



Propelling Women into Entrepreneurship in the Arab Region

The Role of Information and Communication Technology (ICT)



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Economic and Social Commission for Western Asia

Propelling Women into Entrepreneurship in the Arab Region

The Role of Information and Communication
Technology (ICT)



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It builds on a study published in 2019 titled Information and Communication Technologies: Prospects for Promoting Gender Equality in the Arab Region.

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Introduction

Background

Today, there is a growing awareness that empowering women in the economy and closing the gender gap in the world of work are essential to realizing gender equality. This awareness is articulated in the 2030 Agenda for Sustainable Development, which strives to “achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value” (Sustainable Development Goal (SDG) 8, target 8.5) and “to achieve gender equality and empower all women and girls” (SDG 5).

When women are empowered to participate equally in the economy, they are able to take control over their own lives, time and bodies, and they have a greater voice, agency and ability to meaningfully participate in economic decision-making at all levels, from the household to international institutions. A lack of employment opportunities for women results in large economic costs not only for them, but also for their households, communities and countries. Global evidence suggests that women’s economic advancement in turn leads to increased investments in children and reduced household poverty because women often spend a greater share of their income on their children’s nutrition, healthcare and education.¹

Women’s entrepreneurship is an important strategy for advancing the economic empowerment of women while also reducing gender inequality. In the Arab region, the promotion of women’s entrepreneurship has gained traction over the past decade and is often seen as a valuable approach for creating jobs within a generally discriminatory environment. In the Arab region, women have founded or are leading one in three Internet start-ups in the region.² Despite developments such as this, the Global Entrepreneurship Monitor (GEM) found that in 10 Middle East and North Africa (MENA) economies, for every 10 men involved in early-stage entrepreneurial activity, seven own or manage an established business; whereas for every 10 women engaged in early-stage entrepreneurial activity, only slightly more than four women are engaged in an established business.³ This wide gender gap between early-stage and established entrepreneurial activity suggests that businesses founded by women are not surviving at the same rate as those founded by men.

In order to support Arab women in realizing their full economic potential, it is crucial to understand the broader entrepreneurial landscape characterized by high informality and it is likewise crucial to understand and address the challenges that prospective and existing women entrepreneurs in the Arab region face.

¹ <http://documents1.worldbank.org/curated/pt/758041468340239015/pdf/wps4349.pdf>.

² <https://news.itu.int/female-entrepreneurs-arab-world/>.

³ <https://www.oecd-ilibrary.org/docserver/9789264213944-6-en.pdf?expires=1566292280&id=id&accname=ocid195767&checksum=D7BAFD83125FFA8ABEF413C1A8E318FD>.

The COVID-19 pandemic is significantly influencing the entrepreneurship environment by exacerbating existing challenges and/or creating new ones. Nonetheless, opportunities for new businesses and new approaches to conduct business are emerging.⁴

Today, information and communication technologies (ICTs),⁵ particularly mobile phones, the internet and computers, play an important role in accelerating business growth. The potential benefits of ICTs are extensive, including better access to crucial information in areas such as markets and pricing information; increased methods and opportunities for promoting businesses; improved administration; creating networks with customers, business partners and other stakeholders; gaining access to new financial products; and improving communication along the value chain. Analysis by the International Telecommunications Union (ITU) (2018, pp. 24-25) indicates not only that access to and use of ICTs supports entrepreneurial activities, but also that an individual's propensity to engage in entrepreneurial activity is related to their level of digital skills.

As ICT is increasingly integrated into business practices, digital skills have become essential to devising business models, developing business plans, raising financial capital, interacting with stakeholders and clients and building social professional networks and relationships.

Translating digital engagement into business success depends on an individual's concrete use of ICT, as well as digital skills and motivations, which in turn relate to contextual factors, such as social, economic and cultural status.⁶ However, differences in resources and the ability to access and effectively utilise ICTs within and between countries, regions, sectors and socio-economic groups have led to a digital gender divide. The COVID-19 pandemic and ensuing lockdowns have emphasized the importance of ICTs as tools to support the resilience and competitiveness of micro, small and medium enterprises and have weakened many small businesses that lack digital preparedness.⁷

Objective and structure of the study

The purpose of this study is to examine what role ICT can play in supporting existing and potential Arab women entrepreneurs. The study addresses: (a) the broader entrepreneurial landscape and the level of women's engagement in entrepreneurship in the Arab region; (b) the infrastructural challenges facing Arab entrepreneurs in general; (c) the particular challenges women face in establishing and maintaining businesses; (d) how ICTs can help in overcoming these challenges.

Methodology

Attempting to paint a clear picture of women's entrepreneurial activity in the Arab region is

⁴ <https://www.weforum.org/agenda/2020/07/how-businesses-can-turn-covid-19-uncertainty-to-their-advantage/>.

⁵ The broad definition of ICTs includes any product or tool, such as personal computers, digital television, mobile phones, email, radio and others, that stores, retrieves, manipulates, transmits or receives information electronically in a digital form (Zuppo, Colrain M., 2012, Defining ICT in a boundary-less world: the development of a working hierarchy. International Journal of Managing Information Technology, vol. 4, No. 3).

⁶ file:///C:/Users/921407/OneDrive/per cent20per cent20Unitedper cent20Nations/Entrepreneurship per cent20&per cent20ICT/Reading per cent20for per cent20Lit per cent20Review/Spotlight-15-A-Brave-New-World-Technology-and-Education.pdf.

⁷ ITC (2020). SME Competitiveness outlook. Available at <https://www.intracen.org/uploadedFiles/intracenorg/Content/Publications/ITCSMECO2020.pdf>.

difficult, given that no single comprehensive data set can be drawn on to identify existing patterns. This study is based on a mixed methods approach comprised of a desk review of relevant literature as well as some data analysis. A thorough review of quantitative and qualitative studies from the region and around the world on gender, entrepreneurship and ICT adaptation paints a picture of existing macro and individual challenges facing potential and existing women entrepreneurs, as well as potential avenues whereby ICTs can be more effective in supporting businesswomen.

The study analysed data from several sources, including the World Bank Enterprise Survey, the International Labour Organization (ILO), Global Findex, the International Telecommunications Union (ITU) and the Global Entrepreneurship Monitor (GEM).

The World Bank Enterprise Survey is a firm-level survey of a representative sample of an economy's private sector. The surveys cover a broad range of business environment topics, including access to finance, infrastructure, competition and performance measures. For this study, data were analysed to explore women's leadership role in formal sector firms in the Arab region, including the rates of firms with female ownership and leadership, in order to develop an overview of women's engagement in entrepreneurship in the region. In addition, data on obstacles facing entrepreneurs, including the extent to which firms are affected by electrical outages, telecommunications infrastructure, finance and the degree to which the workforce is adequately trained, were analysed to gain an understanding of how obstacles differ by the sex of owners. This was complemented by analysis of data on technology use, in particular whether firms have

a website and use email with clients and/or suppliers.

A major limitation of the Enterprise Surveys for the purposes of this report is that data are not available for every country in the Arab region. Data are available for Djibouti, Egypt, Iraq, Jordan, Lebanon, Mauritania, Morocco, the State of Palestine, the Sudan, Tunisia and Yemen, in some cases for multiple years. However, no Enterprise Surveys have been conducted in Bahrain, Kuwait, Libya, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, Qatar or the United Arab Emirates. In addition, sample sizes for some countries are quite small and data only capture formal sector firms (with five or more employees) in the manufacturing and some service sector categories. This potentially excludes a large cohort of women entrepreneurs who are in other sectors and/or who are self-employed in the informal sector.

Given these limitations, the study also analysed data from Global Findex, the Global Entrepreneurship Monitor (GEM), the Global Talent Competitiveness Index, the International Labour Organization (ILO), the International Telecommunications Union (ITU), the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the World Bank. Finally, the study relied on a number of previous analyses, most notably a 2017 study by the United Nations Industrial Development Organization (UNIDO) which surveyed about 1,200 women entrepreneurs in the formal and informal sectors in Egypt, Jordan, Lebanon, Morocco, the State of Palestine and Tunisia, providing rich analysis of the obstacles facing women entrepreneurs in these six countries. However, because the data sample was not randomly collected and the population that respondents were drawn from appears to differ

depending on the country context, cross-country comparisons should be made with extreme caution.

Still, both the GEM and UNIDO data do provide insights concerning Arab women entrepreneurs in the informal sector and the challenges they face, which is important given the high rates of entrepreneurs engaged in the informal sector within the region (reported by the ILO to stand at 90.8 per cent). At the same time, these studies do not provide a full picture of women entrepreneurs in the informal economy, given the lack of comprehensive data across countries and years. This, therefore, is a limitation of this study, as is the fact that data on the formal sector derive from different sources, contain relatively small numbers of female entrepreneurs and were gathered in different years.

Conceptual framework

This study seeks to identify both structural and individual obstacles that prevent women in the Arab region from engaging in entrepreneurial activity, through data analysis and a review of existing literature, in order to inform policymakers and identify missed opportunities. The study employs a women's empowerment approach, geared towards the fulfilment of the rights of women and girls and the attainment of equality between women and men.

Datta and Gailey (2012, p. 581) identify three forms of empowerment that can result from entrepreneurial activity: "economic security, development of entrepreneurial behaviour, and increased contributions to the family". In other words, entrepreneurship can be empowering to women because it provides them with income (economic security), but also because it helps build their self-confidence and various skill sets through better knowledge of markets, pricing,

negotiation skills, the ability to assess risks etc. (development of entrepreneurial behaviour) as well as because through entrepreneurship, women's standing in their families is often increased (increased contributions to the family). Even if the income generated from entrepreneurship is not substantial, the leadership skills gained may be valuable both within and beyond the household.

In light of Datta and Gailey's definition, one can in turn think about specific ways that ICT can be integrated into women's businesses, that emphasize not only direct economic benefits that may improve revenues/profits, but also solutions that indirectly support women in, for example, improving their self-image and confidence, developing strategies to better position them in the market, etc., which may in turn support the 'development of entrepreneurial behaviour' and shape how they are viewed by their families.

Another definition provided by Shingla and Singh (2017, p. 27) also sheds light on how ICT can be mobilized to support women entrepreneurs. These authors emphasize: "level of mobility", "decision-making power" and "awareness and capacity building" as important aspects of empowerment related to entrepreneurial activity. The present study will use these categories to identify various ways ICTs can enhance women's entrepreneurial experiences and more generally empower them.

In thinking about the most effective way to support women entrepreneurs, another useful theoretical concept is what the OECD (2018c, p. 37) has labelled as "[l]eapfrog opportunities" – which involve "bypassing traditional technologies and taking up digital alternatives". Given that women globally and in the region lag behind in terms of their engagement in

entrepreneurial activity, reflecting on ways to put both traditional and cutting-edge ICT into the hands of women should be at the forefront of policy priorities, both because it will give women a business advantage and will close the digital divide. One final theoretical concept that will frame this analysis is the distinction between subsistence and transformational entrepreneurs, in light of the often-different challenges facing these two groups.

Study outline

The study is comprised of three chapters. The first chapter sets the scene by describing the state of entrepreneurship in the Arab region and presenting the opportunities offered by entrepreneurship to boost economic development. It also examines the multiple broader challenges that all entrepreneurs may face including entrepreneurial and ICT-related challenges given the focus of the study.

Chapter two discusses the readiness of potential women entrepreneurs to embark on entrepreneurial activities and scrutinizes the barriers that they may face once they have

initiated and started running their businesses. The concept of readiness of women to commence new businesses is key to address the gender gap in entrepreneurship. Thus, this chapter examines the factors limiting women's ability to launch businesses as well as the factors obstructing their ability to sustain and expand these businesses, with a particular focus on ICTs as tools to support women's entrepreneurship.

By bringing to light initiatives in the region, chapter three examines how ICTs can promote women's entrepreneurship. This chapter explains the multiple roles of ICTs in helping to overcome the broad challenges that all entrepreneurs, including women, face as well as challenges specific to women. It also examines the opportunities of ICTs in terms of supporting women to initiate, sustain and expand entrepreneurship.

The study concludes with a set of policy recommendations to advance and boost women's entrepreneurship as one channel to support women's empowerment and economic development.

I. Setting the scene: Women's entrepreneurship in the Arab region

Section highlights

- *Countries in the Arab region are increasingly recognising the importance of supporting and nurturing entrepreneurs, both subsistence and transformational, to further economic development. Research indicates that if women and men participated equally as entrepreneurs, global GDP could rise by as much as 2 per cent, or USD 1.5 trillion.*

- *Nevertheless, the region continues to see low rates of entrepreneurship compared to the rest of the world and large informal sectors. Furthermore, women's entrepreneurship in the region is relatively limited. 24.8 per cent of firms in the MENA region have some female ownership compared to 35.9 per cent at global level and 52.7 per cent in East Asia and Pacific.*

- *Ongoing deficits in infrastructure (including electricity and telecommunications), issues of financial regulation and access and an inadequately educated workforce have been identified by entrepreneurs in several countries as severe challenges for all men and women entrepreneurs.*

- *Firms in several Arab countries report telecommunications infrastructure as an obstacle to operations of their enterprises: 53 per cent of firms in Mauritania, 27 per cent in Morocco, 28 per cent in the State of Palestine, 23 per cent in Yemen and 13 per cent in Lebanon.*

- *Additionally, broader components of the digital landscape such as the prevalence of online transactions and amount of content available in Arabic may limit the potential of emerging and established entrepreneurs. The region has a relatively high number of English-language sites, as 70 per cent of online content is in English compared to 55 per cent globally.*

I. Setting the scene: Women's entrepreneurship in the Arab region

Women's entrepreneurship cannot be divorced from the broader entrepreneurial landscape, including whether states have the infrastructure, regulatory and financial environment to support entrepreneurs. This first chapter frames the concept of entrepreneurship and presents the opportunities it offers to boost economic development and lift up women in the Arab region. It examines the state of entrepreneurship in the region and identifies broader regional challenges that all entrepreneurs may face. Given the study's emphasis on the role of ICTs in promoting women's entrepreneurship, this chapter focuses on specific challenges related to ICTs in the region, as well as the state of access to and use of ICTs, particularly among women.

A. Framing the concept of entrepreneurship for women in the Arab region

Entrepreneurship is generally defined as risk-taking activities that involve the hope of income generation on the part of an individual or individuals. This broad definition spans a wide spectrum and encompasses those engaged in both informal and formal entrepreneurship, from farmers engaged in subsistence agriculture and street vendors to individuals with advanced

degrees creating their own businesses to exploit cutting-edge scientific advances.

The link between entrepreneurship and economic development is well established. An early Global Entrepreneurship Monitor (GEM) Report⁸ found that "the national level of entrepreneurial activity has a statistically significant association with subsequent levels of economic growth". The data also suggest that there are no countries with high levels of entrepreneurship and low levels of growth. According to the OECD Council Report in 2012, all countries consider entrepreneurial promotion to be a crucial policy for sustained employment creation, as well as innovation of products, production processes and organizations. Various studies have demonstrated that entrepreneurs contribute to economic development, job creation and a reduction in poverty, particularly for countries in transition.⁹ Entrepreneurs create new businesses, and new businesses create jobs, ensure variety in the market, intensify competition and play a role in increased productivity through technological change.¹⁰

Entrepreneurial activity can result in increased economic security, the development of entrepreneurial behaviour and increased contributions to the family.¹¹

⁸ Global Entrepreneurship Monitor (GEM). 2002 executive report, p. 7.

⁹ World Bank, 2008b.

¹⁰ GEM, 2019.

¹¹ Datta and Gailey, 2012, p. 581.

Box 1. Entrepreneurship as a catalyst for sustainable development

Yet entrepreneurship can play a vital role in advancing the economic empowerment of women, achieving gender equality and advancing the sustainable development goals. Entrepreneurship is explicitly mentioned in two SDGs, namely:

- (a) Goal 4, Target 4.4: by 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship;
- (b) Goal 8: Target 8.3: Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises (MSME), including through access to financial services.

However, as highlighted by the United Nations Secretary-General's report on Entrepreneurship for Development (A/71/210, 2016), entrepreneurship has an impact beyond the two mentioned SDGs, and is also relevant to:

- (a) Goal 1 on poverty;
- (b) Goal 2 on hunger, primarily target 2.3 on agricultural productivity;
- (c) Goal 5 on gender equality and the empowerment of women and girls;
- (d) Goal 7 on energy, particularly its targets linked to the development of renewable energy;
- (e) Goal 9 on resilient infrastructure, particularly targets related to the enhanced role of MSMEs (target 9.3) and encouraging innovation and enhancing productivity (target 9.5);
- (f) Goal 10 on reducing inequality within and among countries;
- (g) Goal 12 on sustainable consumption and production patterns, where entrepreneurs have the potential for introducing new technologies for climate change mitigation;
- (h) Goal 17 on implementation and global partnership for development, where the role of the private sector – with entrepreneurship playing a central role in its formalization and development particularly in developing countries' context – is central to the achievement of SDGs.

Goal 5 on women's empowerment and gender equality cannot be disentangled from the other goals listed above, and supporting and encouraging women to not only engage in entrepreneurial activity, but to do so while embracing ICT provides an opportunity to address Goal 5 along with a number of other SDGs listed above. For example, entrepreneurship can improve women's economic security, which can then in turn contribute to progress on Goal 1 (reduction of poverty) and possibly Goal 2 if the entrepreneur was food insecure. Since the adoption of ICT also involves gaining new skills, Goal 4 is also likely to be addressed (Datta and Gailey, 2012). As will be discussed in the subsequent sections, ensuring that the necessary infrastructure (Goals 7 and 9) is in place is key to supporting women entrepreneurs as they adapt ICTs. ICTs as a source of innovation (Goals 2, 9 and 12) are also important.

Women attain an increased level of mobility as a result of engaging in entrepreneurship, where their decision-making power, awareness and capacity building skills are exponentially increased.¹²

The broader economic impact of women's engagement in entrepreneurship is also substantial, with research by the Boston Consulting Group indicating that if women and men participated equally as entrepreneurs, global GDP could rise by as much as two per cent, or \$1.5 trillion.¹³ Achieving these gains requires not only supporting women to enter entrepreneurship, but also addressing the success rate of female-owned businesses, as more mature businesses are more likely to grow and hire additional people.¹⁴ A lack of employment opportunities for women results in large economic costs for the economies and missed opportunities to empower themselves and contribute to their households, communities and countries.

1. Factors driving entrepreneurial engagement

Expanding further on the notion of entrepreneurship, different factors drive individuals to engage in business activity. For some, entrepreneurship involves the Schumpeterian concept of "seizing an opportunity to introduce new products or services".¹⁵ Such entrepreneurs are often categorized as transformational, given their ability to innovate and contribute to economic

growth and therefore also job creation. Transformational entrepreneurs are particularly important to identify, because of their considerable impact on the macroeconomy (in terms of job creation and innovation).

For others, self-employment is imposed due to circumstances, whereby entrepreneurship is a form of subsistence.¹⁶ Subsistence entrepreneurs refers to "those who are self-employed out of necessity and often lack skills and entrepreneurial traits".¹⁷ Most subsistence entrepreneurs are in the informal sector, although not all informal sector entrepreneurs are subsistence ones. In 1993, the International Labour Organization (ILO) (n.d.) defined the informal sector "as a group of production units comprised of unincorporated enterprises owned by households, including informal own-account enterprises". The informal sector is generally further divided between 'own-account workers' (e.g. entrepreneurs) and wage workers. The ILO (2017, p. 14) further elaborates on 'own-account workers' as "more likely to be poorly paid and under weak or no contracts, have little or no labour protection or support, be employed in the informal sector, have reduced access to social protection systems and be living in poverty". In other words, subsistence entrepreneurs, who are generally in the informal sector, tend to be highly vulnerable.

Various socioeconomic factors, ranging from independence and economic security to flexible working hours, incentivize women across the globe to become entrepreneurs.¹⁸ The pull-push

¹² Shingla and Singh, 2017, p. 27.

¹³ Boston Consulting Group (BCG) (2014), Bridging the Entrepreneurship Gender Gap: The Power of Networks. *The Boston Consulting Group*.

¹⁴ Ibid.

¹⁵ Nieva, 2015.

¹⁶ Schoar, 2010.

¹⁷ Cho and others, 2016.

¹⁸ Bouguerra, 2016.

model is often utilized to understand women's attraction to entrepreneurship.¹⁹ Itani and others (2009) stated that "while job redundancy, the glass ceiling, economic recessions, financial reasons, and job dissatisfaction act as push factors, the need for accomplishment and independence, self-fulfilment, and social status work as pull factors".²⁰ Thus, push factors are the product of women's dissatisfaction with their current socioeconomic condition whereas pull factors are beyond material benefits.²¹

2. Understanding entrepreneurship as an opportunity for women in the Arab region

Examining the reasons behind why women in the Arab region choose to become entrepreneurs is vital to fully understand women's socioeconomic positioning in the region. Itani and others (2011) argue for example that women in the United Arab Emirates are attracted to entrepreneurship largely by pull factors due to their desire to become independent and elevate their social status. In some situations, the push and pull factors may be intertwined, as in the example of Lebanese women entrepreneurs who faced hardships in accessing the labour market and were aggravated by gender discrimination.²² Indeed, the gender discrimination that women experience across the region in the labour market, whether through company policies or in the recruitment process, pushes women to start their own businesses. Furthermore, women in the region are strongly incentivized to become entrepreneurs by financial motives in order to generate double income to support their

husbands and families. The desire for autonomy and personal satisfaction also incentivizes Arab women to open business start-ups.²³

The level of flexibility that accompanies some forms of entrepreneurship may also allow women to balance work duties and care taking responsibilities.²⁴ The labour market, whether in the private or public sector, has long disregarded women's unpaid care responsibilities. Thus, entrepreneurship in the region is often used as a coping mechanism to overcome the challenges women face in the labour market related to inflexibility of employers. Entrepreneurship gives women the freedom to prioritize their responsibilities, organize their time and duties and choose activities that suit their personal preferences. Finally, Bouguerra (2016) stated that Arab women who have family support, education and access to capital are more likely to open their own business start-up.

More generally, the disparate motivations for entrepreneurship that are held by the different categories of entrepreneurs, including subsistence and transformational, entail different policy responses in order to enable them to improve their economic position, and more broadly to generate growth and employment. This distinction is also important as it helps better understanding how ICTs can lever and boost the efforts of various different entrepreneurs. ICT is increasingly essential to all entrepreneurs, whether subsistence or transformational and regardless of their motives for entrepreneurship. Identifying strategies for

¹⁹ Uhlaner and Thurik, 2007.

²⁰ Sarri and Trihopoulou, 2005.

²¹ Bastian and others, 2019.

²² Jamali, 2009.

²³ Bouguerra, 2016.

²⁴ Daniel, 2004; DeMartino and Barbato, 2003.

making use of ICT to reduce the vulnerability of subsistence entrepreneurs and boost the capacities of transformational entrepreneurs is of key importance. Therefore, illustrating the potentialities offered by ICT to support the work of all entrepreneurs lays the groundwork for advocating for strategies to increase their accessibility and use.

3. Scope of women's entrepreneurship in the Arab region

Comparative evidence on rates of entrepreneurship in the Arab region generally comes from two main international statistical sources: the GEM, which focuses on individual entrepreneurial activities, aspirations and attitudes; and the World Bank Enterprise Survey, which focuses on the economic performance and constraints to growth and profitability of registered enterprises with five or more employees. Analyses that make use of existing data sets generally categorise women's 'engagement' in entrepreneurship in two categories: (a) firms that have any female participation in ownership; (b) majority female-owned firms (50 per cent or more of the ownership is female).

Data from the World Bank Enterprise surveys indicate that while globally 35.9 per cent of firms have some female ownership, for the MENA region, the figure is 24.8 per cent, in comparison to East Asia and the Pacific, where the rate is 52.7 per cent.²⁵ It is worth noting that the OECD countries have a similar rate to the MENA region, at 24 per cent. Once the category is restricted to majority female-owned firms, the

numbers drop considerably. Globally, about 14.3 per cent of firms are estimated to be majority female owned, but according to the World Bank, the rate in MENA is far lower at 3.5 per cent. These figures are similar to the ones found (table 1) using the most recent enterprise data, which indicate that female majority firms make up 4.7 per cent of all firms regionally, whereas firms that have at least one female owner are estimated to be around 21 per cent.²⁶

Considerable variation exists in terms of the rate of female ownership across the region as shown in table 1. Including both those with some female owners in addition to majority owned female firms, changes the rankings. When focusing narrowly on female majority firms, Djibouti (10 per cent), followed by Lebanon and Tunisia (7 per cent) scored the highest. At the other end of the spectrum are the conflict-ridden countries. When the definition is expanded to include firms with any female ownership, Tunisia and Lebanon come in first and second, with 52 per cent and 37 per cent of firms respectively reporting some female ownership. The next highest is Morocco (27 per cent). The Sudan and Yemen are again at the bottom with numbers in the single digits.²⁷

Differences are observed in the types of ventures established and run by female and male entrepreneurs in the region. Women's businesses are more likely to be concentrated in personal, consumer-oriented activities, such as health and beauty (rather than business services such as accountancy), and in lower-technology production activities, without, for example an ICT or science-based component. Women's

²⁵ <https://www.enterprisesurveys.org/en/data/exploretopics/gender>.

²⁶ Percentages reported are unweighted. As the World Bank (2008c) states, "[c]aution is thus needed in drawing general conclusions about the entire population of enterprises in the region".

²⁷ Given that the number of women entrepreneurs included in some of these surveys is quite small, and that informal sector firms are not included in the Enterprise surveys, caution is needed in terms of coming to any conclusions about the degree to which country-level differences are significant.

businesses had, on average, been in operation for less time than men's; however, the prevalence of high potential firms²⁸ was similar among male and female entrepreneurs.²⁹

While overall rates of women's engagement in entrepreneurship are low, particularly compared to the global average, there appears to be a high-level of discrepancy between entrepreneurial intentions and actual start-ups, suggesting there is a pool of potential women entrepreneurs who may not have the skills, resources or opportunities to realize their intentions. According to the GEM 2018/2019 Women's Entrepreneurship Report, the global average for women's intentions to start a business within three years is 17.6 per cent,

about four points less than for men (at 21.7 per cent). Promisingly, the highest rates of women's entrepreneurial intentions were observed in the MENA region, at 36.6 per cent, with one of the smallest regional gender gaps in intentions to start a business (39.2 per cent for men). Yet, the MENA region also showed the largest gap in the percentage of women expressing entrepreneurial intentions to those engaged in nascent entrepreneurship (defined as not yet having paid more than three months in salaries) at a rate of only 4.1 per cent (with men at 6.6 per cent), as well as the largest gender gap, at 38 per cent.³⁰ These data further support the hypothesis that women in the region are eager to enter business, but face considerable obstacles.

Table 1. Female firm ownership, as a per cent of all firms, in the Arab States

Country	Year	50 per cent or more female ownership	Some female ownership (at least one)
Djibouti	2013	9.97	21.08
Egypt	2013	5.32	18.3
Egypt	2016	4.44	23.92
Jordan	2013	3.17	14.18
Lebanon	2013	6.89	36.96
Mauritania	2014	3.4	14.96
Morocco	2013	5.05	27.12
Sudan	2014	2.9	8.24
Tunisia	2013	6.76	51.99
Palestinian Territories	2013	3.31	11.09
Palestinian Territories	2019	2.24	9.76
Yemen	2013	1.19	7.7
Total		4.73	21.12

Source: World Bank Enterprise Survey Database.

²⁸ High potential is measured by the entrepreneur's expectations of future employment generation and other variables.

²⁹ OECD. (2014). Women in Business 2014: Accelerating Entrepreneurship in the Middle East and North Africa Region. Available at <http://dx.doi.org/10.1787/9789264213944-en>. Accessed on 2 November 2020.

³⁰ It should be noted that the GEM reports include only seven Arab countries – Egypt, Lebanon, Morocco, Qatar, the United Arab Emirates, Saudi Arabia and Sudan, so caution is needed in terms of generalizing these findings to the entire region.

B. Entrepreneurship in the Arab region: High levels of informality

Entrepreneurship in the Arab region is marked by high levels of informality, which is closely linked to the challenges that entrepreneurs face in establishing and developing their businesses. In recent years, countries in the Arab region have increasingly recognized the importance of establishing entrepreneurship ecosystems, with many cities actively working to become regional hubs for entrepreneurship, including Abu Dhabi, Doha, Dubai, Jeddah, Manama, Muscat, Amman, Beirut, Cairo, Casablanca and Tunis. Most Gulf Cooperation Council (GCC) countries have established national funds to support innovation and entrepreneurship. Several Arab governments, including Bahrain, Saudi Arabia, Qatar and the United Arab Emirates, have recognized the importance of linking with the global ecosystem and therefore have launched initiatives connecting the global ecosystem and local start-ups.³¹ Some of these efforts are starting to bear fruit. For example, the 2017/2018 GEM Global Report found that Saudi Arabia ranked first worldwide on the Entrepreneurial Spirit Index, and the United Arab Emirates ranked first worldwide in High-Status Entrepreneurs. Additionally, Lebanon ranked fourth worldwide in Total Early Stage Entrepreneurial Activity.³²

Despite these advancements, men and women in the Arab region have the lowest rates of self-employment globally. Moreover, the rates of self-employment have dropped between 1999 and 2019 (table 2). The observed decrease in the region between 1999 and 2019 is larger than at

the global level. However, while Arab men and women have lower rates of self-employment compared to global figures, as a per cent of total employment, Arab women are more likely to be self-employed than men are.

Gatti and others (2013: 47) argue that in the MENA region “[h]igh-productivity entrepreneurs are few”, and instead individuals have “a high propensity for entering subsistence self-employment, that the productivity of their enterprises tends to be low, and that subsistence self-employment is still highly correlated with poverty”. The ILO estimates that in the Arab region, the majority of employment (68.6 per cent) and entrepreneurs (90.8 per cent) is in the informal sector. Evidence shows that firms in the formal sector are much more productive than in the informal sector, with the average informal firm in emerging markets and developing economies being four times less productive than the average firm in the formal sector.³³ This is due to the fact that the informal sector tends to employ less-skilled workers, have restricted access to funding, services and markets and lack economies of scale.³⁴ Firms in the informal sector have more limited access to credit from the banking sector and capital markets, which has been identified as a key reason for informal firms remaining small and unproductive. For example, lower access to finance restricts their ability to invest in productivity-enhancing technologies. The transition from the informal to formal economy is also essential to achieving inclusive development and realizing decent work for all, as reflected in SDG 8 on sustained, inclusive and sustainable economic growth.

³¹ ESCWA. 2019b: 20-21.

³² <https://www.unescwa.org/sites/www.unescwa.org/files/publications/files/impact-fourth-industrial-revolution-development-arab-region-english.pdf>, pp. 20-21.

³³ World Bank. 2019. Global Economic Prospects, January 2019: Darkening Skies. Washington, D.C.: World Bank. doi: 10.1596/978-1-4648-1343-6.

³⁴ World Bank, 2019a, p. 130.

Table 2. Self-Employment as a per cent of total employment in the Arab region

Year	Global (M)	Global (F)	Arab region (M)	Arab region (F)
1999	53.8	56.9	38.9	46.0
2009	51.2	52.2	33.7	42.8
2019	47.5	46.8	29.7	34.3

Source: www.ilo.org/ilostat/.

While a few entrepreneurs may seek to remain in the informal sector simply in order to avoid taxes and various forms of regulation, informal economies are typically characterized by a high incidence of poverty and severe work deficits and have a negative impact on the development of sustainable enterprises (particularly regarding low productivity and lack of access to finance) and fair competition in national and international markets.³⁵

Despite the high levels of informality in the Arab region, most studies of the investment climate focus on formal enterprises and relatively less is known about the constraints of informal subsistence entrepreneurs in the region.³⁶ This is largely because data focusing on the formal sector are better.

The comparatively low rates of entrepreneurship regionally, as well as the high rates of engagement in the informal sector are interlinked with the regional challenges impacting all potential and actual entrepreneurs – both men and women. Before delving into the specific challenges that women entrepreneurs face, it is worth examining these broader challenges including those related to entrepreneurship, specifically infrastructural deficits, the regulatory environment, lack of

skills and access to finance; and, given the focus of the study, those challenges related to Internet access and the digital landscape.

C. The entrepreneurial environment in the Arab region: Multiple challenges

For countries to promote entrepreneurship, they need to develop an ecosystem that nurtures entrepreneurs. Key to enabling a conducive entrepreneurship environment are a favourable culture, adequate infrastructure and a regulatory environment that is proportional, effective, transparent, consistent and predictable. This section will first examine some general areas related to the entrepreneurship environment in terms of regulation, infrastructure, financial integration and skills. Several of the indicators in the Ease of Doing Business Index, which pertain to both regulation and infrastructural issues, directly relate to the ability for businesses to integrate ICTs into their operations – namely the indicators relating to electricity and getting credit. Additionally, the World Bank's Enterprise Survey data, Global Findex data and other sources can be used to assess the business environment and the degree to which the regulatory environment supports entrepreneurs.

³⁵ ILO, 2018, p. 1.

³⁶ Gatti and others, 2013, p. 228.

1. The regulatory framework

The regulatory environment can impact a wide range of economic outcomes such as productivity, growth, employment and informality. It should put specific safeguards in place to protect workers, investments and intellectual property (to name a few), while eliminating unnecessary red tape. Where procedures are more complex or unclear, the likelihood of corruption is higher.³⁷ Regulatory frameworks are thus important to create conducive business environments and regulatory frameworks should not include any discrimination or barriers against women but should rather foster women's business initiatives.

Within the Arab region, there are large discrepancies when it comes to the regulatory and business environment. For example, in the 2020 Ease of Doing Business Rank,³⁸ the United Arab Emirates is ranked 16th out of 190 countries, followed by Bahrain and Morocco respectively with ranks of 43rd and 53rd. While the entrepreneurship ecosystem in the United Arab Emirates is relatively young, in the last few years the government has introduced a number of regulatory changes to ease doing business, such as reducing fees for business incorporation, streamlining procedures for

obtaining construction permits and facilitating trade across borders.³⁹ Morocco too has introduced a number of regulatory changes to ease doing business, including reduced registration fees for new businesses, improved the process to obtain construction permits and strengthened minority investors, among other reforms.⁴⁰ As a direct result of improving regulations, the number of new business registrations in Morocco is the highest in the Arab world.⁴¹ Four Arab countries (Bahrain, Jordan, Kuwait and Saudi Arabia) are among the 10 top improving economies in Doing Business.⁴²

Nonetheless, at the other end of the spectrum, many Arab countries received low rankings including the Syrian Arab Republic (176th), Libya (186th), Yemen (187th), Iraq (172nd), the Sudan (171st), Algeria (157th), Mauritania (152nd), Lebanon (143rd), the State of Palestine (117th) and Egypt (114th).⁴³

2. Financial infrastructure

Low levels of integration into formal banking systems are an indication of barriers facing entrepreneurs in general and women in particular, with impacts on their ability to access loans and other financial products and make and receive payments for products and services.

³⁷ World Bank, 2019a, p. 2. Available at https://www.doingbusiness.org/content/dam/doingBusiness/media/Annual-Reports/English/DB2019-report_web-version.pdf.

³⁸ The World Bank "Doing Business" index includes 11 indicator sets that measure aspects of business regulation, including starting a business, employing workers, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts and resolving insolvency (World Bank, 2020a, p. 3).

³⁹ World Bank, 2020a, p. 125.

⁴⁰ World Bank, 2020a, p. 111.

⁴¹ ITU, 2019, p. 14. Available at https://www.itu.int/en/ITU-D/Regional-Presence/ArabStates/Documents/events/2019/Reports19/Entrepreneurshipreport20andper cent20Innovationper cent20inper cent20Arabper cent20Region_Finalper cent20report.pdf.

⁴² World Bank, 2020a, p. 8.

⁴³ World Bank, 2020b.

These barriers may be related to financial regulations and/or infrastructural weakness.

Within the Ease of Doing Business Index under the indicator set focused on “getting credit”, collateral laws that limit the scope of moveable assets businesses can use as collateral, as well as weak credit information systems, are both associated with businesses facing difficulties in obtaining credit. On this indicator, the best performing country in the region is Jordan, with a rank of fourth, followed by the United Arab Emirates (48th), Egypt (67th) and Saudi Arabia (80th). However, overall, the countries in the region perform poorly, falling into the bottom half of global rankings, with scores of 119th (Kuwait, Qatar and Morocco) to 186th (Iraq, Libya and Yemen) out of 190. These issues may have gendered effects.

For example, lower capital requirements are more likely to entice women entrepreneurs: in regions with lower start-up costs, the proportion of micro firms owned by women is higher.⁴⁴ As will be discussed in more detail in chapter two, the challenges of obtaining credit are exacerbated for women due to a lack of gender-sensitive financial services and entrenched gender norms.

Access to banking more generally remains quite low in the Arab region, which is an additional factor that shapes the entrepreneurial environment. Data from Findex indicate that although the per cent of individuals with a bank account has been rising in recent years – and reached 37 per cent in 2017 – it remains considerably below the global average of 69 per cent (table 3).

Table 3. Account holding in the Arab region

Year	Region	Account (Percentage age 15+)	Account, Male (Percentage age 15+)	Account, Female (Percentage age 15+)	Female/Male Ratio	Region	Account (Percentage age 15+)	Account, Male (Percentage age 15+)	Account, Female (Percentage age 15+)	Female/Male Ratio
2011	Arab region	22	30	14	0.5	World	51	55	47	0.9
2014	Arab region	30	38	22	0.6	World	62	66	58	0.9
2017	Arab region	37	48	26	0.5	World	69	72	65	0.9

Source: Global Findex data, 2017.

⁴⁴ World Bank, 2008c, p. 47.

The regional average also hides the fact that some countries have considerably lower rates. As shown in table 4, regionally the rate of bank account use is rising for both sexes, however, the gap between men and women has persisted and is larger than the gender gap globally. Whereas the ratio between female to male rates of account holding is 0.9 globally, in the Arab

region it is only 0.5. Even among the high income countries in the region, the gap is larger than globally and in low income countries, such as Yemen, not only are rates of account holding very low overall (6 per cent), the gap between women and men is very high (with a ratio of 0.3). In the rest of the region, the ratio ranges from 0.6 to 0.9 (table 4).

Table 4. Account holding in Arab States

Country	Account total (Percentage)	Account (M) (Percentage)	Account (F) (Percentage)	Ratio: female/all
Algeria	43	56	29	0.68
Bahrain	83	86	75	0.91
Egypt	33	39	27	0.82
Iraq	23	26	20	0.86
Jordan	42	56	27	0.63
Kuwait	80	83	73	0.92
Lebanon	45	57	33	0.74
Libya	66	71	60	0.91
Mauritania	21	26	15	0.74
Morocco	29	41	17	0.59
State of Palestine	25	34	16	0.64
Saudi Arabia	72	81	58	0.81
Tunisia	37	46	28	0.77
United Arab Emirates	88	93	76	0.87

Source: Global Findex data, 2017.

Note: Definition: The percentage of respondents who report having an account (by themselves or together with someone else) at a bank or another type of financial institution (see definition for financial institution account) or report personally using a mobile money service in the past 12 months (see definition for mobile money account).

Global Findex data⁴⁵ indicate that the most frequent reason given for not having a bank account is “insufficient funds”, with over three quarters of respondents in Egypt, Tunisia, Jordan and Iraq stating this reason. This suggests that the most important factor contributing to low rates of account holding is poverty, although that finding does not necessarily explain the gender differences (the responses to the question were not sex-disaggregated). In Tunisia and Iraq, the nearest bank being too far away was given as a reason by 54 per cent and 26 per cent of respondents, respectively, suggesting lack of infrastructure is also an issue and also providing an example where ICT could play a role in increasing access, given that virtual finance options can reach those without access to a physical bank branch. Another important reason given was that financial services were too expensive. This was particularly true for Tunisia, Iraq, Jordan and Libya. Finally, some reported they did not have an account because someone else in their household had one, and they did not see the necessity. Unfortunately, the data were not disaggregated by sex for this question, but women are more likely to be in this category.

3. Skills

The World Bank’s Enterprise Survey Data⁴⁶ also suggest that a major issue identified by firms in the region was an “inadequately educated workforce”. While overall four per cent of firms identified this as the worst obstacle, between a quarter and a third of respondents in Djibouti, Mauritania, Morocco and the Sudan flagged this issue as major or severe. In Djibouti and

Mauritania, firms with higher proportions of female ownership were particularly likely to flag this issue, although the sample sizes were quite small, suggesting a need for caution in interpretation.

Looking further into the issue of whether populations have an adequately skilled workforce, the Global Talent Competitiveness Index (2020) ranks 132 countries⁴⁷ based on their ability to grow, attract, enable and retain talent. Within the Arab region, the United Arab Emirates was the top performing country, with a ranking of 22nd. It was followed by Qatar (29th), Saudi Arabia (40th), Bahrain (41st) and Oman (43rd). The lowest performing countries in the region were Egypt (97th), Morocco (100th), Algeria (105th) and Yemen (132nd). One area depressing the rankings of Arab countries is their ability to grow talent. The indicators under the pillar of “Grow” include formal education, lifelong learning and access to growth opportunities. Countries in the Arab region are included in the regional grouping of “Northern Africa and Western Asia” in the index. This regional grouping is ranked 4th (out of 7 regions) in all pillars, except for “Grow”, where the region is ranked 5th. While the regional grouping includes several non-Arab countries, the individual scores for Arab countries are lower for “Grow” than their overall ranking. For example, despite an overall ranking of 61st, Jordan ranks 86th in the ability to grow talent.

Drilling down further, research,⁴⁸ using data from Lebanon, indicates that the skill gap is

⁴⁵ The Global Findex survey asked individuals who report not having a bank account eight questions about the reasons they do not have one and respondents could answer yes to as many of the questions as they found relevant.

⁴⁶ Enterprise Survey.

⁴⁷ Countries in the Arab region included in the Index are: United Arab Emirates, Qatar, Saudi Arabia, Bahrain, Oman, Jordan, Kuwait, Tunisia, Egypt, Morocco, Algeria and Yemen.

⁴⁸ World Bank (191), Pierre and Robalino.

largest among managers, with three areas in particular being identified as a problem: “non-computer office skills, computer skills, and ability to work independently”. This suggests that ICT skills are lacking even among managers in Lebanon, a country that has a fairly high level of education for the region. A survey of entrepreneurs in Tunisia also found that while entrepreneurship training played a vital role in the success and development of all firms, only 45.7 per cent of the male and 28.6 per cent of female entrepreneurs in the sample received training related to their businesses, while 77 per cent of the women and 23 per cent of the men had indicated a need for training.⁴⁹ As such, one way of supporting entrepreneurs is providing better ICT training to workers in general, and managers in particular, while also increasing accessibility of entrepreneurship training for budding entrepreneurs.

4. ICT-related challenges

(a) Infrastructure

When considering the degree to which firms can integrate information technology into their businesses, electricity as well as telecommunications and broadband access are key. On the topic of electricity, the Ease of Doing Business Index includes one indicator focused on electricity access. On this indicator, the Gulf countries largely fell within the top 50 (out of 190) performing countries, with the United Arab Emirates, Saudi Arabia, Oman and Qatar receiving ranks of 1st, 18th, 35th and 49th respectively. Meanwhile, among the worst ranked in the world included Lebanon (127th),

Iraq (131st), Libya (142nd), the Syrian Arab Republic (160th) and Yemen (187th), all countries that have experienced war and instability in recent years, which has no doubt contributed to their low ranking.

The World Bank Enterprise data (which do not include data for the Gulf states) also indicate that firms in many countries in the region have identified that electricity, in particular the reliability of the electricity supply and the time it takes to get an electricity connection,⁵⁰ remains a serious obstacle. In Djibouti, Lebanon, Mauritania, the State of Palestine and Yemen, 45 to 70 per cent of all firms identify electricity as a “major” or “very severe” obstacle. In Egypt and Morocco, fewer firms reported that electricity was an obstacle, but a substantial minority of firms (25 to 30 per cent) still flagged it as an issue. Only in Jordan and Tunisia was electricity not identified as a major obstacle by most firms. Inconsistent electricity access not only impedes daily business operations, but also makes incorporating ICT innovations difficult.

(b) Telecommunications and broadband access

Telecommunications infrastructure also has a direct impact on entrepreneurs’ ability to successfully incorporate and use ICTs in their businesses. An analysis of the World Bank Enterprise survey data suggests that while fewer firms reported that telecommunications was “an obstacle to the current operations of this establishment” compared to electricity, it was still identified as an issue by a significant number of firms, again indicating that taking

⁴⁹ Drine and Grach, 2010, p. 10.

⁵⁰ On the topic of “Electricity”, the World Bank Enterprise Survey focuses on whether firms have been affected by electrical outages, the frequency with which outages occur, how long most outages last, whether the company owns a generator, how often that generator is used, how many days it takes to obtain an electrical connection, and an estimate of losses due to power outages as a percentage of annual sales.

advantage of the potential productivity gains of ICT is not without challenges in countries with weak infrastructure. Firms in Mauritania (53 per cent), Morocco (27 per cent) and the State of Palestine (28 per cent) were the most likely to report telecommunications as an obstacle, but a substantial minority of firms in Lebanon (13 per cent) and Yemen (23 per cent) also stated that this was an issue. Again, Jordan and Tunisia stood out as having better basic infrastructure than the rest of the countries surveyed.

The Arab region also has among the lowest rates of access to fixed broadband access.⁵¹ This is likely another indication of infrastructural weakness, but may also reflect the relatively higher cost of such services, with research indicating that the cost of broadband relative to user income is considerably higher in the Arab region than elsewhere in the globe, with the exception of Africa.⁵² Household-level computer ownership also remains at 50 per cent for the region but has been growing rapidly in recent years.

(c) The broader digital landscape: Usage patterns and quality of online content

In addition to gaps in the quality of and access to telecommunications and fixed broadband, another factor related to the use (or lack thereof) of ICTs, particularly the Internet, may be the quality of online content and social trends in how the Internet is used. These factors may reduce familiarity with the Internet as an enabler and driver for business among potential entrepreneurs or contribute to established

entrepreneurs not identifying the vast benefits of the Internet.

It is important to look at both how potential consumers within the Arab region use the Internet, as well as Arab entrepreneurs as providers of internet services. If entrepreneurs are going to use ICT to promote and sell their products, there needs to be a customer base willing to engage. In 2017, a survey examining online usage trends in the Arab region carried out by the Mohammed bin Rashid School of Government (MBRSG) in the Arab region⁵³ found that the most common reasons respondents used the Internet were for socializing (92 per cent), accessing news (79 per cent), job searching (77 per cent) and entertainment (72 per cent). At the other end of the spectrum, only 40 per cent of respondents indicated they regularly use the Internet for online shopping and retail activities and as few as 24 per cent regularly carry out personal financial transactions online, with a similar percentage for business-related transactions including trading, selling or buying. Unfortunately, sex-disaggregated data on usage trends were not available.

The survey showed that while online spending in the region is rising, e-commerce is still in its infancy in the Arab region. Total monthly online spending in 2017 was approximately \$7.3 billion (up from \$2.7 billion in 2015), equivalent to average user spending of \$74 per month. Almost half of the respondents did not spend any money online from 2015-2017, while most e-commerce transactions that did occur were conducted through platforms from outside the

⁵¹ ITU, 2018.

⁵² Intel/Dalberg, 2012, p. 60.

⁵³ The survey was administered in 22 Arab countries (Algeria, Bahrain, Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, the State of Palestine, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates and Yemen).

region.⁵⁴ According to UNCTAD (2019, p. 120), a global report providing data on the “proportion of small and large enterprises receiving orders over the internet”, Egypt was the last country in the ranking, with the smallest per cent of enterprises (particularly smaller firms employing 10 to 49 individuals) selling their products online. The only two other countries included in the research, the United Arab Emirates and Qatar, ranked alongside a number of Asian and European countries, clustered in the middle.

One reason why online sale may be low is that Arabic language web pages are lacking. Research by the Internet Society, ESCWA and Wamda (2017, p. 25) found that the region has an unusually high number of English-language sites: “70 per cent of web content in the region is in the English language (compared with 55 per cent globally)”. The most popular websites in the region are English-language sites, and many of those already online in the region use English to transact online or to access video content. A lack of Arabic and local language content makes it harder for those with limited English language skills and less education to get the most from the Internet. The report finds that content and connectivity drive each other in a virtuous circle: the better the content, the more demand for connectivity, and vice versa.

Examining this issue from a consumer perspective, research on the motivations of people in Egypt visiting commercial websites

found that the entertainment motive was strong among the respondents, followed by social interaction motives, convenience motives and information motives (Mahmoud and others, 2010). A combination of the difficulties of online shopping in Egypt, combined with low consumer confidence in online shopping, may be critical reasons for why respondents used commercial websites for entertainment rather than as an information source for shopping or for convenience. Thus, they suggest that the use of commercial websites may be strongly affected by cultural factors. Kamel and Hussein (2002) identified both social and infrastructural barriers when it comes to transitioning to electronic transactions in Egypt. While their study is almost 20 years old, it still echoes the 2018 G4S (30/31) report that identified the Arab region as still being particularly resistant to moving away from cash transactions, with “70 per cent of the shopping population” preferring “Cash on Delivery”.

When considering the use of internet to pay bills, data⁵⁵ show low overall rates of internet usage for paying bills, ranging from one per cent (Morocco) to 45 per cent (United Arab Emirates) (table 5). Notably, the estimates of the rate of bill paying for developing countries as a whole (at 16 per cent) indicates that the level of uptake in lower income Arab countries is relatively low compared to peer developing countries elsewhere in the world. Algeria and Jordan stand out, given that they are both middle income countries and yet have rates that are close to zero.

⁵⁴ Salem, 2017, p. 18.

⁵⁵ Global Findex.

Table 5. Use of internet to pay bills in the Arab States

Country	Used the internet to pay bills in the past year (Percentage age 15+)	Used the internet to pay bills in the past year, male (Percentage age 15+)	Used the internet to pay bills in the past year, female (Percentage age 15+)	Ratio of females to all
Algeria	2	3	1	0.6
Bahrain	37	39	33	0.9
Egypt	2	2	2	0.8
Iraq	8	11	5	0.7
Jordan	2	3	1	0.3
Kuwait	33	33	33	1.0
Lebanon	6	9	4	0.6
Libya	10	11	9	0.9
Mauritania	3	4	1	0.4
Morocco	1	2	0	0.2
State of Palestine	4	5	3	0.7
Saudi Arabia	31	39	17	0.6
Tunisia	3	4	3	0.8
United Arab Emirates	45	47	39	0.9
Developing	16	17	14	0.9

Source: Index database.

In summary, two conflicting realities indicate various challenges but considerable opportunities when it comes to integration of ITC into business in the region. On the one hand, the various data trends discussed are an indication of the on-going preference in the region in general for in-person/cash transactions and reflect the fact that the Arab world largely remains a brick-and-mortar-based economy,⁵⁶ which may limit the profitability of developing internet-based

businesses. On the other hand, it also suggests there is considerable potential for entrepreneurs to find ways to increase these rates. In fact, the data from the Gulf states indicate much higher rates of use of the internet for financial transactions, suggesting that similar trends could emerge in the coming years elsewhere in the Arab world. Although use of electronic transactions remains in its infancy in the region, women entrepreneurs may benefit from ICT technologies that

⁵⁶ G4S, 2018.

facilitate such transactions, particularly in contexts where mobility is a constraint, due to norms and/or heavy burdens of unpaid work.

D. Recommendations

1. Strengthen basic electricity and telecommunications infrastructure in both low- and middle-income countries in the region in order to facilitate better integration of ICT and meet the needs of all men and women entrepreneurs.
2. Strengthen financial infrastructure, which, together with poverty, is a barrier to financial integration in the region, in order to increase the low level of integration into formal banking and consequently improve access to needed services to support entrepreneurial activities.
3. Improve the educational infrastructure and curricula with a particular focus on integrating ICT and building digital skills.
4. Enact legal reforms, with a particular focus on ensuring that non-discrimination clauses as well as provisions to foster women's entrepreneurship are incorporated into existing laws, while at the same time continuing to work towards eliminating discriminatory clauses.

II. Challenges facing women entrepreneurs in the Arab region

Section highlights

- *In a survey of Arab women with ICT training, which included respondents from 16 Arab countries, 68 per cent of respondents said that they are interested in starting their own company, with a number of them also indicating they are already running their own businesses.*

- *Despite Arab women expressing high rates of entrepreneurial intentions, they face a range of challenges related to starting, sustaining and expanding entrepreneurial activity. Though some of these barriers impact both male and female entrepreneurs, they are felt more acutely by women.*

- *Due to low labour force participation rates, combined with a high rate of dependency on a small number of sectors, particularly the public sector, there is a limited pipeline of women who are gaining the types of experience that are most conducive to launching entrepreneurial activities.*

- *Low levels of integration into formal banking systems are also a barrier facing women in particular, and entrepreneurs in general, with poverty being one of the important factors for this.*

- *Once they overcome the various hurdles faced by all entrepreneurs, a fresh set of challenges awaits women entrepreneurs. These range from time constraints related to unpaid work burdens, constraints on mobility and the unavailability of business support services, including those that facilitate women's access to markets and technology.*

- *The COVID-19 pandemic and its ensuing socio-economic consequences, while exacerbating existing challenges and inequalities, provides new opportunities for women's entrepreneurship.*

II. Challenges facing women entrepreneurs in the Arab region

Arab women entrepreneurs are a promising group that should be supported since doing so is good for both macroeconomic growth and for reducing poverty and furthering gender equality. Subsistence entrepreneurs for example may see increased income generation and be less vulnerable to poverty after adopting ICTs.

Notwithstanding these benefits, potential and established women entrepreneurs in the Arab region face myriad challenges in establishing and expanding their participation in business activities. In addition to those related to the broader entrepreneurial environment discussed in chapter one, which create challenges for both men and women, a number of gender-related constraints are also important to emphasize. Low levels of labour force participation, gaps in education and weakness of professional networks are some factors that reduce the readiness of women to engage in entrepreneurship activities. In other words, women are not well positioned in the pipelines and pathways to enter entrepreneurship. Moreover, once women enter entrepreneurship, they face new issues ranging from limited access to skills training; limited time; mobility restrictions; limited access to information, markets and finance; legal obstacles; and attitudinal and cultural barriers. Though some of these barriers impact both male and female

entrepreneurs, they are felt more acutely by women.

According to the 2018/2019 GEM report,⁵⁷ underlying most entrepreneurship ecosystem frameworks is the assumption that all entrepreneurs have equal access to resources, participation and support, as well as an equal chance of a successful outcome within the entrepreneurial ecosystem. However, the same report argues that the reality is that ecosystem factors, such as regional, cultural and/or economic context, may differently affect women's perceptions, intentions and motivations, industry choice and growth aspirations. Once women take the leap into entrepreneurship, they often face a series of cultural and structural barriers that impede their ability to establish a business and ensure its success and longevity. Countries that provide more incentives and support systems specifically designed for women entrepreneurs have higher rates of female entrepreneurship.⁵⁸

Given the considerable gap between entrepreneurial intentions and entrepreneurial activity among women in the Arab region as presented in chapter one, it is imperative to examine the readiness of potential entrepreneurs, as well as the barriers obstructing their way once they have embarked on entrepreneurial activities. The pipeline of

⁵⁷ GEM, 2018/2019.

⁵⁸ Stevenson, cited in Drine and others, 2010.

entrepreneurs into the economy is of key importance when thinking about both current and future entrepreneurial activity.

This chapter therefore examines factors that impact the readiness of women to enter entrepreneurship, including the needed capacity to manage businesses and ICT tools; experience in embarking on an entrepreneurial activity; and the resources needed to launch and sustain such an activity. It will thus focus on education and difficulties accessing the right ICT tools and services, the low labour force participation rates, weak access to finance and the barriers facing budding and established women entrepreneurs in terms of gender norms, time constraints due to unpaid care work and legal and mobility barriers. All these factors constitute major barriers to women's ability to launch, sustain and expand their businesses.

A. Educational and digital readiness

A foundational element of readiness for entrepreneurship is education. Education levels can have a direct impact on entrepreneurial skills and on the ability to effectively adopt ICTs. For example, a study of women in Oman found that low education levels contributed to an inability to carry out business plans.⁵⁹ Literacy and the ability to use ICTs are also linked.

Furthermore, these two elements are closely associated with access to technology and the internet.

1. Literacy

Although historically several Arab countries had large gender gaps in their overall literacy statistics, these gaps have narrowed considerably in recent years. This can be seen by comparing the gaps between youth and the entire adult population (table 6). Almost all Arab countries have closed the gender literacy gap among youth, as indicated by the Gender Parity Index, which is defined as "the ratio of females to males ages 15-24 who can both read and write with understanding a short simple statement about their everyday life".⁶⁰ However, in some countries of the region, such as Iraq, Mauritania and Yemen, gender gaps persist. Further, while the gender literacy gap among youth has almost closed, in several Arab countries (Comoros, Iraq, Morocco, Sudan and Yemen), the literacy rates among adult females are very low, precluding women from becoming highly functional in terms of technology use. The increasing education levels of young women indicates that they likely have a stronger foundation from which to increase their readiness for entrepreneurship, compared to older women, who have not had the same opportunities.

⁵⁹ Belwal and others, 2014.

⁶⁰ World Bank, n.d. The Gender Parity Index provides a snapshot of the degree to which current cohorts of young women have equal access compared to their male counterparts and is the best indication of current gender norms related to attitudes about female education. Adult literacy rates include large numbers of women who completed their education two to three decades ago and so are less relevant in terms of current practices.

Table 6. Literacy rate in the Arab States

Country	Year	Literacy rate, youth (ages 15-24), Gender Parity Index (GPI)	Literacy rate, adult male (Percentage ages 15 and above)	Literacy rate, adult female (Percentage ages 15 and above)
Algeria	2018	1.00	87.42	75.35
Bahrain	2018	0.99	98.76	94.95
Comoros	2018	1.00	64.64	52.96
Egypt	2017	0.97	75.50	65.51
Iraq	2018	0.88	56.24	44.01
Jordan	2018	1.00	98.61	97.83
Kuwait	2018	1.01	96.67	94.91
Lebanon	2018	1.00	96.85	93.31
Mauritania	2017	0.80	63.75	43.35
Morocco	2018	0.99	83.30	64.59
Oman	2018	1.01	96.99	92.69
Palestinian Territories	2018	1.00	98.66	95.74
Qatar	2017	1.02	93.14	94.71
Saudi Arabia	2017	1.00	97.10	92.71
Sudan	2018	1.01	65.44	56.06
Tunisia	2014	0.99	86.06	72.22
Yemen	2004	0.65	73.16	35.00
Arab World	2018	0.95	81.35	67.23

Source: <https://data.worldbank.org/indicator/SE.ADT.1524.LT.FM.ZS>.

2. Digital literacy

One promising trend gleaned from UNESCO and World Bank statistics is that Arab countries are among the global leaders in terms of the proportion of women graduates in the fields of Science, Technology, Engineering and Mathematics (STEM). Odeh and Olmsted (2018) used UNESCO data to illustrate that women make up at least 40 per cent of all STEM students in Algeria, Bahrain, Jordan, Lebanon, Oman, Tunisia, the United Arab Emirates and Saudi Arabia. They similarly find that women often make up 50 per cent (or more) of computer science students in Egypt, Jordan,

the State of Palestine, Qatar and the United Arab Emirates. In comparison, in the United Kingdom and the United States of America, women's enrolment in Computer Science was 16 per cent and 14 per cent, respectively. Also, worth noting is that data from Islam (2017) indicate that figures from the United Kingdom and United States of America include international students, some of whom are from the Arab region.

In a survey of Arab women with ICT training, which included respondents from sixteen Arab countries, 68 per cent of respondents said that they were interested in starting their own

company, with a number of them also indicating they were already running their own businesses.⁶¹ Also noteworthy was that many of these women said they were motivated not by income, but also by giving back to society. This demonstrates there is a cohort of Arab women who are not only trained in ICT, but also interested in contributing to their societies as social entrepreneurs. Many see ICT as an opportunity to increase their connection to communities, both virtually and face-to-face.

Although a small group of Arab women are excelling within the ICT field, more general digital literacy in the region is uneven and the gendered digital gap in many countries in the region persists. The COVID-19 pandemic has brought the importance of digital literacy into sharp focus, as global lockdowns have meant people are increasingly going online to obtain important health and other information, access vital services, pursue their education and conduct business. In an era where digital skills and communication have become more important, women and girls risk being further marginalized if they do not have the relevant digital literacy and access.

Importantly, education levels, and particularly digital literacy, not only impact women's participation in the labour markets, but also their ability to access, utilise and adapt to ICTs. As pointed out by Al-Izki and Weir (2014, p. 16), "the emergence of a second Digital Divide ... separates those who have the skills and abilities needed to benefit from the use of ICT and those who do not". This has a direct impact on

entrepreneurship, as ITU analysis⁶² has also found that an individual's propensity to engage in entrepreneurial activity is related to their level of digital skills, meaning women who do not have regular access and exposure to technology are less likely to engage in entrepreneurial activity.

Contributing factors to both lower Internet usage and lower mobile phone usage among women include a lack of relevant skills or knowledge, which can manifest in a fear of technology.⁶³ Indeed, to gauge the ease with which individuals can adapt to ICTs, it is important to examine specific training in the area of ICT. "Technophobia" is often the result of concurrent factors including education, employment status and income level. A survey of 2,200 women in developing countries found that more than half the women with no formal education surveyed said they were not familiar with or comfortable with technology. However, this fell to 15 per cent in the case of women with at least some form of high school education.⁶⁴ In this regard, without education, use of ICT is likely to be limited.

The above survey only included one Arab country – Egypt – but a number of insights can be gained from the findings. The data suggest that among women who are non-users, 12 per cent of women in Egypt felt the internet "was not 'appropriate' for them" and 10 per cent felt their family members would not approve. Bigger barriers though were not feeling comfortable with the internet (14 per cent) and, even more importantly, having

⁶¹ Odeh and Olmsted, 2018.

⁶² ITU, 2018.

⁶³ Intel/Dalberg, 2012:13.

⁶⁴ Intel/Dalberg, 2012.

no one available to show them how (20 per cent).⁶⁵ Cost and lack of easy access were also identified as issues.⁶⁶

The Arab region is also reportedly lagging in ICT skill acquisition, especially in terms of basic and standard skills.⁶⁷ A key factor to ensuring ICT skill acquisition is the integration of ICT in education. Regarding primary and secondary education, there are no reliable regionally aggregated data on ICT integration, but a joint Internet Society/UNESCWA/Wamda (2017) report suggests that ICT infrastructure in schools tracks closely to levels of development, with the Gulf countries like Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates ranking high and having made progress towards universal ICT penetration in primary and secondary schools. They are followed by middle tier nations, Jordan and Lebanon, and then Egypt, Morocco, Algeria and Tunisia. The bottom tier countries, which include Libya, Iraq, the State of Palestine, the Syrian Arab Republic and Yemen, have considerable difficulty with access to ICT infrastructure.⁶⁸

3. The digital gender divide

Many entrepreneurs in the Arab region face issues navigating a digital landscape that may not be favourable to entrepreneurial activities. While the lack of Arabic content online and a preference for using the Internet for entertainment rather than commercial purposes affects all entrepreneurs, the challenges are compounded for women who face greater

difficulty getting online in the first place, both due to deficits in digital literacy (discussed above), as well as access issues related to affordability and gender norms that preference access for males.

Recent data indicate that around the world, some 250 million fewer women than men are online and the gender gap in terms of internet penetration has been increasing since 2013.⁶⁹ Looking at the Arab region specifically, the 2019 ITU Facts and Figures show that between 2013 and 2019, the digital gender gap has grown from 19.2 per cent in 2013 to 24.4 per cent in 2019 and is above the world average digital gender gap of 17 per cent. However, statistics for the entire region are deceptive, given that levels of economic development and infrastructural soundness differ vastly across the region. While rates of internet usage have risen across all countries, there is a huge gap between high- and low-income countries. For example, Internet usage in the small Gulf states is almost universal, whereas in the poorer and conflict-ridden countries, rates tend to be lower than a third. According to the most recent data (table 7), 100 per cent of Kuwaitis use the internet, whereas only 14.1 per cent of Sudanese do, an indication of how extreme differences in access are across the region.

By far the largest gender gap is seen in Iraq, followed by the Sudan, which are both conflict-ridden contexts, but Algeria and Egypt also have substantial gaps in terms of women's use of the internet. The ITU data also indicate that gaps persist in all countries in the region

⁶⁵ Intel/Dalberg, 2012, p. 57.

⁶⁶ Survey respondents were allowed to select more than one option, so it is possible that the same respondents reported multiple barriers.

⁶⁷ ITU, 2018, p. 15.

⁶⁸ <https://www.internetsociety.org/wp-content/uploads/2017/10/ISOC-Enabling-Digital-Opportunities-english-1.pdf>.

⁶⁹ OECD, 2018b.

except the small Gulf countries. More generally, the correlation between per capita income and the male/female ratio of internet use was negative (author's calculations) suggesting that as development occurs, the gap declines. In the Sudan, although the gender gap is large, it is noteworthy that only a small minority of men have access as well. While considerably higher than in the case of the Sudan, Egypt and Algeria are two countries

where both the lack of access in general, as well as the gap between males and females, is considerable. Smaller, but still of concern, are the gaps in Djibouti, the State of Palestine and Morocco.

Some of the reasons identified for the digital gender divide include the affordability of the technology and a lack of relevant knowledge and skills.⁷⁰

Table 7. Individuals using the Internet in the Arab States ^a

Economy name	Latest year	All individuals	Male	Female
Algeria	2018	59.6	68.1	50.3
Bahrain	2018	98.6	98.7	98.5
Djibouti	2017	55.7	59.9	51.6
Egypt	2018	46.9	52.4	41.3
Iraq	2018	75.0	98.3	51.2
Kuwait	2018	99.6	99.5	99.8
Morocco	2018	64.8	68.5	61.1
Oman	2016	76.8	79.4	74.0
State of Palestine	2018	64.4	68.5	60.2
Qatar	2018	99.7	99.5	99.8
Saudi Arabia	2018	93.3	94.6	91.4
Sudan	2016	14.1	16.9	11.0
Tunisia	2018	64.2
United Arab Emirates	2018	98.5	97.1	98.8

Source: ITU database.

Note: ^a ITU World Telecommunication/ICT Indicators Database. Age scope of population varies across countries. (1) Internet users are persons aged 15 years and over who accessed the internet for personal use in a typical week.

⁷⁰ OECD, 2018b.

The digital gender divide is reflected in the entrepreneurial arena and limits the ability of women entrepreneurs to maintain and further expand their businesses. The WED framework assesses six major conditions and associated sub-conditions essential for enhancing women's entrepreneurship. For each sub-condition, a score (of 1-5) is given to the country. Included in the WED evaluation are the concept of "business development support" and a focus on women's access to technology and markets. WED data reported in ESCWA (2019c, p. 28) indicate that Algeria is a country where women face problems in terms of accessing markets and technology, receiving a score of one out of five on this category, while Egypt scored the highest with a two. In the category of access to gender-sensitive business development support (including a focus on access to general services, responsiveness to women's needs and the existence of women-focused business services), Egypt received a score of 3 out of 5, Morocco and Tunisia both received a score of 2.7 and Algeria was again last, with a score of 1.3.

Similarly, a question asked as part of the UNIDO study (2017, p. 34, table 28) focused on whether respondents required "support but [were] unable to find the appropriate services". Information about technologies stood out as one of the areas where women felt support was inadequate. This was particularly the case in Egypt, the State of Palestine and Tunisia.

Shifts to online education during the COVID-19 pandemic are potentially exacerbating educational inequalities. Those without access to laptops, smartphones and high-speed

internet access are left behind. More generally women's unpaid work duties likely reduce their access to ICT within households, which may contribute to their lower knowledge and skill levels in these areas. Again, the COVID-19 pandemic has likely exacerbated this issue, with women undertaking increasing unpaid labour to care for ill relatives and children out of school.

4. Access to mobile phones

Globally, 200 million fewer women than men own a mobile phone and those who do tend to use it for less complicated tasks than men. Mobile phone ownership in the region is high, at around 80 per cent,⁷¹ however there are differences by sex, as well as at the country level. For example, in 2012, the mobile phone penetration rate among women in Egypt was 47 per cent, with women being 26 per cent less likely to own a mobile phone than men.⁷² Of concern is more recent reporting that indicates a dip in mobile phone subscriptions in Egypt in recent years.⁷³

More generally, women are 24 per cent "less likely to own a mobile phone than a man" in MENA.⁷⁴ These days, mobile phones do not just facilitate telephone communication, but can open a world of information and opportunities. The implications of the gender gap in mobile phone ownership and usage have been laid bare during the COVID-19 pandemic, with GSMA indicating that during the pandemic, mobiles have been crucial in (among other things) allowing women to keep in touch with friends and relatives, use mobile money to pay for essential bills and services,

⁷¹ ITU, 2018, p. 13.

⁷² GSMA, 2012. The GSMA study included data from four countries – Bolivia, Egypt, India and Kenya.

⁷³ G4S, 2018, pp. 38-39.

⁷⁴ GSMA, 2012, p. 16.

receive digital welfare payments from the government and access virtual marketplaces to sustain microbusinesses and find essential products.⁷⁵ Those without mobile phones have found themselves further isolated both socially and economically.

Barriers to mobile phone ownership among women in low- and middle-income countries are numerous. The primary reported reason is cost (of both handsets and ongoing charges) (50 per cent), followed by a perceived lack of need (30 per cent).⁷⁶ Two other reasons include fear of technology (3 per cent) and lack of family/spousal approval (3 per cent). One concerning finding was that unlike in the overall survey, a quarter of women surveyed in Egypt reported that a family member would object to them having a mobile phone. These findings suggest the need both to identify more affordable mobile phone options for women in order to facilitate their access to such technologies and to address cultural barriers in countries where mobile phone use remains low for women. Although sex-disaggregated data are not available for other Arab countries, an examination of ITU data suggests that in most middle- and high-income countries mobile phone usage is quite high, and women likely do not suffer from a lack of access to this technology. However, in lower income countries this remains an issue, and subsistence entrepreneurs, who could potentially benefit the most from this kind of access, may have trouble accessing mobile phones due to economic reasons, but also possibly for cultural reasons as well.

B. Labour force participation

The Arab region has particularly low rates of female labour force participation overall, although there is considerable variation across countries (table 8) and across socioeconomic groups within countries. Cultural, as well as structural factors, such as Dutch disease⁷⁷ have been put forth as theories for why this is the case.⁷⁸

One particularly relevant finding for this study is the fact that labour force participation rates increase considerably among women with some post-secondary education. As can be seen in table 8, labour force participation rates are now over 50 per cent in several Gulf countries, where education levels have also risen significantly. Data also indicate that in Algeria, Egypt and the Syrian Arab Republic there is a big jump in participation rates (to well over 50 per cent) among women with some post-secondary education. In Tunisia and Morocco that jump occurs when comparing those who have completed their primary education with those who have completed secondary school. In Jordan, although the highest labour force participation rate remains below 50 per cent, those with post-secondary education are far more likely to work as well. Women's labour force participation contributes to their readiness for entrepreneurship, but as can be seen here, without education, that initial step into the labour force can be blocked.

⁷⁵ <https://www.gsma.com/mobilefordevelopment/blog/why-covid-19-has-increased-the-urgency-to-reach-women-with-mobile-technology/>.

⁷⁶ GSMA, 2012.

⁷⁷ Dutch disease is the idea that in many Arab countries exchange rates disadvantage export markets due to inflows of natural resource revenues or foreign aid. Given that women's employment is often linked to export-oriented industries (e.g. garments), a number of scholars have argued that this is one macro-structural factor that can explain why Arab women's labour force participation rates are low.

⁷⁸ Olmsted, 2020.

Table 8. Labour force participation in 2018 in the Arab States

Country	Women (Percentage)	Men (Percentage)
Algeria	14.9	67.4
Bahrain	44.5	87.3
Comoros	37.4	50.7
Djibouti	54.8	71.1
Egypt	29.6	73.2
Iraq	12.4	72.6
Jordan	14.1	64.0
Kuwait	57.5	85.3
Lebanon	23.5	70.9
Libya	25.7	79.0
Mauritania	29.2	63.2
Morocco	21.4	70.4
Oman	31.0	88.7
State of Palestine	19.3	71.1
Qatar	57.8	94.7
Saudi Arabia	23.4	79.2
Somalia	19.1	74.3
Sudan	24.5	70.3
Syrian Arab Republic	12.0	70.3
Tunisia	24.1	69.9
United Arab Emirates	51.2	93.4
Yemen	6.0	70.8

Source: “Labour Force Participation Rate by Sex and Age – ILO Modelled Estimates”, July 2018. Available at www.ilo.org/ilostat/.

In addition to low labour force participation rates, unemployment rates are high among women in the region, with 20 to 25 per cent of all women who are in the labour market searching for employment (table 9). High rates of unemployment are observed across a range

of low-, middle- and high-income countries, including Algeria, Egypt, Jordan, Libya, Saudi Arabia, the Sudan, the Syrian Arab Republic, Tunisia and Yemen. In the State of Palestine, the situation is even worse, with an unemployment rate of over 50 per cent. Women in the Arab

region are experiencing the highest rates of unemployment globally, far above the global average of 5.4 per cent.⁷⁹ The onset of the COVID-19 pandemic, and subsequent lockdowns imposed by governments in a bid to contain the virus, has likely exacerbated these figures further. ESCWA and partners⁸⁰ estimate that at

least 1.7 million jobs may have been lost in the Arab region in 2020 and that nearly 700,000 of these will be lost by women. Given women's already low labour force participation rate, their job losses are estimated to amount to double the percentage of men's job losses, pointing to largely uneven exposure.

Table 9. Unemployment in 2018 in the Arab States

Country	Women (Percentage)	Men (Percentage)	Total unemployment rate (Percentage)
Algeria	21.3	10.1	12.2
Bahrain	3.5	0.3	1.0
Comoros	4.1	3.5	3.7
Djibouti	12.0	10.4	11.1
Egypt	23.1	7.8	23.1
Iraq	12.3	7.2	7.9
Jordan	23.0	13.3	15.0
Kuwait	4.6	0.9	2.1
Lebanon	9.9	5.0	6.2
Libya	24.6	14.9	17.3
Mauritania	12.9	9.1	10.3
Morocco	10.4	8.6	9.0
Oman	12.9	1.7	3.1
State of Palestine	50.8	24.7	30.2
Qatar	0.6	0.1	0.1
Saudi Arabia	20.3	3.0	5.9
Somalia	15.4	13.6	14.0
Sudan	23.2	9.2	12.9
Syrian Arab Republic	20.6	6.0	8.1
Tunisia	22.6	12.9	15.5
United Arab Emirates	7.5	1.7	2.6
Yemen	23.5	12.1	12.9

Source: Unemployment rate – ILO Modelled Estimates, November 2018. Available at www.ilo.org/ilostat/.

⁷⁹ https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_670542.pdf.

⁸⁰ ESCWA, 2020a.

Women in the workforce also tend to be clustered in a fairly small number of industries such as health, education and the public sector, which is of importance when thinking about the pipeline of potential women entrepreneurs, given that those with experience tend to be more successful when venturing into self-employment. In 2017, 38.5 per cent of working Palestinian women were in education, and another 8.4 per cent were in health.⁸¹ A survey of Syrian refugees in Jordan found that 23 per cent of the women who reported working were in the education sector.⁸² More generally the ILO (2017, p. 11) reports that “the Arab states region has the largest sectoral segregation” and that this is driven by overrepresentation in education, health and social work, as well as to a lesser degree agriculture. Occupational level data suggest that women in the lowest income countries are employed primarily in agriculture, whereas in more developed contexts women are often concentrated in the service sector.

Arab women are also particularly dependent on public sector employment, with an overall rate of 30 per cent according to a recent World Bank report.⁸³ As a comparison, among OECD countries the rate of engagement in public sector employment is 18 per cent.⁸⁴

What can trends in women’s labour force participation tell us about the potential entrepreneurial pipeline? On the one hand, the low labour force participation rates, combined with a high dependency on the public sector, suggest a limited cohort of women who have

gained enough understanding and experience of the private sector to make the transition into entrepreneurship. On the other hand, given the high rates of unemployment among women, there may be interest among a subset of these women in exploring entrepreneurial activities. Given women’s historic overrepresentation in education, health and social work, as well as in the public sector more generally, identifying entrepreneurial opportunities that leverage their existing knowledge in these areas should be a key priority. It is also key to find ways to support women who may have become discouraged and left the labour market to return and pursue promising entrepreneurial ventures, preferably in areas that are new and innovative.

C. Access to finance

The low level of financial integration within the Arab region (discussed in chapter one), suggests that financial constraints facing both women and men entrepreneurs are in part a reflection of existing infrastructural challenges. Nevertheless, gender biases in the financial sector negatively impact women in particular. When it comes to investment, as Kowitt (2018) points out, globally women “receive a tiny fraction of all venture capital funding” – a mere 2.2 per cent in 2017.⁸⁵ While this is in part because women make up a small per cent of all entrepreneurs, data show that start-ups founded or co-founded by women receive less investment than those established by men: \$935,000 for women and \$2.12 million for men entrepreneurs, on average,⁸⁶ an indication that

⁸¹ Olmsted, 2019.

⁸² Lockhart and others, 2018.

⁸³ Gatti, 2013.

⁸⁴ OECD, 2017.

⁸⁵ <https://fortune.com/2018/06/07/female-founded-startups-revenue-funding/>.

⁸⁶ Abouzahr and others, 2018. Available at <https://www.bcg.com/publications/2018/why-women-owned-startups-are-better-bet.aspx>.

entrenched gender norms are limiting women's access to finance. Country briefs conducted in the region by the IFC found that many banks in the region generally do not serve the financing needs of small and medium enterprises. The situation may be exacerbated for women-owned businesses, due to lower availability of assets to be put up as collateral, gender bias among lending institutions and a lower level of financial management education among women entrepreneurs.⁸⁷ An OECD survey of 19 banks operating in four MENA economies⁸⁸ found that the banks were potentially motivated to invest in women-led businesses and considered such businesses important for entrepreneurship development and job creation. Yet, only three had annual targets to increase financing to women entrepreneurs and none reported offering tailored programmes, personalized services or customized products aimed at women-led businesses.⁸⁹

Additional barriers to the ability of women entrepreneurs in the Arab region to access finance include a lack of necessary guarantees, followed by complex financing application procedures.⁹⁰ The IFC/CAWTAR survey of businesswomen in five Arab countries found that while between 51 per cent (Lebanon) and 76 per cent (Tunisia) had sought external financing for their businesses in the previous 12 months, most had not received any financing from a formal financial institution. Factors preventing women business owners from obtaining financing included high interest rates,

a lack of collateral, complicated procedures and a lack of a track record in business.

There are considerable differences in terms of the types of start-up finance used by existing women business owners in the region. In Morocco for example almost half of the entrepreneurs who participated in a UNIDO (2017) survey had utilized bank credit to finance their businesses, followed by Tunisians, one third of whom had made use of bank credit. At the other end was Egypt with a rate of only 11.6 per cent. Interestingly in Jordan, almost a quarter of the women had used business angels, but in the other countries this was considerably rarer. Also noteworthy was that in Jordan and Tunisia a number of the women had been able to tap foreign capital sources.⁹¹ Some analysis also suggests that the extent to which women entrepreneurs perceive they face finance-related barriers varies across the region. Women in Lebanon were the most likely to feel that women were disadvantaged in terms of financial access, women in Morocco were most likely to agree that banking procedures were complicated and that women were taken less seriously than men and in Jordan and Tunisia few women felt this was the case.

As was discussed earlier, ESCWA (2019c, p. 26) reported on the ILO Women's Entrepreneurship Development (ILO-WED) framework as it pertains to four Arab countries (Algeria, Egypt, Morocco and Tunisia). Condition Three in the framework looks at access to gender-sensitive

⁸⁷ IFC and CAWTAR, 2007, p. 19.

⁸⁸ Bahrain, Jordan, Morocco and Tunisia.

⁸⁹ OECD (2014). *Women in Business 2014: Accelerating Entrepreneurship in the Middle East and North Africa Region*. Available at <http://dx.doi.org/10.1787/9789264213944-en>. Accessed on 2 November 2020.

⁹⁰ UNIDO, 2017.

⁹¹ While informative, some caution is needed in interpreting these results, given that the sampling methods used within this survey were not identical.

financial services. Scores for this condition indicate that gender-sensitive financial services are lacking in all four countries, particularly Algeria and Tunisia, which both scored one out of five on this measure, meaning there are no specifically targeted financial services for women entrepreneurs. Only Egypt scored a 'three', meaning that "there are credit programmes targeting women-owned enterprises (WOEs) of different sizes and at different stages of development (from start-up to expansion), but such programmes are accessible primarily in urban centres; there is no evidence of women-focused equity (seed and venture capital programs)". Morocco obtained a score of 'two', as "there is evidence of a few women-focused loan programmes, but primarily for women with microenterprises".

Other studies have demonstrated that many women in the region rely on family and other informal networks to obtain funding, rather than obtaining financial support from banks and other institutions.⁹² For example, research on women entrepreneurs in Oman found most women use their own or family funds to start a business,⁹³ while in Lebanon, women generally use their own savings, as well as loans from family and friends in order to start an enterprise and their retained earnings in order to develop the business.⁹⁴ Reasons for lack of access to finance include an inability to obtain loans from banks due to the cumbersome paperwork and the absence of loan programmes targeting women.

In thinking about ways of better supporting women entrepreneurs, the focus needs to be both on identifying and supporting potential

entrepreneurs who are not able to obtain the start-up capital they need, which is a major barrier, and also on identifying successful women entrepreneurs who would like to expand their business. Distinguishing between subsistence and transformational entrepreneurs is also important. The existing evidence suggests that subsistence entrepreneurs are likely to be vulnerable to predatory lending practices, and so the priority should be on improving affordable access to credit. Much larger sums are generally needed for transformational entrepreneurs, and it essential to ensure that venture capitalists have Arab women entrepreneurs on their radar. The good news is that some Arab women, particularly in Jordan, have already tapped angel investors, but for transformational entrepreneurs in particular more of this type of funding is needed and ICTs can help facilitate connecting angel investors and potential women entrepreneurs.

From the above, it can be seen that aspiring women entrepreneurs in the Arab region face several challenges, including a lack of experience due to low labour force participation rates and high unemployment, persistent literacy gaps in some countries, a lack of access to the internet and in some cases a fear of technology. In many countries, an inability to access gender-sensitive financial services and start-up capital is also an issue that limits the ability of women to realize their entrepreneurial intentions. If women can overcome these barriers, they face additional gendered challenges once they embark on their entrepreneurial journey. It is these challenges that will be examined next.

⁹² Bastian and others, 2018, p. 19.

⁹³ Belwal and others, 2014.

⁹⁴ Abdo, 2012.

D. Time constraints related to the burden of unpaid work

Women in the Arab region – as around the world – are responsible for most unpaid care work such as childcare, and women entrepreneurs are often expected to continue to balance their family responsibilities with their business. The most frequently cited constraint on Arab women's labour force participation is challenges of work/life balance.⁹⁵ Between 23 per cent (Morocco) and 46 per cent (Lebanon) of women entrepreneurs surveyed in the Arab region reported that achieving a work-life balance was a challenge.⁹⁶ Relatedly, a majority of women entrepreneurs reported working 30 to 50 hours weekly, with a significant per cent reporting working more than 50 hours, particularly in Lebanon and Tunisia. In a study of home-based Palestinian women embroiderers in Jordan, women indicated that their families expect them to put their family responsibilities above their entrepreneurial activities.⁹⁷

Such work-life balance challenges may vary by class. Subsistence entrepreneurs may feel more constrained by their household responsibilities and lack the money to make use of market-based solutions. This in turn may limit lower income women to pursuing home-based business opportunities, which in turn can contribute to oversaturation (women being crowded in a narrow set of industries) and in turn cause more competition among low-income women.

Women with higher household incomes can more easily purchase substitutes for their own

labour. A qualitative study that looked at motivations and frustrations among female entrepreneurs in the United Arab Emirates, a relatively higher income context, found that women there did not seem to experience conflicts between their entrepreneurial activities and their personal lives.⁹⁸ That said, a study of women's entrepreneurship in Bahrain and Oman⁹⁹ found that work-life balance is a major challenge facing women. Although female entrepreneurs from the Gulf States have typically reported having full-time domestic help, making it easier to focus on their careers,¹⁰⁰ women still perceive work-life balance as an issue. Therefore, although achieving work-family balance is likely a bigger obstacle in lower income communities and/or countries, it does not disappear completely in contexts with higher levels of income and better infrastructure.

E. Legal barriers/constraints on mobility

Since 2009, the World Bank has documented legal barriers facing women, particularly when it comes to employment and entrepreneurial activity, through the Women, Business and Law Index. Countries receive a score, with 100 being the highest, based on whether women and men have equal rights in the areas measured. The Index indicates that the MENA region has, on average, some of the lowest scores when it comes to gendered legal environments.

Within the Arab region, considerable variation exists (table 10: column 1) in terms of the overall

⁹⁵ ILO, 2017, p. 22.

⁹⁶ UNIDO, 2017.

⁹⁷ Al-Dajani and Marlow, 2010.

⁹⁸ Itani and others, 2011, p. 6.

⁹⁹ Dechant and Lamky, 2005.

¹⁰⁰ Caputo and others, 2015.

score, with Morocco having the highest score at 75.6 out of 100 in 2020 and Yemen the lowest at only 26.9. Interestingly, between 2019 and 2020 Saudi Arabia's score jumped from 25.63 to 70.6,

going from the lowest to the second highest in the region, an indication of how quickly progress can be made when there is a will to change the legal environment in favour of women.

Table 10. Women, business and the Law Index: Entrepreneurship

Economy	Overall WBL Index Score	Entrepreneurship Index Score	Can a woman sign a contract in the same way as a man?	Can a woman register a business in the same way as a man?	Can a woman open a bank account in the same way as a man?	Does the law prohibit discrimination in access to credit based on gender?
Algeria	57.5	75	Yes	Yes	Yes	No
Bahrain	46.3	75	Yes	Yes	Yes	No
Djibouti	68.1	100	Yes	Yes	Yes	Yes
Egypt	45.0	75	Yes	Yes	Yes	No
Iraq	45.0	75	Yes	Yes	Yes	No
Jordan	40.6	75	Yes	Yes	Yes	No
Kuwait	32.5	75	Yes	Yes	Yes	No
Lebanon	52.5	75	Yes	Yes	Yes	No
Libya	50.0	75	Yes	Yes	Yes	No
Morocco	75.6	100	Yes	Yes	Yes	Yes
Oman	38.8	75	Yes	Yes	Yes	No
Qatar	32.5	75	Yes	Yes	Yes	No
Saudi Arabia	70.6	100	Yes	Yes	Yes	Yes
Syrian Arab Republic	36.9	75	Yes	Yes	Yes	No
Tunisia	70.0	75	Yes	Yes	Yes	No
United Arab Emirates	56.3	75	Yes	Yes	Yes	No
West Bank and Gaza	26.3	75	Yes	Yes	Yes	No
Yemen	26.9	75	Yes	Yes	Yes	No

Source: Women, Business and the Law Index. World bank (2020). Available at <https://openknowledge.worldbank.org/handle/10986/32639>.

In general, the Maghreb scored considerably higher, whereas the Gulf region (except for the dramatic jump in Saudi Arabia) and conflict-ridden countries had among the lowest scores. The good news is that between 2019 and 2020 the World Bank reports that in addition to the dramatic change in the Saudi Arabian score, a number of other Arab economies have improved in terms of their overall score.¹⁰¹ These include the United Arab Emirates, Bahrain, Jordan and Tunisia.

Interestingly, although the overall scores are very low in the region, the indicators related to supporting women business owners are considerably stronger as indicated in table 10. In the section that focuses on women in business there are four questions:

- (a) Can a woman legally sign a contract in the same way as a man?
- (b) Can a woman legally register a business in the same way as a man?
- (c) Can a woman legally open a bank account in the same way as a man?
- (d) Does the law prohibit discrimination by creditors in (sic) the bases of sex or gender?

Most countries received a score of 75 (3 out of 4 questions were positive), while Djibouti, Morocco and Saudi Arabia scored 100. For all the countries where the score was below 100, the fourth question was the issue. In other words, most Arab countries have not passed a law protecting women from being discriminated against by creditors. This finding, in conjunction with the earlier discussion on finance-related issues, suggests the need for a two-pronged approach to addressing financial challenges – a focus on legal access issues and other accessibility related challenges.

While the region did well in terms of direct questions related to supporting women in business (with the exception of the credit discrimination questions), many other legal restrictions on women may indirectly reduce their freedom to start and run a business. Restrictions on women's travel, for example, could potentially affect their ability to start and run a business. The Arab countries that place the most restrictions on women's mobility – in terms of obtaining a passport, travel and choosing where to live – are Jordan and Oman, which both received a score of zero for this section of four questions. Iraq, Qatar, the Syrian Arab Republic and the United Arab Emirates did only marginally better, with scores of 25 (e.g. 3 of the 4 indicators were negative).

Laws surrounding asset management and inheritance may also impact women's ability to own and run a business. While, in general, women have the right to own assets, asymmetrical inheritance laws can contribute to gender-related challenges. According to the World Bank Business and Law Index, daughters do not have equal inheritance rights to sons in any of the Arab countries. Furthermore, cultural practices may lead women to feel pressured to transfer their inheritance to male members of their families.

Comprehensive analysis of the legal environment in the MENA region carried out by the World Bank (2008c, p. 21) concluded "that most business laws are gender neutral", but also emphasized "that social norms and traditions, facets of the business environment, and discriminatory laws and regulations outside business law may limit the growth of female entrepreneurship and the success of female entrepreneurs". In other words, laws, even

¹⁰¹ World Bank (2020c, p. 1).

when they are supportive of women entrepreneurs, are not enough to eliminate all barriers, not only because they may not be enforced, but also because other factors such as culture and traditions play a role as well.

Despite Arab women expressing high rates of entrepreneurial intentions, they face a range of challenges related to starting and sustaining entrepreneurial activity. While the literacy gaps in the region overall are narrowing, the rates among females in several Arab countries remain quite low, which limits women's preparation for taking on entrepreneurial opportunities. Additionally, due to low labour force participation rates, combined with a high rate of dependency on a small number of sectors, particularly the public sector, the pipeline of women who are gaining the types of experience that are most conducive to launching a business are limited. However, high rates of unemployment contribute to increasing the incentive for women to enter entrepreneurial activities. Finally, low levels of integration into formal banking systems are also an indication of a barrier facing women in particular, and entrepreneurs in general, with poverty being one of the important factors behind this result.

Once they overcome the various hurdles to establishing a business, a fresh set of challenges await women entrepreneurs. These range from time constraints related to burdens of unpaid work, the legal environment, constraints on mobility and the unavailability of business support services, including those facilitating women's access to markets and technology.

Both structural factors and gender norms contribute to the challenges facing women

entrepreneurs in the Arab region. Women in many contexts lack confidence, as well as role models and network opportunities, which limits their ability to pursue business opportunities.¹⁰² Additionally, women may face challenges in terms of accessing business-related services and information, due to discrimination and/or gendered expectations. As such, policies need to be tailored to female entrepreneurs, rather than assuming that existing policies are sufficient to address the challenges facing women.¹⁰³

In a UNIDO study (2017, p. 34, table 28), in addition to the issues of the regulatory environment, laws, public order and access to financing which were cited as challenges, women also observed that it is more difficult to be taken seriously as women in business and it is challenging to manage male employees, achieve a work-life balance and deal with administration. More generally, between 20 per cent (Egypt) and 40 per cent (Lebanon) of women entrepreneurs in the sample felt that the environment is discriminatory against women. One thing that is not clear from these findings is whether the lower rates in Egypt – as well as Jordan and Morocco – are an indication of this being less of an issue for women in these countries, or whether the differences are instead a function of perception, with women not being aware of the level of gender bias facing them as entrepreneurs. Such perception biases may be related to women having low expectations or lacking role models. While discrimination plays a role in limiting women's access to markets, global studies indicate that women entrepreneurs often do not recognize that this barrier is affecting their business even though there is evidence of discrimination in the country.¹⁰⁴

¹⁰² Bastian and others, 2018, p. 18.

¹⁰³ Drine and Grach, 2010, p. 12.

¹⁰⁴ Dechant and Lamky, 2005.

Micro studies of computer use can shed further light on how gender shapes access to computers and technology more generally. For example, an examination of Sudanese university students' access to and use of computers found that female students have less access than males, in part because their unpaid work responsibilities reduce the overall amount of time they have available to learn about technology, relative to men, and also because cultural norms lead to the needs of male household members being given priority in contexts where multiple household members are sharing a single computer.¹⁰⁵

An important means for women-owned firms to navigate these challenges and promote the growth and development of their business is the existence of adequate support systems to provide needed information, technical assistance, advice and guidance. The IFC/CAWTAR survey (2007, p. 25) of women business owners found that while up to 75 per cent of women business owners (the highest rate was observed in Tunisia) relied on the advice of family members when making key decisions, many of the survey respondents had not developed extensive external networks of advisors for their businesses. This could indicate that women's business associations and networks have not developed sufficiently to provide these kinds of referrals to members, that women may not have developed the confidence to actively seek them out or that these groups of advisors do not yet, as a group, consider women business owners as a market worth serving. Mentoring by other business owners though has been shown to be an important predictor of business success.

These challenges are likely to impact subsistence and transformational entrepreneurs differently and there is therefore no one-size-fits-all solution when it comes to addressing these challenges. Appropriate solutions will also vary depending on the country context. Nevertheless, one of the areas worth examining is how ICT may be used to support women entrepreneurs, which will be the focus of the next chapter.

F. Recommendations

Providing adequate support to established women entrepreneurs to maintain and expand their businesses is key to strengthening women's entrepreneurship in the region. Furthermore, it is of utmost importance to strengthen women's presence in entrepreneurship pipelines in the region by gaining the needed experience and skills.

1. Support women's economic inclusion in the labour force and increase their participation in paid labour markets through adequate and relevant legal and policy frameworks.
2. Support women entrepreneurs to identify and recognize the skills they already have and those they need to acquire.
3. Design and implement capacity-building programs to support confidence building; improve ICT-related skills including the use of social media; and build financial and managerial skills to strengthen the readiness of new women entrepreneurs and support established women entrepreneurs.
4. Support women entrepreneurs to establish and maintain networks and access to funds to facilitate their engagement in entrepreneurial activities.

¹⁰⁵ Mubarak, 2014, p. 36.

5. Foster public-private partnerships to put in place capacity-building programs and foster networks and mentoring programs to provide key opportunities to propel women into entrepreneurship.
6. Support the establishment of mechanisms to identify potential entrepreneurs and provide them with required support.

III. Using ICT to support women entrepreneurs

Section highlights

- *ICT can assist in overcoming some of the challenges facing women's entrepreneurship, including boosting literacy and facilitating access to information, financial resources and networks. ICT can thus strengthen the readiness of women to embark on entrepreneurial activities.*

- *The increasing integration of ICT into the health and education sectors may provide potential women entrepreneurs within these sectors with opportunities to use their existing experience to take advantage of new opportunities.*

- *The growing digitization of the education and health sectors, particularly in the context of COVID-19, suggests significant opportunity for women to capitalize on their experience and utilise ICT to become entrepreneurs.*

- *The high representation of women in STEM education is a prime opportunity to support women with entrepreneurial ambitions to enter the field of ICT production and services.*

- *Therefore, while for many women entrepreneurs, ICT may serve as a way of enhancing their access to information and financial resources, others have the potential to develop actual internet-based businesses.*

III. Using ICT to support women entrepreneurs

As demonstrated in the preceding chapters, women entrepreneurs in the Arab region, not unlike women in other parts of the world, face myriad challenges they must overcome in order to enter the world of entrepreneurship and then succeed in their chosen business. Enhancing women's access and use of ICT is a prerequisite for supporting Arab women entrepreneurs. Today, ICT is becoming increasingly important for all types of businesses and entrepreneurs. Research suggests that ICT can play a key role in facilitating women's ability to engage in self-employment.¹⁰⁶ In this section we examine how ICT can play a role in supporting all types of entrepreneurs, and the usefulness of using categories such as subsistence and transformational entrepreneurship to understand the versatility of ICT solutions in addressing the challenges facing women entrepreneurs.

The motivations behind women's entry into self-employment must be kept in mind in order to identify the optimal ways of supporting them. For subsistence entrepreneurs, basic steps that can help improve their productivity are needed, while for more risk-taking entrepreneurs, other programmes may be more appropriate.

It is important to think about how ICT can be integrated into women's businesses so as to provide not only direct economic benefits, such as by improving revenues/profits by positioning women better in the market, but also solutions that indirectly support women in developing entrepreneurial behaviour, including building their self-confidence and skills through better knowledge of markets, pricing, negotiation, risk assessment and network building.

Given the above, this chapter examines how ICTs can boost and encourage women's entrepreneurship, through a lens of reviewing initiatives in the region that support women. It first examines the roles of ICTs in helping to overcome the broad challenges that all entrepreneurs, including women, face. It then focuses on the potential of ICTs to support women entrepreneurs, including examining how ICTs can contribute to addressing women-related challenges of entrepreneurship and the potential benefits of ICTs in promoting women's entrepreneurship.

This chapter assumes that the issues of infrastructure and access are resolved. While this assumption is not currently met in reality, the region is pursuing initiatives to improve access to ICTS.

¹⁰⁶ OECD, 2018, p. 38.

Box 2. Access to ICTs

Digital literacy cannot be achieved without access to ICT in the first place. In this regard, an initiative was launched in Jordan in 2001 to establish Information Technology and Community Service Centres (later named Knowledge Stations). The initiative aimed to ensure that every Jordanian had access to ICTs, and particularly targeted populations that are not able to access ICT easily, including women. The Knowledge Stations provide both access to ICT services, as well as training on basic computer literacy and other advanced ICT courses, including on using ICT in businesses.^a The Ministry of Digital Economy and Entrepreneurship is now transforming 80 Knowledge Stations into incubators to be used to allow all entrepreneurs around the country to start their own businesses by serving as a working space and locus for providing needed support.^b

In the Sudan, 172 similar centres were established in the rural areas of eight states. The centres were equipped with computers and electricity sources and made available to users of both sexes, with some specifically targeting youth and women.^c Government initiatives such as these assist in overcoming the digital gender divide, both in terms of digital literacy and access, thereby potentially facilitating the pipeline of potential women entrepreneurs.

Sources:

^a USAID, 2008, p. 3.

^b ESCWA, 2020c, p. 64.

^c ESCWA, 2020c, p. 79.

A. Role of ICTs in strengthening women's entrepreneurial readiness

Gaining education and experience before launching one's own business is particularly important because successful entrepreneurship involves identifying market needs, as well as having a basic understanding of the challenges that are likely to emerge in the context of running a business. Existing research suggests that successful entrepreneurs generally gain industry-specific experience before they launch their own business.¹⁰⁷ However, as discussed above, women in the Arab region face low labour force participation, high levels of unemployment and ongoing gaps in literacy, including digital literacy. In addition, women in the labour force tend to be concentrated in a

small number of sectors, including public service, health and education, none of which traditionally lend themselves to obtaining the experience required in order to launch a business.

ICT can provide benefits to women entrepreneurs in light of both their historical educational and employment histories and the challenges they face. The Internet has changed the rules of business, as "the Internet space isn't tied to traditional ways of working and entrenched power structures".¹⁰⁸ The use of digital platforms can provide women with greater access to markets, knowledge and flexible working arrangements.¹⁰⁹ Whether the focus is on agriculturally based subsistence entrepreneurs accessing better weather and pricing information

¹⁰⁷ Koster and Andersson, 2018.

¹⁰⁸ Carlassare (2001), cited in Jome, LaRae M., Donahue, Mary P., and Siegal, Laura A. (2006). Working in the Uncharted Technology Frontier: Characteristics of Women Web Entrepreneurs. *Journal of Business and Psychology*, vol. 21, no. 1, pp. 127-147.

¹⁰⁹ OECD, 2018b.

to corporate leaders who are spearheading online platforms, ICT can play a role.

While for many women entrepreneurs, ICT may serve as a way of enhancing their access to information and financial resources, for others the development of actual internet-based businesses has potential. As discussed by the OECD (2018 b), women entrepreneurs globally have gravitated towards such opportunities, which often provide more ability to combine paid work with unpaid work duties, which continue to be shouldered primarily by women. Online businesses can range from traditional retail sales of clothing or jewellery to other types of virtual services, including financial and legal services, as well as marketing services including the web design and other ICT-related products. In the case of retail sales, ICT may be combined with a traditional ‘brick-and-mortar’ business or in lieu of one. Capital needs may be smaller for online sales, although marketing may be more of a challenge, as establishing an online presence may take considerable effort. An important caveat when it comes to the Arab region is that to date internet-based businesses have not fully taken off and so they may be riskier ventures. It is also important to be mindful of potential competition that can emerge between female entrepreneurs who have brick-and-mortar businesses and those interested in launching online ones. But for a subset of women, with ready access to technology already, online businesses hold considerable promise.

ICTs can assist in overcoming some of these challenges facing women’s entrepreneurship, including boosting literacy, while the increasing integration of ICT into the health and education sectors may provide potential women entrepreneurs within these sectors with opportunities to use their existing experience to take advantage of new opportunities. Finally, the high representation of women in STEM education is a prime opportunity to support women with entrepreneurial ambitions to enter the field of ICT production and services.

1. Using ICT to improve education and experience

In terms of utilizing ICT more broadly for education, various ICT tools have been harnessed in the Arab region to boost women’s basic literacy skills through mobile phones (box 3), as well as via digital platforms to provide more in-depth and comprehensive courses. In fact, digital learning is one of the fastest growing sectors in the region.¹¹⁰ Policies focusing on technology and education have also been launched in various Arab countries, including for example the Education Reform for the Knowledge Economy in Jordan.¹¹¹ In Saudi Arabia, the online educational platform “Rwaq” offers an open online course platform entirely in Arabic, with courses ranging from social media to medicine, engineering and religion. As of 2017, more than 1.9 million enrolments had been registered, with women well represented.¹¹²

¹¹⁰ Cointreau, 2014.

¹¹¹ World Bank, 2003.

¹¹² McKinsey, 2020.

Box 3. Using mobile phones to boost female literacy

The proliferation of mobile phones has opened new opportunities for teaching and learning, including in communities where traditional educational services are scarce. In 2008, Souktel and the Education Development Centre, with funding from USAID, launched the Dab iyo Dahab mobile financial literacy programme in Somalia. At the time, the rate of secondary education completion among women under 25 was 5.1 per cent (compared to 11.61 per cent for males). Yet, according to UNDP, in many households women were the primary breadwinners, engaging in small-scale enterprises. There had also been a 1,600 per cent growth in mobile penetration from 2002-2007 and the cost of services was rapidly declining. In this context of low education rates among women, along with high mobile phone penetration rates, the Dab iyo Dahab initiative sought to provide basic mobile audio instruction to reach out-of-school youth, particularly young Somali women, to equip them with the core skills and knowledge that would help them succeed in the workplace.

The program, which ran from 2008-2011, targeted 8,000 young women and men across all three Somali regions. It provided soft-skills training, mobile-enabled job placements and mobile-enabled financial literacy instruction. The programme was comprised of 40 audio lessons, followed by touch-tone quizzes. Trainers facilitated listening groups and phone calls into the service hotline. Pre- and post-tests were administered to assess learning and changes in attitude following the programme and it was found there was a positive, statistically significant change in scores, with most youth being able to understand important financial terms and identify long-term financial goals. It was also found that mobile learning has particular benefits for female-learners. For example, the programme facilitated learning for women in “safe spaces”, and the curriculum utilized female example characters and real-life scenarios that reflected female learners’ actual experiences to promote participation and achieve long-term benefits from the material.

Programmes such as this, which increase the reach and effectiveness of educational programmes while also encouraging regular ICT use, may have applicability in certain Arab countries where women continue to lag behind in literacy. As can be seen from the Somali example, mobile learning can be used specifically to boost skills relevant to female entrepreneurs, such as financial literacy.

Source: GSMA, 2014, p. 19.

In addition to using digital platforms to deliver general education and training, there are several initiatives in the region to enhance the digital skills of women, with a direct aim of supporting women’s entrepreneurship. For example, in Egypt, the Nile National University and the Cairo-based Industrial Training Council have collaborated to train 500 youth (70 per cent women) in digital and business skills. The aim of the project is to create optimal conditions to enable young Egyptians, mainly women, to take advantage of the entrepreneurial and

employment opportunities that the digital economy offers. It highlights promising opportunities for young marginalized Egyptians – building start-ups that leverage digital products (sometimes referred to as the “app economy”) and seizing employment opportunities offered by online outsourcing platforms.¹¹³

In Lebanon, the project “Girls for IT” creates opportunities for girls aged 13-17 to learn directly from successful start-ups and entrepreneurs. Subjects include 3D printing,

¹¹³ <https://www.idrc.ca/en/project/improving-prospects-digitally-enabled-livelihoods-among-marginalized-communities-egypt>.

mobile development, web development, software application, robotics, graphic design, social media and mobile app development, among others. The initiative aims to break cultural stereotypes associated with women in STEM subjects by exposing young women to essential technology skills and providing role models to support the technology start-up ecosystem in Lebanon.¹¹⁴ Similarly, in the State of Palestine, Gaza Sky Geeks is a technology education hub in Gaza providing mentorship to start-ups with a focus on women.¹¹⁵ In Tunisia, a public-private partnership between the Ministry of Women, Orange Foundation and the general management of Orange established the Digital Houses Programme to empower women by implementing an ICT training programme for women entrepreneurs.¹¹⁶

With the emergence of the COVID-19 crisis, the crucial role of the health and education sectors in shaping well-being has been highlighted. Additionally, it is now clear that ICTs can and must play a central role in service delivery in the context of enforced social distancing. Particularly in the context of COVID-19, ICTs are being increasingly used to deliver education, while around the world people are now more reliant on obtaining crucial health information and advice via online sources, and with this trend many questions have been raised about how this shift has likely exacerbated existing inequalities. During outbreaks, women's access to information and their ability to seek services are severely constrained, particularly as communications are largely conducted through online platforms and mobile phone messaging. Challenges facing women and girls in terms of

accessing ICT prevent them from obtaining the health information they require while also hindering their ability to maintain their educational or professional status during the isolation period. The pandemic has therefore highlighted not only the importance of ICT in delivering health and education, but also the importance of making ICTs accessible to hard-to-reach populations, including women and girls.

2. Harnessing ICTs to embark on entrepreneurship in education and health

As discussed in chapter two, a high concentration of Arab women can be found in the education and health sectors, and various entrepreneurs have already figured out a way to convert this knowledge into entrepreneurial activity. With additional support, more women could likely utilise their skills in these sectors to become entrepreneurs in the growing fields of digital learning and online health services.

The growing sector of digital education and training platforms can not only provide women with the skills and education they require for entrepreneurship but can also provide potential women entrepreneurs with experience in the education sector to utilise their existing experience to make the leap into entrepreneurship. While much education is provided by the public sector, increasingly there are discussions about emerging public-private partnerships in the region.¹¹⁷ Already, innovative entrepreneurs have found ways to tap into aspects of education that are privatized, such as the Jordan Education Initiative, which is a public-private partnership.¹¹⁸

¹¹⁴ <https://www.girlsgotit.org/about.php>.

¹¹⁵ <https://gazaskygeeks.com/about-us/>.

¹¹⁶ ESCWA, 2020b, p. 79.

¹¹⁷ See for example Pillary and Hearn, 2009/2010.

¹¹⁸ Beardsley and others, 2009/2010.

Given women's historical focus on education, identifying opportunities for women to make use of their training while building on their interest in pursuing self-employment is important. As was discussed earlier, Arabic language content is lacking on the internet, and this is true of educational content as well as other areas. As such, one particularly promising area is the development of online educational materials and platforms in Arabic, given the likelihood of increased demand and the fact that this niche is one that is unlikely to be filled by entrepreneurs outside the region. This would in turn support improvements in digital literacy among women in the region more generally, while providing potential entrepreneurs with further avenues to access training to support their entrepreneurial ambitions.

Women in the labour force also have a high concentration in the health sector, a sector that is increasingly making use of ICT technologies. Online records to facilitate integrated healthcare delivery for example are becoming the norm in many countries including in the Arab region, and this could provide opportunities for potential women entrepreneurs. One example of ICT used to convey public health communications is a study by Hibatulla Ali and others (2014, p. 21), who turned to ICT communications in the hope that they "could be used to disseminate valuable health information to Yemeni women and improve their health-seeking behaviour".

In Kuwait, Project Techno Care is based on the start-up HealthTech, launched by two women. It aims to increase the quality of life for patients with disabilities and their caregivers by developing applications for wearable devices and mobile phones.¹¹⁹ Another example

highlighted by the Intel/Dalberg report (2012, p. 83) is that of two Egyptian entrepreneurs who "saw an opening to provide locally tailored content informed by doctors and parenting experts" to mothers and mothers-to-be. The result is a business called SuperMama. Relatedly, *digitization* of birth and death records has been occurring in places like Morocco and at least one women entrepreneur has jumped on this opportunity and developed a niche business focusing on delivering such services (Olmsted and Odeh 2018).

COVID-19 has also brought opportunities for new technological developments in the health sector, especially to provide health care services without endangering providers. The artificial intelligence app Nabta Health (United Arab Emirates) provides a virtual assistant, called Aya, that helps women to assess symptoms and risk, especially among women with underlying conditions. The service is also delivered by SMS for women that do not have access to smart phones or other devices to use the app. The assistant explains the risks they could face with COVID-19 due to underlying conditions and can link the user to additional reading material.¹²⁰

3. Facilitating access to finance

As previously seen, access to bank accounts and gender-sensitive financial products has been identified as a challenge for women entrepreneurs in the Arab region. Access to electronic financial systems can facilitate the receipt of revenues, payments to suppliers and other day-to-day transactions, while saving time, increasing the use of formal savings and reducing business costs. Mobile money – a way to make financial transactions SIM card to SIM

¹¹⁹ ESCWA, 2020b, p. 152.

¹²⁰ Tynes, N. (2020). Arab healthcare innovation responds to pandemic. *Nature Middle East*, 12 June. Available at <https://www.natureasia.com/en/nmiddleeast/article/10.1038/nmiddleeast.2020.62>.

card without needing a formal bank account – is proving a powerful source of inclusion for the two billion people worldwide without a formal financial account.¹²¹ Data from the 2017 Global Findex database demonstrate the opportunity of expanding digital financial services to people who do not have an account.¹²²

McKinsey (2020) reports on several initiatives taken in Egypt to increase women's access to mobile banking, therefore improving their financial inclusion. AlexBank signed a strategic MoU with the National Council for Women (NCFW), supported by the Central Bank of Egypt,

to ensure women's access to financial and non-financial services in every Governorate and village in Egypt. The initiative aims to implement concrete steps to improve the financial inclusion of women living in rural areas while enhancing the general level of financial literacy through a mobile application. The Arab Women's Enterprise Fund, also in Egypt, is helping poor women improve their financial inclusion by increasing their awareness, understanding and trust in digital financial services. It is also supporting the development of female-focused strategies and innovating models for closing the digital and financial gender gaps.

Box 4. Increasing access to mobile banking in Jordan

In Jordan, women's access to financial services in general, and digital financial services in particular, is quite low and the gender gap in financial inclusion is one of the highest in the world. There is a paradox between growing access to technology on one side – with many Jordanian women owning a mobile phone – and the low uptake of digital financial services on the other. In this context, the Jordan Payments and Clearing Company (JoPACC), which was established by the Central Bank of Jordan, partnered with the Arab Women's Enterprise Fund (AWEF) to conduct two digital experiments in 2019/2020 to better understand the reasons for the low uptake of digital financial services by women, analyse women's financial behaviour and explore interventions that could motivate women's access and use of digital financial services.

The two experiments focused on mobile wallets, which are virtual financial accounts accessed through mobile applications where the mobile number is the account number. They can be used for a range of financial transactions, from money transfer and bill payment, to online shopping and saving. The experiments looked into the impact of running a loyalty programme for women and the impact of digitizing the payment and repayment of microloans on women's financial activity.

While there is a common expectation that uptake of mobile wallets will be rapid due to their numerous benefits, when dealing with the previously unbanked population, a key barrier to uptake is lack of knowledge and trust in the service. Thus, it was found that incentivizing opening mobile wallets was only effective when coupled with in-depth financial awareness sessions and/or engagement with a female account opening agent. While loyalty programmes targeting female clients were not enough in themselves to incentivise opening a wallet, they did lead to an increase in active usage of the mobile wallet once it was open.

The experiments run by JoPACC and AWEF demonstrate that it is not enough for the banking sector to assume that the benefits of new digital services will speak for themselves, particularly when it comes to the unbanked populations, largely represented by women. Rather, it is important that gender-sensitive interventions, such as financial awareness sessions, contact with female agents and programmes specifically targeting female clients, are implemented to reach previously underserved populations.

Source: JoPACC, AWEF and UKAID, 2020.

¹²¹ OECD, 2018b.

¹²² Demirgüç-Kunt, Asli, Leora Klapper, Dorothe Singer, Saniya Ansar and Jake Hess. 2018. The Global Findex Database 2017: Measuring Financial Inclusion and the Fin-tech Revolution. Washington, D.C.: World Bank.

An important component to consider in the delivery of digital financial services is the inclusion of non-financial services. In many instances, women struggle to make use of digital services due to a limited understanding and knowledge of the use and benefits as well as a lack of trust in the digital environment. In Lebanon, for example, the BLC Bank in collaboration with the International Finance Cooperation's Banking on Women Programme created the "We Initiative",¹²³ a digital platform specifically for women. It serves as a forum where women can connect and share ideas and have discussions on issues. It also provides access to articles on finance and money, business tools and the possibility to consult with experts on a variety of issues related to growing businesses.¹²⁴

Female-focused strategies should consider not only the type of services delivered but also how those services are delivered. In the Arab region, most e-payment systems are manned by male agents. It has been found that women may feel uncomfortable in dealing with them due to prevailing norms. In Jordan and Egypt, the Arab Women's Enterprise Fund has worked with leading e-payment service providers to put in place female e-payment networks. This focus on the need of women to be comfortable in using services has also helped to build trust in digital services and expand their use and reach.¹²⁵

Crowdfunding has been the subject of major recent interest as a transformative innovation providing individuals, start-ups and established businesses with avenues to mobilize financial

resources. However, ICT is key in order to fully realize the promised benefits of crowdfunding. According to a PricewaterhouseCoopers study, women in the MENA region, like women in all other countries around the globe, are more successful in leveraging seed crowdfunding and achieving their financial objectives to find necessary funds to launch their businesses and fulfil their entrepreneurial potential.¹²⁶

4. Women as producers of ICT

Women in the Arab region are also well represented in STEM education and this provides an opportunity for those with entrepreneurial ambitions to become producers of ICTs. This is particularly important in light of arguments that ICT can be key to leapfrogging as argued by Steinmueller (2001). Women entrepreneurs for example may be particularly well-suited to identify ways that ICTs can be mobilized to address gender specific challenges, but also more generally to contribute to innovations that improve consumer well-being, expand environmentally friendly options, etc.

It is noteworthy that the aggregated Enterprise Survey data (for the Arab region as a whole) indicate that among IT and IT service providers, 22 per cent have at least one woman owner, compared to 13 per cent for the entire sample. Unfortunately, the Arab region lags in terms of innovation outputs and effective use of technologies in their production systems, and the Global Innovation Index (GII) indicates that the situation in Arab countries has deteriorated in recent years.¹²⁷ At the same time, a number of

¹²³ For more information go to <https://www.we-initiative.com/>.

¹²⁴ BLC Bank, 2020. *Training: business tools*. Available at <https://www.blcbank.com/content/expand/learning.aspx?modid=1&type=2>.

¹²⁵ Marketlinks (2020). *Making Digital Finance Work for Women in the MENA Region: 8 Lessons from the Field*. 27 April. Available at <https://www.marketlinks.org/resources/making-digital-finance-work-women-mena-region-8-lessons-field>.

¹²⁶ <https://www.pwc.com/gx/en/diversity-inclusion/assets/women-unbound.pdf>.

¹²⁷ ESCWA, 2019c.

Arab countries are working to position themselves as leaders in various tech fields. In particular, the United Arab Emirates and Saudi Arabia have an interest in advancing in the areas of robotics and artificial intelligence.¹²⁸ Given Arab women's active participation in fields such as computer science and engineering,¹²⁹ this is one area where potential female entrepreneurs should be supported.

Several initiatives are underway in the region in the form of incubator and accelerator programmes. Most support the development of both men and women entrepreneurs while some specifically target women. The focus of such programmes is often quite general and can include any start-up where technology is used as well as start-ups where technology specifically is the product. For example, the Palestine ICT Incubator (PICTI) makes special efforts to support and motivate women entrepreneurs to apply for their incubator programme and in 2012 launched a special business incubation programme for women. The Badir ICT incubator in Riyadh, Saudi Arabia has also established an annex incubator for women entrepreneurs (OECD, 2014, p. 92).

In Lebanon Berytech¹³⁰ has an incubation programme that any aspiring entrepreneur can apply for and provides various funding opportunities, business support, mentoring, networking and even rentable office space to start-ups. The organization also runs a variety of programmes that focus on specific fields such as clean energy, health and agriculture and

holds competitions for new innovations with a focus on social entrepreneurship. One of these competitions is "Femme Francophone Entrepreneure" organized in collaboration with Agence universitaire de la Francophonie (AUF) Middle East, L'Orient-Le Jour and le Commerce du Levant. This yearly competition invites women entrepreneurs to submit a project based on that year's priority categories.¹³¹

WOMENA¹³² is a media company that focus on promoting female entrepreneurship throughout the Arab region. In collaboration with Standard Chartered's Women in Tech, WOMENA organizes the acceleration programme Womomentum, a 3-month blended programme with onsite (United Arab Emirates) and remote (home-based) components focusing on women-led technology start-ups.

Much of ICT production also overlaps with the fields of communication and marketing, particularly when related to web design and maintenance. This is another promising field that female entrepreneurs can enter. Financial technologies (Fintech) are promising for women, and some have already taken advantage of them, with 4 women included in a 2018 list of the top 50 Fintech influencers in the Middle East.¹³³ Fintech is not a completely new field, but the advancement of digital technologies has forever changed the field from only focusing on the back-end of traditional financial systems to more consumer-oriented services and tools, which indicates the emergence of new opportunities. In Bahrain a group of women that met at various

¹²⁸ Kaul, 2018.

¹²⁹ Olmsted and Odeh, 2018.

¹³⁰ <https://berytch.org/>.

¹³¹ For more information go to <https://competitions.berytch.org/ffe/>.

¹³² See <https://womena.com/>.

¹³³ Lattice80 (2018). *Top 50 Fintech Influencers in Middle East*. 29 March. Available at <https://www.lattice80.com/top-50-fintech-influencers-middle-east/>.

fintech events came together to form Women in FinTech Bahrain in 2018 to ensure that women are considered in the developing ecosystem and to help grow the sector.¹³⁴

In technology and innovation, there are few fields that do not present opportunities for women's entrepreneurship. Research and Development, especially in science, technology and innovation, is lacking in the region and there will be major opportunities for women entrepreneurs in applying emerging technologies such as artificial intelligence, blockchain and the Internet of Things to advance inclusive socioeconomic development.

One area that can be viewed as both enhancing women as entrepreneurs and addressing other aspects of gender inequality is support for ICT-related innovations that provide a broader social benefit. Policymakers for example can support innovators who focus on labour saving devices that reduce women's unpaid work burden (e.g. laundry, cooking, water and wood gathering). Such advances are most likely to benefit potential and existing subsistence entrepreneurs in instances where heavy unpaid work burdens are constraining them from starting or expanding a business, but also can provide opportunities for creative women to develop new products.

Box 5. Intellectual property rights and women's entrepreneurship

Intellectual property rights (IPR) play a key role in research and development, fostering innovation and entrepreneurship and safeguarding human capital. However, only a few Arab countries have a national intellectual property strategy that encourages and facilitates the management and protection of intellectual property rights. There is also a significant gender gap that persists in IPR. Although the number of women that form part of patent application via the Patent Cooperation Treaty (PCT) was higher in Morocco and the United Arab Emirates than in the 20 countries that submitted applications, fewer women than men still apply and hold patents.

The gap in IPRs could have an impact on women's economic empowerment, business success and the availability of funding for them. Even though the number of women in STEM fields (normally associated with patents) has increased, the number of patent applications from women in these fields has not. Studies have found that women experience certain social barriers and are less likely to seek commercialization and market themselves to partners that could lead to patents. However, data are still too sparse to provide a complete understanding of the barriers and limitations that prevent women from participating in the patent system.

The World Intellectual Property Organization (WIPO) works to improve women's participation in the patent systems through workshops and meetings with entrepreneurs, inventors and scientists as well as government officials. Intellectual property forms part of the entrepreneurship ecosystem as it is potentially a driver of innovation and invention. Therefore, it is important that that IPR be a component and a consideration when women entrepreneurs in STEM fields are given capacity building or mechanisms to help them excel in the field of technology.

Source: ESCWA (2019d). Intellectual Property for Fostering Innovation in the Arab Region. Beirut. Available at <https://www.unescwa.org/publications/intellectual-property-innovation-arab-region>.

¹³⁴ Wadhwa, P. (2019). Bahraini women launch Women in FinTech initiative. SME10x, 11 July. Available at <https://www.sme10x.com/industry/bahraini-women-launch-women-in-fintech-initiative>.

There are several initiatives that can be used to help create social benefit for women as well as ensure the development of ICTs geared towards their needs. One such initiative are hackathons that bring together specialists in coding, design and development and give them a short amount of time to work in teams to come up with a solution for a specific problem or give life to an idea. In 2020, for example, the United Arab Emirates held the Yalla 2020 Fintech Hackathon and asked participants in the field of digital financial service delivery to develop tools or apps focused on those excluded, including women.¹³⁵ In 2015, Lebanon held its first female-only hackathon called “She Develops” at the American University of Beirut. Groups competed to build a basic Android app that would speak to solving a business or social issue.¹³⁶

ICTs can play several roles in strengthening the pipeline of women entrepreneurs in the Arab region. At the most fundamental level, ICTs can be used to provide women with the education they require to become entrepreneurs – from the most basic literacy skills to more in-depth courses in their field of interest. In this way, ICTs can be used to reach women who may not have previously had access to such educational opportunities. The growing digitization in the education and health sectors, particularly in the context of COVID-19, suggests significant opportunity for women to capitalise on their experience and utilise ICTs to become entrepreneurs. Finally, while women are well represented in the STEM fields of education, they have struggled to transition from education to work. With the correct support, women in these fields represent a potential pool of entrepreneurs in the field of ICT production and services. The next section will look at how ICTs

themselves can be utilized to provide support for women entrepreneurs in overcoming the gender-specific challenges they encounter once becoming entrepreneurs.

B. Overcoming mobility and time constraints

As previously discussed, women entrepreneurs in the Arab region, as in other parts of the world, may encounter mobility constraints, arising from legal restrictions and/or social and cultural norms, as well as significant time constraints due to unpaid care obligations, all of which could potentially affect their ability to start and run a business. ICTs, while not a long-term or comprehensive solution to these mobility constraints, can enable women to engage in entrepreneurship in the face of restrictions on their movements. Mobility constraints have been exacerbated due to the lockdowns implemented in the context of COVID-19, impacting not only women entrepreneurs, but also their potential customer base and suppliers.

Commerce carried out using mobile phones or tablets, which has become known as M-commerce, is an effective way to overcome major challenges facing some women entrepreneurs in the Arab region, particularly in terms of mobility and time constraints. With M-commerce, most of, if not the entire, supply chain process of a business can be carried out online, from dealing with suppliers and customers to carrying out mobile marketing activities and delivering and distributing products. In addition, if used successfully, M-commerce can enable women entrepreneurs to start and operate a global business, rather

¹³⁵ GIZ (2020). *Yalla Fintech 2020 – Arab Hackathon for Financial Inclusion*. Available at <https://www.fintech-galaxy.com/hackathon/hackathondetail?hid=110>.

¹³⁶ For more information go to <http://thekipproject.info/event/she-develops-women-only-hackathon/>.

than just concentrating on acquiring customers in one geographical area only.¹³⁷ That said, challenges to successful implementation of M-commerce in the region include the security of mobile transactions, a lack of trust in M-commerce in the region and the lack of an accurate postcode system in some countries. Ameen (2016) argues that for M-commerce to be successfully used to support women entrepreneurs, government initiatives and policymakers need to boost and regulate its use.

Social media is also a powerful tool for women to start and run businesses from home. In the Sudan, religious and cultural norms contribute to much discussion about whether women should work outside the home or not, and under what conditions. Steel (2017) examined how mobile phone practices in the Sudan facilitate new forms of home-based female entrepreneurship, with a focus on Sudanese women in Khartoum known as *tajirat al-Facebook* – or *tajirat al-Face* (Facebook traders) in short. These women are predominantly well-educated Sudanese women, many of whom had careers that were halted when they married or became pregnant. Most perceived the shift from professional woman to housewife in a negative way and were looking to participate in economic activities and widen their professional and social circles, while navigating the mobility constraints imposed on them by traditional gender norms. The women use smartphones to trade goods such as cosmetics, garments, *toob* (typical Sudanese dress for women), fashion accessories and perfumes online. Steel argues that the mobile phone, and the smartphone, has opened up a range of opportunities for women to increase their space for social and economic manoeuvring and to negotiate power within, and beyond, the domestic realm.

While ICTs to enable women's work from home can on the one hand help them become more profitable, they can also reinforce traditional norms and reduce women's mobility further, a point made by Anderson (2020) in her discussion on women's adaptation of ICTs in home-based businesses in Jordan. More generally, women reported challenges when combining online entrepreneurship with their familial responsibilities at home, as on the one hand they are expected to prioritize family duties, while on the other, customers expect instant communication. In this way, increasing women's ability to engage in online entrepreneurship from the home without simultaneously addressing their unpaid work responsibilities can have a negative result of increasing the work burden of women. Therefore, caution is needed when it comes to concluding that integrating ICTs into homework can facilitate the goal of empowering women's entrepreneurs.

C. Accessing information and building networks

Accessing information about marketing opportunities, prices, suppliers, training, financial products and networking opportunities is important for business success. Carr, Chen and Tate (2000) argue that self-employed women are often at a disadvantage within the supply chain because they lack information about prices and therefore are unable to bargain effectively. Internet access, as well as the skills to extract relevant information, can therefore be a valuable tool for increasing women's ability to obtain relevant information that can help them negotiate with other actors within the supply chain in order to improve their revenue streams and reduce their costs.

¹³⁷ Ameen, 2016, p. 435.

Several business development support programmes for women entrepreneurs in the region utilize ICT to assist women entrepreneurs in both obtaining information and building networks. The Association des femmes chefs d'entreprise (AFEM) is a major women entrepreneurs' association in Morocco that serves as a one-stop shop for its members, offering mentoring, training and professional development as well as online access to information on financing and e-learning courses on a range of topics.¹³⁸

The Business Women Forum – Palestine (BWF-P) Business Development Centre for Women (BDC) aims to enable businesswomen and female entrepreneurs to develop their

competitive advantage. One method they have used to encourage Palestinian women entrepreneurs and build their knowledge, skills and confidence is an Online Business Plan Competition for Palestinian women in the South Area of the West Bank (supported by the Middle East Partnership Initiative). The competition encourages women entrepreneurs to start and develop their own businesses through training, coaching and access to networks. Women who submit business proposals receive training and online coaching on how to develop their business plans, and those with successful business plans (competition winners) receive further professional consulting, coaching and seed money.¹³⁹

Box 6. ICTs to increase access to information

Several studies have demonstrated that ICTs can be simple means to provide women entrepreneurs with access to necessary information. For example, a study of 22 Egyptian women entrepreneurs in the agricultural sector found that ICT was used by women in several ways to improve the productivity of their land, increase access to markets and obtain information about pricing. One simple way that ICT can help farmers is improving their access to information about the weather – checking conditions online helped women to be able to respond more effectively to weather-related challenges and better protect their crops. The study also found increases in revenue streams with increased access to ICTs and the resulting access to various forms of information online. Once women had better knowledge and could show their families that they were capable of not only successfully managing the land, but also increasing their productivity and profitability, they were also able to assert their right to manage the land with the knowledge they gained.^a

In India, the Self-Employed Women's Association (SEWA) aims to provide "livelihood security" for its members. Each day, SEWA sends agricultural workers SMS messages with up-to-date spot and future commodity prices for each market so they can determine when and where to get the best price for their produce. This enhances women's ability to better plan their plantings and make informed harvesting decisions. Women have not only been able to increase their incomes, but have also saved time and money by not having to travel in order to get the latest market prices.^b

Sources:

^a El-Neshawy, 2014.

^b GSMA, 2012, p. 39.

¹³⁸ OECD, 2014, p. 98.

¹³⁹ OECD, 2014, p. 86.

COVID-19 is highlighting the importance of both networking platforms and more generally having an online presence. An example of a networking initiative increasing its online presence due to the pandemic is She Trades MENA,¹⁴⁰ part of the global She Trades initiative,¹⁴¹ which aims to connect three million women to market by 2021. It ensures international support from policymakers, the business community and women's organizations to harness international trade to connect and empower women economically. In addition, it provides women-owned businesses the opportunity to connect with other businesses, offer and source products on the online platform; learn skills through the Virtual Learning Space; and attend workshops, trade fairs and other business events. The She Trades platform notes that amid the COVID-19 outbreak they are increasing their online presence, through webinars, publications, videos and virtual learning in order to continue supporting members.

In addition to business development support, mentoring has also been shown to be a powerful tool to help women entrepreneurs identify and access relevant networks, information and opportunities; however, women entrepreneurs do not always have the ability or means to locate and cultivate mentors. The Cherie Blair Foundation Mentoring Women in Business Programme matches women entrepreneurs from low- and middle-income countries with women and men mentors elsewhere in the world. The women entrepreneurs work one-on-one with a dedicated business mentor for a year, meeting online for two hours a month. In addition to the

formal online programme, it has an online forum for members and alumni, through which members develop relationships, exchange ideas and collaborate. Online solutions such as this allow women entrepreneurs to access advice on demand and develop online communities of professional colleagues, with no more than an Internet connection.¹⁴² Programmes such as this may be particularly beneficial for women with time or mobility constraints, or where social norms would prevent them from meeting with male colleagues.

D. Communications and marketing

In addition to building networks with mentors and industry professionals, communicating with clients, including both direct contact and marketing of products/services, is key to business success. ICT is increasingly seen as an important mechanism through which this is done and is of particular importance to those women who operate online or home-based businesses, who may not come into regular face-to-face contact with their customer base or who may face other mobility restrictions. There are numerous ways that businesses can use ICT to facilitate communications – these include mobile phone use, email communications and web development, as well as engagement in various forms of social media. In the Syrian Arab Republic, for example, the Rural Knowledge Network portal, which aims to link rural villages together and provide them with ICT resources, has played an important role in marketing rural products, including handicrafts made by women.¹⁴³

¹⁴⁰ <http://dedc.gov.ae/English/Initiatives/Pages/shetrades-mena.aspx>.

¹⁴¹ <https://www.shetrades.com/en>.

¹⁴² Boston Consulting Group, 2014, p. 11.

¹⁴³ ESCWA, 2020c, p. 81.

Looking at the use of ICT to facilitate direct contact with clients and consumers, the Enterprise Survey asks whether firms use “email to communicate with clients/suppliers”, an indication of the vital role of ICTs in terms of external communications. Across the region firms with at least some female ownership are considerably more likely to make use of email than firms with no female owner. Whereas 76 per cent of firms with some female ownership answered yes to the question, only 55 per cent of male-only firms did so. The data also suggest that the use of email varies considerably across the region and countries with weaker infrastructure make less use of email. For example in the Sudan about 66 per cent of firms reported email use, with no difference between firms with and without female ownership, but in a number of other countries (e.g. Morocco and Tunisia) the vast majority of firms use email and there are either no statistical differences by the sex of the owners, or women-owned firms are more likely to be adopters. The data also indicate that huge changes have occurred in recent years, even in countries with weak infrastructure, such as Mauritania. The 2006 Mauritania data stated that only 39 per cent of firms were making use of email but by 2014, that number had jumped to 83 per cent, with firms with some female ownership having higher rates than the country average.

Advances in communications technologies have transformed traditional marketing strategies to adapt to a new consumer. A study of promotional strategies preferred by college students in Jordan, Lebanon and Dubai found that these customers chose the Internet as their main source of information when making decisions about western-made products, such as electronics, clothing and luxury items.¹⁴⁴

Globally, webpages have been used as a business strategy for at least forty years (Cockburn and Wilson, 1996). However, the uptake of webpages has been slower in the Arab region, with recent Enterprise Surveys finding that less than half of all respondents (46 per cent) indicating that they had a website. In Mauritania the rate jumped from 10 to 39 per cent between 2006 and 2014, while slower progress was seen in Yemen, where the rate rose from 28 to 38 per cent between 2010 and 2013, and the Occupied Palestinian Territories, where the rate slowly increased from 38 to 45 per cent between 2013 and 2019. Lebanon, Morocco and Tunisia are the countries where websites are the most integrated into firms’ practices. Analysis¹⁴⁵ of home-based women entrepreneurs in Jordan suggests that while online marketing may compliment more traditional forms of reaching customers (e.g. word of mouth), it is more effective in maintaining customers than it is in locating them in the first place.

Returning to the analysis of the World Bank Enterprise survey data, one interesting finding is that rates of website use by firms with some female ownership are consistently higher across all country contexts. At the same time, all female firms appear to have lower rates of website adoption than other types of firms. In other words, all-male or all-female firms have lower rates than those with a mix of ownership, and all female firms have the lowest rates, although some caution is needed around interpreting this finding, since the number of all female firms in the sample was quite small. These findings are important for three reasons: firstly, there is considerable room for growth in the Arab region when it comes to utilizing websites and other internet-based marketing and communication

¹⁴⁴ Assaf and others, 2012.

¹⁴⁵ Anderson, 2020, p. 145.

strategies to reach clients; within the region there is considerable variation, suggesting South-South cooperation as a strategy for furthering this outcome; and finally, it is noteworthy that firms with some female owners tend to be leading the way in terms of these types of technology adoptions, but 100 per cent female-owned firms may be lagging behind. More analysis is needed to understand why this is the case and identify the potential for leveraging this to further women's entrepreneurship.

Also noteworthy is that these days online marketing goes far beyond websites alone and encompasses a broad range of social media platforms, including Instagram, Facebook and LinkedIn. In addition to email, messaging apps are also increasingly becoming a popular and convenient form of communication. An example of one such app that has had considerable success in the region is WhatsApp. Data suggest that the penetration rate for this app is 84 per cent, with rates varying from 99 per cent (Lebanon) to 47 per cent (State of Palestine) (Statista, n.d.). Unfortunately, the Enterprise Survey data do not ask about messaging apps, social media or other more recent additions to firms' communication and marketing options. However, the 2017 MBRSG survey of regional online trends found that 25 per cent of respondents used instant messaging apps primarily for work, while eight per cent used messaging apps to generate income and profit.¹⁴⁶

Assaf and others (2012) argue that to reach younger generations and more educated Arab markets, sophisticated social media campaigns

will be key. Indrupati and Henari (2012) evaluated the effectiveness of online social networking by entrepreneurs in the Arabian Gulf. They found that over 87 per cent of respondents felt that social media profiles – particularly on Facebook and LinkedIn – had helped their businesses and the average respondent generated \$9,109 annual revenue from Facebook. This study is somewhat dated, and the use and reach of social media platforms has expanded exponentially since this time, suggesting that social media will increasingly be key as a marketing and communication strategy. The rising popularity of social media marketing platform has promise not only in terms of women utilizing such tools, but also in terms of women entrepreneurs as providers of these services.

Not only should Arab women entrepreneurs be offered support to help them develop better social media communication strategies, but they can also be encouraged to become providers of such services as well. As an example, the GSMA report (2012) points out that women have already become mobile phone providers in several low-income countries. The report on the one hand identifies the Middle East and North Africa as a "Gender Gap Hotspot",¹⁴⁷ but also highlights a woman entrepreneur in Saudi Arabia operating in the mobile phone industry.¹⁴⁸ Women have also been involved in the development of a range of apps and the Arab world is no exception in that regard as evidenced by a series of hackathons hosted by the ARAB Women in Computing (WIC).¹⁴⁹ Mobile companies such as Zain have also supported women entrepreneurs in the region.¹⁵⁰

¹⁴⁶ Salem, 2017, p. 23.

¹⁴⁷ GSMA, 2012, p. 16.

¹⁴⁸ GSMA 2012, p. 23.

¹⁴⁹ Stephanie d'Arc Taylor, 2015.

¹⁵⁰ GSMA, 2012, p. 23.

IV. Conclusions and recommendations

A. Conclusions

Entrepreneurship is increasingly recognized as an important avenue for advancing women's economic empowerment. Despite a substantial amount of interest in entrepreneurship among women in the Arab region, their engagement in entrepreneurship continues to lag behind both men in the region and their female counterparts around the world. One of the main challenges is that the pipeline of women entrepreneurs is quite weak, due to women's historically low rates of labour force participation, high rates of unemployment and high concentration in the public sector. Although considerable variation exists across countries and by levels of education, these employment trends limit the number of women who have the private sector experience required to launch their own business.

Once they have taken the decision to embark into the world of business, women entrepreneurs in the Arab region face a new set of challenges, ranging from limited or poor infrastructure to gender norms and expectations that produce obstacles not faced by their male counterparts. These include access to finance; time constraints related to unpaid work burdens; legal barriers; constraints on mobility; a lack of networks and role models; and a lack of gender-sensitive business development support.

While addressing the barriers faced by women entrepreneurs in the long term will require comprehensive legal, social and structural

reforms, this report sought to examine whether increasing women's access and use of ICT can help overcome some of the challenges. ICT can have particular benefits for women entrepreneurs in the Arab region, given their employment experience and level of education. For some women ICTs may also help overcome societal norms and structural factors restricting their mobility and ability to access networks. ICT can be used to facilitate financial transactions (even if one does not have a bank account); improve the quality and reach of communications and marketing for a low price; improve women's access to crucial information; and support the manufacturing process.

Women's self-employment success hinges on both individual as well as institutional and macro-level factors. Institutional and macro-level factors include policies that support businesses while balancing other societal needs. Obviously, given the focus on women, one important institutional factor that requires particular emphasis is the degree to which existing gender norms create circumstances that lead to additional challenges facing women, whether in the form of discriminatory behaviour on the part of banks or an inability for women to network effectively due to existing norms. Therefore, interventions to support women entrepreneurs, including those based on ICT solutions, need to target both individual needs as well as broader institutional factors.

This is particularly relevant in the context of COVID-19. Globally, the economic vulnerability of women has increased, even as they already

had a more precarious relationship to paid labour that was marred by lower wages and greater insecurity. In addition, COVID-19 and the social isolation requirements that followed have greatly increased women's unpaid work burdens, further reducing their ability to remain active as paid employees. As such, supporting women's entrepreneurial initiatives is even more important and ICT can play a key role in doing so.

ICT will not rectify all of the gender hurdles that women need to overcome, and ICT solutions should be pursued in parallel with more comprehensive reforms and support to women entrepreneurs. Nevertheless, ICT has become such an integral component of businesses worldwide that it is imperative for women entrepreneurs to adopt ICT solutions in order to remain competitive. Therefore, supporting women entrepreneurs' uptake of ICT is a worthy goal in and of itself.

The existing data suggest that there is a considerable amount of variation by country, region and income level when it comes to women's access to and use of ICTs. Gender gaps in Internet and mobile phone usage persist in many communities, particularly in low-income countries. In numerous contexts, severe infrastructural constraints limit the ability of entrepreneurs to integrate ICT solutions. Weaknesses in electricity provision and telecommunications infrastructure are of note, and the educational system in a number of countries also contributes to the under preparedness of workers. Both of these shortcomings in turn make integration of ICT solutions more challenging.

Data presented in this report indicate that the Arab region is lagging in ICT skill acquisition,

especially in terms of basic and standard skills. Compounding the issues of ICT access and literacy is the fact that limited Arabic-language content has been produced for the internet, which means that even if an individual can get online, if they do not speak English, their uses of the Internet are limited. Similarly, data patterns indicate that the Internet remains used primarily for entertainment, rather than commercial transactions, which reduces women's familiarity with and potential ability to benefit from the Internet as an income-generating tool. Online businesses have been identified in other countries as particularly key to women's success, given potential mobility constraints and time constraints due to unpaid work burdens.

Because subsistence and transformational entrepreneurs face considerably different challenges, ICT solutions must be tailored to both groups. Subsistence entrepreneurship is closely linked to poverty and therefore is more likely to be happening in contexts where infrastructural challenges are also more severe. Solutions that focus on more accessible forms of technology (e.g. mobile phones) are particularly relevant in such contexts. The region could also do more to support transformational women entrepreneurs, who are more likely to develop businesses with substantial employment generation and the potential to substantially advance ICT innovations directly. More generally, Arab women should be recognized not only as users, but also as potential producers of ICT, given the high rates of women engaged in STEM education fields. Support for transformational entrepreneurs and particularly those with a STEM focus is key to supporting innovation, macroeconomic growth and women's empowerment.

B. Recommendations

Given disparities both within and across countries in the Arab region, a two-pronged approach that supports both subsistence and transformational entrepreneurs is advisable, recognizing that the needs and economic potential of these two groups are often very different.

1. Infrastructural improvements

1. Improve basic infrastructure in the areas of electricity and telecommunications in both low- and middle-income countries in the region, in order to facilitate better integration of ICTs.
2. Improve educational infrastructure, with a particular focus on building digital skills.
3. Provide infrastructural support for the development of institutionalized care facilities (for children, the elderly and other dependents), in order to reduce women's unpaid care burdens. ICTs can play various roles in terms of the development and marketing of these types of services.
4. Improve safety nets, with an emphasis on shielding subsistence entrepreneurs from income volatility to protect them from downside risks. ICTs can play a role in monitoring income volatility and facilitating distribution of benefits.
5. Enact legal reforms, with a particular focus on ensuring that non-discrimination clauses related to financial access are incorporated into existing laws, while at the same time continuing to work towards eliminating obedience clauses and reforming inheritance laws.

2. Policy support to improve the pipeline of women entrepreneurs

1. Facilitate women's education-to-work transitions with a focus on ICT tools to help with this transition.
2. Introduce programmes to support confidence building. ICTs, particularly social media, can play a key role in building confidence among both potential and existing women entrepreneurs.
3. Introduce better methods of identifying potential entrepreneurs and providing them with financial support, with ICT as a conduit.
4. Support women in both developing better managerial skills and recognizing the skills they already have, with ICT facilitating training and networking opportunities.
5. Develop joint programmes to hone women's data analytics skills while also developing their entrepreneurial potential.

3. ICT-related policies to support existing entrepreneurs

1. Explore how ICTs can be used to facilitate access to finance for female entrepreneurs. Women entrepreneurs in many Arab countries identify a lack of capital as a major obstacle to growth, and given that ICT can be used to help reduce barriers to obtaining finance, such a goal should be a top priority.
 - (a) Enhance support for subsistence entrepreneurs, to enable them to make better use of ICTs;
 - (b) Recognize the limits of microfinance institutions for creating transformational entrepreneurs and expand women's access to other forms of finance.

2. Identify ways to improve women's access to information and markets.
 - (a) Support women entrepreneurs in increasing their online/social media presence;
 - (b) Support women with the skills to become service providers in this area.
 3. Identify ways to support women entrepreneurs' access and expansion of virtual networks at the national, regional and global levels, and facilitate online contact with potential mentors.
 4. Identify ways to support women innovators who focus on ICT products that address gender inequalities, including:
 - (a) Innovative solutions to unpaid work/time constraints;
 - (b) ICT tools that can bridge literacy gaps;
 - (c) Apps that address other aspects of gender inequalities, with a focus on the role ICT can play in reducing gender-based violence.
4. Other recommendations
1. Transfer and adapt approaches that have already been operationalized in other spheres to tackle gender inequality, such as those designed to improve women's access to political power, which may also be relevant to addressing women's participation in entrepreneurship. These include:
 - (a) Highlighting existing female role models within the Arab region, such as Arab women who have become highly successful entrepreneurs;
 - (b) Introducing quotas when it comes to corporate board membership.
 2. Promote changes to gender norms to increase women's mobility and decision-making power. ICTs can be key to promoting norm change.
 3. Encourage collaboration across country contexts, given both the vast diasporic Arab entrepreneurial community, as well as the different institutional contexts and variation in terms of prevalence of female entrepreneurship observed within the Arab region.
 4. Improve research and data collection related to trends in women's entrepreneurship:
 - (a) Better data are needed in order to assess women's entrepreneurship patterns in the region. In particular information about informal sector firms and subsistence entrepreneurs is lacking;
 - (b) More comparative analytic work is needed to identify which countries have devised successful programmes to support Arab women entrepreneurs. In particular, it would be useful to examine Lebanon, Tunisia and the United Arab Emirates, which have had relatively more success;
 - (c) Support research examining the links between gender, ICT and entrepreneurship. Because of the dearth of existing research, some of the findings are speculative. A number of rather descriptive studies have been performed on the intersection between gender, ICT and entrepreneurship in the Arab region, but these tend to be based on small, non-randomized samples, and are particularly concentrated in the Gulf region. Broader theoretical and empirical studies are lacking.

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