



Y-LEAD

Creating Civic Spaces for Active Citizenship

**Promoting Young Women's Opportunities in
Egypt's ICT Sector**

Policy Paper

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Abstract

Ensuring the social, economic and political inclusion of the broadest array of social groups and classes, particularly women is a major challenge that Egypt faces. This policy paper sheds light on women's economic empowerment, with particular focus on the employment of young women in the Information and Communications Technology (ICT) sector. There has been a recent increase in the percentage of female graduates in the fields of ICT, however, the percentage of job opportunities for women is still relatively limited. The paper analyses the causes of the meagre opportunities available for women in this key sector and proposes policy alternatives to bridge this gap and increase women's employment in the ICT sector. Three alternatives are proposed: the first alternative focuses on boosting the economic growth of the technological sector by strengthening its infrastructure. The second alternative endorses the development of new capacity building programs to support women's self-development, encourage continuous education, support women owned businesses, enhance their skills, and thereby promote their opportunities in the ICT sector. The third alternative focuses on creating networks and partnerships among different stakeholders and organizations that support women in this field. Following an analysis of the three alternatives, the second alternative was chosen due to its sustainable nature and was deemed the best solution to tackle the ongoing issue in order to economically empower young women in ICT.

Rationale

One of Egypt's major challenges is ensuring the social, economic and political inclusion of the broadest array of social groups and classes, especially women. Egypt has been committed to attaining the United Nations' (UN) Sustainable Development Goals (SDGs), in particular Goal (5), which focuses on gender equality, supporting women's empowerment and participation in the labour market, as well as their inclusion in the public sphere through Egypt's Vision 2030. Yet, the existent prevailing climate of uncertainty makes gender equality unlikely to be realized soon. The Global Gender Gap Index (GGGI) for 2020 indicates that Egypt ranked 134 out of 153 countries. Although Egypt has faced vast improvements in women's health and education attainment, the gap in realizing economic participation and political empowerment remains vast.

With respect to economic participation, only 44% of the gap has been closed, which signifies that there is still a 56% gap. Moreover, the political empowerment gap is at a bleak 87%. Hence, there is a need for Egypt to take action towards closing the gender gaps in order to prosper as a country that is free of gender disparities.

In terms of economic empowerment, the Egyptian government is moving towards further empowering women economically as the "National Strategy for the Empowerment of Egyptian Women 2030" is being implemented in alignment with the UN SDGs and Egypt's "Sustainable Development Strategy – Vision 2030". The fact that women are less present than men in the labour market negatively contributes to the existing gap in economic participation, particularly in the ICT industry. Women's roles and positions in the ICT sector should thereby be analysed not only through understanding its nature but also by reviewing the current governmental policies that try to increase women's opportunities throughout this sector.

Nature of ICT Sector

The ICT sector requires high operating skills and is considered to be one of the most important pillars of an economy. Over the last two decades, this sector has occupied a growing position in the economies of advanced industrial countries. As these countries' transition towards digital technology, other communities were encouraged to develop their ICT sectors in order to expand their technology market. This expansion has the potential to provide local, regional and global employment opportunities and thereby boost women's economic participation.

Egypt's ICT sector is one of the most promising sectors in the economy, this is due to the support of the government easing the digital transformation process in the hope of making Egypt an ICT hub. Gender gaps in digital literacy is almost non-existent among youth below 25 years of age and investments in women entrepreneurship in ICT is encouraged as high percentages of females are using computers and the internet in the private sectors (World Bank, 2018a, p. 25). Additionally, public and private agencies have taken stimulating measures in this respect by encouraging individuals to establish start-ups in ICT's various domains. The following table illustrates the indicators and contribution of the ICT sector on the Egyptian Economy from 2015 to 2019:

Table 1: ICT sector indicators (%)

| Year | Growth rate | Contribution to GDP | Contribution to total investments | ICT sector employment |
|------|-------------|---------------------|-----------------------------------|-----------------------|
| 2015 | 3.9 | 4.7 | 5.6 | 0.8 |
| 2016 | 8.4 | 11.0 | 6.0 | - |
| 2017 | 12.5 | 10.5 | 3.1 | - |
| 2018 | 9.1 | 3.5 | 12.5 | 1.0 |
| 2019 | 16.6 | 4.0 | 24.3 | 1.5 |

Source: *Annual reports (2015-2019) of the Ministry of Planning, Investment and Administrative Reform.*

The table above illustrates the increase in growth for Egypt's ICT sector as well as its contribution to the Egyptian economy in 2019, which doubled reaching a growth rate of 16.6%. Moreover, the number of companies working in this sector have also increased by 21.9%, reaching 1199 companies compared to 986 companies in 2018 (Egypt ICT Trust Fund, A, 2019, 2).

Government Policies and Programs in ICT

The Ministry of Communications and Information Technology (MCIT) is the regulatory body of the ICT sector. Another body is the Information Technology Industry Development Agency (ITIDA) responsible for the development and improvement of Egypt's global ranking in ICT. There are other major government agencies such as: The National Telecommunications Regulatory Authority; Telecom Egypt; Egypt Post; the Information Technology Institute; the Technology Development Fund (TDF); the Information Technology Fund; and the Centre for Documentation of Cultural and Natural Heritage. These entities are concerned with Egypt's role and functionality in the ICT sector. Additionally, the Supreme Council for the Digital Society was established by the Presidential Decree No. 501 of 2017, which aims to develop strategies and policies related to the digital transformation system in order to eventually maximize the benefits of ICT in empowering the state's different development sectors and combating corruption. Digital transformation has thereby been incorporated into the administrative reform plans for the development of information infrastructure and enhancement of government services related to ICT (Egypt ICT Trust Fund, 2017).

The Egyptian government is leading a number of initiatives to tend to the needs and requirements of the labour market by providing high value technology trainings. In addition,

there is a number of Egyptian and international organizations that support the ICT sector (Egypt's Cabinet Office, 2020).

Education vs. Employment

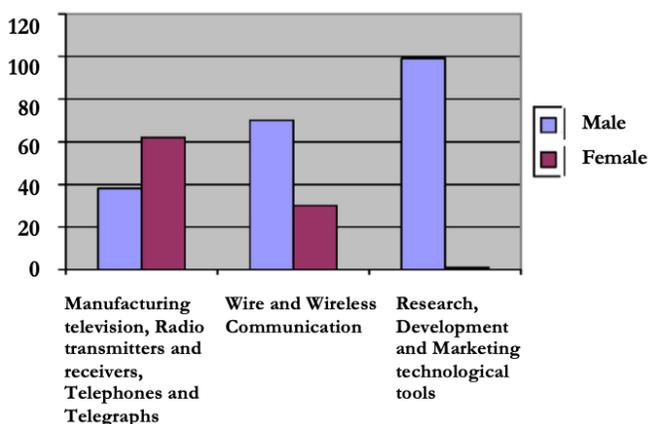
Ameliorating women's access to education contributes to raising one's income level. Yet, in order to ensure successful results employment opportunities should also be available to serve for the educational boost. Even though Egyptian Universities and institutes have received a surge in the female students in the fields of Information Technology (IT), science, mathematics and engineering, the labour market does not tend to such an increase and thus decreases the chance of young women being employed. As such, female enrolment increased in educational bodies for various scientific disciplines such as computer science, computer engineering, IT, electronic and communications engineering, and social computing; yet, women's percentage in the ICT sector's managerial and leadership positions remain low (World Bank, 2018). Data reveals that the percentage of females that specialize in computer science in Upper Egyptian universities are on the rise (World Bank, 2018a). For example, the percentage of enrolled female students in the Faculty of Computers and Information at the University of Assiut has increased from 31% in 2015 to 40% in 2018 (Ministry of Higher Education Scientific Research, 2019). This rapid growth is thereby an important source of employment for the ICT industry as it employs and is reliant on a relatively educated workforce.

Leadership positions in the Faculty of Computers and Information have been including women: six women are now the deans of such faculties for 11 public universities. According to data published in 2019 by the, women also represent 50% of the members of the Faculty of Computers and Information at the University of Cairo (Ministry of Higher Education Scientific Research, 2019). In addition, three government organizations are being run by powerful women; the Information Technology Industry Development Agency (ITIDA), the Information Technology Institute (ITI) and the National Telecommunication Institute (NTI) (Othman, 2019, 10-12). Despite the ongoing achievements, women in such positions still receive backlash. Challenges emerge as employee resist being managed by women and in some cases, even refuse to interact with women in general when originating from a relatively conservative background. As such, there exists a lack of women owned businesses and start-ups in this field.

For instance, in several telecommunications companies', women who were promoted to managerial positions, that were usually reserved for men, faced visible discrimination prior to their selection. Hence, even though the women were as qualified as the men, the companies preferred to hire men instead. Ergo, the women were thereby not chosen in the first-place due to the presence of gender discrimination. The women were eventually able to get promoted because the older cadre of leaders retired and a younger cadre who are more open minded, aware and sensitive to inequalities between women and men took over. Moreover, women voiced out their struggles and emphasized the discriminatory nature of their work environment.

The following table shows women's level of participation in different ICT activities:

Figure 2: Women's participation percentage in some sub-fields in the ICT sector



Source: Mujahid, Abeer Mahmoud, 2017, 440.

It is clear from the previous figure that women's opportunities are largely concentrated in low-tech sectors with 62% mainly manufacturing televisions, radio transmitters, radio receivers, telephones and telegraphs. Women's employment in communications reached 30%; however, their employment rate is at its lowest of 1% in Research and Development (R&D) and technology equipment from 2000 to 2014.

Finding a job in ICT is the first obstacles that young women face when trying to enter the labour market associated with this field. They often rely on social networks such as family friends and acquaintances to find a job as connections are a means by which women are able to secure a position. Hence, women rarely rely on web searches, social media and

announced job advertisements to obtain employment opportunities.

It is evident that there is a trend to increase the inclusion of women in leadership positions throughout the ICT sector in order to bridge the gap between education and employment. Yet, women's participation percentage is still relatively low in comparison to that of men. Since women suffer from second generation bias as well as negative bias when applying for job opportunities; thus, creating barriers at the job entry level. The belief that women are less competent than men perpetuates through the ICT sector due to strong cultural norms.

Based on the presented information, it can be concluded that women's low participation in the ICT sector is a result of:

- Foreign enterprises working in ICT being biased against hiring females compared to local enterprises. So, gender discrimination is present in the workplace.
- Women are less likely to be managers and specialists in the ICT industry due to second generation bias and gender bias.
- Women's underrepresentation in the decision-making and policymaking process as well as their low participation in the design and production of technologies, lead to the creation of irresponsible technologies that do not tend to women's needs.
- Women are more likely to fill temporary jobs in low-tech domains and thereby lack the elements of stability and job security (The National Council for Women, 2017).

Women's participation rates in ICT are on the rise. However, several social and administrative factors hinder young women's access to appropriate job opportunities in the ICT industry. Hence, there is a need to promote the available opportunities for young women and ensure that they get a fair chance to expose their capacities. Gender gaps in ICT employment should decrease such as the low existent gender gap in digital literacy.

This paper states that despite the growing efforts and initiatives of various government and non-government agencies supporting women's participation in Egypt's ICT sector, their participation rates and employment opportunities in the technology labour market remain low. Throughout the next section of this paper, three alternatives

are being proposed and analysed as a means to present different measures that could be taken to address the low participation and employment rates of young women in the technology labour market.

Alternatives

A systems analysis approach has been used in order to develop alternatives that would stimulate women's opportunities in the ICT sector. These alternatives stem from the establishment of different points of intervention. Each alternative thereby presents a different path that addresses the lack of opportunities for women in the ICT sector and tries to present different ways to promote and increase these opportunities for young women. They have the end goal of being presented to decision makers and key stakeholders in Egypt as a means to ensure change and the economic empowerment of women in the ICT sector.

Three possible alternatives are presented to tackle the lack of women's inclusion in ICT.

The **first alternative** deals with improving the infrastructure of the ICT sector through providing equipment and advanced technologies in cooperation between the Egyptian government, foreign business, national business and different stakeholders.

The **second alternative** focuses on encouraging contiguous education and stimulating entrepreneurial opportunities for young women by increasing their interest in the ICT sector. Hence, the state is to support post-graduate centres to encourage the involvement of women in ICT through advertising, financial support and fair training course prices. Additionally, the involvement of women in small and medium-sized enterprises (SMEs) is encouraged as continuous education is offered and social norms are addressed. Women can thereby be included in Research and Development as their qualifications rise. Relevant government agencies would be encouraged to provide financial and non-financial assistance for women in the short term and take advantage of the information centres that are currently present to conduct higher-level training curriculums for ICT courses. This alternative thereby aims to create a qualified cadre of women ready to join and lead the technological labour market.

The **third alternative** urges for networking and the creation of partnerships between institutions supporting women in the field of technology (government, private sector and civil society). Hence, cooperation protocols could be signed with

specialized companies in order to accommodate female trainees and graduates in order to provide them with potential internships and job opportunities.

The information above proposes different alternatives that could be undertaken in order to enhance women's limited opportunities in Egypt's ICT sector. Additionally, there are various actions along with the implementation processes of the alternatives in order to achieve certain objectives. These interventions should be executed so as to promote women's opportunities and inclusion throughout this sector.

Analysis of the Alternatives

The following criteria was used to analyse and evaluate the alternatives: relevance, continuity, flexibility, social acceptance, political acceptance, effectiveness, efficiency, expected outcomes and applicability.

The first alternative tackles the issue at hand and tends to interest and needs of women in the ICT sector. It is possible to sustain this policy and its interventions, due to its formal inclination to make Egypt an IT hub. As such, women in return would be able to absorb the ongoing technological developments and updates. Other stakeholders, such as the government, consent to such an alternative in comparison to the others. Enhancing the infrastructure has great potential but is dependent on several factors. It is heavily reliant on successful cooperation between the Egyptian government, foreign business, national businesses and different stakeholders. Even though it could be sustained, it is very expensive to keep up with the ongoing developments in this sector. As Egypt tries to change the infrastructure and cope with the new technologies that the ICT sector has to offer, new advancements will be created. Thus, creating a never-ending spiral, that Egypt might not be ready to uptake.

The second alternative attentively addresses women's interests and needs. Moreover, this alternative deals with establishing the notion of 'continuous learning' throughout this sector. Thus, Egyptian women can benefit from these training methods by absorbing and implementing the knowledge learnt. In addition, the government has supported academic interventions of this sort in comparison to the other alternatives as their interests are entirely aligned with the application of this alternative.

In cases of emergencies and force majeure such as the current outbreak of the coronavirus, this alternative also gives women the ability to undertake courses and promote women led SMEs through various online platforms. Hence,

protecting women in times where the economy tumbles. It is also the most appropriate intervention that would support and promote the participation of young Egyptian women in the technology sector by enhancing their skills. The benefits are not just temporary as these skills will be carried down from one generation to the other. So, it will not only ameliorate the skills of women but also aid in battling social norms around the inclusion of women in ICT.

The application of the third alternative requires sustainable strategies in order to overcome several obstacles that will emerge from networking and coordinating between different stakeholders. Additionally, the distinct organizations capacity to keep up with ongoing technological developments should be addressed at all times. Hence, making it very difficult to monitor both the implementation of the alternative and the supporting stakeholders' agendas.

Chosen Alternative

To successfully intervene and ensure a boost in women's participation in the ICT sector, it is recommended to implement the **second alternative** which endorses continuous education and supports women led SMEs in the ICT industry. These thereby support women's self-development, enhance their skills and promote their opportunities in ICT. The following alternative has promising effects on the economic sector as it would create a strong calibre of young women who are equipped with technological skills and prepared for the labour market.

This alternative is also in line with Egypt's governmental actions in achieving digital transformation (2030 Vision). Additionally, international trends for sustainable development ensure the support and adoption of this alternative as it directly transfers to development in the long run. Therefore, for the adoption of this alternative, it is necessary to focus on both the supply and demand of the labour market in the ICT sector. The provision of advanced training that matches the quality and skills of the emerging jobs in the technological market is of vital importance to ensure the creation of a strong calibre of young women in ICT. With the help of subsidized postgraduate courses in ICT the calibre would be sustained. In order to promote women's participation in ICT, the women must also overcome the apparent social barrier present in Egypt. This is tackled as women owned business, senior positions and SMEs are addressed. Hence, leading to change in both community and institutional perceptions around the employment of women. A favourable culture and

environment that supports the provision of job opportunities for young women in this sector is thereby created. So, as women become more skilful and the youth rise, these social barriers will no longer be an obstacle.

Recommendations

In order to thoroughly execute the second alternative, the following points should be considered by decision-makers:

- The Ministry of Communications and Information Technology should encourage companies working in this sector to provide employment opportunities for young women, and that they create gender-responsive policies.
- NGOs and organizations working in the domain of training young women in technological skills should be endorsed. Women's initiatives in the ICT sector should be encouraged and supported.
- Local communities should be educated on the importance of women's employment and economic participation in this sector.
- The private sector should be encouraged to provide training scholarships in schools and universities.
- Training opportunities in private companies for female graduates should be provided in order to gradually promote their employment opportunities.
- Women should be equipped with the proper skills needed to build and manage small and medium technology projects.
- Female academics and researchers should develop more research content and designs related to the ICT sector.
- Collaborations with technology companies to provide SMEs and the self-employed with discounted access to internet and technological tools is encouraged.
- Encourage companies and different stakeholders to include women in more advanced topics under ICT such as, Research and Development (R&D).
- Use the media to attract women and normalize working in the ICT sector in order to dismantle gender centred social norms.

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