“Women’s empowerment through inclusive and sustainable industrial development in the MENA region”

Desk review study on: Women Access to technology in Algeria, Morocco, Tunisia, Egypt, Jordan, Palestine and Lebanon

June 2018
Executive summary

Between February 2015 and May 2018, UNIDO has implemented the project “Promoting Women Empowerment (PWE) for Inclusive and Sustainable Industrial Development in Middle East and North Africa (MENA) region” with the objective to support women economic empowerment through entrepreneurship development. The project, funded by the Italian Government and labelled by the Union for the Mediterranean, has relied on strong partnerships with the Ministries of Industries and women’s business associations of the covered countries: Algeria, Egypt, Jordan, Lebanon, Morocco, Palestine, Tunisia.

The relevance of designing a second phase to the project, building upon the lessons learned and challenges identified during the first phase, was highlighted by the Ministries of Industry and Women’s Business Associations at the Steering Committees held in Amman (July 2016) and Rome (April 2017) and the independent evaluation (2017).

The PWE project’s second phase, has been designed by UNIDO, UN Women and FAO and will be launched during second quarter 2018. The project will be implemented in the same countries and will scale up and the expand the activities carried out during phase I. Among the objectives set, it is foreseen that the project will contribute to the reduction of the digital gender gap to boost women’s economic participation.

In order to identify the country-specific needs to reduce the digital gender gap and to track progress in bridging this gap a desk review baseline study on the digital gender divide in seven target countries, has been carried out. The following report is the results of the desk review study and discusses access to and use of technology in the MENA region, in seven countries: Algeria, Morocco, Tunisia, Egypt, Jordan, Palestine and Lebanon. The study explores the current context of women’s access to technology, including mobile, tablets, computers and internet, for entrepreneurship and income generation, and identifies currently available data and indicators on a national level. The study is intended to inform the design and baseline study for the second phase of UNIDO’s women’s entrepreneurship programme in the region, which will focus on the enhancement of digital access, affordability and skills for female business owners.

The study found that there is a lack of regional, comparable gender disaggregated data relating to technology access and use. Available global data is used to indicate (a) the overall gender gap and (b) access to technology across the population. Individual country studies are used to understand gendered differences in access to technology in more depth.

Women and girls in the MENA region have less access to education, economic participation and income than men. Globally, the region is the furthest from achieving gender parity. Across the study countries, women have lower literacy levels, though the gap is small in Jordan and Lebanon, while the largest gap exists in Morocco. Women are more likely to be unemployed than men, except in Morocco, where rates are similar. The highest rate of female unemployment is in Egypt, at 24.2%, compared to 9.4% of men. Access to formal financial accounts varies significantly by country, but in all seven countries, men have better access than women.

In terms of technology access, mobile subscriptions are high in all countries, particularly Jordan, where there is a subscription rate of 196%. This is indicative, however, of a context that requires mobile users to own multiple SIM cards in order to access different networks. It is therefore unreliable in indicating the spread of technology access. For example, Lebanon has a lower mobile subscription rate of 96%, but the highest percentage of individual internet

2 Gender gap data is unavailable for Palestine.
users of the seven countries, at 76%, indicating widespread access to internet, compared to 62% in Jordan. Egypt and Algeria have the lowest rates of individual internet users, at 39% and 43% respectively. Lebanon also has the highest percentage of households with a personal computer and at-home internet access, at 81% and 68% respectively. These rates are significantly lower in Algeria, at 28% and 26% respectively, and Tunisia, at 33% and 29% respectively.

In almost all countries, women have less access to technology than men. However, the gender gap in mobile and internet use varies by country and study. For example, men and women were found to have similar levels of mobile phone ownership and mobile internet use in Egypt (53% of women and 54% of men own a phone), and similar levels of mobile phone use in Tunisia (79% of women and 82% of men use a phone). Conversely, gender gaps are reported in Jordan, where 35% of women and 66% of men were found to use mobile internet, Palestine, where 48% of women and 60% of men were found to use the internet, and Morocco, where 51% of women and 63% of men were found to use the internet.

In addition, across all countries, there are significant differences identified between different groups of people and women, relating to the rural-urban divide, age, education levels and wealth. For those living in urban areas, mobile phone use is more widespread, and mobile phones are a primary means to getting online. However, women in rural regions tend to have lower education and literacy levels, and are less likely to possess digital literacy and skills, which limits their access. Women in the MENA region are also less likely to have autonomy over the cash they are able to spend on technology, and their activity may be restricted and monitored by family. Concerns about security and harassment online are also reported to be barriers for women in Egypt and Jordan.

Based on the findings in this report, the following four recommendations are made for the design and baseline study for the UNIDO programme:

- Data on women’s access to technology is drawn from multiple sources and studies, and there is a lack of comparable, recent data across the seven countries. It is recommended that at baseline, data is collected on women’s access to and use of mobile phones and computers in the regions in which the programme will be implemented.

- There is a lack of data on women’s ICT literacy levels. While young, educated women in cities in the MENA region have often received some ICT education and are able to readily access computers and the internet, ICT literacy remains a barrier to technology access, in particular in rural areas. It is recommended that data collection includes tools to measure women’s ICT literacy and their specific needs, to establish a baseline in order to track progress, and facilitate programme design.

- The data provided in this report gives a broad, national level view. In order to drill into the specific aspects of women’s technology access and use the programme intends to address, it is recommended that specific indicators are identified, to track changes from baseline.

- Data indicates that in the MENA region, young educated women in urban areas generally have good access to increasing technology provision. However, greater gaps exist in rural areas. It is recommended that programme design addresses this by focussing on rural areas, with emphasis on training for women with low levels of education and limited digital literacy.
1. Introduction

1.1. Purpose of the study

The purpose of the study is to provide UNIDO with an initial review of the digital gender divide and women’s access to and use of technology in the MENA region, specifically Algeria, Morocco, Tunisia, Egypt, Jordan, Palestine and Lebanon. The study aims to enable the organisation to better understand the context of women’s access to technology, in order to facilitate the design and implementation of regional programmes aiming to enhance women’s entrepreneurship using technology, including improved digital literacy, use of financial software and access to online markets.

1.2. Methodological approach

The primary methodological approach for this desk-based analysis was a systematic review of relevant data published by international organisations. This included a range of reports and data from the World Bank, UNESCO, UN Women, GSMA and many others. The sources for each point of data are provided as footnotes throughout. The report was also informed by a review of programme documents that was conducted at the outset, and enhanced by the pre-existing sector knowledge of the research team.

1.3. Rationale and parameters of the study

This is a rapid and solely desk-based study conducted within a limited timeframe. It therefore serves as an initial reference point rather than a comprehensive assessment. Below are several noteworthy points to state at the outset to aid appropriate engagement with the report:

- The decision was made that it would be helpful to have a country external to the study to serve as a comparison where relevant. The country selected was Kenya, as a country with recent growth and development in ICT and technology access and where services such as mPesa\(^3\) have been developed. There are various references made to this country throughout the report.
- Much can be learned from a review of data from secondary sources. However, it has not been possible to verify the quality of the data collection and analysis methodologies for all the sources that are cited. If programme decisions are to be made on the basis of the review then it will be necessary to first conduct this quality verification.
- It is widely recognised that national level data often obscures significant local and regional disparities. It is the specific detail of the local context which will be valuable when making programme decisions. Similarly, the extent of gender disparity is often under-reported in official figures.
- There are significant data gaps on the topic of gender equality in access to and engagement with digital technologies. In addition, relevant indicators are often not fully comparable between different countries as they are reported in different ways.
- At points in the study non gender-specific indicators have been included in order to provide an understanding of the wider engagement with digital technologies within the society.

1.4. Structure of the report

The report begins with a brief summary of gender equality in the MENA region and overall comparison table of the main indicators (section 2). It then provides a country-specific analysis.

\(^3\) mPesa is a mobile banking app that was launched in Kenya in 2007 by Vodafone. The app enables users to deposit, withdraw and transfer money and make payments using a mobile phone.
for Egypt (section 3), Jordan (section 4), Palestine (section 5), Lebanon (section 6), Algeria (section 7), Morocco (section 8) and Tunisia (section 9).

Each country-specific analysis follows the same structure. They begin with a contextual review, then focus on the state of technology in education and training, followed by mobile phone access and use, and internet access and use.

2. Gender equality in the MENA region

The tables below detail comparative data for the seven countries in the MENA region, together with three non-study countries for comparison (Kenya, Germany and the UK).

Table 1. Gender gap comparison

<table>
<thead>
<tr>
<th>Country</th>
<th>WEF Gender Gap ranking (/144 countries)</th>
<th>WEF Gender Gap score</th>
<th>Literacy rate, women</th>
<th>Literacy rate, men</th>
<th>Unemployed adults, women</th>
<th>Unemployed adults, men</th>
<th>Women with formal financial account (2014)</th>
<th>Men with formal financial account (2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tunisia</td>
<td>117</td>
<td>0.651</td>
<td>72.2</td>
<td>86.1</td>
<td>22.2</td>
<td>12.5</td>
<td>20.5</td>
<td>27.3</td>
</tr>
<tr>
<td>Algeria</td>
<td>127</td>
<td>0.629</td>
<td>67.5</td>
<td>82.6</td>
<td>17.1</td>
<td>9.2</td>
<td>40.1</td>
<td>50.5</td>
</tr>
<tr>
<td>Egypt</td>
<td>134</td>
<td>0.608</td>
<td>67.2</td>
<td>82.6</td>
<td>24.2</td>
<td>9.4</td>
<td>9.2</td>
<td>13.7</td>
</tr>
<tr>
<td>Jordan</td>
<td>135</td>
<td>0.604</td>
<td>97.4</td>
<td>98.4</td>
<td>20.7</td>
<td>10.1</td>
<td>15.5</td>
<td>24.6</td>
</tr>
<tr>
<td>Morocco</td>
<td>136</td>
<td>0.598</td>
<td>59.1</td>
<td>80.4</td>
<td>10.3</td>
<td>9.5</td>
<td>26.7 (2011)</td>
<td>39.1 (2011)</td>
</tr>
<tr>
<td>Lebanon</td>
<td>137</td>
<td>0.596</td>
<td>88.1</td>
<td>94.3</td>
<td>10.4</td>
<td>5.0</td>
<td>32.9</td>
<td>46.9</td>
</tr>
<tr>
<td>Palestine</td>
<td>Gender gap data not available for Palestine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenya</td>
<td>76</td>
<td>0.694</td>
<td>74.0</td>
<td>83.8</td>
<td>12.2</td>
<td>12.1</td>
<td>51.9</td>
<td>58.9</td>
</tr>
<tr>
<td>Germany</td>
<td>12</td>
<td>0.778</td>
<td>99.0</td>
<td>99.0</td>
<td>3.7</td>
<td>4.4</td>
<td>99.4</td>
<td>98.0</td>
</tr>
<tr>
<td>UK</td>
<td>15</td>
<td>0.770</td>
<td>99.0</td>
<td>99.0</td>
<td>4.7</td>
<td>4.9</td>
<td>98.7</td>
<td>99.2</td>
</tr>
</tbody>
</table>

Using the WEF Gender Gap index, which scores countries on the basis of a broad set of indicators related to education, health, political participation and employment, Tunisia scores most highly for overall gender equality of the seven countries, while Lebanon is the lowest.

Women in Lebanon and Jordan have the highest literacy levels of the seven countries, and the smallest gap in comparison the men. The literacy gender gap in Morocco, however, is 21.3%,

5 Ibid
6 Ibid
7 Ibid
8 https://data.worldbank.org
9 Ibid
with women significantly behind. Gaps in literacy are also prevalent in Tunisia, Algeria and Egypt.

The largest gap in employment between women and men exists in Egypt, with a gap of 14.8%. Unemployment rates among women are high in Egypt, Tunisia and Jordan, whereas in Morocco less women are out of employment, and at a similar rate to men. Access to formal financial institutions varies significantly by country. For example, in Egypt both men and women have limited access and few have a formal account. In Morocco, while almost 40% of men have a formal account, just 27% of women have an account.

Table 2. Technology access comparison

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tunisia</td>
<td>-</td>
<td>126</td>
<td>5.7</td>
<td>51</td>
<td>46.2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Algeria</td>
<td>37</td>
<td>117</td>
<td>6.9</td>
<td>43</td>
<td>18.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Egypt</td>
<td>49</td>
<td>114</td>
<td>5.2</td>
<td>39</td>
<td>31.7</td>
<td>31.1</td>
<td>36.6</td>
</tr>
<tr>
<td>Jordan</td>
<td>-</td>
<td>196</td>
<td>5.8</td>
<td>62</td>
<td>44.0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Morocco</td>
<td>39</td>
<td>121</td>
<td>3.7</td>
<td>58</td>
<td>56.8</td>
<td>51.4</td>
<td>62.8</td>
</tr>
<tr>
<td>Lebanon</td>
<td>-</td>
<td>96</td>
<td>25.6</td>
<td>76</td>
<td>74.7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Palestine</td>
<td>-</td>
<td>77</td>
<td>6.9</td>
<td>61</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Kenya</td>
<td>42</td>
<td>81</td>
<td>0.3</td>
<td>26</td>
<td>43.4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Germany</td>
<td>19</td>
<td>115</td>
<td>38.1</td>
<td>90</td>
<td>86.2</td>
<td>85.5</td>
<td>89.7</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>12</td>
<td>122</td>
<td>39.2</td>
<td>95</td>
<td>91.6</td>
<td>90.4</td>
<td>93.6</td>
</tr>
</tbody>
</table>

There are significant differences between mobile cellular subscriptions in the seven countries. For example, Jordan has one of the highest subscription rates in the world, at 196%, compared to 77% in Palestine. Mobile cellular subscription rates are based on the number of SIM connections and therefore rates above 100% reflect ownership of multiple SIM cards per person. Ownership of multiple SIM cards is closely related to the nature of mobile service provision in different countries. Poor network coverage often means mobile owners require multiple SIM cards in order to get a connection in different locations. Different costs and

10 https://www.gsmaintelligence.com/research/?file=e4549aeda553ac832ff9126c7d6c0861&download
11 https://data.worldbank.org
12 Ibid
13 Ibid
16 Ibid
bundles among providers can also affect this, such as the cost of international calls and data. High subscription rates therefore do not necessarily indicate that the whole population has access to a mobile phone. It is therefore not possible to use this data to understand how many people own and use a phone, and this should not be used to make programmatic decisions. Across the MENA region as a whole, there were 360 million unique subscribers in 2016, and 639 million SIM connections\textsuperscript{17}.

Internet access is highest in Lebanon, where fixed broadband subscriptions are significantly higher than other countries in the MENA region. This indicates that mobile broadband is more often used to access the internet than fixed broadband in these countries. In Lebanon, 76\% of the population uses the internet, compared to 39\% in Egypt and 43\% in Algeria.

Subscribers in MENA are increasingly using mobile broadband services to access the internet due to the lack of fixed broadband infrastructure in the region\textsuperscript{18}. 3G coverage is expanding across the region, but delays in service rollout, political instability and affordability challenges continue to limit service provision, particularly in North Africa.

In terms of affordability, countries in the MENA region are among the countries where mobile internet is more affordable. In the A4AI Affordability Report 2017 report, using data from 58 countries, the average price of 1GB for a mobile prepaid plan as a percent of average monthly income ranges from 0.48\% (Sri Lanka) to 51.89\% (Sierra Leone)\textsuperscript{19}. Egypt, Jordan, Tunisia and Morocco were included in this study, and all rank within countries with a percentage of 2.0\% of less. Mobile data is most affordable in Egypt, at 1.19\% of the average monthly income. It should be noted, however, that individuals living in rural and poorer regions may be less likely to use a prepaid mobile plan, due to income volatility and the cost of data forming a significantly higher proportion of income than the national average.

\textsuperscript{17} https://www.gsmaintelligence.com/research/?file=84935f5774975f3d35c8ed9a41b9c1a4&download
\textsuperscript{18} Ibid
\textsuperscript{19} http://a4ai.org/affordability-report/report/2017/
3. Egypt

3.1. Context

There is a high disparity in labour force participation in Egypt, with a 24.9% participation rate among women compared to 80.4% among men. Of those in the labour force, there is a high female unemployment rate, at 24.2%, compared to just 9.4% for men\(^20\). Female youth unemployment is a significant problem, with 48.2% out of work\(^21\). The skills gap between men and women contributes significantly to the employment gap. Egypt underperforms on international benchmarks in Science, Technology, Engineering & Math (STEM) fields, where there exists a large under-representation of women. Although female students are enrolled in STEM fields, they frequently fail to transition into STEM jobs\(^22\).

World Bank data indicates that 17.8% of businesses owned partially by women and 2.4% owned in majority by women\(^23\). The IFC reports that SMEs contribute to 38% of total employment, and 33% of Egypt's GDP. Of the estimated 6.4 million MSMEs in Egypt, only 406,000 SMEs operate in the formal sector. Women-owned SMEs (excluding agri-businesses) make up 40,000 of these enterprises, and are primarily in the manufacturing and tourism sectors\(^24\). Women-owned SMEs in the formal sector have a credit demand of approximately $283 million, and $246 million of potential deposits. However, financial penetration is low. World Bank 2014 data indicates that just 14% of all adults have a bank account and only 9% of women and 6% of those in poorer households are banked\(^25\).

3.2. ICT in education and training

Compared to other countries in the MENA region, Egypt has a relatively undeveloped policy environment for ICT integration in education. A 2013 study of ICT in education found that while ICT was well integrated into the national curriculum in Jordan, Oman and Qatar, ICT is used infrequently in Egypt, and recommendations to use ICT only target selected subjects at specific levels. Although all schools in Egypt have electricity, 68% of lower secondary and 66% of upper secondary schools have telecommunications infrastructure. In comparison, 96% of lower secondary and 97% of upper secondary schools have telecommunications infrastructure in Palestine\(^26\). Typically, government schools and schools in more rural, disadvantaged areas lack telecommunications infrastructure. In schools with resources, they are greatly overstretched, with 120 students per computer at the primary level, compared to 38 per computer in Palestine and 26 per computer in Jordan. Looking specifically at computers connected to the internet, there are 441 students per computer at the primary level in Egypt.

Egypt's Ministry of Communications and Information Technology (MCIT) set up an IT Club initiative in 2001 to improve access to ICT and offer ICT training, with the aim of stimulating local enterprise. As of January 2018, 77 IT Clubs, now called Telecentres, are in operation across the country\(^27\). IT Clubs are hosted in youth centres, schools, universities, public libraries

\(^{21}\)https://data.worldbank.org/indicator/SL.UEM.1524.FE.ZS?locations=EG
\(^{22}\)https://www.menabytes.com/almakinah-global-shapers-egypt-coding-grants/
\(^{23}\)http://www.enterprisesurveys.org/Data/ExploreTopics/gender#all-countries
\(^{24}\)https://www.ifc.org/wps/wcm/connect/7931b811-04b3-45b5-9dc5-c36a5eb5faff/Web+version_Banking+on+Women+in+Egypt+FINAL.pdf?MOD=AJPERES
\(^{26}\)http://uis.unesco.org/sites/default/files/documents/information-and-communication-technology-ict-in-
education-in-five-arab-states-a-comparative-analysis-of-ict-integration-and-e-readiness-in-schools-
en_0.pdf
and local authority offices, among other venues.  

3.3. Mobile phone access and use

In Egypt, mobile phone ownership is high among both men and women. This is likely due to Egypt’s highly competitive mobile market, which drives prices down. Male and female phone ownership is nearly equitable: 53% of women and 54% of men own a phone. The gender gap is low, at 2%, which is lower than Kenya, which has a gender gap of 7%. This is also a higher penetration rate than Kenya, where 41% of women and 44% of men are connected.

Ownership profiles are similar among men and women, in terms of the cost and type of phones individuals own. In Egypt, unlike other countries, men and women access mobile internet at similar rates. Furthermore, women report using social media more than male. A total of 65% of female phone owners use Facebook and 50% use Twitter, compared to 59% and 42% of male phone owners, respectively. This is unusual compared to other countries in the same study, where men typically use social media more than women.

Borrowing phones is not commonplace for men or women in Egypt and compared to other countries in the study it has lowest rate of female non-users who would use a mobile phone if they were given one, at 52%. This may indicate that most women who would like to use a phone are able to own and use a phone. The main barrier to phone use is handset cost and is cited equally by men and women (80%), followed by network quality (cited by 75% of women and 74% of men). Gender disparity is highlighted in regard to identification issues as a barrier to obtaining a mobile phone, which was cited by 44% of women but 26% of men (44% being the highest reported rate across all countries in the study). This may be due to women having less access to necessary documentation, such as a national ID, or because they are less likely to be registered as a homeowner or bill payer. In Egypt, women are not able to apply for and obtain a national ID card or passport in the same way as men.

Security concerns and harassment via mobile are concerns for women. Men and women report the practice of men randomly dialling numbers in the hope of reaching a woman. Services that block unwanted callers have been launched in several countries, and can be particularly appealing to female users. In Egypt, where mobile phone harassment is one of the main reasons for high turnover among mobile operators, Mobinil (Orange) launched Call Block in 2012. The service now has over 600,000 users, of which approximately 90% of customers are women.

Women also experience constraints from family over their use of and expenditure on phones. 40% of women say their family feels (or would feel) uncomfortable with them using a mobile, although this is also high for men at 31%.

3.4. Internet use and access

Use of mobile internet is the same among men and women in Egypt: 68% male and 68% female phone owners report using internet on their phone. In terms of internet use more widely, in 2017 31.1% of women in Egypt had used internet in last 3 months, compared to 36.6% men.

The WEF GIGTR found that in 2014 45.1% of households have a personal computer and 36.8% use mobile internet.  

---

31 Ibid
32 Ibid
have access to the internet\textsuperscript{34}. 31.7\% of the population uses the internet, but just 3.7\% have a fixed broadband connection. A government survey found that 8\% of individuals use a computer for work; 22\% use it for education; 27\% use it for entertainment and 28\% use it to get online. The most popular use of the internet is communication via e-mail (28\% of adults and young people), and social media (27\%), while 14\% of people go online to access information about health and health services, and 7\% to access information about goods and services\textsuperscript{35}.

In 2016, enterprises using internet were found to primarily use it to find information about goods and services (52\% of private sector enterprises using the internet) and communicate using e-mail (51\%)\textsuperscript{36}. 38\% use the internet to provide customer services, 17\% use internet banking and 7\% use it to access other financial services. 3\% of small enterprises (10-49 employees) use the internet to make online sales, while 10\% of medium enterprises (50-249 employees) and 17\% of large enterprises (250+ employees) make online sales.

\textsuperscript{34} http://www3.weforum.org/docs/GITR2016/WEF_GITR_Full_Report.pdf
\textsuperscript{35} http://www.mcit.gov.eg/Upcont/Documents/Publications_882017000_ICT_Indicators_Annual_Report_English_8_8_17_.pdf
\textsuperscript{36} Ibid
4. Jordan

4.1. Context

Although enrolment in secondary and tertiary education is at parity, gender equity in labour force participation is among the lowest in the world, ranked 142nd of 144 countries in 2017\(^{37}\). As of 2017, 20.7% of women are unemployed, compared to 10.1% of men, with higher rates in rural areas and among young people: 56.5% of women aged 15-24 years are out of work\(^{38}\). The gender gap in ICT related employment is wide. In 2010, men took up 2,396 newly created jobs in the ICT sector, compared to 780 women, and in 2011 men took up 1,882 jobs compared to 626 women\(^{39}\).

Jordan has one of the largest gender gaps in early stage entrepreneurial activity in the MENA region, with a male activity rate 3.4 times higher than female activity rate\(^{40}\). Women in Jordan experience cultural and social barriers to entrepreneurial activities, including marriage, motherhood, domestic responsibilities and lack of familial support. Women are often restricted from working long hours; a particular barrier to initially setting up a business, which requires long working hours.

4.2. ICT in education and training

An increasingly large part of the infrastructure in primary and secondary education in Jordan is technology based. In 2014, 99% of schools had at least one computer, and of those, 86% were connected to the internet. However, connectivity is lower in rural areas: about 95% of schools in cities are connected, compared to 74% in rural areas. In addition, despite wide connectivity, e-learning, e-curricula and ICT in education is generally found to be under-utilized.

Enrolment in ICT in high school has increased rapidly over the last decade, from 11,931 students in 2006 to 43,535 in 2012, of which 44% are women. In higher education, however, female students typically select subject areas that are socially perceived as ‘suitable for women’, preferring education fields over engineering and sciences. Enrolment in ICT-related subjects reflect these norms, with high rates of female enrolment in education technology courses, whereas less than 25% of computer science and information security students are female\(^{41}\).

---

\(^{40}\) Ibid
\(^{41}\) Ibid
ICT education in Jordan often does not align with the requirements of the labour market in terms of technical and soft skills, and most graduates lack employability skills. Training that is well aligned and relevant to the labour market are primarily based in Amman, but lacking in rural areas. However, even in Amman, women experience high barriers to access to these courses due to cost and travel restrictions42.

4.3. Mobile phone access and use

In Jordan, 34.5% of women reported the use of mobile internet, compared to 65.5% of men43. Across the total population, about 51% own a smartphone44.

Although Jordan is a mid-range income country, in 2015, women were 21% less likely than men to own a mobile phone, and 19% less likely in urban areas. In comparison, Jordan is wealthier than Kenya, but the gender gap in mobile ownership in Kenya is 7%45.

Jordan is ranked low in the WEF's global gender equality index (135th of 144 countries) and has relatively high levels of gender discrimination. Women experience limited financial autonomy and decision-making power, particularly in rural areas, which can limit women's access and use of mobile. Women in Jordan are more likely to borrow phones than men (10% of women, compared to 1% of men) and typically borrow from family or use a shared household phone. Less educated and rural women are more likely to borrow phones than educated, urban women, who have higher rates of ownership. Half of all female non-phone users report that they have never used a phone, but 70% said they would use one if given one.

Cost is a primary barrier to mobile phone access for women, 76% of women citing handset cost as a challenge, compared to 42% of men, and 56% of women citing SIM cost, compared

42 http://www2.unwomen.org/-/media/field%20office%20jordan/attachments/publications/2014/ict-study-updatedtxt-4.pdf?la=en&vs=1758
to 21% of men. Even when women use their own money or the household budget to pay for their phone, they typically require permission to spend the money. Digital literacy and confidence is also a greater barrier for women, reported by 34% women compared to 17% men.

Security concerns and harassment over the phone also limit women’s use of phones: 53% of women said security was a concern compared to 22% of men, the largest gap compared to other countries in the study. Women experience harassment from men over Facebook and WhatsApp, with women reporting that they reduce their mobile and social media use as a consequence. Young women (but not young men), particularly in more rural areas, often have their mobile use monitored and controlled by families, who want to protect them from harassment or otherwise control their communication.

Women’s use of mobile for business is low compared to other countries in the study: 39% of women who own a phone (and 44% of women who borrow a phone) agree that through her phone she has more business and/or employment opportunities. In comparison, in Niger, DRC, Mexico, Indonesia, Kenya and Colombia, approximately 70-90% of women agree. This may indicate that women with access to phones are unsure how to make use of them for business purposes, or that women in Jordan are more constrained from entrepreneurship and business opportunities.

4.4. Internet access and use

In Jordan, 46.1% of women use the internet at home, compared to 53.9% of men, and 30.1% of women use the internet at work, compared to 69.9% of men. 10.3% of women go to internet cafes to use the internet, compared to 89.7% of men. Although more people and more women are getting connected in Jordan, the gender gap remains present, at 6.1% for computer users and 6.9% for internet users.

A PEW research study found that 67% of adults have access to the internet (report using it at least occasionally or report owning a smartphone). This compares regionally to 86% in Israel, 72% in the Palestinian territories and 72% in Turkey. Internet access is Kenya, for example, is lower, at 40%. From 2013 to 2015, internet access increased by 20 percentage points, one of the most rapidly increasing rates among countries in the study. Access varies considerably with education: 96% of more educated people have access to the internet, compared to 41% of less educated people, and with income: 80% of those with a higher income have access to the internet, compared to 50% of those with a lower income.

Internet users often get online using their smartphone. In 2015, 51% of adults who owned a phone own a smartphone with access to the internet. This increased from 38% in 2013. Young people, more educated people and those with a higher income are all significantly more likely to own a smartphone.

Of phone owners, women experience greater barriers to mobile internet use: 59% of female phone owners use mobile internet, compared to 64% of men. Women who own a phone are found to be more likely to use mobile internet than women who borrow a phone. Women also use social media less than men in Jordan: 54% of female phone owners use Facebook and 15% use Twitter, while 72% of male phone owners use Facebook and 17% use Twitter.

47 http://www.pewglobal.org/2016/02/22/internet-access-growing-worldwide-but-remains-higher-in-advanced-economies/
48 Ibid
5. Palestine

5.1. Context

Female unemployment in Gaza and the West Bank is high, at 28.2%, though this has been falling since 2014\(^\text{50}\). Male unemployment is lower, but remains high, at 22.3%. In 2015, 37.2% of young women were out of education, training or employment, compared to 26.2% of young men.

Women’s activity and work is restricted in Palestine. Of women in work, only about 20% work outside the home, compared to nearly 70% of men, according to the International Labour Organization (ILO). Women and men both lack access to financial institution, with 24% of all adults, 21% of women, and 16% of adults living in poor households having a formal financial account\(^\text{51}\).

Israel and Tel Aviv offer increasing STEM courses and jobs, but Palestinian women continue to face significant barriers to study and employment in this sector. Over 2,200 Arabs were studying computer science and software engineering at Israeli universities in 2016, a record high. However, they are significantly less likely to get a job than Israeli students, and women graduating from Palestinian universities are reportedly even more limited\(^\text{52}\).

5.2. ICT in education and training

Policy on ICT in formal education systems does not fully embed technology at each level of education, but covers specific subjects at the higher education level. Palestine, however, has been a significant recipient of the One Laptop Per Child programme, which has deployed 4,000 computers in the West Bank and 6,000 in Gaza\(^\text{53}\). In 2013, OLPC reported that through networking and fundraising, it intends to eventually provide a laptop to all children in Palestine. The large majority of schools in the West Bank also have telecommunications facilities (94% at primary and 96% at lower secondary), providing 38 computers per student at primary and 30 at lower secondary, and 93 internet enabled computers per student at primary, and 87 at lower secondary\(^\text{54}\).

At the higher education level, all 13 of the universities in the West Bank and Gaza have an ICT department. It is reported that the number of ICT students exceeds the number of private sector jobs in the ICT sector, and unemployment among ICT graduates is high (46% in Gaza and 18% in the West Bank)\(^\text{55}\).

5.3. Mobile phone access and use

A PEW Research study found that 92% of adults surveyed own a phone\(^\text{56}\) (2016). This compares to 97% in Israel and 82% in Kenya. Of those who own a phone, 62% report owning a smartphone, with access to the internet. In 2014, young people’s access to mobile phones was found to have risen sharply over the previous decade, with the percentage of young people who own a phone increasing from 34.9% in 2004 to 75.2% in 2014. However, access

\(^{50}\) https://data.worldbank.org/indicator/SL.UEM.TOTL.FE.ZS?locations=PS&view=chart
\(^{52}\) http://www.ibtimes.com/palestinian-women-are-shaking-tech-industry-2589920
\(^{54}\) Ibid
\(^{55}\) http://thisweekinpalestine.com/telecommunication-sector-palestine/
\(^{56}\) http://www.pewglobal.org/2016/02/22/internet-access-growing-worldwide-but-remains-higher-in-advanced-economies/
was found to be higher among men, with 86.3% owning a phone, compared to 63.7% among women\textsuperscript{57}.

Mobile internet access is a political issue in Palestine, with bandwidth controlled by Israel\textsuperscript{58}. In recent years access to 3G has been limited in Palestinian territories. However, it is reported that this year Palestinian cellular providers will launch 3G mobile networks in early 2018\textsuperscript{59}.

5.4. Internet access and use

In 2016, 69% of adults in Palestine reported using the internet at least occasionally\textsuperscript{60}. Of those who reported using the internet, 57% report using it several times a day and a further 22% use it every day. 86% report using social networking sites, such as Facebook or Twitter.

Government data found that in 2014, women’s use of internet was lower than men’s, with 59.6% of men using the internet compared to 47.5% of women\textsuperscript{61}. 48.3% of households were found to have an internet connection in the year 2014, compared to 30.4% in 2011.

\textsuperscript{57} https://www.internews.org/sites/default/files/resources/Media-Landscape_WestBank-Gaza_29July14.pdf
\textsuperscript{58} https://www.aljazeera.com/indepth/features/2013/09/20139171334748594.html
\textsuperscript{60} http://www.pewglobal.org/2016/02/22/internet-access-growing-worldwide-but-remains-higher-in-advanced-economies/
6. Lebanon

6.1. Context

The Gender Gap Index ranks Lebanon as 137 out of 144. It is third to last in the MENA region, with only Syria and Yemen having lower rankings (142 and 144 respectively). Gender inequality is believed to permeate through social values, cultural beliefs and is replicated in legal and social structures. For example, women do not have the same citizenship rights as men, and cannot pass their nationality on to their husband or children. Lebanon’s Human Development Index value for 2015 was relatively high, with a ranking of 76 out of 188 countries. Information on poverty levels is however limited due to the absence of reliable statistical data.

Lebanon has experienced a persistent decline in the gender index ranking since 2010. This is linked to a consistently low political empowerment score, that has been close to zero. While women have had the right to participate in politics since 1953, women make up only 3.1% of parliament and 3.4% of ministerial positions. Lebanon ranks 109 in education attainment, despite being close to parity in the secondary and tertiary education enrolment subcategories, where it ranks first. 53% of adult women have reached at least a secondary level of education compared to 55.4% of their male counterparts.

Despite high literacy rates, at 88.1%, women’s labour force participation is low, at only 26.3%, compared to 75.7% for men. The adult unemployment rate for women is twice as high as it is for men, at 10.4% and 5.0% respectively. Within the work force, participation in professional and technical work is almost at parity, with 48% women and 51% men. Lebanon has a large informal sector with skilled Lebanese often seeking or gaining employment in more developed markets. As a result, Lebanon has a large, educated and diverse diaspora. Labour market conditions are exacerbated by the ongoing conflict in neighbouring Syria. The World Bank estimates 36% of the labour market to be informal, a figure that is expected to increase as refugees (Syrian, Palestinian, Iraqi) who may have limited rights to work make up a quarter of the population. Self-employment consists of 33% of the labour market. Women face barriers in this sub-sector, where only 3% of bank loans are awarded to female entrepreneurs.

6.2. Mobile phone access and use

Lebanon ranks 64 of 176 countries in ITU’s ICT Development Index (IDI) and has 56.8 mobile broadband subscriptions per 100 inhabitants. Lebanon’s mobile telecommunications market is split evenly between just two mobile companies, both of which are government owned. In 2017, activists organised a boycott due to high airtime and mobile data costs. Mobile internet is completely unavailable in some parts of the country, such as Arsal, a border area.

---

64 Ibid
66 Ibid
68 Ibid
72 https://freedomhouse.org/sites/default/files/FOTN%202017_Lebanon.pdf
town in the north east that has been disconnected since August 2015 due to purported security concerns73.

In 2016, 88% of the population were reported to own a phone and 52% of adults were reported to own a smartphone74. Younger, educated people have significantly higher access to smartphones, and there is a significant gap in smartphone ownership among those with a lower income, 20% of whom own a smartphone, and those with a higher income, 85% of whom own a smartphone75. This study did not collect gender disaggregated data for Lebanon.

6.3. Internet access and use

According to the ITU, 76% of the Lebanese population use the internet. 78% of households have access to a computer, and 77% have access to internet at home76. Of internet users and smartphone owners in Lebanon, 92% were found to access the Internet on a daily basis, which was the highest percentage among the 40 countries in the study77.

Internet is however reported to be prohibitively slow and unreliable, and an urban and rural digital divide persists. The development of internet infrastructure has been particularly slow, due to corruption allegations and a sector monopoly. The country’s internet backbone, fixed, mobile and telephone industry are owned by the government. It exercises control over Internet Service Providers, who can only lower their prices through an official decree78. In 2015, the Ministry of Telecommunications launched a plan to expand fiber-optic infrastructure, increase internet speed and access in the country by 202079.

There are large gaps in internet use relating to age and education levels. While 89% of young people use the internet regularly, this compares to 50% of adults, and 90% of more educated people use the internet regularly, compared to just 34% of less educated people. Those with a higher income have significantly better access to the internet, with 90% using the internet regularly, compared to 42% of those with a lower income. This is the largest gap in the MENA region of the countries studied80.

73 Ibid
74 https://samencouncil.org/samena_daily_news.php?news=57482
75 Ibid
77 https://samencouncil.org/samena_daily_news.php?news=57482
78 https://freedomhouse.org/sites/default/files/FOTN%202017_Lebanon.pdf
7. Algeria

7.1. Context

Algeria ranks 127th for overall gender equality and 132nd in gap in gender equality in terms of economic participation of 144 countries, well below average. It has fallen in rank for overall and economic participation since 2006. Female unemployment is 18.2%, compared to 8.2% for men. In 2015, 32.1% of young women are out of education, training or employment, compared to 10.8% of young men.

As well as employment, women lack access to financial systems: 40.1% of women have an account at a financial institution, compared to 60.9% of men (World Bank, 2014)\(^{81}\).

7.2. Mobile phone access and use

Algeria ranks 37th of 56 countries for mobile engagement (GMEI\(^{82}\)), scoring 1.9, compared to 5.0 in South Korea (1st) and 1.3 in Nigeria (48th) and 1.1 in Egypt (49th). The GMEI measures the level of engagement of phone users in a range of use cases and services; the higher the score the more likely consumers are to frequently engage in mobile services.

The overall density of mobile penetration is over 100% with 47 million mobile subscriptions out of a population of 41.5 million (113%)\(^{83}\). While this figure does not indicate complete saturation and universal mobile phone ownership, it does mean that on average, Algerians have at least one mobile subscription. This is due to many individuals having multiple SIM cards, likely driven by pricing structures penalising cross-network calls on prepaid plans (which make up 90% of Algerian subscriptions\(^{84}\)).

A study by GSMA found that digital literacy was a greater barrier to mobile use for both women and men than cost, compared to other countries in the study: 18% of women and 17% of men said mobile literacy prevented their phone ownership, and 17% of women and 16% of men cited difficulties reading and writing\(^{85}\). Among those who do own a phone, 24% of women said they didn’t know how to use the internet on their phone, 24% said they are unsure how to use their phone, and 33% said they have reading and writing difficulties, all of which limit their utilisation of the internet. This compares to 20%, 17% and 19% of men, respectively.

In Algeria, women experience barriers to mobile phone use due to challenges with identity documentation. Women are not able to apply for and obtain a national ID card or passport in the same way as men\(^{86}\). For example, a married woman is required to produce a marriage certificate when applying for a national identity card, whereas the husband is not required to do so. This affects women’s ability to obtain a mobile phone.

7.3. Internet access and use

In Algeria, the density of internet penetration is 71% with 29.5 million internet subscriptions, of which 93% are mobile internet connections\(^{87}\). There exists a 11% gender gap in internet use and an 18% gap in IP messaging. However, similar numbers of men and women own SIM

---

\(^{81}\) https://data.worldbank.org/indicator/WP_time_01.2?locations=DZ&view=chart

\(^{82}\) https://www.gsmaintelligence.com/research/?file=e4549aeda553ac832ff9126c7d6c0861&download


\(^{84}\) Ibid. p10


Identity issues are closely tied to access to mobile and mobile internet, as ID cards are often required when purchasing SIM cards\(^8\). In Algeria, like Egypt, women are not able to apply for and obtain a national ID card or passport in the same way as men. For instance, in Algeria, a married woman is required to produce a marriage certificate when applying for a national identity card, whereas the husband is not required to do so.


8. Morocco

8.1. Context

Morocco has a significant gender gap, ranked 136th in the world, of 144 countries. However, progress has been made in labour force participation in recent years. In 2017, labour force participation was at 26.9% for women, and 78.7% for men. Of professional and technical workers, 35.6% are women and 64.4% are men. Women are significantly more likely to be employed in part-time work, at 38.0% compared to 7.9% of men.

In 2017, the literacy rate for women was 59.1% for women, compared to 80.4% for men. However, enrolment in primary education is at parity, and enrolment in tertiary education is 27.5% for women and 28.7% for men.

ICT is an increasing area of focus for the government, which has introduced the Morocco Digital 2020 Strategy, with the aim of becoming one of the top performing countries in the MENA region in terms of Datacom infrastructure and the ICT business environment. As part of this strategy, launched in 2016, the government lifted the voice over internet protocol (VOIP) ban, which prevented voice calls over Skype, WhatsApp and other platforms, and is reported to have had a significant negative impact on business and the economy.

8.2. ICT in education and training

The Government of Morocco launched a comprehensive ICT in education programme in 2005, the GENIE programme, a large-scale, long-term national policy and initiative to mainstream ICT in schools and educational institutions. Since its launch, it has provided infrastructure, devices and connectivity to over 10,000 schools, and 300,000 teachers and school administrators have participated in training. The programme provides resources in four languages (French, Arabic, English and Amazigh) to enhance accessibility through its national ICT in education online platform.

There is a similar proportion of ICT graduates among men and women, at 14.9% of women, and 16.6% men (expressed as a percentage of total graduates from tertiary education programmes). A higher proportion of women graduate in business and administration than men, at 31.8% of women compared to 20.2% of men, whereas more men graduate from engineering fields, at 17.8% of men compared to 7.8% of women.

8.3. Mobile phone access and use

The mobile phone market in Morocco is highly developed, and phone access is widespread. As of December 2017, the country had a mobile subscription rate of 126 per 100 people, higher than the world average of 101.6. There exists, however, gaps in men and women’s use of phones, as well as a rural-urban divide. In 2016, 67% of people aged 12-65 owned a smartphone in urban areas, compared to 42.5% in rural areas.

---

91 Ibid
95 http://www.taalimtice.ma/
97 https://www.anrt.ma/sites/default/files/publications/2017_t4_tb_mobile.pdf (p. 3)
98 https://data.worldbank.org/indicator/IT.CEL.SETS.P2
99 https://www.moroccoworldnews.com/2017/05/216867/90-7-of-moroccan-rural-population-own-a-
A 2013 study found that rural women in Morocco experience distinct barriers to utilising mobile phones. Low levels of functional literacy and numeracy were found to be significant contributors to the mobile utility gender gap in rural Berber communities. In addition, the study found that a complex language environment, with communities using both Arabic and Berber dialects and multiple alphabets, as well as cultural gender-related barriers, limited mobile phone use. Concerns about surveillance and a loss of privacy also presented challenges.

8.4. Internet access and use

Internet access is generally widespread in Morocco, but there remains a digital divide in urban and rural areas. In 2013, 47% of households had a personal computer or tablet (59% in urban areas and 23% in rural areas). In 2016, 68.5% of Moroccan households had internet access (77.2% in urban areas and 51.3% in rural areas). In 2017, the WEF Gender Gap Report found that 62.8% of men use the internet, compared to 51.4% of women. The Moroccan national telecommunications regulator reports an internet penetration rate of 64% as of Dec 2017.

People use the internet for a variety of reasons. 80.7% of users use internet to access social networks, news, gaming, leisure and sports content, and 77% of users access social networks on a daily basis; 80% in urban areas and 68% in rural areas in 2016. Educational websites are visited by 45.7% of users, training websites by 36.6%, and health information websites by 34.1%. Almost 12% of users made online purchases in 2016; 15.5% in urban areas and 2.5% in rural areas.

---

100 http://www.realttechsupport.org/UB/I2C/Barriers_Interfaces_2013.pdf
102 https://www.moroccoworldnews.com/2017/05/216867/90-7-of-moroccan-rural-population-own-a-phone/
9. Tunisia

9.1. Context

Despite ranking 117th of 144 countries in the overall gender gap, and showing recent improvements in political participation and health, Tunisia ranks 131st against economic participation and opportunity specifically. 27.8% of women are participating in the labour force, compared to 76.7% of men, and the country ranks 133rd for labour force participation. 22.2% of adult women are considered unemployed, compared to 12.5% of men.\(^\text{104}\)

There is also disparity in literacy, with 72.2% of women able to read and write, compared to 86.1% of men. However, at the tertiary education level, more women than men enrol; 43.3% of women have enrolled in tertiary education compared to 26.2% of men.

Men and women both have limited access to financial institutions. In 2014, 34% of men had an account at a financial institution, compared to 20% of women.

The country’s Digital Tunisia 2020 National Strategic Plan, financed by the AfDB, aims to increase digital coverage across the country, including in rural areas, and strengthen public services through digital platforms. The programme begins in 2018.

9.2. ICT in education and training

Tunisia has implemented policies to upgrade technology related infrastructure in schools and universities. For example, computers, smart boards, video projectors, and digital cameras are some of the tools being used to improve learning. By 2007, all primary schools and all higher education universities and institutes were connected to the internet\(^\text{105}\). Tunisia has an official internet service provider for higher education, El Khawarizmi Calculus Center. Women and men generally have comparable enrolment in education and therefore their access at school and university in similar. However, there is a rural-urban gap, and less rural education institutes are connected.

The more highly trained women are, the more they make use of ICT\(^\text{106}\). Teachers and women working in industry make the greatest use of mobile phones in their profession. Women employed in administration and in the ICT sector are most likely to own a computer and use it frequently in the office\(^\text{107}\). Women’s participation in the ICT sector in Tunisia is high. In 2010, women were well represented in the sector, where they accounted for 41% of all ICT workers. More than 75% of the employees in this sector are university graduates.\(^\text{108}\)

9.3. Mobile phone access and use

Access to mobile phones has increased rapidly in Tunisia, from 11.1 million subscriptions in 2010, to 14.3 million in 2016. A 2011 ITU study found that women and men’s ownership of mobile phones is not significantly different, with 78.5% of women and 81.7% of men owning a phone\(^\text{109}\). The Tunisian national telecoms regulator reports a mobile penetration rate of 125.4% as of February 2018 (14.5 million subscriptions)\(^\text{110}\). 65% of these mobile subscriptions

---

\(^{104}\) http://www3.weforum.org/docs/WEF_GGGR_2017.pdf


\(^{106}\) https://www.itu.int/net/itunews/issues/2011/05/pdf/201105_49.pdf

\(^{107}\) Ibid


\(^{109}\) https://www.itu.int/net/itunews/issues/2011/05/pdf/201105_49.pdf

\(^{110}\) http://www.intt.tn/upload/files/TB2_Tel-Mobile%20-%20F%C3%A9vrier%202018.pdf (note these figures are based on subscriptions active in the last three months).
have mobile data, allowing them to access the internet\textsuperscript{111}. However, women spend less per month of communications, spending 28.50 TND (9.60 EUR) on average, compared to 37.70 TND (12.70 EUR) for men.

Fewer women own a mobile phone in rural areas than in urban areas. The use of mobile by women in rural areas is typically personal rather than professional, and they experience greater difficulties using a mobile. Phones are more often shared with other people and use cases tend to be limited to calls.

9.4. Internet access and use

About half the population (51\%) was using the internet in 2016, an increase from 37\% in 2010\textsuperscript{112}. An ITU study found that in the workplace, women connect to the internet less frequently than men (18.6\%, compared to 29.9\%). The Tunisian national telecoms regulator (INTT) reports 73\% penetration rate of internet connections, of which 90\% were from mobile internet connections\textsuperscript{113}. Among internet users (male and female), the most common points of connection are the home (48.5\%), an internet café (47.1\%) and the office (21.0\%). Among female respondents, 34\% know how to connect and browse the internet; 34\% use the internet; 57\% do not use the internet because they do not see the benefit and 9\% do not use the Internet because there is no place nearby where they are able to connect. 23\% of women connect at least once a month, 19\% at least once a week, and 26\% at least once a day\textsuperscript{114}.

Few women in rural or peri-urban areas own a computer or know how to use one. In peri-urban areas, women who do use a computer rarely own it. Women living in urban areas are more likely than those living in rural areas to know how to browse the Internet and do so. They typically go online more frequently, and for more time. The survey found that almost all women who have an e-mail address live in urban areas.

The study categorised women’s profiles in relation to their ICT use\textsuperscript{115}:

- **Non-committed users (52\%)**: These women are less likely to have a mobile phone and spend less money on calls. They do not use computers, internet or bank cards. They are usually living in rural areas and are more likely illiterate or educated to primary level. They are older, and are typically housewives or working in agriculture or domestic work.

- **Standard users (14\%)**: Almost all of this group own a mobile phone and use a computer and the internet. They are usually educated to the secondary level and are single, and are employed in administration or are seeking employment.

- **Seasoned users (21\%)**: These women all use a mobile phone and a computer. They use the internet and about half have an e-mail account. They have usually received formal or informal ICT training. They are typically young women who are educated to the secondary or tertiary level, and 80\% come from an urban environment.

- **Committed users (13\%)**: They spend more money on their mobile phone, all of them actively use a computer and computer, and almost all have regular access to a connected computer. Almost all have received training in ICT. This group lives in urban areas and are highly educated and relatively young, including a high proportion of students and schoolchildren.

\textsuperscript{111} http://www.intt.tn/upload/files/TB4_Data-Mobile\%20-%20F\%C3\%A9vrier\%202018.pdf (p. 3)
\textsuperscript{112} https://data.worldbank.org/indicator/IT.NET.USER.ZS?locations=TN
\textsuperscript{113} Data aggregated from mobile data figures (http://www.intt.tn/upload/files/TB4_Data-Mobile\%20-%20F\%C3\%A9vrier\%202018.pdf) and fixed-line data figures (http://www.intt.tn/upload/files/TB3_Data-Fixe\%20-%20F\%C3\%A9vrier\%202018.pdf)
\textsuperscript{114} ITU, 2011 https://www.itu.int/net/itunews/issues/2011/05/pdf/201105_49.pdf
\textsuperscript{115} https://www.itu.int/net/itunews/issues/2011/05/pdf/201105_49.pdf
The study reports that the digital divide exists more between different categories of women in Tunisia, than between women and men. Barriers to ICT include age, geographical environment (such as rural, hard-to-reach areas) and level of education\textsuperscript{116}.

\textsuperscript{116} Ibid
10. Conclusions and recommendations

Overall, technology access is generally high in urban areas in the MENA region, particularly mobile phones access. Mobile subscription rates show that many people in the seven countries own multiple SIMs. Across the region, mobile phones are increasingly the primary means to getting online.

Nevertheless, particular groups continue to lack access in the MENA. A digital gender divide exists in a number of countries, as well as divides between groups of women, relating to rural-urban divide, age, education levels and wealth. Women in rural regions generally have more limited access to technology and connectivity, and due to lower education levels and illiteracy, are less likely to know how to use a mobile phone, computer or the internet. Social and cultural barriers also limit women’s access to and use of technology, and their activity may be restricted and monitored.

Based on the findings in this report, the following recommendations are made:

- Data on women’s access to technology is drawn from multiple sources and studies, and there is a lack of comparable, recent data across the seven countries. It is recommended that at baseline, data is collected on women’s access to and use of mobile phones and computers in the regions in which the programme will be implemented.

- There is a lack of data on women’s ICT literacy levels. While young, educated women in cities in the MENA region have often received some ICT education and are able to readily access computers and the internet, ICT literacy remains a barrier to technology access, in particular in rural areas. It is recommended that data collection includes tools to measure women’s ICT literacy and their specific needs, to establish a baseline in order to track progress, and facilitate programme design.

- The data provided in this report gives a broad, national level view. In order to drill into the specific aspects of women’s technology access and use the programme intends to address, it is recommended that specific indicators are identified, to track changes from baseline.

- Data indicates that in the MENA region, young educated women in urban areas generally have good access to increasing technology provision. However, greater gaps exist in rural areas. It is recommended that programme design addresses this by focussing on rural areas, with emphasis on training for women with low levels of education and limited digital literacy.
Annex 1. Current ICT training and education

The table below provides a snap-shot of some of the initiatives and technology hubs that have been established in the seven countries to equip young people and adults with digital skills and entrepreneurship opportunities. The list is not exhaustive of all initiatives, but gives an example of current programmes.

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Country</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaza Sky Geeks</td>
<td>Palestine</td>
<td>Start-up tech hub. <a href="https://gazaskygeeks.com/">https://gazaskygeeks.com/</a></td>
</tr>
<tr>
<td>Palestine ICT Incubator (PICTI)</td>
<td>Palestine</td>
<td>PICTI was launched in 2004 to equip entrepreneurs with ICT skills, and aiming to create more jobs for young people. The incubator has 10 spaces for enterprises and typically half are owned by women, and the programme has a special incubation programme designed specifically for women. <a href="http://www.picti.ps/">http://www.picti.ps/</a></td>
</tr>
<tr>
<td>Al Makinah Fire Up</td>
<td>Egypt</td>
<td>12 week private software engineer training - partnered with Global Shapers Community Cairo Hub</td>
</tr>
<tr>
<td>Maktaby</td>
<td>Egypt</td>
<td>Over 1,000 women trained to manage their businesses online, work independently through specialized platforms, or launch small commercial projects.</td>
</tr>
<tr>
<td>E4E ICT Egypt</td>
<td>Egypt</td>
<td>Partnering with ITIDA - aims to bridge the skills gap for the ICT industry and improve the employability of students through: 1 - Develop an ICT National Qualification framework intended to improve the quality of educational curricula and guide design of educational/training programs. 2- Improve access to information for all stakeholders via the development of a labour observatory, and building the capacity of ITIDA to house it.</td>
</tr>
<tr>
<td>ELCC</td>
<td>Egypt</td>
<td>The Ministry of Communications &amp; Information Technology launched a website ‘ICT for Women’ which includes an online course in Business and Entrepreneurship Education, in partnership with Cisco Systems.</td>
</tr>
<tr>
<td>UNICEF Innovation Hub</td>
<td>Algeria</td>
<td>The Hub was set up by UNICEF together</td>
</tr>
<tr>
<td>Program</td>
<td>Country</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Graduate Internship Program (GIP)</td>
<td>Jordan</td>
<td>Launched on a national level in partnership with the Ministry of Labor (MoL) and representatives of the private sector. The program’s model is built around a Public – Private Partnership (PPP) whereby with the support of the Government, private sector companies can hire and train more graduates and thereby, contribute towards the overall development of the ICT industry. <a href="https://jordankmportal.com/resources/graduate-internship-program-gip">Link</a></td>
</tr>
<tr>
<td>E4E ICT Jordan</td>
<td>Jordan</td>
<td>Launched in November 2012, the project is partnering with Int@j, the ICT business association in Jordan, to decrease the skill gap in the ICT sector through: (1) Strengthening Quality Assurance Framework (ICT-QF); (2) Establishing an ICT Continuing Education Academy. Estimated student reach: 1,520 students. <a href="www.spark-online.org/wp-content/uploads/2014/12/E4E-Nov-2014-IGNITE.pdf">Link</a></td>
</tr>
<tr>
<td>E4E ICT Tunisia</td>
<td>Tunisia</td>
<td>The project, in partnership with the ICT Federation of Tunisia, aims to improve access to information &amp; employability of Tunisian youth in sector through the creation of (a) labour market observatory (b) qualifications framework (c) a virtual matchmaking academy, to identify training needs of ICT firms and oversee contracting of training providers accordingly. Project supports WB efforts in Tunisia. Estimated student reach: 4,500 students.</td>
</tr>
<tr>
<td>Girls in Tech</td>
<td>Morocco, Egypt, Jordan</td>
<td>Girls in Tech is a non-profit organisation that runs a variety of programmes to engage women and girls in tech and ICT, with global programmes, including in Morocco, Egypt and Jordan. Programmes include start up awards, coding workshops and mentoring: <a href="https://girlsintech.org">Link</a></td>
</tr>
<tr>
<td>Social Media Exchange (SMEX)</td>
<td>Lebanon</td>
<td>(SMEX) initiatives empower individuals and their communities through the integration of digital strategies and skills into their self-expression, journalism, advocacy, and</td>
</tr>
</tbody>
</table>

117 [Link](https://www.unicef.org/about/annualreport/files/Algeria_Annual_Report_2014.pdf)
<table>
<thead>
<tr>
<th>Organization</th>
<th>Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BeryTech</td>
<td>Lebanon</td>
<td>Innovation and incubation hub.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><a href="http://berytech.org">http://berytech.org</a></td>
</tr>
<tr>
<td>Girls Got IT</td>
<td>Lebanon</td>
<td>A joint initiative between five Lebanese NGOs, led by LLWB in collaboration with MEHE, supported by UNICEF, funded by the Kingdom of the Netherlands. More than 2,500 students have been part of the ‘Girls Got IT’ program since its start in March 2016.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><a href="https://www.girlsgotit.org/">https://www.girlsgotit.org/</a></td>
</tr>
</tbody>
</table>
## Annex 2. Summary of indicators

The table below summarises the country level access and affordability data currently available. For access, WEF GITR data is cited (2014 data)\(^{118}\), unless otherwise referenced. For affordability, A4AI data is used (2015)\(^ {119}\).

<table>
<thead>
<tr>
<th></th>
<th>Access</th>
<th>Affordability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Mobile phone subscriptions (per 100 people)</strong></td>
<td><strong>Individuals using the internet (%)</strong></td>
</tr>
<tr>
<td></td>
<td>a. Male</td>
<td>Households with a personal computer (%)</td>
</tr>
<tr>
<td></td>
<td>b. Female</td>
<td>Households with internet access (%)</td>
</tr>
<tr>
<td></td>
<td><strong>Individuals that own a mobile phone (%)</strong></td>
<td><strong>Price of a 1GB mobile prepaid plan as % of average monthly income, 2015</strong></td>
</tr>
<tr>
<td></td>
<td>a. Male</td>
<td>Households with internet access (%)</td>
</tr>
<tr>
<td></td>
<td>b. Female</td>
<td></td>
</tr>
<tr>
<td>Algeria</td>
<td>93</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a. -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>28%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Egypt</td>
<td>114</td>
<td>32%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a. 37%(^ {120})</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. 31%(^ {121})</td>
</tr>
<tr>
<td></td>
<td></td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>37%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a. 54%(^ {122})</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. 53%(^ {123})</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.19%</td>
</tr>
<tr>
<td>Jordan</td>
<td>148</td>
<td>44%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a. -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51% own a smartphone(^ {124})</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a. -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.45%</td>
</tr>
<tr>
<td>Lebanon</td>
<td>88</td>
<td>75%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a. -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>81%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>68%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>88%(^ {125})</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a. -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Morocco</td>
<td>132</td>
<td>57%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. 63%(^ {126})</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. 51%(^ {127})</td>
</tr>
<tr>
<td></td>
<td></td>
<td>53%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>67% own a smartphone(^ {128})</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>


\(^{121}\) Ibid


\(^{123}\) Ibid


<table>
<thead>
<tr>
<th>Country</th>
<th>Code</th>
<th>Coverage</th>
<th>Population with Phone</th>
<th>Household Internet Access</th>
<th>Mobile Internet Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palestine</td>
<td>-</td>
<td>69%</td>
<td>a. 60%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tunisia</td>
<td>129</td>
<td>46%</td>
<td>a. -</td>
<td>33%</td>
<td>b. -</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>29%</td>
<td>b. 82%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>c. 79%</td>
</tr>
</tbody>
</table>

127 Ibid
128 https://www.moroccoworldnews.com/2017/05/216867/90-7-of-moroccan-rural-population-own-a-phone/
129 http://www.pewglobal.org/2016/02/22/internet-access-growing-worldwide-but-remains-higher-in-advanced-economies/
131 Ibid
132 http://www.pewglobal.org/2016/02/22/internet-access-growing-worldwide-but-remains-higher-in-advanced-economies/
133 https://www.itu.int/net/itunews/issues/2011/05/pdf/201105_49.pdf
134 Ibid