accessible information."

In addition to funding and information access challenges, mentorship and role models remain crucial yet underdeveloped in Morocco's entrepreneurial ecosystem, particularly for women. This is especially important when it comes to creating digital or digitally enabled jobs favourable to women, as women entrepreneurs reported needing greater access to structured mentorship programmes to build their own confidence as well as to scale their businesses. One interviewee emphasised the importance of shifting societal perceptions from an early age, saying "the collective thinking needs to evolve. We should add examples of women success stories—entrepreneurs, engineers, doctors—in school textbooks to change perceptions from an early age." This underscores the broader need for visibility and leadership representation, ensuring that women not only enter the digital economy but thrive within it.

4. Attraction and Retention Strategies

Merit-based hiring approaches are playing a key role in fostering gender diversity in Morocco's digital workforce. One employer emphasised this commitment, stating, "Our hiring

strategy is competence-based rather than gender-focused. We recruit those who are most capable, regardless of gender."

Yet even with some evidence of women's increased participation in the labour market, retention remains a challenge. One solution which has emerged is flexible work arrangements, which have proven essential for women balancing professional and family responsibilities. As one entrepreneur noted, "as a mother and business owner, the flexible work setup here allows me to manage both roles effectively."

5. Recommendations and Best Practices

Efforts to integrate women into Morocco's digital economy must address structural challenges in education, employment, entrepreneurship, and financial inclusion while ensuring policies are adaptable to cultural and socio-economic constraints.

Digital Skills Training should be embedded into national curricula, with an emphasis on practical application and gender-responsive models. To enhance the impact of digital training for women, programmes should integrate gender-responsive models that include flexible learning formats (e.g., hybrid models, evening classes, childcare support) to accommodate women's responsibilities. Additionally, embedding soft skills like leadership and negotiation within training curricula can improve women's career prospects. Public-private partnerships should also be strengthened to create structured employment pathways that connect women to digital job opportunities post-training.

Schools and training institutions should develop partnerships with the private sector to align educational programmes with job market needs. Expanding women-focused digital bootcamps will help bridge the gap for those who did not pursue STEM degrees, enabling career transitions into high-growth sectors like IT, e-commerce, and digital marketing.

Employment Accessibility for Women in digital sectors can be improved by promoting hybrid and remote work models. While urban women benefit from digital job opportunities, those in rural areas face infrastructure and culture around their physical mobility which constrains their ability to access digital jobs as well as digitally enabled jobs. Expanding internet coverage, particularly under the Digital Morocco 2030 strategy, helps to reduce infrastructure-related discrepancies between women residing in urban and rural areas. However, these infrastructure improvements should go hand in hand with localised digital literacy programmes to ensure women in rural areas develop the technical and soft skills to capitalise on increased employment opportunities offered by expanding broadband access. Employers should adopt inclusive hiring practices by implementing bias-free recruitment processes, offering leadership development programmes for women, and ensuring workplace policies that support gender diversity. Research shows that businesses with diverse leadership teams experience stronger innovation, better financial performance, and improved employee retention—making gender diversity not just an ethical imperative but a strategic advantage[139].

Policymakers should prioritise integrating digital skills into national curricula and expanding affordable broadband infrastructure, particularly in rural areas. programmes like INTELAKA and FORSA need to be scaled to reach more women entrepreneurs, while advocacy efforts should focus on shifting cultural norms to support women's financial independence and digital literacy[140]. By fostering inclusive policies and programmes, Morocco can unlock the full

potential of its female workforce, positioning women not only as participants but as leaders in the country's evolving digital economy.

Women Entrepreneurs continue to struggle with access to funding and business growth opportunities. The expansion of microfinance tailored for women-led businesses is crucial in helping entrepreneurs move beyond subsistence-level enterprises into scalable businesses. This is particularly relevant for digitising microenterprises, where women entrepreneurs can leverage e-commerce platforms, sales and marketing tools, and supply chain solutions to foster job creation and economic opportunities. Simplifying access to financial services, particularly digital banking and mobile payment solutions, would also enable more women to participate in platforms for offline work, such as transportation, logistics, and home services, by connecting them with clients through job tech platforms. Finally, initiatives that support women in building online businesses, including training on digital marketing and e-commerce strategies, are essential for increasing participation in digital skill building and platforms for ICT/online work, where freelancing, microtasks, and creative digital roles provide flexibility and remote work opportunities.

Addressing socio-cultural barriers remains key to ensuring long-term retention and advancement for women in digital careers. Women are often funnelled into lower-tier roles with limited career mobility. Expanding mentorship networks and leadership development programmes will create pathways for career progression. Representation matters and promoting visibility for successful women in tech and entrepreneurship will challenge entrenched gender biases.

[139] Al Arkoubi, K., & Tahari, F. (n.d.) (2023). Bridging the gender gap in Morocco's corporate boardrooms. *Virtus Interpress*. Retrieved from https://virtusinterpress.org/IMG/pdf/nosrcgp1.pdf

[140] Sipos, X. Z. (2021). *Evaluating the impact of COVID-19 on women in Morocco and Tunisia*. *Hungarian Journal of African Studies*, *15*(4), 17–36. Retrieved from https://www.researchgate.net/publication/358099957_Evaluating_the_impact_of_COVID-19_on_women_in_Morocco_and_Tunisia

6. Recommendations

Based on the key findings, these recommendations aim to provide actionable steps for policymakers, employers, training providers, and ecosystem actors to improve access, inclusivity, and long-term sustainability for women in digitally enabled jobs in the MENA region.

1. Education and Career Pathways

Align Digital Curricula with Market Needs

- Universities and technical institutes should collaborate with the private sector to ensure curricula reflect current and emerging digital job demands. This includes integrating digital marketing, data analytics, cybersecurity, and AI-related skills into higher education.
- Foster industry-academia partnerships where companies contribute to curriculum design, ensuring students graduate with job-ready skills.

Encourage Early Exposure to Digital Skills

- Introduce digital education at the secondary school level, particularly in all-girls schools, to normalise technology careers for young women.
- Expand initiatives like coding competitions, robotics clubs, and entrepreneurship hackathons, especially in rural and underserved regions, to expose girls to digital career opportunities early on.

2. Job Readiness and Digital Skilling

Expand Access to Digital Training programmes for Women

- Training centres and digital bootcamps should increase accessibility through hybrid learning models, providing both online and in-person options to accommodate

women with mobility and caregiving responsibilities and thus also increasing their customer base. Additionally, creating safe learning environments is crucial, particularly in rural areas where societal norms may discourage women from participating in mixed-gender settings. Bringing in female trainers and launching women-only cohorts can help foster a more inclusive and supportive atmosphere, encouraging greater participation and retention in digital skilling programmes.
- Offer financial incentives, such as scholarships and stipends, for women in low-income or rural areas to join digital skilling programmes.

Improve the Gender Responsiveness of Digital Skilling Outreach

- Design inclusive marketing and outreach materials to explicitly target women, using gender-inclusive language and visuals in job advertisements and training promotions.
- Encourage employers and training providers to use neutral or female-friendly terminology to remove subconscious bias in application processes.

Develop Career Transition and Re-Skilling Pathways

- Introduce intensive bootcamps and upskilling programmes to help women transition into digital careers from non-tech fields.
- Encourage micro-credentialing and stackable certification models that allow women to build skills gradually without long-term time or financial commitment.

3. Workplace Culture and Retention

Promote Flexible and Inclusive Work Policies

- Employers should embrace flexible work arrangements, including hybrid models and results-based performance evaluations, to support women balancing work and family responsibilities.
- Companies and training centres should adopt comprehensive gender-sensitive policies, including sexual harassment prevention measures, safeguarding protocols,

and unconscious bias training, creating a safe and inclusive environment for training and professional development.

4. Women in Leadership and Entrepreneurship

Increase Visibility of Women in Digital Leadership

- Companies and organisations should actively promote women into leadership roles, thus creating female role models to encourage other women within the field or interested in entering the sector. However, as noted by some of the interviewees, some men may find it difficult to accept women in leadership positions. Therefore, it is essential to accompany this effort with gender awareness training, fostering an inclusive workplace culture that supports and respects female leadership, to help ensure that women in these roles can effectively perform and thrive.

Improve Women's Access to Funding for Digital Entrepreneurship

- Financial institutions should create tailored funding mechanisms, such as grants, loans, and investment funds specifically targeting female entrepreneurs in digital sectors.

Strengthen Networks and Support Systems for Women in Tech

- Private sector actors should expand professional networks and peer-learning platforms where women in tech and digital entrepreneurship can connect, share experiences, and collaborate, thus contributing to greater senses of safety and support and resulting in increased loyalty and retention.

5. Post-Maternity Career Reintegration

Develop Returnship and Upskilling Programmes for Women Re-Entering the Workforce

- Companies must introduce structured returnship programmes that offer short-term employment with training components to help women refresh their skills and regain confidence after career breaks.
- Companies and digital skilling centres should tailor digital upskilling opportunities to women returning to work, particularly in fast-evolving fields like AI and cloud computing.

Reduce the Career Penalty of Maternity Leave in Tech

- Companies should implement workplace policies that ensure career breaks do not negatively impact promotion trajectories.
- Introduce slow reintegration models, such as part-time re-entry roles or project-based work, allowing women to ease back into full-time positions.

Foster Workplace Cultures That Support Caregivers

- Encourage organisations to provide on-site childcare services or childcare stipends for working mothers.
- Advocate for stronger maternity and paternity leave policies to create a more equitable work environment. Companies should ensure that men also take parental leave, reducing the burden on women.
- Develop phased return-to-work programmes that allow women to reintegrate gradually after maternity leave through part-time work and re-skilling opportunities, as well as after paternity leaves.

8. Annex 1

8.1. Sampling Approach

The sampling process was conducted in collaboration with CFYE country managers to ensure diverse representation. Implementing partners (IPs) were selected based on their support for different types of digitally enabled jobs, ensuring coverage of the CFYE's four modules. Key criteria for selecting IPs included:

- Operational experience to facilitate data collection and beneficiary engagement.
- Representation of varied digitally enabled job categories across the two digital job types.
- Capacity to host focus group discussions (FGDs) and site visits during the research timeline.

Participants for FGDs were purposively sampled to include 6–8 women representing diverse digitally-enabled job roles, ensuring insights into their experiences across job categories.

8.2 Field Data Collection

Data collection was coordinated with IPs in the four target countries each country to ensure effective planning and execution. The process involved close collaboration with CFYE country managers in November and December 2024. to introduce the research objectives, schedule interviews and FGDs, and ensure the availability of participants.

The data collection timeline spanned 6 weeks, from November 4th, 2024, to December 15, 2024, with field visits conducted in the following sequence:

- **Tunisia**: November 4–19, 2024
- **Egypt**: November 18–29, 2024
- **Morocco**: November 25 – 29, 2024
- **Jordan**: December 7–14, 2024

The data collection process included:

1. **Coordination with CFYE Country Managers and IPs**: The research team worked with country managers and IPs to schedule **3** Key Informant Interviews (KIIs) and **2** Focus Group Discussions (FGDs) in each country.
2. **Logistical Preparation**: Ensuring all logistical arrangements, such as participant availability and site access, were confirmed prior to field visits, with the exception of Morocco.
3. **Challenges and Adjustments**: While the majority of IPs were able to facilitate data collection, some were unavailable during the designated timelines, and others weren't able to facilitate an FGD with their beneficiaries. This required adaptations, such as conducting **6** virtual KIIs or rescheduling sessions. In total:

   Tunisia: Conducted 3 Key Informant Interviews (KIIs) and 2 Focus Group Discussions (FGDs)
   - FGDs: Engaged 13 female beneficiaries and trainers (ages 19–32) from two digital skilling training centres, divided into two groups of 6 and 7 participants.
   - KIIs: Interviewed representatives from two digital skilling training centres and a Tunisian digital platform that connects parents with qualified babysitters and caregivers, facilitating offline job placements.

   Egypt: Conducted 4 KIIs and 2 FGDs.
   - FGDs: Engaged six participants (ages 22–28) from a digital skilling-building company and five participants (ages 23–30) from a technology group specialising in global tech solutions and gender-inclusive recruitment.
   - KIIs: Interviewed representatives from companies specialising in digital skilling, tech solutions, and online work platforms.

   Jordan: Conducted 3 KIIs and 2 FGDs.
   - FGDs: Engaged two groups of seven participants (ages 23–31 and 23–25) from a global Business Process Outsourcing (BPO) firm focused on youth skill development and a cybersecurity company specialising in sector advancements.
   - KIIs: Interviewed representatives from a leadership council under royal patronage within an ICT association, a cybersecurity company, and a BPO firm integrating Meaningful Youth Participation (MYP) into its business strategy.

   Morocco: Conducted 4 KIIs and 1 FGD.
   - FGD: Engaged three women entrepreneurs in e-commerce, biocosmetics, food services, and artisan crafts.
   - KIIs: Interviewed a representative from a digital upskilling training and incubator center, an investment expert discussing funding challenges and investor bias, and an entrepreneurship ecosystem

expert addressing market access limitations and the evolving role of women in business.

Despite the logistical challenges, the research team ensured comprehensive data collection across the four countries, capturing diverse insights into digitally enabled jobs and women's participation in the digital economy.

8.3 Coding and Data Analysis

The analysis followed a structured approach:

1. **Coding Framework**: Data was organized under predefined themes and subthemes, including:

Main Theme	Subthemes	Generalised Codes/Nodes
1. Job Creation and Sustainability	1.1 Contribution to Digital Employment	- Role in enabling women's participation in digitally enabled jobs - Categories of roles supported
	1.2 Barriers to Access	- Socio-cultural challenges - Financial constraints - Logistical or systemic barriers
	1.3 Overcoming Barriers	- Strategies to address access issues (e.g., subsidies, outreach) - Engagement with underserved groups
	1.4 Retention Challenges and Solutions	- Factors influencing retention (e.g., workplace environment, support structures) - Solutions implemented
2. Digital Skilling and Gender Dynamics	2.1 Effectiveness of Skill building programmes	- Success in preparing women for digital roles - Feedback on the relevance of skills taught
	2.2 Market Alignment	- Alignment of training content with job market needs - collaboration with external partners
	2.3 Gender-Specific Dynamics	- Inclusivity in training or work environments - Challenges women face in skill acquisition

	2.4 Best Practices	- Effective models for skilling and retention - Gender-inclusive practices or innovations
3. Ecosystem Support and Opportunities	3.1 Current Support Mechanisms	- Contributions by NGOs, government, private sector - Available partnerships and collaborations
	3.2 Gaps in Support	- Unmet needs (e.g., financial aid, infrastructure, policy gaps) - Areas lacking collaboration
	3.3 Collaboration Opportunities	- New potential partnerships - Opportunities to scale ecosystem support
	3.4 External Influences	- Broader technological trends (e.g., AI, automation) - Economic and social context impacts
4. Attraction and Retention Strategies	4.1 Attracting Women	- Recruitment strategies (e.g., outreach, awareness campaigns) - Inclusive messaging
	4.2 Retaining Women	- Support systems for retention (e.g., childcare, flexible hours) - Strategies to address retention issues
	4.3 Inclusive Work Practices	- Gender-inclusive policies and practices - Company culture and leadership focus
5. Recommendations and Best Practices	5.1 Recommendations for Stakeholders	- Actionable strategies for employers, trainers, and ecosystem actors
	5.2 Policy and programme Priorities	- Suggested policy changes - Focus areas for future programmes
	5.3 Future Trends and Opportunities	- Growth areas in digitally enabled jobs - Anticipated challenges and strategies to address them

2. **Data Coding Process**: Transcriptions from KIIs, FGDs, and site visits were coded to identify patterns and themes systematically.

3. **Triangulation with Desk Review**: Findings from primary data were cross-referenced with desk review insights to validate observations and identify regional trends

8.4 Analysis

The analysis synthesised data across the identified themes to uncover commonalities and variations among the four countries. This included:

- Highlighting barriers and opportunities for women in digitally enabled jobs.
- Identifying effective strategies and best practices implemented by IPs.
- Exploring the broader implications of digitally enabled jobs for women's empowerment in the MENA region.

By integrating findings from multiple sources, the study provided actionable insights for CFYE and its partners, contributing to a deeper understanding of gender-inclusive digital employment.