JORDANIAN WOMEN IN THE ICT SPACE

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UN WOMEN
United Nations Entity for Gender Equality and the Empowerment of Women

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List of Abbreviations and Acronyms

3G	Third Generation
DOS	Department of Statistics
E4E	Education for Employment
ERFKE	Education Reform for Knowledge Economy project
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GIP	Graduate Internship Program
GPG	Gender Pay Gap
GSC	General Secondary Certificate
HRD	Human Resources Development
IB	International Baccalaureate
ICT	Information and Communications Technology
IGCSE	International General Certificate of Secondary Education
IMF	International Monetary Fund
Int@j	Information and Communications Technology Association
IT	Information Technology
ITES	IT Enabled Services
JEI	Jordan Education Initiative
JFBPW	The Jordan Forum for Business and Professional Women
KAFD	The King Abdullah Fund for Development
LG	Life's Good Electronics
MENA	Middle East and North Africa Region
MOE	Ministry of Education
MOICT	Ministry of Information and Communications Technology
MOL	Ministry of Labor
NOS	National Occupational Standards
MSME	Micro, Small and Medium Enterprise
PSUT	Princess Sumayyah University for Technology
QRNEC	Queen Rania National Entrepreneurship Competition
RSS	Royal Scientific Society
SQA	Software Quality Assurance
TRC	Telecommunications Regulatory Commission
UNRWA	United Nations Relief and Works Agency
UNWomen	United Nations Development Fund for Women
VoIP	Voice Over Internet Protocol
WEC	Women's Enterprise Center

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Acknowledgments

This study was conducted by Al Jidara Investment Services Company, which professionally serves a wide range of local and international investors and institutions for close to two decades. They have developed significant and even unmatched experience in being the local counterpart of internationally funded projects, both long and short term, aimed at economic development.

UN Women deeply appreciates the efforts exerted by Al Jidara in developing this study. This was implemented through: desk research, and field research processes. The field research part was implemented through conducting 12 focus groups sessions among the northern, middle, and southern regions of Jordan, and through conducting 19 semi-structured interviews. In that regard, UN Women deeply thanks: Female IT and ICT students in public and private schools and universities within the age range of 16 – 23; Female ICT graduates with more than two years of experience in the ICT field; Female ICT graduates who are not interested in working within the ICT field and are working or looking for jobs in other fields; Parents of female ICT students, ICT graduates or ICT employees; Interviewed ICT companies; Interviewed women ICT companies owners; Interviewed representatives of local or international organizations concerned with ICT sector Interviewed ICT experts working in the management field or teaching in public or private universities and institutes.

We are grateful to the United States Agency for International Development / USAID Jordan for its financial support to this study, and to all study respondents.

Forward

ICT can play a major role in women empowerment, in particular the economic empowerment as nowadays, Information Technologies are everywhere: They make our lives more comfortable. They connect people worldwide - anywhere, anytime. We all know that development cannot be achieved through ICT without taking gender issues into consideration.

The sweep of digital technologies and the transformation of our economies to knowledge-based ones, created a strong demand for workers who are skilled in the different sectors of Information and Communication Technologies (ICTs).

It is our responsibility to raise awareness about the opportunities of the ICT sector and empower girls and young women with the knowledge that careers in ICT can be for them.

To that end, the study evaluates and sheds light on the status of women in the ICT sector in Jordan as part of ensuring gender equality and women empowerment in the economic sector. The study comes to serve the goals of the 'Achieving E-Quality in the ICT Sector' initiative that is undertaken by UN Women Jordan Country Office , and which strives to build Jordanian women's capacities and capabilities, enhance their skills, and help them better integrate in the ICT workplace.

This is an exploratory research that aims at assessing the status of Jordanian women in the ICT sector. This study keeps pace with new developments in the ICT sector, while building upon the previous studies, conducted under the Achieving E-Quality in the ICT Sector AEQ project that were published in 2002 and 2007. Some of the results of this study were linked and compared to the results of the 2007 study. The scope of this study is to conduct robust research to collect primary and secondary up-to-date information and statistics on women's status in the ICT sector in the Kingdom.

I dedicate this study to all those working in the ICT sector in Jordan, as well women empowerment and gender equality. We will work hard towards fulfilling the recommendations of this study that fall in line with UN Women's objectives and focus areas.

Giuseppe Belsito

Representative

UN Women – Country Office for Jordan

1 EXECUTIVE SUMMARY

1

Executive Summary

The overall objective of this study is to evaluate and shed light on the status of women in the ICT sector in Jordan as part of ensuring gender equality and women empowerment in the economic sector. A number of factors have been examined, including the quality and availability of education and training, and how well the educational system equips students with the needed skills; employment and entrepreneurship reality among women, and the challenges faced that hinder their effective participation in the workforce; and the challenges that women face in the ICT workplace. Information was collected though desktop research, focus group sessions, and interviews with key stakeholders.

Key Findings:

ICT Sector

- The ICT sector grew steadily as a result of government-led initiatives and strong participation of the private sector. Over the past decade, total IT revenues increased by around 12 folds reaching JD 617 million in 2012. The sector provides job opportunities for both males and females in a wide spectrum of disciplines.
- The ICT sector contributes around 14 percent to the economy and 1.2 percent to direct employment. In 2012, the sector employed around 11,360 individuals.
- The ICT sector in Jordan enjoys strong leadership support, a fully liberalized market, and a growing number of ICT graduates entering the labor market every year.
- Jordan is considered to be one of the region's most open economies to trade and foreign participation; however, the ICT sector continues to face difficulties in building specializations and maintaining market efficiency due to numerous legal and regulatory impediments.
- There is a wide mismatch between the outputs of academia and the ICT industry requirements. Jordan also suffers from low levels of research and development and faces strong regional competition.
- The ICT sector's main export market is Saudi Arabia, accounting for around 40 percent of total export revenues. Other export markets include the United States, the United Arab Emirates, Iraq, Qatar and Oman.
- Economic activities within the ICT sector are varied, ranging from manufacturing electronic components and boards, to general ICT-related consulting and training services.
- Jordan ranked 47th out of 144 countries in the Global Information Technology Report for 2013. Jordan improved in most pillars, mainly the political and regulatory environment, skills, business usage, and economic impacts, however, it dropped the ranks in pillars related to affordability and government usage.
- Around 90 percent of governmental services in Jordan are offered electronically; however, such services are not being widely used by the public.

Gender Gap/Parity

- Jordan achieved gender parity in access to basic services, mainly health and education, but the gender gap is high in economic participation and political empowerment. The gender gap in economic participation is evident from the high female inactivity and unemployment rates, reaching alarming levels of 67.6 percent and 19.9 percent respectively, in addition to the few female entrepreneurs.
- The wide gap can be attributed to a number of factors. These include labor laws that are still partially biased to men; a wage gap that is evident in both the public and private sectors, and even in female dominated sectors; unfavorable work environment; limited mobility; lack of 'safe' transportation services and affordable child care; family upbringing and social norms, which confine females to the house and emphasize the notion that females should not be the providers, and that their primary responsibility is the house and children. This is further exacerbated by the fact that male support in household chores is frowned upon by society at large.
- In Jordan, men are paid 41 percent more than women in the private sector and around 28 percent more in the public sector.
- Females generally prefer to work in the public sector since it offers 'culturally acceptable' jobs, fringe benefits, job security, and shorter working hours.
- The gender gap in computer and internet users in Jordan remains to be present at 6.1 percent for computer users and 6.9 percent for internet users. The gap in Internet users among the employed grew from 50 percent in 2011 to 56 percent in 2012.

Gender Issues in Labor Laws

- Articles 6 and 23 of the Jordanian Constitution protect the right to work and the principles of equality and equal pay in Jordan; however, none of the articles of the constitution include 'sex' as a prohibited base of discrimination.
- Article 23 of the Constitution and Article 69 of the labor code entitle the minister of labor to specify the industries and activities that women cannot take part in. In Jordan, women are not allowed to work in mines, and are not allowed to work between 8 pm and 6 am, except in some industries such as hospitals and airports.
- The Labor Law of the year 1996 and the Interim Act number 26 of 2010 entitle women to 70 days for maternity leave, which is shorter than the maternity leave stated in the Civil Service regulation, ILO Maternity Protection Convention 1952 (No.103), and the ILO Maternity Protection Convention 2000 (No.183).
- Despite the maternity rights stated within the labor law, women are often subject to dismissal or failure of contract renewal.
- The temporary social security law number 7 of 2010 established a maternity protection fund to cover the 70-day paid maternity leave and encourage the employment of women in the private sector. The law limits these benefits to four child deliveries per working mother. The law also includes some discriminatory elements, such as the different retirement ages for men and women.
- Most employers in Jordan do not abide by the provisions of Article 72 of the labor law, which requires private employers with 20 females or more to provide child care facilities within their premises if these women have at least ten children below the age of four.

Education and Training

- Jordan achieved school enrollment parity, and high literacy rates.
- Around 99 percent of schools have at least one computer, and of those computers, 86 percent are connected to the internet. However, the use of e-learning, e-curricula and IT in education remains under-utilized.
- The academic IT stream that was recently introduced has become very popular amongst male and female students. Enrollment witnessed a remarkable 265 percent increase between 2006 and 2012, surpassing those of the traditional scientific and arts streams Field research revealed that the majority of high school students choose the IT stream mainly because the curriculum is easier than those of the scientific and arts streams. The chances of students getting higher grades on the Tawjihi exam and securing university admission are therefore significantly improved.
- In higher education, enrollment parity is achieved at the undergraduate level, with the gap widening as the level of education increases.
- Field research pointed to the fact that females mostly choose specializations that are socially perceived as 'suitable for women'. This is reflected in lower enrollment rates of females in scientific specializations such as engineering, and higher enrollment rates in areas such as education.
- Enrollment in IT fields is also a reflection of these social norms. Female enrollment in 'education technology' is high, while less than 25 percent of stu-

dents in computer science and information security are females.

- There is a clear mismatch between the output of education and the requirements of the labor market in term of technical and soft skills. Field research revealed that most graduates lack employability skills.
- Field research also revealed that academic counseling activities exist in high schools but are confined to a number of exploratory field visits and counseling sessions. Academic counseling is also almost non-existent in universities, especially after the introduction of the online registration system in most universities.
- Students were also found to lack the ability to make informed decisions regarding areas of study and fields of work. This is due to limited education counseling and lack of access to information regarding the job market.
- Providers of training and certification programs that are relevant to the labor market are mostly in Amman; females have less access to these courses due to cost and travel restrictions.
- A number of initiatives have been launched by the varied stakeholders in the sector to support students during their school-to-work transition. Although highly promising, these initiatives lack a gender focus, thereby falling short of addressing the specific needs of women employment in general, and in the ICT sector in specific. These are also more pronounced in the governorates where working prospects are scarcer.
- There is a weak link between academia and the private sector. The relationship is limited to some unstructured and ineffective on-the-job training of graduates. There is also a clear lack of private sector initiative toward establishing stronger relations with varied education institutions.

Women and the ICT Workplace

- Females make up around half of the ICT graduate pool; however, they comprise around one-third of total employment in the ICT sector. In technical and management positions, females occupy less than one-quarter of those positions.
- The gender gap in the technical and management positions could be explained by the demanding nature of these jobs that require long working hours. This contradicts with social norms that limit the working hours of women and assume certain field tasks as inappropriate.
- The causes of this gender gap are not specific to the ICT sector, but rather to the participation of women in the labor market in general. A number of cultural and institutional weaknesses result in very few females opting to join the work force. Salient constraints include limited mobility, lack of access to information, marital status, maternity, cost of childcare, the gender wage gap, and administrative barriers of home-based employment.
- Field research revealed that women view the ICT as a respectable field, as those working in it are 'educated' individuals, and therefore ICT is suitable for women to work in, if the working hours were reasonable, and the location of the job is close to home..

Women Entrepreneurs and ICT

- The culture of entrepreneurship is generally lacking among females and Jordanians in general.
- Jordan has one of the largest gender gaps in early stage entrepreneurial activity in the region with a male activity rate that is 3.4 higher than that for females.
- There is a lack in programs that work on empowering women and building their self-confidence in making decisions.
- Field research revealed that women shy away from entrepreneurial activity due to a number of factors including family upbringing, awareness/knowhow, and access to funding sources. The female share of entrepreneurial activity is estimated to stand at 22 percent.

Recommendations

A number of recommendations that fall in line with UN Women's objectives and focus areas are made for further action. These include enhancing the participation of the private sector in the training and educational process; supporting the development of life and employability skills; launching a comprehensive awareness program and campaign; supporting efforts to improve academic and career counseling; redefining gender roles in society; improving mobility of women and improving access to labor market information; addressing legal issues that hinder the participation of women in the workforce; provide business startup support; and improve internship programs for women and on-the-job training opportunities in the ICT sector.

More specifically, recommendations are grouped into three main themes: Education and Labor Market Bridging; Women in Business and Entrepreneurship; and Women in the ICT Workplace.

Theme 1: Education and Labor Market Bridging

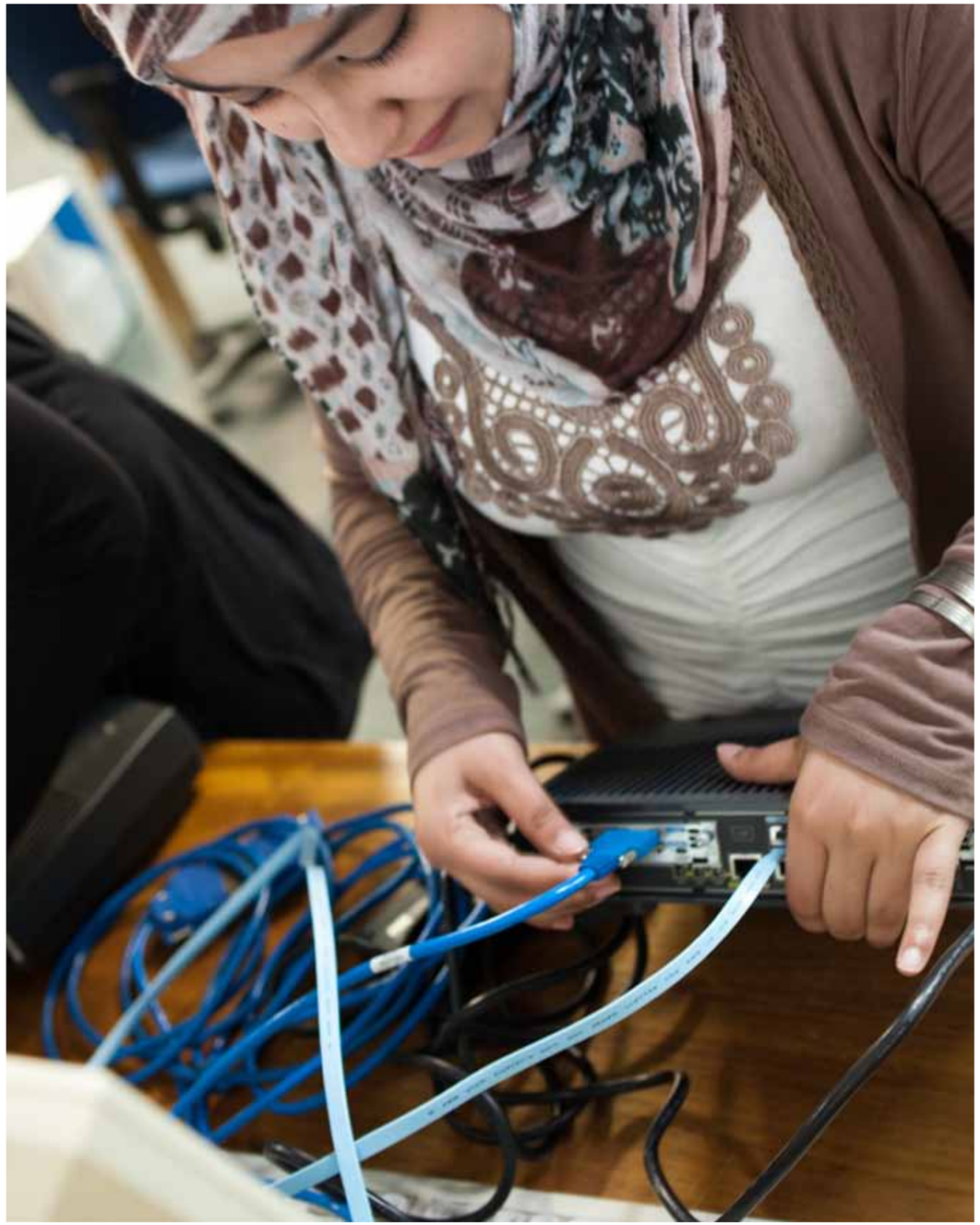
- Promote the exchange of expertise between the private sector and universities through the involvement of the private sector in graduation projects.
- Support the establishment of internship programs for graduating female students.
- Encourage companies to develop CSR programs that include internships and on-the-job training opportunities.
- Support efforts of the private sector and ICT vendors to introduce relevant programs at universities.
- Develop a model training program between a leading ICT firm and an educational institution.
- Activate the role of media in spreading awareness.
- Highlight success stories of women in the ICT sector.
- Introduce means of parental control over the internet content to increase ICT penetration among girls and women.
- Increase awareness about ICT as an economic and social enabler by spreading E-culture.
- Activate the role of career advisory and guidance centers in spreading awareness.
- Develop an integrated information system on the labor market supply and demand.

Theme 2: Women in Business and Entrepreneurship

- Expand the Gender Equity Seal initiative to the ICT sector and companies in the governorates
- Develop online training programs on technical and soft skills needed in the ICT
- Initiate an advocacy campaign to lobby for an equitable labor law.
- Increase the number of women benefiting from current entrepreneurship initiatives, especially women from the governorates
- Support current start-up initiatives to have a gender focus, especially for women residing outside Amman
- Support women entrepreneurs' access to financial resources to enable them to purchase personal computers

Theme 3: Women in the ICT Workplace

- Expand Int@j's awareness efforts among students to include gender aspects
- Support the Sector Skills Organization (SSO) role in running the 'ICT Bridging Academy'
- Expand the scope of Knowledge Stations
- Use a variety of media tools to disseminate up-to-date information on the ICT sector
- Develop 'safe' commute programs for women from homes to internship venues
- Expand scope of the internship programs to include remote internships and develop a suitable compensation model and a specific contract
- Set up an internship program for women at Oasis 500 premises
- Support HR systems at companies and develop an HR guide
- Provide rehabilitation after extended leave from work
- Develop a portal for outsourcing and work-from-home opportunities for women
- Support Int@j in implementing the National Qualifications Framework for the ICT sector in Jordan



2 INTRODUCTION

2

Introduction

2.1 Background

Information and Communications Technology (ICT) has been identified as a critical tool and efficient enabler for growth and development. Driven by knowledge economies and globalization, ICT has become a force of economic and social change. The digital divide in Jordan is not highly pronounced as access to the internet and the variety of ICT tools is growing, and the gender gap is narrowing. The ICT sector however is a continuously evolving field that requires an incessant process of training and self development, which many women find themselves unable to keep up with. This is caused by certain social norms and cultural structures in Jordan, which continue to marginalize women to domesticity, even among the educated segments, and thereby limiting their mobility and exposure. This is reflected in the ability of women to participate in economic life, exploit and open up opportunities for a better quality of life.

How successful has Jordan been in closing the ICT gender gap, and improving the penetration of women in ICT? This will be the focus of this study. As the title of this study implies, the aim is to track the progress of women in the ICT space. In 2001, The United Nations Development Fund for Women (previously UNIFEM) commissioned a baseline study on "The Status of Jordanian Women in the ICT Space". The study has been widely distributed to generate greater awareness of the opportunities and challenges for women entering the ICT market, and the research results have been used by policy makers to formulate and gender sensitize national ICT initiatives. Two consecutive updates took place in 2006, and 2013 when UNIFEM commissioned Al Jidara, a development consulting firm, to carry out both updates on the progress of Jordanian women in the ICT space, building on the 2001 baseline study.

UN Women, grounded in the vision of equality enshrined in the Charter of the United Nations, works for the elimination of discrimination against women and girls; the empowerment of women; and the achievement of equality between women and men as partners and beneficiaries of development, human rights, humanitarian action and peace and security. Placing women's rights at the center of all its efforts, UN Women leads and coordinates the efforts of the United Nations system to ensure that commitments in gender equality and gender mainstreaming translate into action throughout the world. It provides strong and coherent leadership in support of Member States' priorities and efforts, building effective partnerships with civil society and other relevant actors.

Launched in 2002, the "Achieving E-Quality in the ICT Sector" Program is a UNIFEM–Cisco initiative that seeks to bridge the digital divide between men and women in the ICT sector through facilitating the access of women in underprivileged communities to advanced technology tools and capacity building. The project has had remarkable success in effecting positive change in awareness on the opportunities provided by the fast moving ICT sector, and has documented this change through the exceptional demand by target beneficiaries throughout Jordan for the different services provided by the project.

The initial success of the project has encouraged UN Women (UNIFEM previously) and USAID to expand the project to the second phase that ended in December 2006. Consequently, the third phase was launched and ended in 2011, and the fourth and final phase of the project started early 2012 until the first quarter of 2014.

UN Women identified the following immediate objectives:

- To raise awareness on women's participation in the ICT sector among stakeholders including policy makers, market stakeholders, and students to ultimately create a positive policy environment and create equal opportunities for women in the ICT sector.
- To build the capacity of women and enable them to compete and gain higher positions in the ICT sector through continuing to support already existing gender-focused Cisco Networking Academy Programs (CNAPs) within national institutions.
- To enhance women's soft and professional skills through conducting workshops and training courses on human development skills, career development skills, market required IT skills and gender awareness.
- To link Cisco Networking Academy Program graduates with the job market through cooperation with both the public and the private sectors, and to ensure that equal opportunities are given to women applicants in the ICT market.
- To create a gender-sensitive environment in the workplace to further boost the women's participation in the national economy.

To date, the following has been achieved:

- Creation of 12 specialized network engineering 'gender sensitive' academies that are spread across Jordan in various universities and community centers.
- Offering of specialized training on basic and advanced network engineering and certificates required by the labor market. Coursework and certifications include IT Essentials, CCNA, CCNA Security, and CCNP.
- Offering discounts of up to 70 percent for females and vouchers of up to 75 percent for the industry international certificates.
- Offering soft skills, career counseling, and entrepreneurship training for female graduates.
- Contributing to increasing female participation in the ICT labor force from 12.1 percent in 2002 to 32 percent in 2013.

2.2 Study Objectives

The overall objective of this study is to evaluate and shed light on the status of women in the ICT sector in Jordan as part of ensuring gender equality and women empowerment in the economic sector. The study comes to serve the goals of the 'Achieving E-Quality in the ICT Sector' initiative that is undertaken by UN Women, and which strives to build Jordanian women's capacities and capabilities, enhance their skills, and help them better integrate in the ICT workplace.

The specific objectives of the study are as follows:

- Evaluate the general status of women in the ICT workplace, or ICT related fields;
- Provide an overview of ICT development initiatives;
- Highlight entrepreneurship and business incubation in the ICT sector;
- Identify factors that obstruct women's participation in the ICT sector;
- Examine the opportunities available for women in the ICT sector;
- Evaluate the quality of education in the ICT sector and how it aligns with the requirements of the labor market;
- Identify the factors identifying societal views and values towards women's economic participation, particularly in the ICT sector;
- Outline any strategies, policies, or initiatives that help promote women's participation in the ICT workplace; and
- Build recommendations through focus group sessions that would help promote and enhance the status of women within the ICT space.

2.3 Study Methodology

This is an exploratory research that aims at assessing the status of Jordanian women in the ICT sector. This study keeps pace with new developments in the ICT sector, while building upon the previous studies, conducted under the Achieving E-Quality in the ICT Sector AEQ project that were published in 2002 and 2007. Some of the results of this study were linked and compared to the results of the 2007 study. The scope of this study is to conduct robust research to collect primary and secondary up-to-date information and statistics on women's status in the ICT sector in the Kingdom. This was implemented through:

1. **Desk research** through which secondary data were collected based on market research to cover ICT statistics and updated indicators as well as reviewing ICT related studies, initiatives, strategies, policies, programs, and relevant legislation. During the desk research, data, documents, and reports from secondary credible sources were reviewed in order to establish an understanding of themes, trends and events that shape the status of the ICT sector in Jordan, as well as women's involvement in the sector. These sources included reports published by international organizations such as the United Nations, International Labor Organization, and the World Bank. Official statistics and data published by Jordanian official agencies were also reviewed, analyzed and tabulated.

   This phase covered several aspects including a socioeconomic review of women in the ICT field exploring literacy rates, educational attainment levels, economic activity and participation in the workforce as well as the challenges faced by women in the workplace. Furthermore, ICT development and educational reform programs, strategies, policies, and initiatives were also mapped and reviewed. Finally, literature from Jordanian ministries, NGOs, international organizations, and IT associations among other sources, were reviewed in order to identify market requirements in terms of ICT technical and soft skills, available opportunities to develop these skills, and the mismatch between the skills of graduates and the requirements of the market. In addition, an understanding of women entrepreneurs and businesswomen situation in the ICT sector was built. This phase aimed to build the required comprehensive understanding of the ICT sector in Jordan and the status of women within this sector. It also provided statistics and references, and served as the base for carrying out the field research.

2. **Field research** research was conducted by collecting primary data using the qualitative research methodology through focus group sessions and semi-structured interviews. In both, purposive sampling method was used to ensure that participants were recruited according to certain characteristics such as employment status, field of employment, social status, educational level, university major, place of residence, sex, and job title. Participants in the focus group sessions were recruited using the snowball sampling technique (type of purposive), and this facilitated the recruitment of participants that share experience, knowledge, and insights into the research topic and themes. The list of interviewees was agreed upon with UN WOMEN, to ensure that the opinions of stakeholders are incorporated into the study.

   a. **Focus group sessions**: twelve focus group sessions were equally distributed and conducted among the northern, middle, and southern regions of Jordan. These sessions were designed to target the following groups:

      1. Female IT and ICT students in public and private schools and universities within the age range of 16 – 23;
      2. Female ICT graduates with more than two years of experience in the ICT field;
      3. Female ICT graduates who are not interested in working within the ICT field and are working or looking for jobs in other fields;
      4. Parents of female ICT students, ICT graduates or ICT employees.

After specifying the participants' characteristics, invitations were distributed and halls in the three regions were set ready and equipped with audio recording machines. The participants were informed about the objectives of the study and the terms of confidentiality and privacy were clearly explained to them. Discussion was led through a predefined discussion guide set for each group of participants. *(Annex I includes the focus group objectives and discussion guide).*

After conducting all sessions, transcripts of the recordings were generated and data were classified according to the study's themes. Finally, findings from all focus group sessions and interviews were analyzed and linked to the results of previous studies.

The extent of consensus between participants' opinions on certain topics was reflected throughout the entire report according to the scale below.

All participants	The majority	Some	Few	A limited number
100%	Less than 100%, more than 75%	75% - 50%	Less than 50%, more than 25%	25% or less

The twelve focus group sessions aimed at addressing the following topics:

- The importance of developing opportunities for technical and soft skills
- The issue of women entrepreneurs in the ICT sector and women in business and business incubators
- Market requirements in terms of ICT technical and soft skills
- Matching the skills obtained by the graduates and the requirements of the market and the need for educational reform
- Challenges that hinder women to effectively participate in the work place.
- Females' access to jobs and factors that hinder women from reaching decision-making levels
- Matching the skills obtained by the graduates and the requirements of the markets
- Suggested solutions to increase women's participation in the workforce

b. **Semi-structured interviews**: nineteen semi-structured interviews were conducted with ICT company owners, women working in senior positions in ICT companies, women ICT company owners, representatives of local or international organizations concerned with the ICT sector, and ICT experts working in the management field, or teaching in public or private universities and institutes. (Annex II lists the persons interviewed and the questions asked during the semi structured interviews).

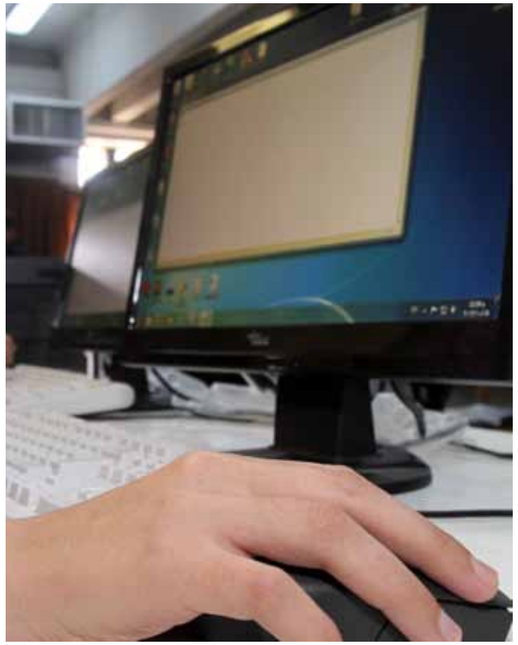
These semi-structured interviews were designed and conducted to obtain information and insight regarding:

- The importance of developing opportunities for technical and soft skills
- The issue of women entrepreneurs in the ICT sector and women in business and business incubators
- What is required by the market in terms of ICT technical and soft skills
- Matching the skills obtained by the graduates and the requirements of the markets and the need for educational reform
- Women's access to jobs, challenges that hinder women to effectively participate in the work place and reach decision-making levels
- Success stories, advice and suggested solutions

The collected quantitative data from the desk research was processed, analyzed, synthesized, and presented statistically and graphically. While the qualitative data and findings from the field research were analyzed and interpreted and relationships were explored. Findings from both the desk and the field research were grouped into the below eleven dimensions:

1. Cultural and Social Norms
2. Government Policies and Programs/E-Initiatives/Institutions
3. Socioeconomic Conditions
4. Employment Opportunities/Entrepreneurship in the ICT Sector
5. Education and Training
6. Access to the ICT Physical Infrastructure
7. Awareness, perceptions, and attitudes
8. Laws and Regulations
9. ICT Sector Characteristics/The emergence of ICT as a Cross-Cutting solution
10. Perceived Characteristics of Women (work ethics, traits, etc.)
11. Localization of Technology/Content

Finally, observations were drawn, and recommendations were generated based on a thorough reflection on the analysis of the research results. Recommendations and suggested solutions to overcome challenges hindering women's participation and growth in the ICT sector were categorized based on the implementing party and prioritized based on urgency into three categories; immediate, short-term and long-term. Prioritization also took into account the willingness for change and implementation, as well as the availability of human capacities and financial resources to achieve the targeted results.



3. **Data collection and analysis**: The discussion in the focus group sessions was led according to the themes and dimensions described in the discussion guide and according to the main questions set. The discussion guide allowed participants to brainstorm and come up with new ideas and themes that were not included in the discussion guide. Interviews were conducted according to set questions, and the discussions in both the interviews and the focus group sessions were recorded. Simultaneously, a member of the project's team took notes to ensure that all answers were being recorded. Directly after the end of each focus group session, an analysis session followed to document the remarks of the moderator and the note taker. Transcripts for all sessions were generated using the audio recordings and written notes. Methods used during the analysis of data included:

- **Coding:** Transcripts were analyzed thematically, and codes were applied to every set of data and were related to the questions set in the discussion guide.
- **Tabulating:** The transcripts were sorted in matrices by cutting and pasting answers to show the extent of consensus or disagreement between all answers obtained, and highlighting the answers through a set of defined variables.
- **Scaling**: Answers were assigned relative weights that depended on the degree of compatibility between the answers.

3 OVERVIEW OF ICT SPACE IN JORDAN

3

Overview of ICT Space in Jordan

The Information and Communications Technology (ICT) sector was acknowledged by the Jordanian government, in response to a challenge put forth by His Majesty King Abdullah II in 1999, as a key promising economic sector capable of generating jobs in a variety of disciplines for males and females; propelling economic growth; and supporting overall development efforts. As such, the government took a number of measures over the years to deregulate the sector and upgrade the physical infrastructure for ICT in order to increase penetration, and improve accessibility of ICT for individuals and IT enabled services (ITES). In 2000, the Information and Technology Association of Jordan (Int@j) was established, and played a critical role in devising a series of national strategies (REACH 1.0, 2.0, 3.0, etc) in close collaboration with the Ministry of Information and Communications Technology (MoICT). The successive REACH initiatives aimed to create an export oriented and internationally competitive ICT sector in Jordan, and established the needed regulatory framework that provided an enabling infrastructure environment, development programs, human resources development, and capital.[1]

The most recent National ICT Strategy (2013-2017), also focuses on yielding productive and sustainable benefits for the ICT sector, increasing internet penetration, improving the telecommunications infrastructure, and expanding Jordan's IT/ITES export markets. Since its establishment in 2002, MoICT also grew more involved in leading, and guiding the collective development of the sector.

1 http://www.intaj.net/node/69

Box 1: :

SWOT Analysis of Jordan ICT Sector

Strengths

- Leadership support
- One of the region's most open economies to trade and foreign participation, taxation has become relatively liberal
- Jordan's ICT sector enjoys a fully liberalized market
- High number of ICT graduates annually
- High rate of entrepreneurship
- Positive image
- Location

Weaknesses

- Product development
- Building specialization
- Legal and regulatory hurdles may affect market efficiency
- Relative mismatch between outputs of academia and industry requirements
- Relatively low level of R&D by global standards

Opportunities

- Major export markets are GCC and USA
- Established international trade agreements
- Product development
- Building specialization

Threats

- Regional vitality
- Regional competition
- Reliance on foreign aid
- Bureaucracy in government procurement
- Brain drain

Source: Int@j

BOX 2:

Timeline of the liberalization and privatization of the telecom sector in Jordan

In 1988, paging services were launched in Jordan by issuing a license to Jordan Paging Company.

In 1992, the Ministry of Post and Communication (MoPC) replaced the Ministry of Post, Telegraph, and Telephony.

In 1993, a program was adopted to increase the penetration of Telephony from 7.8 to 12 lines/100 citizens.

In 1995, the Telecommunication Regulatory Commission (TRC) was founded by the Telecom. Law No.13 of 1995.

In 1997, the Telecom Corporation (TCC) became owned by the government under the name of Jordan Telecom.

In 1999, a mobile services license was issued to MobileCom Company.

In 2000, Jordan joined the WTO; it presented its plans to liberalize the telecom sector by the end of 2004.

In 2000, a consortium led by France Telecom bought 40% of Jordan Telecom shares.

In 2002, the (MoPC) was renamed as the Ministry of ICT by the temporary law No.8 of 2002.

In 2002, the TRC's independence was emphasized on by the temporary law No.8 of 2002.

In 2002, 10.49% of Jordan Telecom Shares were sold to the public.

In 2003, the government confirmed its serious intentions to liberalize the telecom sector as required by the WTO.

In 2003, the first Radio Trunking services license was issued to Xpress Company.

In 2004, a mobile services license was issued to Umniah Company.

In 2004, the new Program of Licensing recognized two types of licensing (Individual & Class).

In 2005, a new numbering plan was enforced, it added 8th digit to all numbers, and unified the code for mobiles.

In 2005, the Fixed Line market was opened, the monopoly of Jordan Telecom Company ended.

In 2005, Batelco Company granted a license to offer Fixed Line Services and compete with Jordan Telecom.

In 2005, transition into the Class license as per the Integrated Licensing and Regulatory Regime began.

In 2006, Fastlink, Umniah, and Xpress Companies transitioned to the Integrated Licensing and Regulatory Regime.

In 2006, the government failed to sell all its shares in Jordan Telecom, and retained 11.6%

In 2006, the license to provide FBWA services was granted to five companies.

In 2007, the Council of Ministers approved the Statement of Government Policy on the ICT and Postal sectors.

In 2007, the transition processes to the Integrated Licensing and Regulatory Regime were completed.

In 2008, the government sold its remaining 11.6% shares of Jordan Telecom.

In 2008, TRC plans to introduce 3G services in Jordan.

In 2009, a 3G license was issued to Orange Mobile Company.

Source: Development of Jordan's National Information and Communications Technology Strategy (2012-2016)', Danish Management A/S. March, 2013.

Over the past decade, Jordan succeeded in accommodating for and creating a culture of innovation and entrepreneurship, and turning ICT into a vibrant sector. Between the years 2000-2012, total IT/ITES revenues increased by tenfold to reach around US$617 million, and added over 10,000 jobs.

Table 1:

ICT Sector Indicators (select years between 2000 and 2012)

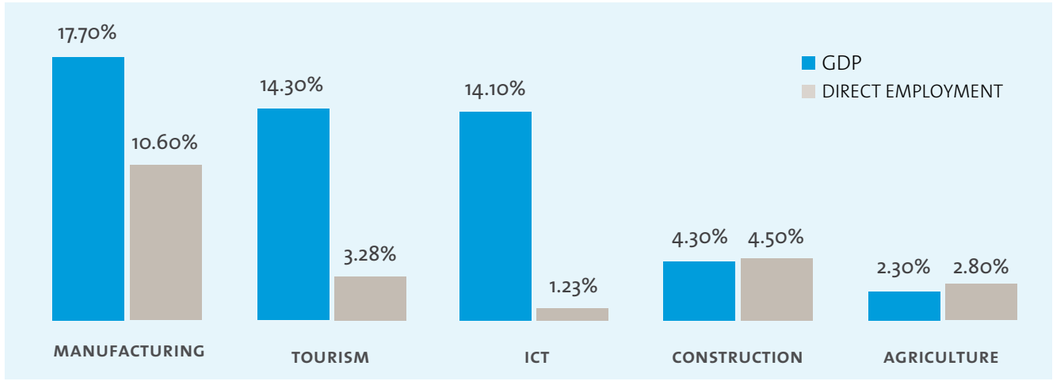
In US$ million	2000	2001	2002	2003	2005	2007	2009	2012
Export Revenues	12	40	40	70	173	197	210	300
Growth %	*n.a.*	*233.3*	*0.10*	*74.16*	*105*	*2.81*	*-7.64*	*30.10*
% of total revenue	*20.00*	*23.53*	*17.52*	*24.00*	*28.00*	*22.30*	*23.41*	*48.61*
Domestic Revenues	48	130	188	226	418	686	685	317
Growth %	*n.a.*	*170.83*	*44.96*	*20.02*	*15.80*	*18.58*	*-6.81*	*-37.52*
% of total revenue	*80.00*	*76.47*	*82.48*	*76.00*	*72.00*	*77.70*	*76.59*	*51.39*
Total Revenues	60	170	228	296	581	883	895	617
Growth %	*n.a.*	*183.33*	*34.40*	*29.51*	*31.86*	*14.66*	*-7.01*	*-16.40*
FDI (cumulative)	n.a.	60	68	80	93	109	128	146
Employment (number)	1,250	6,000	8,000	8,117	10,032	11,034	11,334	11,360

Source: Int@j

The sector continues to present the national economy with a unique opportunity to develop and enhance its competitive advantage over other countries in the region.[2] The relatively newer sector contributed to 14.1 percent of the country's GDP, and 1.23 percent of direct employment in 2011.[3]

FIGURE 1:

Contribution of Different Sectors to GDP and Direct Employment in 2011



Source: Int@j

2 Int@j, Jordan ICT Sector Profile, 2012

3 Int@j, ICT & ITES Industry Statistics and Yearbook, 2012

The growing sector also attained the interest of foreign investors particularly after the year 2000 when Int@j was founded, and the private sector became heavily engaged in promoting and developing the sector. FDI into Jordan's IT witnessed a steady inflow, reaching over US$146 million by the end of 2012. The country now enjoys on-the-ground presence of numerous renowned international companies such as Cisco, Microsoft, Oracle, HP, Yahoo!, Intel, Motorola, LG, and Ericson.[4]

The Cisco Networking Academy had created strong partnerships with many influential donor agencies and governmental entities.[5] In Jordan, UN Women is one of the program's strategic partners. UN Women's Achieving Equality project provides support to many academies scattered all around Jordan. Due to the UN Women's efforts, around 55 percent of the 3,500 graduates from the Cisco Networking Academies in Jordan are females.[6]

Although constantly increasing, the volume of annual inflow of foreign investment into Jordan's ICT, has fluctuated over the past decade. This trend however is not unique to the ICT sector, as FDI inflows as a whole were halved in 2011 when compared to their levels in 2008. This came as a reaction to the global financial crisis in 2008, as well as the outbreak of the Arab Spring in 2011.

The local economy was also able to export ICT related goods and services to many markets around the world. ICT export revenues grew from a meager US$12 million in 2000, to around US$300 million in 2012. The main export market is Saudi Arabia, accounting for around 40 percent of total export revenues, followed by the United States at a distant second, generating around 10 percent of export revenues. Other export destinations are primarily within the region, including the United Arab Emirates, Iraq, Qatar, and Oman. Exports to Saudi Arabia grew over the years to become Jordan's main ICT export market.

4 Int@j, Jordan ICT Sector Profile, 2012

5 http://www.itu.int/wsis/docs/pc2/roundtables/rt5/reilly.pdf

6 UN WOMEN

Table 2:

ICT Export Revenues by Country 2009-2012

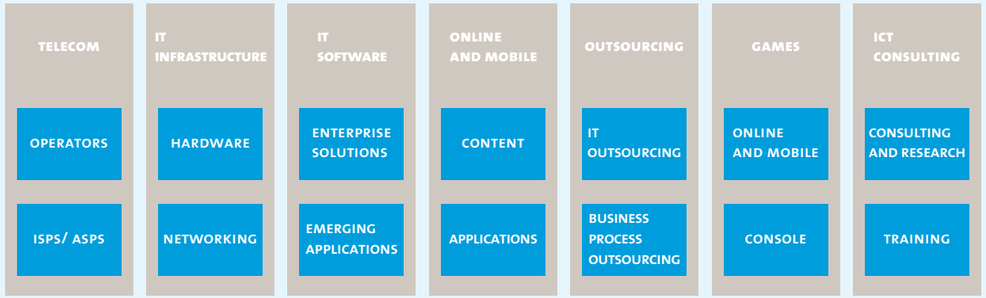
Export Market	2009	2010	2011	2012
Saudi Arabia	21.62%	33.83%	39.45%	23.49%
United States of America	20.93%	6.56%	9.48%	20.10%
United Arab Emirates	7.21%	13.36%	8.5%	10.16%
Iraq	12.94%	13.46%	6.3%	12.01%
Qatar	3.48%	1.98%	4.09%	2.06%
Oman	3.28%	4.81%	3.94%	1.57%

Source: Int@j

The ICT sector in Jordan involves a wide spectrum of economic activities, ranging from manufacturing electronic components and boards, to general ICT-related consulting and training services. In 2012, the wholesale of computers, computer peripheral equipment and software contributed to around 27 percent of total IT/ ITES revenues, a ratio that is far larger than any other activity.

Figure 2:

ICT Sector Segments



Source: Int@j

Official numbers, however, reflect that the composition of IT/ITES is constantly changing and economic activities contribute differently to the sector's revenues each year. Computer programming activities, for example, constituted around 13 percent of revenues in 2012, compared with 24 percent in 2011, and 11 percent in 2009. The contribution of software publishing also rose to over 12 percent of revenues, against only 2 percent in 2009. Adversely, the contribution of computer consultancy and computer facilities management activities dropped from around 11 percent of total IT/ ITES revenues in 2009, to less than 1.5 percent in 2012.[7]

Table 3:

Contribution of Economic Activities to ICT Revenues in 2012

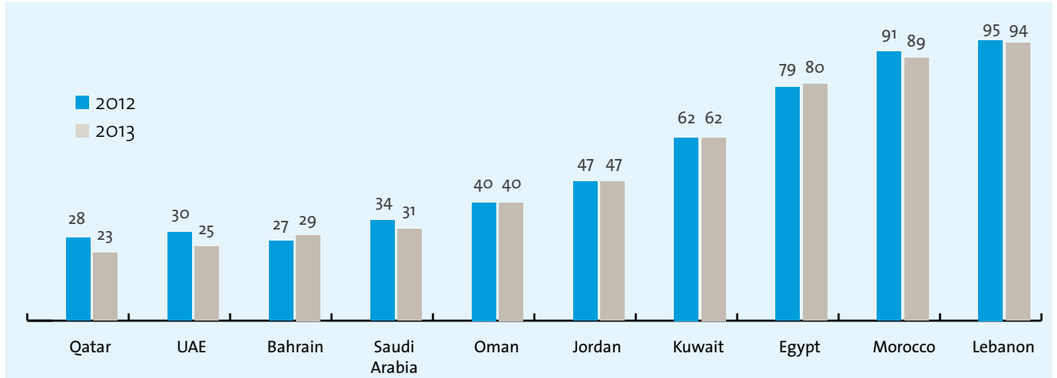
Economic Activity	Total Revenues (US$ mn)	%	Domestic Revenues (US$mn)	%	Export Revenue (US$mn)	%
Wholesale of computers, computer peripheral equipment and software	168.88	26.61%	160.24	49.12%	8.6	2.8%
Computer programming activities	80.90	12.75%	41.65	12.77%	39.25	12.73%
Software publishing	77.53	12.22%	7.29	2.23%	70.24	22.78%
Data Processing, hosting and related activities	120.13	18.93%	49.61	15.21%	70.51	22.87%
Wholesale of telephone communications and equipment	3.05	0.48%	1.52	0.47%	1.53	0.50
Computer consultancy and computer facilities management activities	8.47	1.34%	3.96	1.21%	4.52	1.47%
Other activities	184.09	29.01%	65.93	20.20%	108.18	38.32%
Total	634.58	100%	326.24	100%	308.31	100%

Source: Int@j

7 Int@j, ICT & ITES Industry Statistics and Yearbook, 2012

Figure 3:

Network readiness of select Arab countries, 2012 and 2013



Source: The Global Information Technology Report 2013, WEF.

While Jordan was traditionally viewed as a regional pioneer in 'developing, adopting, and utilizing ICT', it has recently dropped down the ranks.[8] According to the Global Information Technology Report for 2013, Jordan ranked in 47th place out of 144 countries. It was superseded by five regional countries: Qatar, the United Arab Emirates, Bahrain, Saudi Arabia and Oman.

According to the report, 'Jordan remains stable in 47th place, leading the group of Levantine states where Lebanon ranks in 94th place, one position up from last year. ICT infrastructure (81st), notably international bandwidth capacity (97th), remains a challenge for Jordan, and despite the efforts to liberalize the market and render access to the existing infrastructure affordable (27th), ICT uptake by individuals (66th) remains low, especially in terms of broadband subscriptions (87th)'.[9] In 2013, Jordan improved in most pillars, notably the political and regulatory environment, skills, business usage, and economic impacts. On the other hand, pillars pertaining to affordability and government usage witnessed a notable drop. Recent hikes in telecom taxation have made internet and communication more expensive. The limited usage of e-government services has also impacted the rankings of the government usage pillar. Although 90 percent of government services are offered electronically, 'many Jordanians remain unaware of the government's e-services and how to use them'.[10] *(E-government is discussed in section 10.2)*

8 'Development of Jordan national information and communications technology strategy (2012-2016)', Danish Management A/S. March, 2013.

9 The Global Information Technology Report 2013, p.28 http://www3.weforum.org/docs/WEF_GITR_Report_2013.pdf

10 Statement by the Secretary General of MoICT, August 1, 2013. http://jordantimes.com/many-jordanians-still-unaware-of-e-govt-services----official

There remain a number of challenges that hinder the full exploitation of ICT in Jordan. Legislative and regulatory issues, as well as the inadequate understanding of ICT components by consumers, the public sector, and to a certain degree the private sector, have left the IT and ITES lagging behind. As such, the National ICT Strategy was devised to provide Jordan with a clear direction between 2013 and 2017, to expand the role of ICT in economic development and employment. (the National ICT Strategy is discussed in more detail in section 10.2)

Table 4:

Network Readiness Index in Jordan 2012 and 2013

	2013	2012
Networked Readiness Index	47	47
A. Environment subindex	42	48
1st pillar: political and regulatory environment	*48*	*58*
2nd pillar: business and innovation environment	*40*	*43*
B. Readiness subindex	55	47
3rd pillar: infrastructure and digital content	*81*	*79*
4th pillar: affordability	*27*	*9*
5th pillar: skills	*34*	*49*
C. Usage subindex	60	55
6th pillar: individual usage	*66*	*67*
7th pillar: business usage	*55*	*69*
8th pillar: government usage	*56*	*37*
D. Impact subindex	54	57
9th pillar: economic impacts	*49*	*70*
10th pillar: social impacts	*54*	*49*

Source: The Global Information Technology Reports 2012, 2013

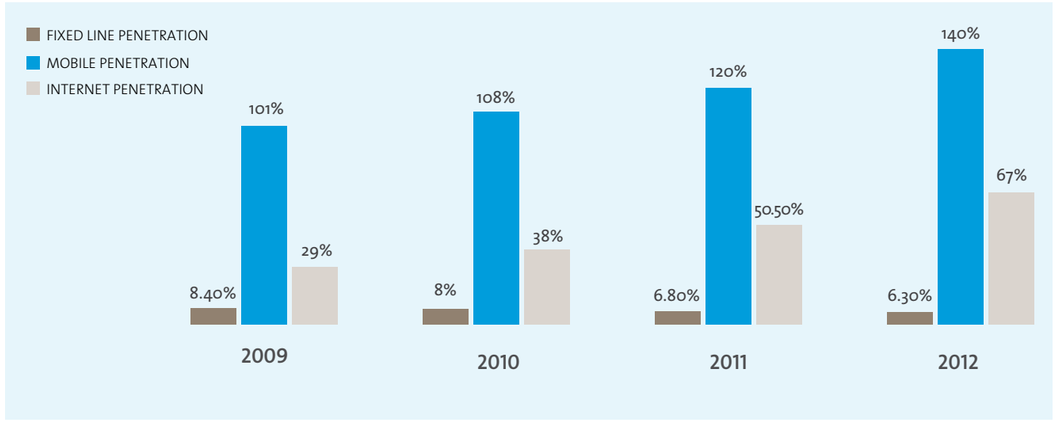
3.1 Telecommunications

The telecom industry is considered to be one of the fastest growing in the Jordanian economy. The future of the sector correlates with the introduction of new services and technologies. Official figures reflect that the market of landline telephones witnessed a sharp decline over the past six years, due to the swift invasion of cellular phones and other means of communication such as the internet, VoIP, and free instant messaging. The mobile phone market has become the major asset in the telecom industry, generating most of the income in this sector. Mobile penetration rates rose to 140 percent in 2012, compared with a low penetration rate of 6.3 percent for landline telephones services.[11] Such an increase in penetration rates for wireless services is mainly because of the competitive packages that the different operators are offering.

11 Int@j, ICT & ITES Industry Statistics and Yearbook, 2012

Figure 4:

Telecom Sector Penetration Rates 2009-2012



Source: Int@j

The competition in the telecom market is quite fierce. There are currently three different mobile phone service providers: Zain, Orange, and Umniah, and over eleven providers of internet services.

The Telecommunications Regulatory Commission (TRC) is the entity responsible for regulating telecommunications and information technology services, as well as the services provided by the postal sector, as per the provisions of the Jordanian Law. The TRC participated in raising the e-readiness of Jordan and aided in the realization of the objective of increasing the current figures of personal computers and internet penetration. In 2011, the TRC granted the Jordan Mobile Telephone Services Company 'Zain' a frequency license for operating 3G mobile telecom services over 2.1 GHz. Such license was issued after the end of a separation period of one year under a license that was previously awarded for the same frequency band of spectrum to Petra Jordanian Mobile Telecommunication Company 'Orange Mobile'. This step will contribute to lowering prices of services and increasing internet usage in the local market, lead to additional investments that depend on broadband internet technologies. The TRC also issued an updated regulatory decision on Mobile Virtual Network Operator, and signed an amended agreement with Connect Arabia Telecommunications Company P.S.C (Friendi Mobile), which granted it the Mobile Virtual Network Operator license.[12]

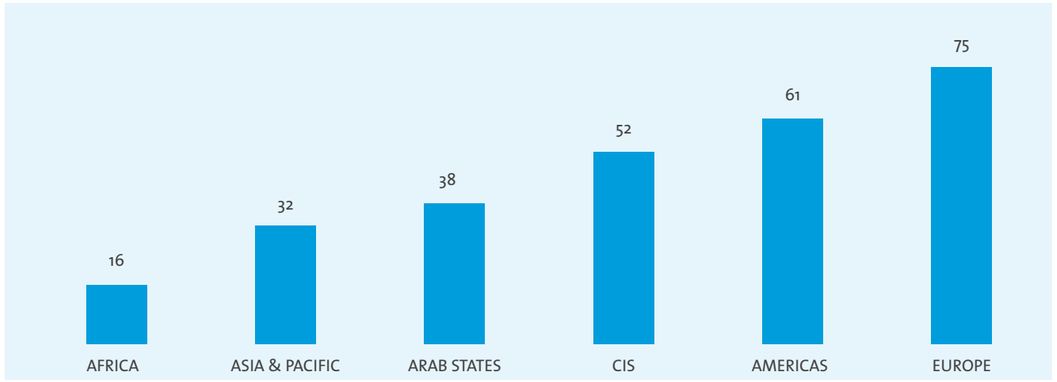
3.2 Gender Gap in the Access to the Internet

In 2013, over 2.7 billion people around the world were estimated to be using the internet, corresponding to 39 percent of the world's population. Internet penetration was also far more pronounced in the developed world at 77 percent, compared with the developing world at 31 percent. Europe held the highest penetration rate of 75 percent compared with 38 percent in the Arab world, followed by Asia & Pacific at 32 percent and Africa at 16 percent.

12 The Telecommunications Regulatory Commission, Annual Report 2011

Figure 5:

Internet Users by Region per 100 inhabitants, 2013*



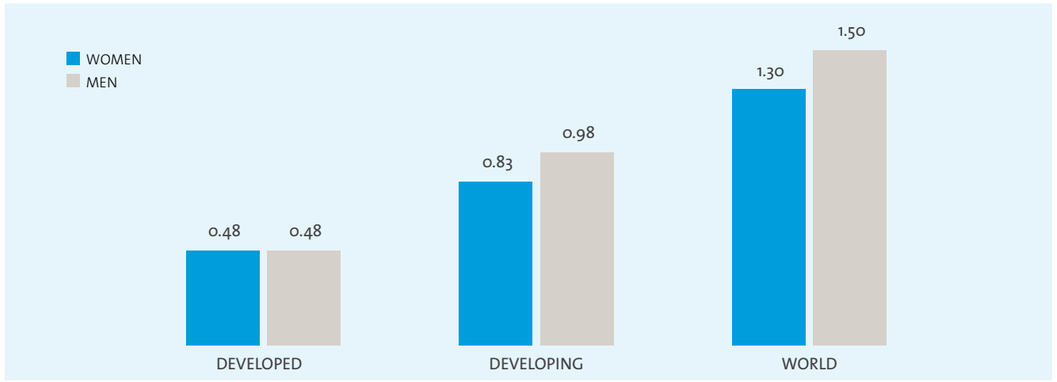
Source: ITU World Telecommunication/ICT Indicators database

Note: * Estimate

Although more men than women use the internet, the gender gap in internet penetration is not wide. Globally, around 37 percent of women are on line, compared with 41 percent of men. The gap is more pronounced in the developing world where 16 percent fewer women than men use the internet compared with only 2 percent fewer women than men in the developed world.[13]

Figure 6:

The gender gap: men and women online, totals and penetration rates, 2013*



Source: ITU World Telecommunication/ICT Indicators database

Note: * Estimate

13 Telecommunication Development Bureau – International Telecommunication Union. http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2013.pdf

In Jordan, around half of the population uses computers and slightly over a third uses the internet as illustrated in Table 5Table 5. Moreover, people use computers mostly for personal purposes, followed by use for learning and training purposes. Computer use for work remains to be limited, with only 15.7 percent using the computer at work. This is supported by two facts: (1) Jordanian workers are mostly males with an education level of high school and below indicating less inclination and need for computer use at work, and (2) demand for ICT has been more consumer-based than corporate-based as over 99.6 percent of registered businesses in Jordan are micro, small and medium in size, indicating a limited capacity to incorporate IT solutions into the work environment, and a limited ability to absorb high value added products[14]

While more people and more women are getting connected in Jordan, the gender gap in computer and internet users remains to be present at 6.1 percent for computer users and 6.9 percent for internet users. The gender gap between 2010 and 2012 narrowed by 1.6 percent for computer use, but grew by 1.5 percent for internet use as indicated inTable 5 Table 5.

Internet users who are economically active (both employed and unemployed) are mostly males. The same applies to the student pool as illustrated in Table 6:Table 6. The gender gap is the widest amongst the employed, and has remained somewhat the same between 2010 and 2011. The gap however amongst the unemployed grew from 3.8 percent to 23 percent during the same period.

Internet cafes are mostly frequented by males, indicating some cultural limitations that restrict women from going to cafes in the first place. The gap is also large at work, and reaffirms the observations made above regarding the gap in internet use between employed males and females. The opposite is observed at schools, a favored place for females to work in, where the percentage of female users surpasses that of males.

14 'Development of Jordan national information and communications technology strategy (2012-2016)', Danish Management A/S. March, 2013.

Table 5

Computer and internet by purpose of use (%)

Indicator	2010	2011	2012	Gap (2010-2012)
Computer users aged 5+	55.7	55.3	51.4	-4.3
Males	*59.4*	*57.7*	*54.3*	*-5.1*
Females	*51.7*	*52.9*	*48.2*	*-3.5*
Gender Gap	**7.7**	**4.8**	**6.1**	**-1.6**
Internet users aged 5+	27.2	34.9	36.8	9.6
Males	*29.8*	*37.6*	*40.1*	*10.3*
Females	*24.4*	*32.2*	*33.2*	*8.8*
Gender Gap	**5.4**	**5.4**	**6.9**	**1.5**
Computer users for personal purposes	91.1	89.4	87.5	-3.6
Computer users for work purposes	16.9	15.7	15.7	-1.2
Computer users for learning and training	56.3	46.6	47.1	-9.2

Source: Department of Statistics, Jordan in Figures (2010-2012

Table 6:

Distribution of persons aged (15+) who use the internet by economic activity (%)

Economic Activity	2010			2011		
	male	female	gap	male	female	gap
Employed	74.8	25.2	49.6	75.3	24.7	50.6
Unemployed	51.9	48.1	3.8	61.5	38.5	23.0
Student	54.1	45.9	8.2	52.7	47.3	5.4
House maker	0.6	99.4	-98.8	0.7	99.3	-98.6
With means	93.8	6.2	87.6	95.1	4.9	90.2
Disabled	86.2	13.8	72.4	86.5	13.5	73.0

Source: Department of Statistics Gender Indicators http://www.dos.gov.jo/dos_home_e/main/index.htm

The majority of internet users that access the internet through phones are mostly males. Access through the computer however is more balanced. This could be attributed to the fact that males in general earn more income and have more wealth than females, and are therefore able to purchase the more expensive smart devices.

Table 7:

Distribution of persons aged (5+) by place of internet use (%)

Place of Use	Male	Female	Gender gap
Home	53.9	46.1	7.8
Work	69.9	30.1	39.8
Internet café	89.7	10.3	79.4
School	45.9	54.1	-8.2
University	54.9	45.0	9.9
Other*	56.7	43.3	13.4

Source: http://www.dos.gov.jo/dos_home_e/main/ehsaat/alsokan/wom_in/gender/it/2011/10.pdf

*Others: knowledge stations, civil associations and organizations, and other places.

Internet penetration in Jordan and the Arab world remain to be below western standards; however, mobile phones and smart device penetration has surpassed advanced western economy levels. Access to the internet will therefore improve as mobile devices become the dominant means of internet access.[15]

Table 8:

Distribution of persons aged (5+) who use the internet by mean of use (%)

Place of Use	Male	Female	Gender gap
Computer	53.4	46.6	6.8
Mobile	65.5	34.5	31.0
Computer and Mobile	61.4	38.6	22.8

Source: http://www.dos.gov.jo/dos_home_e/main/ehsaat/alsokan/wom_in/gender/it/2011/10.pdf

15 'Development of Jordan national information and communications technology strategy (2012-2016)', Danish Management A/S. March, 2013.

4 JORDAN'S SOCIOECONOMIC STATUS: BASIC OBSERVATIONS

4

Jordan's Socioeconomic Status: basic observations

Jordan is an upper middle-income country with a population of around 6.4 million, a GDP of JD22 billion (US$31 billion), and a per capita income of JD3,439 (US$4,849) in 2012. The majority of Jordan's population lives in the center and north, of which 38 percent, 18 percent and 15 percent reside in the Governorates of Amman, Irbid and Zarqa respectively.[16] The population in Jordan is also one of the fairly youngest amongst the upper middle income countries with around 40 percent under the age of 14.[17] Between 2004 and 2008, Jordan enjoyed robust GDP growth rates averaging 8 percent, but subsequently slowed to 3.3 percent between 2009 and 2012.[18]

The average family size remained the same at 5.4 persons. Fertility rates among Jordanian women dropped significantly from more than 6 births per woman in the 1980s to 3.7, 3.0, and 3.2 in 2005, 2011, and 2012 respectively. This figure however is still higher than the MENA average of 2.8 births per woman, and the low and middle-income countries' average of 2.6 births per woman in 2011.[19]

Jordan's population continues to be predominantly young, with around 60 percent below the age of 20, and 75 percent of the population below the age of 30. This also reflects a very high dependency ratio of 68.2 percent, which is one of the causes of poverty incidence in Jordan. The growing young population is also straining public resources and services such as education and infrastructure development. The unemployment rate although down from its level in 2005, remains to be stubbornly highly, with women's unemployment still at an alarmingly high level of around 20 percent.

Table 9:

Jordan's socioeconomic profile, select indicators

Key indicator	2005	2012
Total population (million)	5.47	6.38*
Annual population growth (%)	2.3	2.2
Male to female population ratio	1.06	1.06
Population in urban areas (%)	82.6	82.6
Population in rural areas (%)	17.4	17.4
Fertility rates (births per woman)	3.7	3.2
Average family size	5.4	5.4
GDP (US$ billion)	12,548	30,971
GDP per capita (US$)	2,300	4,849
Unemployment rate (%)	14.8	12.2
Unemployment rate among women (%)	25.9	19.9
Unemployment rate among men (%)	12.8	10.4

Source: Central Bank of Jordan, Department of Statistics

16 Sources: Department of Statistics and Central Bank of Jordan

17 http://www.worldbank.org/en/country/jordan/overview

18 Central Bank of Jordan

19 http://data.un.org/Data.aspx?d=SOWC&f=inID%3A127

Coupled with the high unemployment rate is also a very high inactivity rate amongst able Jordanians, who are also overwhelmingly female. A number of factors contribute to these high rates, including cultural mindsets, which will be discussed in detail throughout the report.

"Even if my salary was three times higher than that of my husband's, and one of us had to stay home to take care of our children, it will definitely be me. I do not accept for my husband to stay at home. What will people say about him?!"

Participant, focus group session – Parents, Amman

The country's economy is predominantly comprised of services, where the majority of jobs are generated, including those in the public sector. The country has limited natural resources, and is heavily strained by water and energy scarcity. Combined with an open and a highly integrated regional economy, Jordan remains to be highly vulnerable to political, social and economic volatility in the region. More recently, the turmoil that swept the Arab world had significant ramifications on the Jordanian economy manifested by the significant cuts in Egyptian gas, and the high influx of Syrian refugees into Jordan. This has constrained the ability of the government to invest in both infrastructure and human capital development. As for the country's human development, Jordan is above average when compared to other middle-income countries. This is made possible by the consistent government spending of more than 25 percent of GDP on health, education, and other human development aspects. Moreover, Jordan ensures a high level of gender parity with regards to access to basic public services. School enrolment rates are also comparable to countries at Jordan's income level.[20]

20 http://www.worldbank.org/en/country/jordan/overview

5 JORDANIAN WOMEN IN A GLOBAL CONTEXT

5

Jordanian Women in a Global Context

The Global Gender Gap Report 2013 captures the gaps between men and women in fundamental categories or sub indexes: economic participation and opportunity, educational attainment, health and survival, and political empowerment.[21] A scale from 0 to 1 is used, where 0 denotes absolute inequality and 1 denotes absolute equality. The scale is such that the results can be interpreted in terms of percentages. The report also shows that the world, represented by 136 countries,[22] has closed over 96 percent of the gender gap on health (compared with 90 percent in 2006), and almost 93 percent on education (compared with 90 percent in 2006); however, in terms of economic participation and political empowerment, the gap between men and women remains to be wide at 60 percent and 21 percent respectively (compared with 50 and 15 percent respectively in 2006). Out of the 110 countries that have been involved in the report since 2006, 86 percent showed improved results, while 14 percent showed widening gaps. The Middle East region continues to hold the last place, having closed almost 59 percent of its gender gap.

Table 10:

Gender Gap Index for Select Countries, 2013

Item	Sweden	United States	Israel	France	Italy	Kuwait	Lebanon	Jordan	Morocco	Egypt
Global Gender Gap Index 2013 Rank	4	23	53	45	71	116	123	119	129	125
Global Gender Gap Index 2013 Score	0.813	0.739	0.703	0.709	0.689	0.629	0.603	0.609	0.585	0.594
Economic Participation and Opportunity Rank	14	6	56	67	97	115	126	128	129	125
Economic Participation Score	0.783	0.818	0.691	0.669	0.597	0.525	0.442	0.415	0.395	0.443
Educational Attainment Rank	38	1	82	1	65	57	87	68	109	108
Educational Attainment Score	0.998	1.00	0.987	1.00	0.992	0.994	0.980	0.992	0.900	0.920
Health and Survival Rank	69	33	93	1	72	112	1	90	88	51
Health and Survival Score	0.974	0.979	0.970	0.980	0.973	0.961	0.980	0.971	0.971	0.977
Political Empowerment Rank	4	60	57	45	44	126	133	117	111	128
Political Empowerment Score	0.498	0.159	0.164	0.187	0.191	0.037	0.010	0.061	0.072	0.035

Source: The Global Gender Gap 2013 Report

Note: data on a 0 to 1 scale (1=equality, 0=inequality)

21 http://www3.weforum.org/docs/WEF_GenderGap_Report_2013.pdf

22 Of the 136 countries, 110 countries have been included since the first edition of the report in 2006.

According to the report, Jordan achieved a low rank of 119 out of 136, by managing to close around 61 percent of its gender gap. No improvement has been achieved since 2006, when Jordan also closed 61.1 percent of the gender gap. At the regional level, Jordan was superseded by five countries in 2013, compared with four in 2006, and by four Arab countries in 2013, compared with two in 2006. The four Arab countries include the UAE (109), Bahrain (112), Kuwait (116), and Qatar (115).

Economic participation and opportunity is assessed by five factors, which include the participation of women in the workforce; equality of pay between men and women for similar work; level of income; number of jobs in senior positions; and number of professional and technical women workers. Jordan ranked 128 out of 136, and received a below average score of 0.415, meaning that it only closed 41.5 percent of the gender gap in the area of economic participation and opportunity as illustrated in Table 11:Table 11. This overall ranking was primarily set back by the low income generated by working women, followed by the low participation levels of females in the labor force.

The World Economic Forum maintains that countries with narrower gender gaps fare better economically than those with large ones, regardless of how much resources are available to the country.

Table 11:

Gender equality in economic participation and opportunity in Jordan

	Rank		Score	
	2006	2013	2006	2013
Economic Participation and Opportunity	105	128	0.442	0.415
Labor force participation	111	133	0.360	0.240
Wage equality for similar work	71	52	0.600	0.680
Estimated earned income (PPP USD)	106	130	0.310	0.210
Legislators, senior officials and managers	--	--	--	--
Professional and technical workers	83	1	0.410	1.00

Source: The Global Gender Reports 2006 and 2013.

6 STATUS OF WOMEN IN THE WORKFORCE

6

Status of Women in the Workforce

The challenges women face in entering the workforce are numerous, and many of them are not unique to Jordan. Some of these are related to cultural, social, and religious restrictions, while others arise due to shortfalls in education, training, and wage expectations. Women in general prefer to work in the public sector, where it offers shorter working hours, and a safer, more stable, and culturally acceptable working environment. For most women, job stability is more important than career growth.

"An attractive work environment for women is one that offers short working hours, a reasonable salary, job stability and security."

Participant, focus group session – Employees, Amman

Most women also view their income as complementary, given the predominant view that males should be the prime income earners. Latest statistics by DOS indicate that women's average wage is 88 percent of the men's.

Despite the fact that the Jordanian economy was successful in creating around 50,000 new jobs in 2012 (see Box 3:Box 3), more than half of these jobs went to persons with an educational level of high school and below, and another sizeable segment of 17 percent went to foreigners. Net jobs created for women was significantly below that of men reaching 14,000 compared with 35,000 for men indicating a gender gap of 21,000 in net created jobs.

Box 3:

Basic Labor & Wages Indicators

Average No. of workers per establishment 2011:

6.4 employees

Percentage of Non- Jordanian workers 2011:

11%

Percentage of Female workers 2011:

23%

Average wage 2011:

- Male: JD429
- Female: JD379
- Male-Female ratio:0.88

Unemployment rate 2012: 12.2%

- Male: 10.4%
- Female: 19.9%

Net Created Jobs 2012: 50,000 Jobs

- Jobs for females: 14,000
- Jobs for males: 35,000

Percent of net created jobs by sector in 2012:

- Public sector: 32%
- Private sector: 66%

Source:2011 figures from the DOS 2012 Statistical Yearbook Report; 2012 figures are from DOS Press release, Sept 2013. http://www.dos.gov.jo/dos_home_e/main/archive/job_creation/2013/Created%20Jobs.pdf

As for the IT/ITES sector, the number of jobs witnessed its most sizeable leap between the years 2000 and 2001, where the number grew from 1,250 to 6,000. The number grew further to hover at around 10,000 in 2005, and then inched up to over 11,000 in 2007. Since then, the number of employees in this sector remained somewhat the same reaching 11,360 in 2012, [23] and to an estimated 80,000 in both direct and indirect jobs. Of those direct jobs, close to 30 percent are occupied by women.[24] The gender gap in the net employment opportunities remains to be wide.

Unemployment in Jordan remains to be stubbornly high even during high growth years, reflecting structural challenges. In 2012, unemployment for males reached 10.4 percent and for females 19.9 percent. These rates are higher in rural areas reaching 11.5 percent and 25.6 percent for males and females respectively where fewer job opportunities are available to both genders. While unemployment is relatively 'low' among males over the age of 25 years (6.6 percent), it is at a much higher 25.2 percent among young males (15-24) and shockingly high among young females (15–24) at almost 50 percent. These figures are socially explosive given that close to 70 percent of Jordan's population is below the age of 30, and one in five young Jordanians who want to work simply cannot find a job.

Table 12:

New Job opportunities in the ICT sector in 2010 and 2011

Year	Job opportunities in the ICT sector	Male	Female	Gender Gap
2010	New Jobs created	2,396	780	1,616
	Resignations	1,121	372	749
	Net employment opportunities founded	1,275	409	903
2011	New Jobs	1,882	626	1,256
	Resignations	429	115	314
	Net employment opportunities founded	1,453	510	943

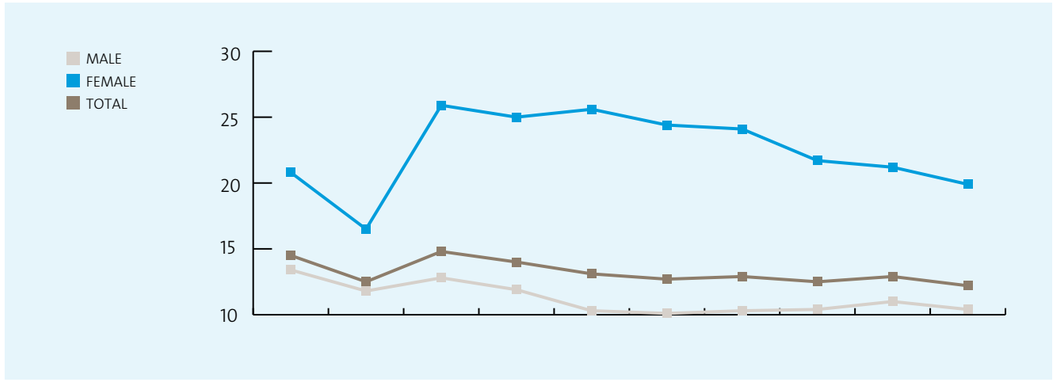
Source: Department of Statistics

23 Int@j IT/ITES sector statistics 2012

24 http://www.bridgeprogram.jo/AddCounter

Figure 7:

Unemployment by Gender

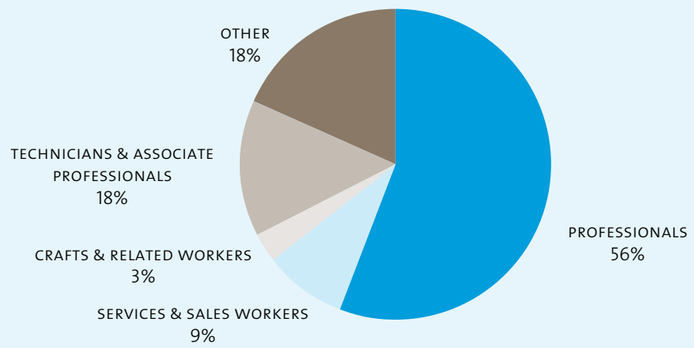


Source: Department of Statistics

There are qualitative differences between unemployed males and females in their 20s. While 70 percent of unemployed male youth have not received any education past high school, 75 percent of the unemployed female youth have actually completed community college or university education.[25] The majority of the employed in Jordan work mostly in in various professions, and sales.

Figure 8:

Breakdown of Female Employment by Profession

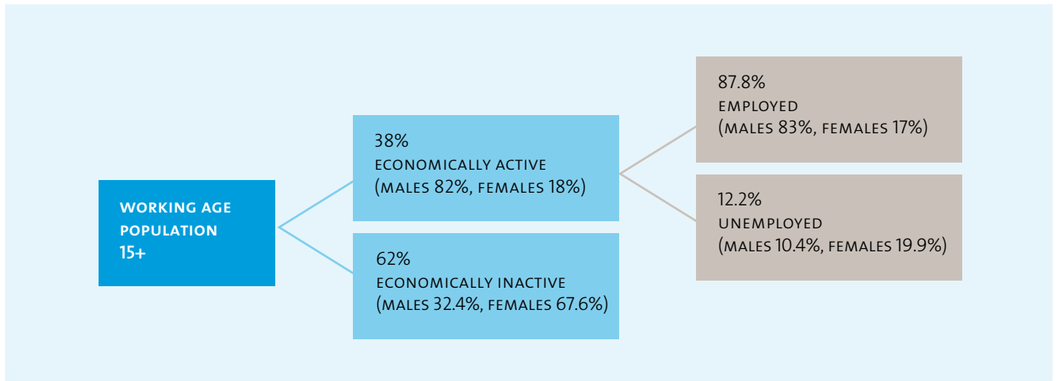


Source: Department of Statistics

25 http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2012/10/23/000356161_20121023012526/Rendered/PDF/733340WP0P11310Employment010019012b.pdf

Figure 9:

The Structure of the Labor Market in Jordan, 2012



Source: Department of Statistics

Around 38 percent of the working age population (15+) is economically active, of which around 82 percent are male, and 18 percent are female despite the fact that half of the working age population is female. A large segment of the working age population is economically inactive, comprised mostly of women.[26]

6.1 The Economically Inactive

The alarminlgy high rate of the inactive working age population in Jordan is infact considered to be one of the highest in the world, and is viewed as a more serious challenge to address than the current double digit unemployment rate. Contributing to this high rate is the high inactivity for both males and females, however the rate becomes overwhelming high for females with lower educational attainment levels.[27] It is estimated that around 61 percent of females of working age with secondary education or less are economically inactive.[28]

The economically inactive males and females are predominantly below the age of 30, some of which are students. Nontheless, a sizeable segment are 'stay-at-home females', and 'early retirees'.

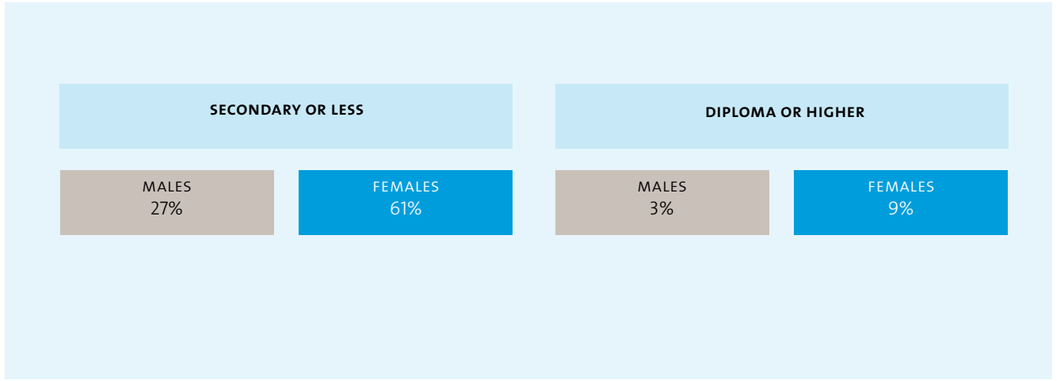
26 DOS Employment report 2012

27 National Employment Strategy 2011-2020

28 Department of Statistics

Figure 10:

Distribution of the Inactive Working Population by Gender and Education



Source: Department of Statistics.

6.2 The Economically Active

Economic activity is low for males and alarmingly low for females by regional and global standards. The economic participation rate among males is estimated at 65 percent, and at a strikingly low 15 percent for females, representing a gender gap of 50 percent compared with 26 percent globally.

Males enter the workforce at normal rates, but tend to exit early, whereare females enter at lower rates and exit fairly quickly. The economic participation of males peaks at 45 years of age; however for females, the participation peaks at 27, reflecting their quick exit rate[29] This is due to a variety of reasons including the early retirement option, which encourages women to drop out from the labor market early due to the lenient retirement standards adopted in Jordan. Maternity is another major contributor to early drop out.

Table 13:

Jordan's Working Age Population Compared with Other Countries

State	Economic Participation Rate Among Males	Economic Participation Rate Among Females	Gender Gap
The World*	78%	52%	26%
Jordan*	65%	15%	50%
Syria**	88%	38%	50%
Morocco**	85%	30%	55%
Tunisia**	79%	31%	48%
Egypt*	76%	24%	52%

*2009 data

**2008 data

Source: National Employment Strategy 2011-2020

29 Ibid

After pregnancy, women become more of a liability to employers, who encourage women to quit their jobs before delivery. The new social security maternity benefits scheme is expected to change the employers' incentives and perceptions by introducing a 0.75 percent contribution to be paid by all employers to employees regardless of their gender.[30]

6.3 The Employed

The total employed population is estimated at 1.22 million, of which 84 percent is male, and 61percent have a high school eduation or below. Employment in the public sector through the Civil Bureau represents a 'fairer' gender distribution, with 55 percent of the employees being male, and 45 percent female. The breakdown however in independent public institutions, and the private sector become more heavily skewed in favor of males, with the gender gap reaching 74 percent in the private sector as illustrated in Table 14:Table 14.

Table 14:

The Composition of Employment Across Sectors by Gender

State	Males	Females	Gender Gap
Public Sector (Civil Service Bureau)	55%	45%	10%
Independent Public Institutions	80%	20%	60%
Private Sector	87%	13%	74%

Source: National Employment Strategy 2011-2020

Females have historically preferred working in the public sector (especially in health and education) as it offers 'culturally acceptable' jobs, fringe benefits, job security, and most importantly shorter working hours, thereby allowing females to tend to their 'obligations' at home. The private sector on the other hand offers less benefits and demands longer working hours.[31]

30 International Labour Office, Ministry of Labor and the Jordanian National Commission for Women, "Towards Pay Equity: A Legal Review of Jordanian National Legislation. 2013

31 National Employment Strategy 2011-2020

6.4 The Gender Gap

The female participation in the labor force varies drastically by educational attainment levels. The young and educated women tend to enter the workforce, but as they get slightly older they drop out of the labor market. Jordanian women who have attained a degree from a university or a community college have a higher motivation to seek job opportunities and are more likely to get employed. Official figures indicate that women's educational attainment directly correlates with female employment rates. For example, women holding university degrees constitute 26 percent of the 'economically active female' population between the ages of 20-29 years. These women enjoy an employment rate of over 40 percent. Moreover, women holding an 'intermediate diploma' or a community college degree, account for 12 percent of economically active females in their 20s, and have an employment rate of around 30 percent. Females who have received a high school degree at the most, have an employment rate of 9 percent only. Nonetheless, Jordanian males between the ages of 20-29 enjoy employment rates ranging from 78 percent and 89 percent, regardless of their educational attainment level.[32]

Table 15:

Economic Activity Rate by Gender

Indicator	Males	Females	Gender Gap
Economic Activity Rate (population Age 15+)	62.8%	14.7%	48.1%
Youth Economic Activity Rate (15-24)	39.1%	9.5%	29.6%
Unemployment Rate (population age 15+)	11.0%	21.2%	-10.2%
Youth Unemployment (15-24)	26.3%	47.0%	-20.7%

Source: Department of Statistics

32 'Soft Skills or Hard Cash? What Works for female employment in Jordan?', World Bank 2012

Table 16:

% Distribution of Jordanian Females Aged 15+ by Economic Activity Status and Educational Level in 2012

Educational Level	Employed	Un-employed	Student	House wife	With Income	Disabled	Other
Illiterate	1.1	0.1	...	13.1	8.3	73.0	...
Literate	0.8	0.1	...	4.4	2.0	9.6	...
Primary	2.8	0.8	3.5	11.6	4.9	7.9	8.4
Preparatory	4.5	0.8	18.1	18.0	9.0	4.1	...
Basic	6.5	5.5	37.7	19.8	1.8	1.5	67.5
Vocational Apprenticeship	0.0	0.1	...	0.0	...	...	...
Secondary	7.7	3.8	39.4	14.5	8.6	1.7	2.4
Intermediate Diploma	22.0	19.1	0.2	9.9	32.9	1.0	7.0
B.A	48.8	65.0	0.9	8.3	26.6	1.0	14.7
High Diploma	1.7	0.9	0.0	0.1	0.6	...	...
Masters	3.1	3.6	0.2	0.2	4.2	0.1	...
PhD	1.0	0.1	...	0.0	1.2	...	...
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Department of Statistics

Jordan's Human Development Report also found that female entrepreneurs make up almost 3.9 percent of all Jordanian entrepreneurs, which is staggerlingly below the global standard of 25-33 percent. This is also further exacerbated by the low participation rate of females in the workforce. In jobs, a female employee is also likely to have three years of additional experience than male counterparts in the same position, indicating a more rapid movement of males up the scale of career paths[33]

The female particiaption rate in the workforce is alarmingly low when compared to developing countries and even MENA countries, which are estimated at 43 percent and 28 percent respectively compared with 15.5 percent for Jordan[34] Very few females are opting to join the workforce, due to a number of cultural and institutionl weaknesses. Jordan's National Employment Strategy for 2011-2020 summarizes these salient constraints as follows:

- **Limited mobility and access to information**: information regarding job opportunities flows mostly through informal channels that are dominated by males. Subsequently, females have less access to information about job opportunities, especially those outside their locality.
- **Marital status:** around 60 percent of never married females obtain a job before the age of 30 compared with less than 30 percent of married females of the same age.

33 Jordan Human Development Report 2013, Explanatory note on 2013 HDR composite indices

34 Ibid

- **Maternity**: this contributes to the early exit of females from the labor market.
- **Cost of childcare**: females, especially mothers of young children, face a tradeoff between additional income and the cost of childcare.
- **Gender wage gap**: the gap exists and is wider in the private sector.
- **Limited opportunities** for on-the-job and vocational training tailored for females.
- **Administrative barriers** to home-based employment.

Despite the notable strides made towards achieving gender equality, field research affirmed that Jordan remains to be confined to a number of social norms and values that hinder reaching a level where traditional gender roles are completely overcome. Empowering women in the workplace continues to challenge the numerous forms of patriarchy embedded in the Jordanian society, resulting in a very low participation rate of women in the workforce.

Accordingly, women play a limited role in economic life, which seems rather incongruent with the high rate of educational attainment among the female population. To address this issue, the Jordanian government shed precise emphasis on the economic participation of women and strove to adopt a set of policies and legislations that would raise female access to education and enhance their position within the economy. In spite of all the schemes undertaken by the government, as well as the international community, the gap between males and females in the labor market continues to persist, with women's unemployment on the rise and an ever expanding Gender Pay Gap (GPG), even in female dominated sectors. Although the GPG is explained through elements including, educational attainment, work experience and skills, other factors like stereotypes, discrimination, and traditions do factor in as well. In its latest Employment Survey issued in 2011, Jordan's Department of Statistics concluded that in the public sector the average monthly wage for men was JD457, compared with JD403 for women. As for the private sector, men and women are paid JD378 and JD315 on average per month, respectively.[35] Along female dominated sectors, the GPG stood at an outstanding 41.3 percent in manufacturing, 27.9 percent in health and social work, and slightly lower in education at 24.5 percent.[36]

"Self-generated income from ICT businesses can give women greater power to close the gender wage gap, as it is a means of production that allows for some control and determination on the price that women can sell their labor."

Remarks of Phumzile Mlambo-Ngcuka, UN Women Executive Director, at the UN Broadband Commission Working Group on Gender, New York, 20 September 2013.

Field research showed the predominant perception that a women's priority should always be the house and children, and that women should only work if they are able to fulfill their duties towards their homes. This was the predominate perception of all focus group participants. They held the view that a woman's employment is secondary to her primary role at home, and employment is only needed when the husband is unable to provide financially.

"A woman's work outside the house is not a necessity. It is a non-binding choice that she makes. She can keep her salary and not spend anything on the house."

Participant, focus group session

35 The World Bank, Understanding the Determinants of Female Labor Force,2011

36 International Labour Office, Ministry of Labor and the Jordanian National Commission for Women, "Towards Pay Equity: A Legal Review of Jordanian National Legislation. 2013

6.5 Role of MSMEs

Around 99.6 percent of Jordan's enterprises are micro, small and medium in size (MSMEs), and if utilized well, these enterprises can provide valuable opportunities for female employment. Female-owned enterprises have a higher ratio of female to male employees, as females tend to hire females. Females are also more likely to establish micro and small businesses, as women are less likely to own wealth, partly due to the prevailing inheritance law that favors males. Females also tend to establish their business in their area of residence, and hire females from their own locale. This is very important, as the overwhelming majority of women prefer to work close to home.

"I was offered a high paying job in a nearby country, but my parents did everything they could to transfer this opportunity to my nephew, who is as old as I am. They were against my travelling and living abroad. They would only accept for me to do this if I was married and my husband escorted me."

Participant, focus group session – Employees, Irbid

Female employers also offer female employees more flexible working hours and working arrangements, thereby allowing the female employees to better cater to their household and family obligations. Moreover, conservative families, which tend to shy away from 'allowing' their daughters to work in male-dominated enterprises, will be more encouraged to let their daughters pursue job opportunities in female-owned enterprises. As such, encouraging female startups will generate more jobs for females. As for medium-sized enterprises, the female pool is found to be larger than that in small enterprises, and therefore encouraging their establishment will create more job opportunities for women.[37]

MSMEs are therefore fertile platforms for increasing the penetration of women in the ICT sector. The World Bank identified the ICT needs of women in micro and small businesses as follows:

- "Women are interested in all forms of ICTs. Women are innovative, and will work together if the technologies enable them to do so. They are constantly reinventing themselves and are imaginative about working within narrow confines.
- Women are de facto social entrepreneurs. Their income objectives are often less about making profit for profits sake and more about servicing their immediate communities. As a result they are willing to take risks and make the necessary investments to keep their enterprises competitive.
- Over the past two decades, women's rates of economic activity have been increasing in the entrepreneurship sector and the Internet has a real impact on the growth rate of women-owned enterprises.
- There is a fertile playing field for introducing ICTs to women entrepreneurs. In many ways, precisely because of the business challenges that women face, women recognize the quantum differences that ICTs could make to their business activities and are ready to adopt the new technologies in their businesses. They need resource and information support to adapt ICT uses for both the informal and formal sectors; assess the risks and benefits of using ICTs; and allocate time to integrate and understand ICT into their business strategies."[38]

The World Bank admits that ICT may 'threaten' the informal nature of many women-led MSEs, stating that "by implication, the application of ICTs to MSEs might push the business entities from the informal to the formal economies, and while this may be desirable from a national economy perspective, it might not be considered desirable from an individual entrepreneurs' perspective."[39]

37 Jordan Small Businesses and Human Development, 2011

38 World Bank: Engendering ICT Toolkit http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTGENDER/EXTICTTOOLKIT/0,,contentMDK:20272991~menuPK:562603~pagePK:64168445~piPK:64168309~theSitePK:542820,00.html

39 Ibid

In Jordan, informal employment represents 44 percent of the total employment in the economy.40 The World Bank however, affirms that women have a pragmatic attitude to ICTs, and usually "choose those elements of the formal sector that will enable the business entity to maintain the optics of accountability and transparency, critical for business auditing and export-trading purposes. However, women-led enterprises also maintain a 'shadow' business that keeps some of the income 'safe' from declaration."[41]

6.6 Gender issues in labor laws

The right to work and the principle of equal pay is protected by the Constitution for all Jordanian citizens, as stipulated in Article 23 of the Constitution. Moreover, Article 6 of the Constitution states that 'Jordanians shall be equal before the law. There shall be no discrimination between them with regards to their rights and duties on grounds of race, language, or religion'. These and the remaining articles of the constitution do not include 'sex' as a prohibited base of discrimination.[42]

Moreover, workers and employees are referred to in gender-neutral terms in both the labor law and the Civil Service Ordinance that regulates employment in the public sector. However, the laws continue to lack provisions that prohibit discrimination in the workplace, and equality of pay for men and women that hold the same position. Social discrimination against women is also prevalent. Society continues to view women's entry into the workforce as that being 'supplementary' to the household income, rather than a conduit to achieve economic independence and a meaningful career path.[43]

Worldwide, women receive on average 22.9 percent less in pay than males in jobs of equal value.[44] In Jordan, men are paid 41 percent more than women in the private sector and around 28 percent more in the public sector. Official numbers reveal that the gender pay gap between the two sexes by sector reached 41.3 percent in transformation industries, 27.9 percent in health and social works and 24.5 percent in the education field.[45] Women also tend to be employed in 'social' fields such as education and social work, where salaries in those professions are generally low.

The choice of professions for women and certain working hours are also limited by cultural norms, and legislation. The minister of labor is entitled by Article 23 of the constitution and Article 69 of the labor code to specify the industries and activities that women cannot take part in. For example, women are not allowed to work in mines, and are not permitted to work between 8p.m. and 6a.m., except in some service industries such as hospitals and airports. Exceptions are also made for certain times of the year including annual inventory work. Legal regulations also limit evening working time for women to 30 days per year, and a maximum of 10 hours per day. Jordanians see the legitimacy of these restrictions as means of protecting women from harmful working conditions.[46]

The ordinance in Jordan also favors men when it comes to benefits. This stems from social, legal and religious values, where women are seen entitled to be financially supported by males. For example, men are entitled to receiving family and cost of living allowances, while a woman may receive such benefits only if the husband is deceased or handicapped. Debates regarding benefit equity continue to take place, especially since men and women pay an equal share for those benefits.[47]

40 http://www.mop.gov.jo/uploads/Final%20Informal%20report%20for%20website.pdf

41 World Bank: Engendering ICT Toolkit http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTGENDER/EXTICTTOOLKIT/0,,contentMDK:20272991~menuPK:562603~pagePK:64168445~piPK:64168309~theSitePK:542820,00.html

42 International Labour Office, Ministry of Labor and the Jordanian National Commission for Women, "Towards Pay Equity: A Legal Review of Jordanian National Legislation. 2013

43 http://www.freedomhouse.org/sites/default/files/inline_images/Jordan.pdf

44 ILO: A new era of social justice, Report of the Director-General. 2011

45 http://www.ilo.org/global/about-the-ilo/newsroom/features/WCMS_213754/lang--en/index.htm

46 http://www.freedomhouse.org/sites/default/files/inline_images/Jordan.pdf

47 Ibid.

Some private sector institutions also practice gender-based discrimination within their policies and procedures. In both the public and private sectors, occupational sex segregation is significant thus women are more present in less paying jobs and within limited sectors. Remuneration differences also exist among men and women. Additionally, no official initiatives have been run by the government, unions or even business owners to encourage or raise the awareness regarding pay equity.[48]

Moreover, many violations occur in some sectors in terms of wage protection. In some cases, employees and specifically women are forced to admit to receiving their full wages while receiving less in reality due to the absence of legislations that protect wages and ensure that employees receive their full rights. In other cases violations occur regarding overtime wages and working during holidays.

In terms of maternity rights, women are entitled to 70 days for maternity leave as per the Labor Law of the year 1996 and Interim Act number 26 of 2010. This period is shorter than the maternity leave period stated in the Civil Service regulation, International Labor Office (ILO) Maternity Protection Convention 1952 (No.103), as well as the higher standard set out in set out in ILO Maternity Protection Convention, 2000 (No. 183). Despite maternity rights stated within this Law, women are often subject to dismissal or failure of contract renewal. In addition, most employers do not abide by the provisions of article 72 of the Labor Law, that require private employers with 20 females or more to provide childcare facilities on their premises if at least ten children below the age of four need such care. The temporary Social Security Law number 7 of 2010 is seeking to mitigate the impact of maternity leave on employers. This law ensures maternity rights for 70 days in alignment with the Labor Law of the year 1996 and Interim Act number 26 of 2010. The law established a maternity protection fund to encourage the employment of women in the private sector, yet it limits these benefits to four child deliveries per working mother, which contradicts the Labor Law of the year 1996 and Interim Act number 26 of 2010. Addressing this lack of consistency in legislations governing the work environment is of high urgency.

The temporary Social Security Law number 7 of 2010 also includes some articles that contain elements of discrimination of wages since it sets different retirement ages for men and women. It is preferable to set one retirement age for both males and females, as the latter tend to suspend pension payment over the course of their working years due to childbirth, child rearing and other family obligations that take them away from work. This contributes to lowering pension payments for females. Moreover, the lump sum compensation option before reaching the age of retirement encourages women to leave the labor force and therefore lose their skills and qualifications on the long run, which leads to the loss of wage protection and a retirement pension and consequently female poverty at old age. [49]

Some of the students and employees in the focus groups sessions stated that they are aware of the labor law regulations especially the ones mandating the number of working hours, vacations, and personal leaves. The majority of participants also stated that they have read their employment contracts before signing, and some even consulted a legal expert. Some of the students also recalled a course covering the labor law at their universities. Field research however found that legal awareness in general is lacking and women generally acquire it while at work. Employers in many instances, also take advantage of their employees, because they do not have adequate legal awareness of their rights. This is particularly true among female employees as many of them are not able to, for a variety of social and financial reasons, take their cases to court.

"I worked for a company for two years and was paid lower than what was agreed upon in the contract. I initially accepted because I liked my job, but when I asked for my rightful salary, I was told that they can easily find another replacement."

ICT employee, focus group session

48 International Labour Office, Ministry of Labor and the Jordanian National Commission for Women, "Towards Pay Equity: A Legal Review of Jordanian National Legislation. 2013

49 International Labour Office, Ministry of Labor and the Jordanian National Commission for Women, "Towards Pay Equity: A Legal Review of Jordanian National Legislation. 2013

6.7 Women Entrepreneurs and ICT

Despite the various efforts extended by the government, the private sector, and the various business incubators[50], albeit fragmented, challenges continue to obstruct many ideas from turning into realities.

Women usually face several cultural barriers that hinder their ability to establish their own businesses. Many women usually drop out of the labor market due to marriage, childbearing/rearing, and household obligations. Moreover, affordable daycare is not prevalent, and transportation services are unreliable and inefficient. Women are also generally restricted from working long hours, a challenge particularly faced by women entrepreneurs at the initial stage of their business startup which requires long working hours.

A study by InfoDev/World Bank identified six main challenges that face women entrepreneurs: gender inequality of rights, resources related to social status; entrepreneurship perceived to be a male domain; lack of financing; lack of self confidence; lack of information; and lack of role models.[51]

Jordan has one of the largest gender gaps in early stage entrepreneurial activity in the region, with a male activity rate that is 3.4 times higher than that for females. The female share of entrepreneurial activity was estimated at 21.7 percent compared with the regional unweighted average of 28.6 percent. This is a reflection of a number of observations, the most salient of which include: 1) the participation of women in the workforce is one of the lowest in the world, 2) those who participate in the workforce mostly prefer the stability of the public sector and the private sector to a lesser extent, 3) the culture of entrepreneurship is generally lacking among both men and women, and 4) people tend to be risk averse mainly due to the high dependency ratio in Jordan, and lack of funding sources other than those from family and friends.

Table 17:

Gender gap in early stage entrepreneurial activity

Country	Prevalence Rates (%)	Male Prevalence Rates (%)	Female Prevalence Rates (%)	Male to Female Ratio in Rates	Female Share of Entrepreneurial Activity (%)
Yemen	24.0	29.0	18.8	1.5:1	38.6
Algeria	16.7	19.8	13.4	1.5:1	39.8
Morocco	15.8	19.9	11.7	1.7:1	38.1
Lebanon	15.0	20.2	10.2	2:1	35.6
Egypt	13.1	20.2	5.9	3.4:1	20.0
Tunisia	9.4	13.7	5.1	2.7:1	27.0
Jordan	10.2	15.8	4.5	3.4:1	21.7
Palestine	8.6	13.6	3.4	4:1	19.0
Syria	8.5	13.7	3.1	4.4:1	18.1
Unweighted average	13.5	18.4	8.5	2.2:1	28.6

Source: Global Entrepreneurship Monitor, MENA Regional report 2009

50 A number of incubators and accelerators are providing entrepreneurs in Jordan with necessary funds and support. This is covered in Section 9 and Annex IV.

51 http://www.nina.com.my/phocadownload/Women%20Business%20Incubation%20as%20a%20Gateway%20to%20Economic%20Development_Annuar%20Saffar.pdf

Table 18:

Gender gap in entrepreneurial activity rates (%)

Country	Nascent Prevalence Rate (%)			New Business Owner Prevalence Rate (%)			Established Business Owner Prevalence Rate (%)		
	Male	Female	M:F Ratio	Male	Female	M:F Ratio	Male	Female	M:F Ratio
Palestine	4.7	1.2	3.9:1	9.4	2.2	4.3:1	11.1	2.5	4.4:1
Jordan	9.2	2.4	3.9:1	7.5	2.3	3.3:1	9.1	1.3	7:1
Syria	4.9	1.8	2.7:1	8.7	1.4	6.2:1	11.9	1.3	9.2:1
Lebanon	8.8	4.8	1.8:1	12.4	5.5	2.3:1	25.3	7.5	3.4:1
Yemen	27.9	17.6	1.6:1	1.1	1.2	0.9:1	3.1	2.7	1.1:1
Algeria	12.8	9.7	1.3:1	7.4	3.7	2:1	6.4	2.9	2.2:1
Morocco	7.9	6.0	1.3:1	13.1	5.7	2.3:1	23.6	6.7	3.5:1

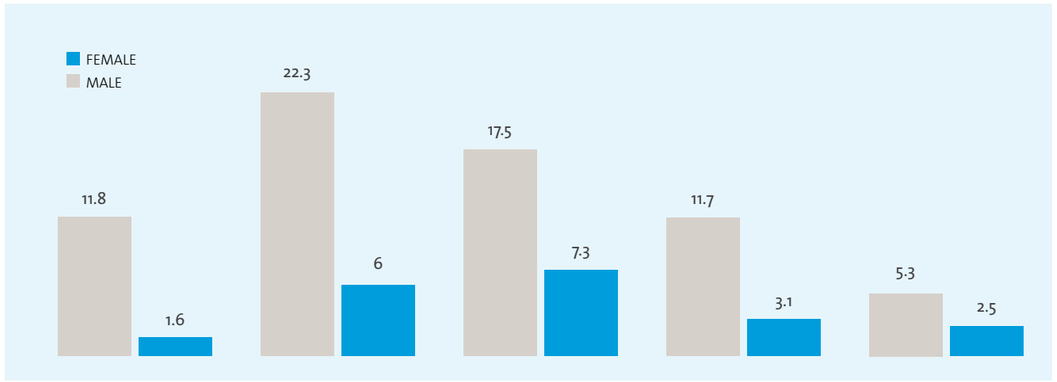
Source: Global Entrepreneurship Monitor, MENA Regional report 2009

Data also shows that the male to female ratio in prevalence rates is much lower in the nascent phase than in the established business-owner phase. This is not so because the male prevalence rate goes up as the business becomes more established, but because the prevalence rate for females drops. The female prevalence rate at the nascent stage in Jordan was estimated at 2.4 percent in 2009, compared with 1.3 percent at the more developed 'established business-owner' stage.[52]

In terms of age, the early-stage entrepreneurial activity rate for females is the highest in the 35-44 age group and the lowest in the 18-24 age group. The peak for males is different, occurring earlier in the 25-34 age group.

Figure 11:

Early-Stage Entrepreneurship Activity Rate by Gender and Age (%)



Source: Global Entrepreneurship Monitor, MENA Regional report 2009

52 Global Entrepreneurship Monitor, MENA Regional report 2009

A limited number of participants in the IT students' focus group sessions indicated their strong interest in establishing their own business, while participants in the other groups focused mainly on challenges faced in finding suitable jobs such as those in banking and education. The majority of students indicated that their graduation projects were based on very creative ideas; however they lacked the education, life and personal skills needed to translate those ideas into viable projects.

Interviewed professors indicated that males have a higher chance of turning their ideas into projects. Female students are less likely to conduct the needed interviews and information gathering exercises; meet freely with relevant stakeholders to develop their ideas; and work late or meet with professors after hours due to cultural limitations. Males on the other hand face no restrictions, and generally come up with more developed and concrete graduation projects.

> "One of the graduation project ideas that we suggested necessitated that data be collected from the industrial estates. Not a single female was interested."
>
> *Interviewed ICT professor*

The overwhelming majority of parents did not support the idea of their daughters starting a business, citing that it is more suitable for males to do so. They explained that a business startup requires substantive effort and time, and necessitates networking and follow up with the varied governmental entities, which they deemed inappropriate for females to do. Startups also require long working hours, which take the female away from her social obligations and skews her off the 'right' path of marriage.

> "What use is it for my daughter if she starts her own business and never gets married? Regardless of what she achieves in her career, her house should always remain a priority."
>
> *Mother participant, parents' focus group session*

Interviewed female entrepreneurs all agreed that women face many challenges when they decide to start a business, but those challenges are overcome when a women has the knowhow, confidence, technical and financial support. They indicated that competition in the well established ICT field in Jordan is fierce, and therefore their business ideas must be creative and different. They asserted that it is important to find a niche in the market in order to grow and remain competitive.

> "Challenges facing women in the ICT field are not unique to Jordan. Women face challenges in all sectors and all over the world because of the stereotypes that confine women's capabilities within the social and humanitarian domains, and males in the knowledge and applied sciences domain."
>
> *Interviewed female entrepreneur*

In general, there is a lack in programs that work on empowering women and building their self-confidence to enable those women to take decisions and to boldly take full responsibility for those decisions. This does not culminate from enrollment in a few awareness or training sessions, but through a rigorous and systematic approach to women empowerment from a young age through education and awareness. An enabling environment for female entrepreneurship must also tackle social stereotypes and provide the needed financial and legal support.

Field research revealed that women shy away from en-

trepreneurial activity due to a number of factors including family upbringing, awareness/knowhow, and access to funding sources. Families raise their daughters different from how they raise their sons. Girls are brought up to focus on tending to their household and family needs, and are rarely encouraged to grow into independent, outspoken and accomplished individuals. They are brought up in a manner that confines them to the home (private space) under the close supervision and 'protection' of a male figure – be it a father, a brother or eventually a husband. Women are not brought up to be ambitious and risk takers – critical elements of a successful entrepreneur. Lack of knowledge and awareness is also another major factor, which is rarely introduced at home, and is insufficiently incorporated into the educational system. Access to financial resources is also limited for females. Women in general have limited wealth due to inheritance laws in Jordan, which favor males.

"The number of women that start a business is very small. Starting a business is a cumbersome affair and most women do not have the drive to follow this path."

Interviewed director of a training institute

6.8 Women in Business and ICT

Field research revealed that women working in the ICT sector enjoy the same incentives and privileges as their male peers do, and in general face no obstacles or challenges that hinder their promotion and career growth. Career advancement is more visible in the private sector, where upward movement along the career path does not follow the systematic and bureaucratic procedures that apply in the public sector. Promotion in the private sector is based on merit; however, the majority of women shy away from being promoted because along with promotion come additional responsibilities and a heavier workload.

"I have been up for promotion for a while now, and my superiors continuously encourage me to move up the ladder. I keep turning these offers down because I cannot handle additional responsibilities that might distract me from my obligations at home."

Interviewed female ICT employee

The 2007 study revealed the concern ICT employers have regarding the ability of women to cope with some aspects of the work that were seen to be more suitable for men. These included long working hours, some travel requirements, and rigorous field work. As women were viewed by society to be the prime care givers at home, a growing responsibility at work would jeopardize their ability to tend to their duties both at work and at home. The 2007 study also affirmed that achieving a balance between household and work duties is very cumbersome for most women, especially when household responsibilities are not shared by a spouse or other family members. Results of this study confirmed this prevalent perception, not only among employers, but also among parents, students and women.

"Women in general have a shorter career lifecycle, extending in most cases to no longer than 10 years, and to even 5 years for careers in the ICT sector. Most women are also interested in administrative non-technical jobs within ICT. A woman's job is viewed as secondary to many, and the ICT sector requires continuous follow-up because of its evolving nature. Most women, due to household obligations, are not able to keep up and find themselves lagging behind and unable to pursue senior positions. Women also do not like to move from one section to the other, and that is important for assuming higher management positions. Managers must understand the full spectrum of their work."

Interviewed ICT professional

A number of measures can be taken to support women in business and ICT. Documenting success stories and creating national awareness campaigns can be instrumental in incentivizing young women to pursue and sustain careers in ICT. Women and companies alike must also be made aware of the positive attributes women's work has at both at the institutional and economic levels. Enabling women to work from home is also a substantive contributing factor to increasing the penetration of women in the ICT sector. This however requires companies to invest in their internal system to ensure that work flows can be efficiently managed inside the company and remotely. A growing number of women are currently working from home, especially in the areas of content development and call centers where women call in through their phones or internet lines.

7 EDUCATION AND ICT

7

Education and ICT

The lack of natural resources drove Jordan towards becoming highly invested in education and skill development. This section sheds light on how the Jordanian education system evolved; ways in which it works to accommodate for the requirements of ICT; and the availability of qualified and skilled human resources that are needed to thrust the development of the ICT sector.

7.1 Indicators

The Jordanian Government recognizes the importance of education in fostering social and economic life in the country. Jordan's literacy rate is estimated to have surpassed that of most Arab countries, which were recognized for their ability to achieve most progress in terms of eradicating illiteracy and improving education rates for both youth and adults, as adult literacy increased from 55 percent in 1990 to 95.9 percent in 2011.[53]

In 2012, 11 percent of the Jordan's General Budget was allocated to the Ministry of Education (MOE).[54] Within its strategy for the years 2009-2013, MOE made it an explicit goal to enhance the quality of education and boost primary and secondary educational attainment rates nationwide. As such, public schools are available throughout the country's governorates for very nominal fees. MOE currently provides around 3,486 public schools, or 56 percent of total schools in Jordan, while the United Nations Relief and Works Agency (UNRWA) provides around 173 schools.[55]

Table 19:

Select Education Indicators

Key Indicators	2010/2011	2011/2012
No. of Primary Schools	3,170	3,223
No. of Secondary Schools (including both academic and vocational)	1,422	1,463
Children in Private Schools (%)	23.1	24.0
Enrollment Rate in Primary Education (Gross %)	81.4	80.8
Enrollment Rate in Secondary Education (Gross %)	12.3	12.6
No. of Public Universities	10	10
No. of Private Universities	17	19
Total Students Enrolled in Universities (B.A/B.Sc)	222,586	245,884
Total Students Enrolled in Universities (M.A/MBA/M.Sc/PhD.)	15,170	14,843

Source: Ministry of Education, Ministry of Higher Education

53 UNESCO Institute for Statistics, Adult and Youth Literacy Factsheet (2012)

54 11Ministry of Education, Education Statistics Report 2011-2012

55 Ibid

Despite the availability of public schooling, private schools are perceived to offer better quality education. In a private setting, students are able to choose from a variety of educational systems, such as the national secondary school certificate (Tawjihi), the International General Certificate of Secondary Education (IGCSE) and the International Baccalaureate (IB) program. For the years 2011-2012, around 24 percent of students were enrolled in private schools, compared with 22 percent in 2009.[56]

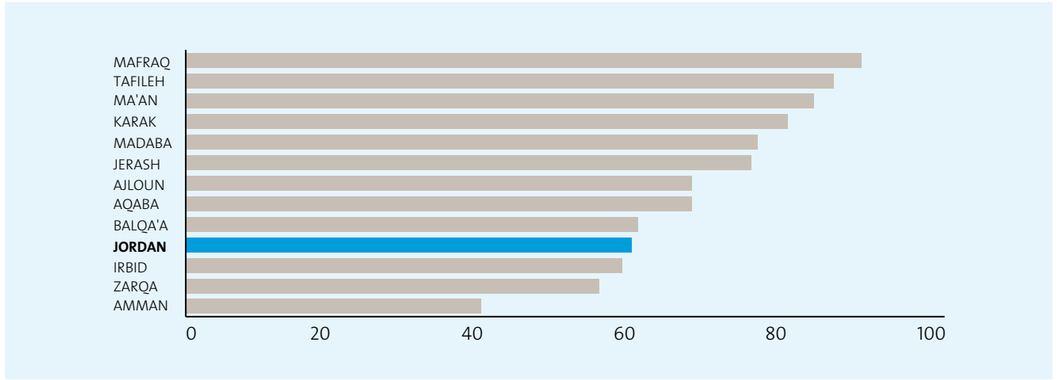
According to the Ministry of Education, for the Academic Year 2011-2012 around 58.7 percent of all schools in Jordan were government owned. In central Jordan, particularly Amman and Zarqa - Jordan's most heavily populated governorates, the ratio of public schools to total schools reached 38.9 percent and 54.5 percent respectively. This does not only reflect a better quality of education in these governorates, but also indicates a relatively wealthier population.

The ratio of public schools in the governorates of Mafraq, Tafileh and Ma'an is the highest in Jordan, which is a reflection of their lower income levels. Overall, enrollment rates in private schools around the Kingdom remain significantly lower than those in public schools, due to the higher costs associated with enrollment in private schools. Although these rates are rising, the increase has been very slow, not surpassing 2 percent over a span of four years.[57]

The enrollment ratio of private to public schools is two times higher for males than females at both the primary and secondary levels. In general, families tend to invest more in their boys' education, given the predominant perception and practice that women must be economically dependent upon the male members of their families. Job prospects for women are also limited to a number of 'socially acceptable' jobs and professions, such as those in health and education as previously mentioned.

Figure 12:

Percent of Public Schools to total Schools per Governorate (%)



Source: Ministry of Education

56 Ministry of Education, Annual Report 2011-2012

57 Ministry of Education, Education Statistics

Table 20:

Total enrollment in primary and secondary schools in 2011/2012 by gender

Gender	Level	Private	Public	Ratio of Private to Public
Male	Primary	176,242	463,801	38%
	Secondary	14,261	87,476	16%
Female	Primary	112,876	499,512	23%
	Secondary	11,778	99,699	12%

Source: Ministry of Education

Although Jordan was able to fulfill notable achievements in the education sector, the quality of education remains to be unevenly distributed among urban and rural regions. Moreover, public schools are believed to be performing poorly in terms of equipping students with the needed skills to become active leaders in their communities. The national curriculum also does not provide students with the appropriate tools for critical thinking and problem solving, and does not adequately address topics in the IT space or skills related to the workplace. Therefore, the skills attained by school graduates are often incongruent with the requirements of the labor market.[58]

"Graduates of both the IT and Scientific streams will stay at home. Everyone will stay at home not matter what they study. After I witnessed the struggle of my son to find a job, I stopped interfering with the younger's decisions. There is frustration in all sides of life here!"

Participants, focus group session – Parents, Mu'tah

58 USAID Jordan Education Program Description

7.2 Primary and Secondary Education

Primary education in Jordan is obligatory by law for all those below the age of 15, under the provisions of Article 10 of the Education Law.[59] In order to facilitate this, public schools provide primary education for free. Once a child reaches the age of six, they are required to enroll in a primary school, and are not allowed to drop out until they complete 10 years of primary schooling. Illustrating this is the high enrollment rate of about 91 percent at primary schools for both males and females. Of these children in primary school, 49 percent are girls and 51 percent are boys, reflecting a fairly even level of basic education. Furthermore, the number of primary schools is growing, advocating Jordan's dedication to maintaining and improving its educational requirements, and meeting the demands of its growing population. As of the academic year 2011-2012, there were 3,223 primary schools in Jordan, compared with 2,986 schools in 2005-2006.[60]

Despite the fact that secondary education is not mandatory by law, it still has a high enrollment rate. Overall, it can be fairly concluded that participation in primary and secondary education across Jordan is strong, with both genders almost equally represented. Moving on, in order to facilitate a smooth and easy transfer for students from primary to secondary education, there is an emphasis on an integrated structure of both levels within a single institution. Of these, 75 percent of them are public and 25 percent of them are private.[61]

Table 21:

Number of Primary and Secondary Schools

Year	Primary Education	Secondary Education	Total
2011/2012	3,223	1,463	4,686
2010/2011	3,170	1,422	4,592
2005/2006	2,986	1,290	4,276

Source: Ministry of Education

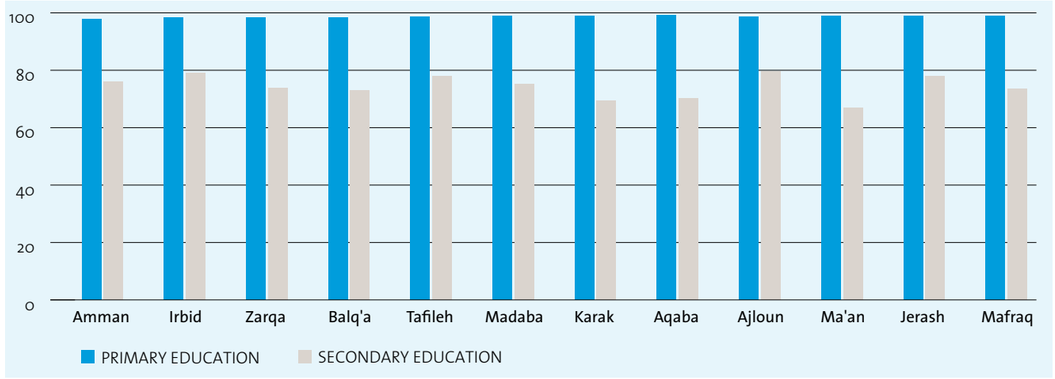
59 Jordanian Education Law, 1993

60 Ministry of Education, Education Statistics Report 2011-2012

61 Ibid.

Figure 13:

Net Enrollment Ratio of Primary and Secondary Students per Governorate (%) - 2011



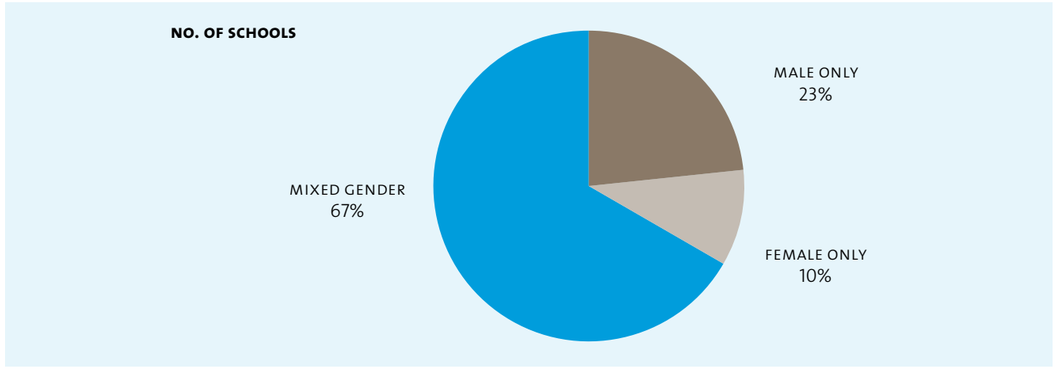
Source: Ministry of Education

Figure 13:Figure 13 reflects the distribution of primary and secondary students amongst the Kingdom's governorates. One can conclude that the Jordanian student body is heavily concentrated in the governorates of Amman, Zarqa, and Irbid, which house a larger population compared to other governorates in the country.

Among both primary and secondary schools in Jordan, a present day phenomenon is the exclusion of education by sex, which makes up a considerable proportion of all the schools in Jordan. In addition to mixed-sex schools, both the private and public sectors offer schools that are gender segregated. Around 23.5 percent of all schools in Jordan are male specific schools, while only 10 percent cater for female students. Although 66.5 percent of schools are mixed-gender, the availability of gender specific schools resolves the concerns of more conservative families in terms of sending their children off to mixed-sex schools. The pie chart below depicts the ratio of gender specific schools to mixed gender schools in Jordan.

Figure 14:

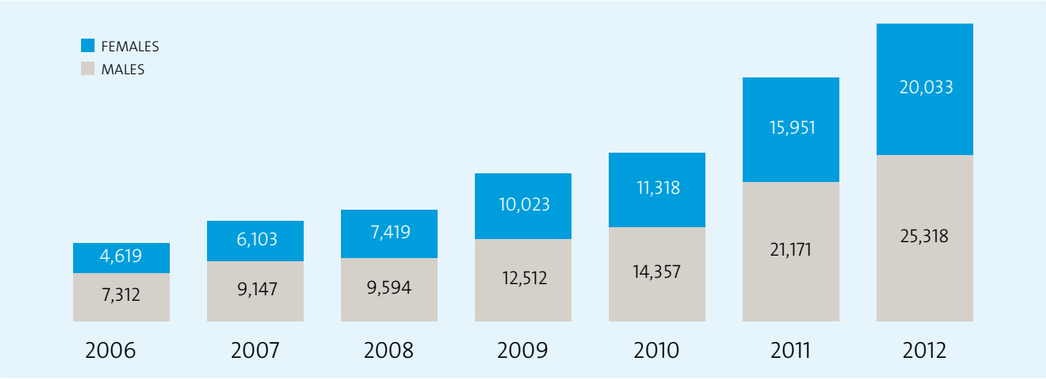
Sex Specific and Mixed Gender Schools in Jordan, 2011



Source: Ministry of Education

Figure 15:

Net Enrollment by gender in the IT stream in high school in Jordan (2006-2012)



Source: Ministry of Education

At the end of secondary school, students sit for a set of official examinations (known as Tawjihi) in order to attain the General Secondary Certificate (GSC), which is an entry requirement by all universities and a pre-requisite for most jobs in the public sector. There is a wide variety of streams that students can choose from. The most predominant streams are those that fall under the Academic secondary schooling, which include Art, Science, and Information Technology (IT). Vocational secondary schools offer streams such as Health Education, Agriculture, Industry, and Home Economics.

Enrollment in academic streams is far higher than in vocational streams, with an 87 percent enrollment rate in 2012. In past years, the Arts stream's female enrollment rate was one of the highest among all other streams. In 2012, 59.8 percent of candidates in the Art stream were females, out of which 40.7 percent successfully passed the GSC test, compared with a 28.3 percent passing rate for male students. As for the Scientific stream, females accounted for 46.9 percent of all candidates, and achieved a passing rate of 67.6 percent, which was significantly higher than the male passing rate, which stood at 58 percent.[62]

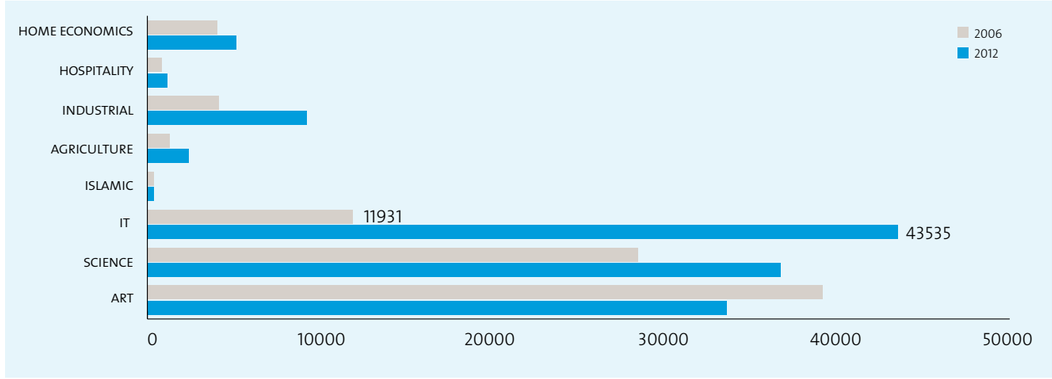
The IT stream, which was introduced relatively recently, witnessed a remarkable 265 percent increase in enrollment rates between 2006 and 2012. In fact, the number of students in the IT stream surpassed that of the Art and Scientific streams in 2011 and 2012 respectively. In 2012, over 45,000 students were enrolled in the IT stream, of which 44 percent were female, compared with 39 percent in 2006.

Focus group discussions with high school students revealed that the majority of students choose the IT stream mainly because the curriculum is easier than those of the Scientific and Arts streams. Their chances of getting higher grades on the Tawjihi exam and securing university admission are therefore significantly improved.

62 Ministry of Education, Annual Report on Education 2012

Figure 16:

Student Enrollment GSC Streams between 2006 and 2012



Source: Ministry of Education

7.2.1 Integration of ICT in Primary and Secondary Schooling

An increasingly large part of the infrastructure in primary and secondary education in Jordan is technology-based. Of all the schools in Jordan, about 99 percent have at least one computer. However, a survey conducted by MoICT, MOE, and the Jordan Education Initiative shows that of the 95,750 computers installed in public, private and UNRWA schools an estimated 8,812 are not used. Around the country, 86 percent of school computers are connected to the internet; 54 percent of these internet connections are broadband-based, and 15 percent are wireless-based systems.

Although these figures indicate high connectivity rates, there exists a significant gap in this technological involvement in education between rural and urban areas. Around 95 percent of schools in cities are connected to the internet, compared to 74 percent of schools in rural areas.[63] The difference in internet usage between rural and urban areas is mainly attributed to limited financial resources in rural areas, precisely in areas where internet permeation has not yet reached absolute levels.

63 Int@j, ICT & ITES Industry Statistics Yearbook , 2012

There is a smaller, but still significant gap between public, private and UNRWA schools in internet usage. Around 85 percent of public schools are connected to the internet, while 89 percent of private schools have internet access, and an astonishing 100 percent of computers in UNRWA schools are connected. Furthermore, 77 percent of teachers own computers at home, with 41 percent connected to the internet, and 57 percent with access to their personal MOE email account. On the other hand, 58 percent of students have computers at home, and only 28 percent of the devices have access to internet.[64]

A few challenges that schools are facing include slow internet connections, lack of periodic maintenance of old computers, and the lack of Arabic content for educational purposes. The main goal is to integrate technology within the educational systems, in order to develop skills and support creativity and innovation in students. The Jordanian government recognizes the importance of connecting schools to the internet, and is currently focusing on enhancing e-learning and fostering e-curricula to improve the educational sector and support creativity and innovation. Not only do computers with

64 MoICT, JEI, MOE, ICT Use and Penetration in Schools of Jordan, 2012

internet access benefit the students and teachers at schools, but also the entire surrounding communities, as schools are turning into centers that offer training programs for local community members.

This technological education has been well supported by government programs, such as ERFKE I, which started in 2003 and ended in 2009. This program aimed to further improve and maintain high quality education institutions in Jordan, through the addition of computer labs, science labs, classrooms, and even the construction of new schools. Other initiatives to help integrate ICT in schools across Jordan include EduWave, Jordan Education Initiative, and Madrasati. All of which aim at enhancing the learning environment of the students. *(education initiatives are presented in section 7.4 and Annex III)*

This difference in internet penetration and computer presence is much smaller than the difference in mobile-based infrastructure. Only 71 percent of public schools have a phone line, compared with 92 percent of private schools, but 8 percent of public schools have a mobile phone line, compared with 76 percent of private schools.[65] Public schools in Jordan, while incorporating technology at an increasing rate, lag significantly behind private schools.

Overall, the education system in Jordan is adequate, supporting kids at high rates from basic up to secondary education, with high literacy rates throughout. The foundation provided for Jordanians through secondary education is solid, but in terms of ICT, the educational system remains to be somewhat lacking. The 2007 study revealed that despite developments in the ICT sector, and the increased access to the internet, particularly at schools, a number of challenges continued to hamper schools from incorporating ICT tools into the learning process. These included limited financial resources and lack of training. This was further affirmed by high school students in the focus group sessions, who also added that ICT tools must incorporate practical and applied elements.

65 Department of Statistics, Jordan in Numbers 2012

7.3 Higher Education

Higher education has been a national priority that aims at economically, socially, and knowledgably developing Jordanian citizens. A number of developments include the growing number of higher education institutions, diversified range of study programs, the operation of foreign universities in Jordan, the increasing number of enrolled students and faculty members, and finally the rise in financial spending on this sector.

As of 2012, 10 public universities, 19 private universities and 51 community colleges were operating in Jordan. This increase of educational institutions was accompanied by a hike in the number of enrolled Jordanian and foreign students. Between 2005 and 2012, the total number of undergraduate students across Jordanian universities increased by almost 41 percent. Private universities have a fairly higher tuition than public universities. Private universities have also been viewed as profit-driven, with student admission based on their ability to pay. The requirements for students to be accepted into private universities are lower than those required by public universities. However, it is not certain whether the quality of "output" of public education is better than that of private education. A prevalent trend existing among newly admitted university students is enrolling in the more expensive parallel programs at public universities than attending a private university. This illustrates that public universities have a better reputation than private universities; however, this is not based on objective and concrete information.

In 2012, 51.3 percent of undergraduate students, 45.3 percent of master's students, and 36.6 percent of Ph.D students were females. A divide in the choice of majors pursued between males and females is present. Engineering has the lowest percentage of females at 32.6 percent, whereas, Education Sciences and Teacher Training has the highest percentage of females enrolled at 81.8 percent. This pattern has been observed over the years. In 2005 for example, 24.4 percent of engineering students and 82.9 percent of Education Sciences and Teacher Training students were females.

Community Colleges offer two- or three-year programs in specialized career-oriented training and practical education that prepare their students for work in middle-level professions. Some of the programs offered are education, commerce, computer studies, medicine, pharmacology, hotel management, interior design, social work, nursing and midwifery. Students complete their studies once they pass a comprehensive government exam at the end of the course. Al Balqa Applied University, a Jordanian public university, supervises and affiliates all public Community Colleges around the country.

During the academic year 2011-2012, 57.2 percent of the student body studying for a B.A. or a B.Sc. in public universities was female, compared to 35.4 percent females enrolled in private universities. As for the master's degree programs, 48.9 percent and 31.7 percent of students were females in public and private universities respectively. As for the Ph.D level, 38.6 percent of students attending public universities were females, whereas, 24.9 percent of students in private universities were females. It is obvious that as the level of education increases, so does the gender gap.[66]

"Males' education and the major they choose are much more important than those of females' because females are eventually not 'ours'. They will get married and go to their husband's house."

Participant, focus group session – Parents, Irbid

Table 22:

Distribution of Undergraduate Students According to Field of Study

Major	Year					
	2005		2008		2011	
	Total	% Female	Total	% Female	Total	% Female
Education Sciences & Teacher Training	23,690	82.9	24,927	82.4	19,719	81.8
Law	6,001	28.5	6,794	25.5	5,110	33.3
Commercial & Business Administration	32,415	31.7	37,850	35.3	63,895	38.4
Mathematics & Computer Science	22,105	38.3	20,307	46.8	22,285	48.3
Medicine	3,229	30.3	3,609	42.7	6,178	39.4
Pharmacy	5,667	51.1	7,300	57.8	7,824	68.3
Engineering	20,561	24.4	28,379	29.8	39,954	32.6

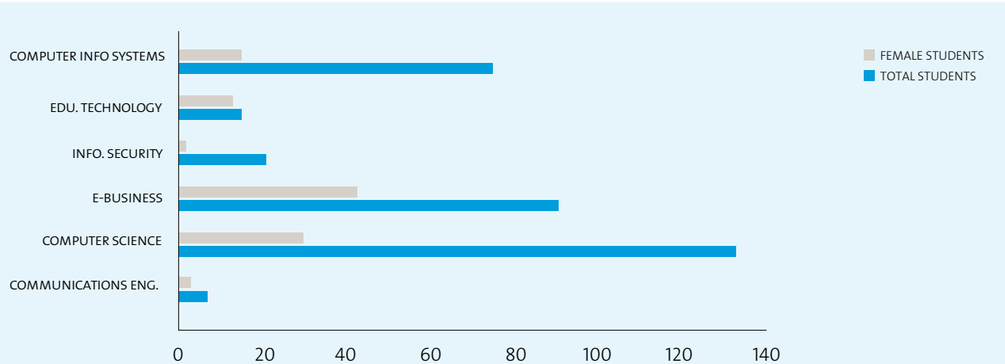
Source: Department of Statistics

66 Ibid

Furthermore, postgraduate degrees related to ICT include Communications Engineering, Computer, E-business, Information Security, Educational Technology, and Computer Information Systems. The most popular degree among females is Computer Science, whereas, Information Security has the lowest number of females.

Figure 17:

Postgraduate Student Distribution According to ICT Related Fields



Source: Department of Statistics

Field research affirmed that the choice of study by females is influenced by a number of factors. These include: preferences of parents, financial abilities, high school grades, and personal inclination among others. The majority of ICT female university students who participated in the focus group discussions affirmed that their field of study was a choice they personally made. They foresaw ICT as a relatively easy field to score higher grades in, an area that will develop some of their skills, and a field that will present a wide spectrum of 'suitable' job opportunities. The link between the choice of study and the prospects of work was also highlighted during the parents' focus group sessions. All parents affirmed that females should be 'careful' when choosing their fields of study because not all areas are 'suitable' for women.

As such, they feel obliged to give 'advice' and 'direction' to their daughters. All parents also stated that the choice of study for males is not restricted by what they can do in the future because there are far fewer limitations that restrict job choices for males. Another factor that parents take into account is the location of the university. A limited number of parents accept for their daughters to travel long distances, and to reside away from home. This also limits university options for women to those that are nearby and subsequently what they study.

7.4 Education Reform & Initiatives

In order to further improve Jordan's educational system, several initiatives and programs have been set in place. The main initiatives are outlined below, and mostly work on incorporating the use of technology into the educational system.

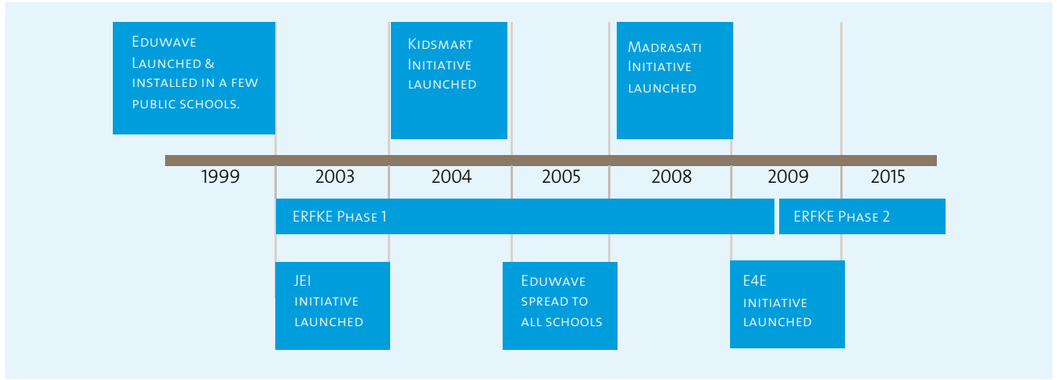
Jordan has been analyzed and widely discussed in international literature as a leader in the region in terms of developing its ICT infrastructure and promoting ICT as a tool to improve human capital. Jordan has systematically set in place a regulatory system through the National Center for Human Resources Development to monitor all activities in its reform program–the Education Reform for the Knowledge Economy (ERFKE) which will be expanded during the next phase scheduled for 2009–2015. [67]

67In the Arab states, the implementation and use of ICT in education often lags behind other social and economic spheres. In many states, children and youth tend to learn more about how to use various ICT tools informally outside the school system. However, ICT is being integrated into educational institutions and classrooms in Jordan. Jordan has specific objectives or courses at all three levels of primary, lower secondary, and upper secondary education regarding the inclusion of basic computer skills and curricula. The inclusion of recommendations for ICT–assisted instruction in the national curriculum of Jordan is not the same as in the other four countries. Jordan is similar to Oman and Qatar and its heavy integration across subjects for all grades in primary through to upper secondary education.[68]

Annex III lists the main initiatives that have been implemented and that relate to education in the ICT sector.

Figure 18:

Timeline of educational initiatives in Jordan (1999-2009)



Source: Ministry of Education

67 UNESCO Institute of Statistics and the Talal Abu Ghazaleh Organization, ICT in Education in Five Arab States

68 Ibid

7.5 Market Needs in Terms of ICT Technical and Soft Skills

There is a mismatch between the output of the educational system in Jordan and the demand of the ICT labor market. A recent survey carried out by Int@j indicates that 75 percent of employers face difficulties finding well-educated resources in the labor market, including those specialized in the core and highly demanded areas of computer sciences, computer information systems, and software engineering. Employers also indicate that a number of life skills that are needed for the non-technical jobs are not addressed by most universities. These include communication, English language and presentation skills, in addition to creative thinking, time management, problem solving, team work, and workplace ethics. Most universities require IT students to take project management, communication skills, and technical writing courses. Other soft skills, such as interpersonal, management, and English language are offered on a limited scale by universities. Career advisory services also remain lacking, leaving students unaware of the evolving trends in the ICT market.[69]

The 2007 study revealed that while many educational institutions do offer some form of career counseling, it was described as weak and ineffective. This was further affirmed by this study. ICT can be used as an effective tool for improving access to information about the labor market and therefore enable career counselors to conduct 'educated' assessments of students and the careers they wish to pursue.

Box 4:

HR Challenges in the ICT Sector

Lack of Critical Soft Skills

- Communications
- Presentation
- Innovation and creativity
- Leadership and management
- Teamwork
- Time management

Lack of Support Programs & Skills

- Business & management
- Project management
- Sales and marketing
- PR & communications
- Human resource management
- Technical writing

Source: Int@j

Table 23:

Relevant majors as indicated by ICT companies in Jordan and their market availability

Major (ranking based on relevance to companies)	Market Availability	
	Easy	Difficult
Computer Information System	18%	37%
Computer Science	22%	37%
Software Engineering	30%	40%
Information System Engineering	19%	30%
Computer Engineering	26%	14%
Management Information Systems	33%	23%
Business Information Systems	44%	19%
Telecom Engineering	37%	18%
Electronic Engineering	37%	11%

Source: Int@j

69 Int@j, ICT Sector Competencies, Skills, and Needs Assessment, Jordan, 2012

Quantitatively, the output of the educational system will meet the demanded areas of study required by the majority of ICT companies as illustrated in the table below. As indicated earlier however, the quality of this output in terms of the hard and soft skill is likely to fall short of the labor market requirements. A study by the European Training Foundation found that the ICT sector in Jordan could benefit substantially from an improvement in the quality of education and basic skills competencies. Bridging the education and labor market divide in terms of the needed education and skill sets is also another challenge that needs to be addressed.[70]

Table 24:

Expected number of ICT graduates for the academic year (2012-2013)

Major	University		Total Number
	Public	Private	
Computer Engineering	445	85	530
Technical and Electronic Engineering	547	211	758
Computer Science	798	470	1,268
Software Engineering	235	338	573
Computer Information Systems	626	311	937
Business Information Systems	81	0	81
Accounting Information Systems	446	23	469
Management Information Systems	852	428	1,280
Total Number of ICT Graduates	4,030	1,866	5,869

Source: Int@j

70 The European Training Foundation, Women and Work in Jordan: A Case Study – 2010.

7.6 Gap between Market Demand and Academia's Supply

According to a number of stakeholders in the ICT sector, teaching and learning approaches in the education system generally do not provide students with an experience that prepares them for the world of work. In particular, the employability attributes of graduates are considered to be weak and lack the emotional intelligence needed for managing work place relationships. Graduates are also considered to have good levels of theoretical knowledge but without the practical skills and methodologies of the workplace which leads to additional training overhead on employers. Many graduates also have weak English language communication skills, thereby significantly impacting their employability prospects. ICT graduate programs also do not pay sufficient attention to the development of soft skills and employability attributes such as communication skills, approaches to problem-solving, managing own time, and accepting responsibility. Graduate guidance and training linked to the ICT labor market information is also considered to be inadequate.

The mismatch between the supply of academia and the demand of the workforce was strongly highlighted in 2007. This gap arises from the lack of both the technical and the soft skills that are needed by the sector. Collaboration between academia and the private sector was also seen as weak. These results were further affirmed by this study. Lack of collaboration and lack of needed skills continue to persist.

7.6 Weaknesses in the educational system

The majority of participants in all focus group sessions indicated that the teaching methods adopted by universities depend on rote learning with a higher focus on the grades rather than the learning outcome as a whole. The ability to apply theories practically is also weak, given that the majority of courses lack a practical training part. All the participants in the students and unemployed graduates groups described the curricula taught in universities as outdated as it offers programming languages that are no longer used, and old textbooks that are presently irrelevant. Professors in many instances are also unaware of the developments that take place in the ICT field, signaling a clear disconnect between business and academia. A limited number of students praised a professor or two for exerting extra effort to stay updated.

The majority of students also mentioned that their English language skills are very weak, which is a major limitation, given that English is the language of instruction in the various ICT study fields. They also indicated that most professors do not speak or write in English except when introducing terminologies, or during examinations. As such, first-year university students are faced with the dual task of understanding the new ICT content and translating the content into a language that they understand. This has been very cumbersome for the majority of students. Some students said that they had to use free online translation software in order to read the required study material, and in many instances, the translation was not understandable.

"Books and references are all in English. Our foundation in English is very weak. We simply do not understand this language, and our professors do not offer much help."

Participant, focus group session – graduates, Tafileh

Focus group sessions also revealed that ICT senior students find it challenging to execute their graduation projects. They are faced with difficulties pertaining to project management, applying the required programming language, building and designing networks. All participants agreed that the majority of students resort to specialized centers to support them with their graduation projects for a fee that could exceed JD1,000 per project.

"After I finished my project, I discovered that the required programming language for execution was never taught in class. When I consulted my professor, he suggested that I teach myself the language or go to a private training center."

Unemployed ICT graduate student

The majority of ICT employees faced significant challenges when employed for the first time. They stated that the education they received at universities did not equip them with the needed skills and many had to acquire additional skills by enrolling in private training centers, which they attended after working hours. This training was critical for them to get employed and retain their jobs.

The majority of participants stated that it is essential to complement university education with training that is offered by private training centers. These centers also award local or international certificates in programming languages, networks, operating systems, and other related fields that are of high demand in the labor market. All female students asserted that attending these courses, which are critical for their employment prospects, is difficult for three reasons: 1) they are expensive, 2) they are held late in the evening, and most females are not allowed to stay out late, and 3) most training centers are in Amman, and those residing in other governorates cannot attend the courses. As such, female students are at a disadvantage, and their chances of joining the workforce are therefore jeopardized.

Interviewed ICT faculty members also stressed that the curricula need to be revised and updated, and agreed that the outcome of the educational system in Jordan is not aligned with labor market requirements. The curricula must also work on improving the students' life and personal skills, which are seen to be lacking. More effort must also be exerted at the high school level to improve English language skills, a challenge that most university students face.

According to the field research, the wide gap between the educational outcomes of universities and the requirements of the ICT labor market are caused by the following:

1. Educational curricula are outdated and unable to keep pace with the rapid development in the ICT field. This is attributed to lack of resources, and the limited capabilities of most faculty members to stay updated.
2. Traditional teaching methods that depend on rote learning, and neglecting the practical training aspects.
3. Weak English language skills of most students and a good number of faculty members, which makes the proper instruction of many ICT courses very challenging.

7.6.2 Academic counseling

The majority of participants in the students' groups stated that academic counseling in some schools begins toward the end of grade 10 to support students in choosing an academic stream (scientific, arts, information technology, and a variety of vocational streams). Eventually however, the choice is determined by their grades. Students with the highest scores are usually advised to enroll in the Scientific stream, followed by the Arts, and then the Information Technology stream. Those with lower grades enroll in vocational programs. The school's administration in many instances may organize exploratory field trips to universities, colleges, and vocational training centers to allow students to explore their interest in work and major of study.

Some of the participants and interviewed professors also pointed out that academic counseling is almost non-existent in universities, especially after the online registration system was introduced in most of them. Students now do not need their advisor's approval to register for courses. The majority of students also indicated that they prefer to ask older students for advice rather than seek the counsel of their assigned advisor. Few may have even asked a professor for help, but in most instances they provided them with inaccurate advice.

"Academic counseling is limited because of the growing number of students and the limited financial abilities of universities to put a proper system in place."

Interviewed ICT professor

Field research confirmed that academic counseling programs are weak and insufficient, and are limited to lectures and field trips. Students are not counseled on a one-on-one basis and therefore, counseling programs are generic in nature and do not cater to the individual interests, inclinations, and capabilities of each student.

Students are also unable to make informed decisions about their areas of study because information on the demand and supply of skills and jobs in the labor market is not readily available. Students therefore choose their fields of study without knowing their prospects for employment. Efforts that link business with academia are also weak and fragmented, and do not fall under a concerted and systematic initiative that all students can benefit from. Professional and academic counseling programs in general are ineffective, and are generally another main reason for the mismatch between labor supply and market demand.

"It is very important for students today to have access to qualified mentors to provide them with guidance in study and work. Students today do not have access to any information on the job market to enable them to make educated and calculated decisions."

Interviewed ICT entrepreneur

7.6.3 Private sector involvement

There is a weak link between academia and the private sector. The relationship is limited to some unstructured and ineffective on-the-job training of graduates. In general, there is a clear lack of private sector initiative towards establishing stronger relations with the varied educational institutions despite the fact that these institutions supply the market with the labor force. Joint programs between the private sector and some universities are mainly limited to holding job fairs and some awareness programs that continue to generate less than desired results in terms of job placement and bridging the gap between business and academia. University faculty and business leaders also lack any form of communication channels due to universities' bureaucratic restrictions. Joint training programs are also weak and unstructured, and do not qualify students for the labor market. While the number of universities has also grown, and with it the number of prospective student trainees, the number of private venues that can provide the needed training remains to be limited. Companies are also mostly located in Amman, which makes internship, training and apprenticeship programs difficult for many students that reside in the various governorates, and especially females.

"There are many reputable universities that are located outside Amman, but the private sector is mostly concentrated in Amman. It is therefore very difficult for these universities to develop relations and programs with the private sector."

Interviewed ICT professor

The majority of focus group participants indicated that while still studying they had little or no information on any project in the ICT field that was implemented by a private or a public institution. Instruction was therefore theoretical and rarely involved practical training elements. A limited number of participants also indicated that their universities organized training workshops in ICT or held a career day in which ICT companies participated and extended jobs offers to graduating students. All the participants in the employees focus group session indicated that a number of universities require their students to undergo some form of on-the-job training at a private company in order for the students to complete their course requirements. Nonetheless, the majority indicated that companies do not have a proper training program in place for those students, and no proper evaluation is undertaken by the university to assess the effectiveness of this training. This, as they indicated, is a reflection of the weak relationship between academia and the businesses sector.

"New graduates lack practical experience. Out of the numerous universities in Jordan, only two or so offer a solid education in the ICT field. This makes it very difficult to hire graduates of most universities in Jordan as we find them lacking education and skills. There have been numerous attempts by private and international companies to support curriculum development, but these attempts have failed because universities suffer from bureaucracy."

Interviewed company manager

Interviews held with ICT faculty members affirmed that there is a wide gap between the output of academia and the requirements of the labor market. Foremost, universities in Jordan, and due to severe financial limitations, are unable to attract qualified instructors that are up to date with the latest developments in the ICT sector; second, the majority of students have very weak English language skills and find instruction in English very challenging; third, university administrators lack the drive and motivation to upgrade and overhaul the educational process.

'University administrators in Jordan are focused on issues related to accreditation, campus violence, and the lack of financial resources. Very little focus is placed on developing curricula and study plans."

Interviewed ICT Professor

7.7 'Bridging the gap' initiatives

To help address the lack of soft skills amongst graduates, and provide job placement support, a number of programs and initiatives were instituted, the most salient of which include the Graduate Internship Program (GIP), the Bridge Program, and the E4E Initiative.

7.7.1.1 The Graduate Internship Program (GIP)

The Graduate Internship Program (GIP) was done in cooperation between MoICT, the Ministry of Labor (MoL), Int@j, and the ICT sector. GIP is an 18-month employment program where the Jordanian government provides a subsidy of 50 percent of each intern's salary during his/her first 12 months of employment, and a 25 percent subsidy during the next six months. During this period, interns receive employment at a private sector company for 18 months, with a monthly salary of JD300. The company has these salaries subsidized at a 50 percent level (up to JD150) for 12 months, and a 25 percent subsidy (up to JD75) for the last 6 months. The company provides available benefits to the interns, such as health insurance, while the government provides soft skills training. According to an interview with MoICT, the GIP cannot specify or impose the number of interns a company hires, or even which governorates the interns are hired from. To support efforts to spread the benefit of the program throughout the country, Int@j requested that the 50 percent subsidy be raised to 60 percent if companies hire from the governorates, or a specific number of females.

The objectives of the GIP are to provide graduates with soft skills training, as well as employment. This, in turn, is hoped to relieve some of the unemployment among information technology and telecommunications engineering graduates. In doing so, the long-term objective is to promote economic development, through helping provide employment through incentives (subsidies) to companies. Since its launch in May 2009, the program has appointed over 980 graduates in more than 185 companies in the Jordanian private sector. There are no total results for the program as it is still ongoing.

In 2010, Microsoft Jordan and Int@j announced the launch of the Community Technology Skills Program (CTSP), as part of GIP. Microsoft extended a US$130,000 grant to support the training and certification of up to 200 higher-education students using the latest innovations from Microsoft, and which could ultimately reach up to 500 students through live meeting and broadcasting training sessions.[71]

According to Int@j's 'ICT Sector Competencies, Skills, and Needs Survey, Jordan 2012', 70 percent of companies that participated in the survey benefited from the GIP. The remaining 30 percent that did not benefit from the program mentioned one or more of the following reasons: not being approached, not aware of the initiative/ not believing it would be effective, or no business need to recruit new employees.

7.7.1.2 Bridge Program

The program was launched in partnership with the Royal Scientific Society (RSS), MoICT, Amideast, Princess Sumayyah University for Technology (PSUT), Gaming Lab, and the King Abdullah Fund for Development (KAFD) in 2009. Its main objective is to equip ICT graduates with a set of skills that enable them to find jobs, generate a well skilled labor force, and have advantage when competing for recruitment of foreign investment in the ICT industry in Jordan. The ultimate goal of this program is to "bridge" the gap between the educational outcomes and the labor market requirements, so that ICT graduates could find jobs easily. The training course offers a blend of technical, English language, and soft skills training, offered at a subsidized price. The program also offers its alumni the chance to secure a paid half-year internship at a local ICT company.[72]

71 http://www.intaj.net/node/1584

72 http://www.bridgeprogram.jo/AddCounter

7.7.1.3 The E4E Initiative

The E4E future plans include developing an IT Skills Academy, which could also involve the provision of HRD training, guidance and support for the private sector to gain a greater understanding and value of continuous professional development of staff. Communication skills and use of the English language are not always explicit in the statements of competence contained within occupational standards, and is absent completely in consideration of English as a second language. It must be decided how this can be incorporated, either as additional standards, or by reference to separate international frameworks such as the Common European Framework for Reference of Languages, and how this is linked to common language testing programs.[73]

73 Draft Inception Report for the: "Development of Internationally Recognized Qualification Framework for Information Technology Sector in Jordan"

8 WOMEN AND THE ICT WORKPLACE

8

Women and the ICT Workplace

8.1 A Global Context

Demand for jobs in the ICT sector will continue to grow, and the nature of these jobs will also continue to change and evolve. A number of drivers have been identified to shape the workforce of the future: longer life spans, a growth in smart devices, developments in computational systems, evolution of social media and multimedia technology, and the connected global market.[74] As such, ICT clearly shapes this future. The evolving ICT sector is a growing sector for employment, and continues to be driven by creativity, innovation, interaction, and learning that should be equally exciting for men and women. Growth in employment however did not see a similar growth in jobs for women in ICT. In fact, the growth in job opportunities for women in the developed world is declining, which indicates not only entry issues, but also lack of motivation, retention and promotion of women within the sector. Moreover, and despite the fact that internet and computer usage rates are similar for both teenage boys and girls, girls are five times less likely to pursue technology-related careers.[75]

A study conducted by the International Telecommunications Union indicates that in ten years, there will be 2 million more ICT jobs globally than there will be professionals to fill them. Women however, continue to shy away from the ICT sector because it is generally perceived to be a male-dominated industry. Men continue to hold most of the high-value and high-income jobs in this sector. Moreover, the research conducted for this study in both the developed and developing world shows that vertical gender segregation is strongly present in the sector, where women are mostly represented in lower level ICT occupations. On average, it is estimated that women account for 30 percent of operations technicians, 15 percent of managers, and only 11 percent of strategy and planning professionals. There is also substantial room for women holding leadership positions, either on boards or senior management positions.[76]

8.2 Jordanian Women and the ICT Workplace

The ICT industry in Jordan includes activities ranging from computer programming, software publishing, data processing and hosting, installation and repair of equipment to consultancy and management services, manufacturing of electronic components, training and more. It therefore offers many job opportunities given the wide variation in the industry's activities, which require different professional and technical tracks, educational attainment levels and life skill sets. Jobs in the sector can range from those in data programming, system administration, and technical support, all the way to customer relations, project management, business development, sales, and public relations. The ICT sector is growing, and is creating relatively high-quality, well-paid, professional and technical jobs. It also offers a variety of working routines, including tele-working and working from home. This can be particularly relevant for the integration of women in the ICT workforce. Additionally, and while the working environment of the ICT sector is more conducive for male employment (due to long working hours among other factors), documented research shows that gender stereotyping in the ICT sector is less pronounced in the Middle East than it is in Western Countries.[77]

74 www.iftf.org

75 'A bright future in ICT opportunities for a new generation of women'. International Telecommunication Union, 2012.

76 Ibid.

77 The European Training Foundation, Women and Work in Jordan: A Case Study – 2010.

Women in Jordan face employment challenges across all economic sectors, and the ICT sector is no exception. The number of female graduates in the core disciplines that are demanded by ICT firms is high, hovering at around half of the total number as illustrated in the table below. Upon employment however, women tend to be concentrated in support functions or non-technical jobs such as those in administration and marketing.[78]

> "Males can stay updated with all technological advancements. Females cannot travel freely. We cannot go to Amman and attend training sessions as males do, and so we lose our chance to stay updated."
>
> *Participant, focus group session – Students, Tafileh*

Table 25:

Graduates in ICT disciplines from Jordanian universities by gender for the academic year (2011-2012)

Major	Total Number of Graduates	Female Graduates	
		Number	% of total
Computer Science	1,280	617	48%
Computer Information Systems	1,006	499	50%
Computer Engineering	831	461	55%
Software Engineering	639	249	39%
Business Information Systems	151	85	56%
Networking and Communication Systems	79	19	24%
Computer Graphics and Animation	48	28	58%
Information Technology	33	4	12%
Electrical and Computer Engineering	14	3	21%

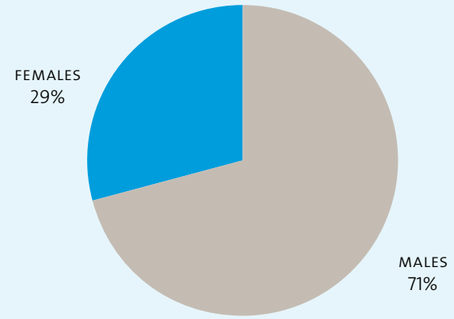
Source: Ministry of Higher Education

Although females account for 48 percent of graduates in the ICT field, they are a far subordinate component in the ICT workplace. A female university professor cited that women outperform their male peers academically, but fare far worse in the job market. Once employed, females are no longer self motivated and driven to perform and achieve because their focus automatically shifts to getting married. Sector figures indicate that women comprise only 29 percent of employees in the IT & ITES fields making this sector a male dominated one.

78 Ibid.

Figure 19:

IT & ITES Employment by Gender



Source: Int@j

The discrepancy in female participation in the ICT workplace is not only limited to the ratio of employed women as opposed to men, but to the type of work taken over by each gender. Around 50 percent of women working in IT and ITES have jobs in the administrative, marketing, sales, and customer care fields, which are areas of work that do not heavily rely on the employee's technical know-how and IT skills. In contrast, almost 50 percent of males work in areas related to managerial, technical and operational fields.

Table 26:

IT & ITES Female Employment Breakdown

Category	Total number	Females	Female (%)
Management	1,396	301	21.6%
HR & Admin	977	473	48.4%
Marketing	314	160	60.0%
Sales	872	212	24.3%
Technical	5,606	1383	24.7%
Operations	1,474	551	37.4%
Customer Care	724	262	36.2%
Total	11,363	3,342	29.4%

Source: Int@j

8.2.1 Perception of Employment in the ICT

The majority of participants in all focus group sessions stated that women have a sizeable potential to work and innovate in the ICT sector, mainly because some areas of this field require analytical skills, which the participants viewed women to be strong in. In addition, some participants mentioned that work in the ICT field requires attention to details, follow up, and accuracy in executing plans and programs, which women are also seen to be highly proficient in. All the participants in the employees' group also supported this opinion through their own work experiences. They cited that their employers entrusted them with several tasks to ensure quality, proper execution, and follow up. Some participants however asserted that capacities and abilities for work in the ICT field vary across each gender, and therefore it is not accurate to label ICT as a sector that is more suitable for men or more suitable for women.

Irrespective of the field of work, field research affirmed that the majority of women seek job security and stability. In their opinion, this gives a strong incentive for employers to continuously invest in female employees and keep them up to date because women are less likely to change jobs.

"Women are very productive, and are more inclined to commit to a job because they seek stability. Investing in female employees is therefore more lucrative."

Interviewed manager, ICT firm

Moreover, ICT is highly regarded and viewed as a respectable field, as those working in it are 'educated' individuals, and therefore ICT is suitable for women to work in, if the working hours are reasonable, and the location of the job is close to home. These findings were also concluded in the previous 2007 study. This is supported by the fact that females comprise 29 percent of the work force in the ICT sector compared with 15 percent across all sectors combined.

Despite some efforts in the educational curriculum aimed at changing the stereotypical image of women as mothers and housewives, this image unfortunately still prevails. Women asserted that their priority is not career advancement, but tending to the needs of their homes.

'Women seek job stability, more than men do. For most women, pay is secondary to stability."

Female ICT employee

Only a limited number of focus group participants cited that tasks at work are classified by gender. According to them, social norms dictate and restrict women from performing some job functions, especially those that require physical activity including installation work, climbing ladders and field work in general. In their opinion, this hampers women's skill development and career advancement. Interviewed female entrepreneurs rejected the notion of classifying tasks by gender.

'The two jobs in the ICT field that women do not desire are 'operations' and 'technical maintenance', but these two are just a drop in the bucket compared with the wide spectrum of job opportunities in the ICT field that are available for them to pursue."

Interviewed ICT Professor

8.2.2 Gender Mainstreaming in the ICT Workplace

To be able to respond to the evolving needs of the ICT sector, human capital must be trained and nourished in a non-discriminatory manner at schools, universities, and 'applied' schools. Research has shown that girls are inclined to choose careers through which they can make a difference such as healthcare, education, and medicine.[79]

Jordan offers a myriad of opportunities in a number of high value-added industries including medical, healthcare, education and higher educational services that appeal to many female entrants into the labor market. Diffusion of ICT into those industries can therefore play a major role in increasing the penetration of women in the ICT sector. Jordan's limited labor force, when compared to others in the region, also supports the argument that focus must be made on ICT sectors that are knowledge-based, and have high added value that can enable Jordan to develop and maintain a competitive edge. As such, sectors in which Jordan has a traditional competitive advantage can be strengthened and developed through the development of intersections between ICT and those sectors.[80]

79 'A bright future in ICT opportunities for a new generation of women'. International Telecommunication Union, 2012.

80 'Development of Jordan national information and communications technology strategy (2012-2016)', Danish Management A/S. March, 2013.

Narrowing the gender gap in the labor market was a main driver of economic growth in Europe during the past decade. In regions where the gender gap in economic opportunities is high, economic costs rise significantly. These costs have been very high in Arab countries, where the gender gap is the widest in the world. Gender equality is therefore a longer-term driver of competitiveness and equity that is becoming more important in an increasingly globalized world.[81] Studies have also shown a strong link between women in leadership positions and an improved business performance. Companies with a greater gender balance in leadership positions tend to generate better financial results as balanced teams are inclined to make better informed decisions, which lead to better risk assessments and more successful outcomes. As such, the competitiveness of the ICT sector in an economy is driven by how well it educates and utilizes its human capital in a non-discriminatory manner.[82]

Creating a conducive and an enabling environment for both girls and women is imperative for engaging women more significantly in the ICT sector. Foremost, training and career support must be extended at varied levels to ensure that the labor force has the needed skill sets for the evolving ICT sector. At the entry level, support can be provided through education, training, apprenticeships, internships and more. At the mid career level, this support can be provided through training to facilitate promotions. At the management level, this support can be extended through mentorships, and skill enhancement programs. In parallel, effort must be exerted to increase awareness amongst parents, teachers and career counselors about the viable opportunity for women to pursue careers in the ICT sector.

A study by MoICT in 2009 indicated that the ICT sector created a myriad of job opportunities found to be suitable by women, and improved the ability of the Jordanian economy to benefit from a large pool of educated females and achieve a better gender balance in the workforce. ICT reduces the need for physical activity that is not favored by women, and creates more professional white-collar jobs. The diffusion of ICT was found to have positively impacted the gender balance in a number of sectors. This was captured through a simple correlation conducted by comparing the percentage of female employees to the diffusion of ICT. This correlation stood at 0.902, indicating an extremely strong relationship between ICT diffusion and female employment, where 0 means almost no chance for women and 1 means equal opportunities between genders to work for the same job.[83]

Table 27:

Correlation between ICT diffusion and female employment by sector

Sector	Correlation
Manufacturing	0.91
Education	0.91
Health	0.92
Financial Services	0.70*
Wholesale and Trade	0.91

Source: Ministry of Information and Communications Technology (2009). Assessment of the economic impacts of ICT in the Hashemite Kingdom of Jordan project: final report.

*This figure is believed to be underestimated due to accuracy of the available data used

81 http://www.worldbank.org/en/topic/gender/overview

82 'A bright future in ICT opportunities for a new generation of women'. International Telecommunication Union, 2012.

83 Ministry of Information and Communications Technology (2009). Assessment of the economic impacts of ICT in the Hashemite Kingdom of Jordan project: final report.

8.2.3 Success Stories

Maha Muasher – *CCNA and CCNP certification holder*

Maha Muasher graduated in 2008 from Mutah University as a computer engineer. When she decided to specialize in IT, her family and friends advised her not to because they believed it was a very demanding field. She insisted on her choice of study and faced all these objections with determination. She adds, '*I was never fazed by the constant reminders, labeling IT as a very challenging field of study for a female. On the contrary, I was always willing to go the extra mile and excel in a difficult yet intriguing male dominated area of interest'*. Maha enrolled in CISCO Networking Academy during her years at university because she always sought to excel and learn. She described the Networking Academy courses by saying, *'Offering a wide range of topics not taught in the credited university hours, I jumped at the opportunity to learn from CISCO Academy about hardware products.'*

While still a student, Maha understood the big challenges that she might face in a field dominated mainly by males, so she completed four levels of CISCO Academy and passed 12 examinations for each level. Today, she holds the CCNA and CCNP certifications, which made her an expert in configuring routers and switches. These qualifications, allowed her to secure a job at the Telecommunications Regulatory Commission (TRC) and she has been working there for two years as an IT Regulatory Officer. She concluded by saying, '*I believe I am the product of CISCO Academy in the fullest sense. The program smoothed the ride of my postgraduate studies in Computer Engineering and gave me the chance to be sel ected out of 25 program colleagues who applied for my job. There is no staunch supporter of this academy more than me. I never hesitated to mediate for having Mu'ta University adopt the Academy's program to* open closed doors for more female IT students.'

Candide Kirk – *Quirckat.com*

Quirkat is a multi-platform video game development company that was established in late 2004 at the iPark ICT business incubator in Amman. At the time, the content industry across the Arab world was in early infancy and we were just starting to see Internet connectivity and mobile penetration reach encouraging levels, but by and large the *biggest challenge for us setting the company up was finding legitimacy in a piracy ridden region.*

As the company grew and our projects and games got more complex in technology and art, our mission shifted into building the team and finding the right resources with the raw talent to deliver international quality games. *Finding talent remains one of the biggest challenges.* One of the more bizarre things that happened along the way was that we had a high turnover of male employees and a very loyal base of females, and so today, entirely by coincidence, and with the exception of my business partner, the team is entirely made up of very skilled young women who now have international game credits under their belts.

A relaxed and friendly work environment that empowers women is a big factor and I would strongly encourage women in technology and sciences who find themselves in leadership positions to try to influence their workplaces to encourage more women in ICT. Earlier this year Quirkat released our first Sony published PlayStation3 game - Pro Foosball, a sports title nonetheless - and *we were super proud that the entire artistic, technical and design vision for the game was led by a team of Jordanian women.*

Fida Al Taher – Zaytouneh.com

Fida established **Zayotuneh.com** in 2011 as a video production company specializing in producing short tutorial cooking videos for digital media. The videos are filmed in full HD, and are between 45 seconds up to three minutes long, where only the chef's hands preparing the meal are shown, which enables dubbing the videos in any Arabic dialect as well as other languages. The company produces +80 video recipes a month and already has +700 recipes its our library. Zaytouneh aims to become one of the world's top online destinations, and one of the largest libraries for short and illustrative cooking tutorials and related content through multi-platforms, including websites, mobiles, and applications.

'Although emerging markets come with more challenges, they also come with better opportunities'. The ICT market in the region is fertile, and innovative ideas have room to flourish and succeed. Fida was able to make it this far because she was determined to succeed. '*I was blessed with brilliant mentors, and eventually good investors*'. Challenges she faced were due to lack of data, lack of regulations that protect intellectual property, and creating and maintain a good team and the relaxed intellectual property protective rules.

The best piece of advice she can offer is not to be afraid to ask questions, since they might prevent start up entrepreneurs from making mistakes. Fida also asserts the need to '*find yourself a good mentor, someone who challenges your ideas and business model'*.

9 BUSINESS INCUBATORS

9

Business Incubators

Business incubators help new entrepreneurs and start-up businesses overcome the uncertainty and financial burdens that come with starting a company. Incubators offer physical work space, finance, mentoring, and other special services depending on the location and the sector the incubator covers. The main goal of business incubators is to increase the probability of success of startups by offering an instructive and supportive environment for the entrepreneurs during the critical stages of growth. Incubators work towards decreasing the cost and time needed for the business to start sustainably growing.

An InfoDev/World Bank research project identified around 6,000 business incubators around the world, of which very few were found to be focused on women. In the MENA region, the project identified only 90 incubators, half of which are in Iran, and only one woman business incubator in Morocco. It was found, in general, that there is a lack of knowledge about women entrepreneurs, and subsequently women business incubation. Policies that support entrepreneurship were also found to be gender neutral, and wherever support has gender aspects it was generally found to be provided by international organizations and not national governments.

InforDev/World Bank made a number of recommendations to support women business incubation efforts:[84]

- Develop a training package that supports women entrepreneurs
- Promote initiative to support women business incubators: deepen, widen
- Raise awareness for the need to promote women business incubators
- Improve marketing strategies to attract more women in business incubators
- Promote networking among women business incubators: web portal and workshops (training of trainers)
- Produce publications on Women Incubators and Entrepreneurship (policies, programs, facts, locations, programs, challenges, problems, needs, etc.)
- Produce a guide for Starting and Managing a Women-focused business Incubator

Annex IV provides a summary of the main business incubators in Jordan.

84 "Gateway to Economic Development through Women Empowerment and Entrepreneurship" – World Bank project commissioned by InfoDev.

10

ICT DEVELOPMENT POLICIES, STRATEGIES AND PROGRAMS

10

ICT Development Policies, Strategies and Programs

In order to provide a solid foundation of ICT knowledge in Jordan, the government has worked to establish both a strong infrastructure as well as a solid technological education system. This has been done through the implementation of several initiatives. Programs have also been set in place to promote greater involvement in the ICT industry, in order to foster economic growth in this sector.

The technological infrastructure in Jordan is strong, founded in above-average mobile penetration rates and gradually increasing internet penetration rates. To improve this, the Jordanian government has taken several steps. One is the decision to establish a National Broadband Network as a tool of the government to provide organized ICT services such as E-Government, E-Health, and E-Education policies. However, this network is still incomplete, and finishing this network would allow for easier implementation of ICT-related government policies. Also, another step taken for the development of the ICT infrastructure is the creation of Knowledge Stations throughout the Kingdom, part of a program that has been set in place since 2001. These Knowledge Stations help foster greater ICT knowledge, develop ICT-related skills in Jordanians, and assist people participating in e-government, and computer services. All of these initiatives and policies are designed to strengthen the technological foundation of Jordan.

Essentially, INT@J was the first institution to gather important data and statistics that are relevant to the ICT sector. INT@J worked on creating a series of national strategies, including the REACH initiatives, which focused on the growth of the information technology industry in Jordan, strengthening the sector's competitiveness on the global market, and forming strong partnerships between the public and private sectors.

The main recent initiatives that aim for the development of the ICT sector are listed in Annex V.

10.1 National ICT Strategy (2013-2017)

MoICT has set in place a national strategy for the telecommunications and IT sector for 2013-2017. The strategy aims to increase the contribution of ICT to economic growth in Jordan, particularly the growth of high value-added exports, as well as creating sustainable employment opportunities. Through this strategy, the government intends to protect intellectual property rights, develop the job skills of Jordanians for the sector, support of marketing, and regulation of the radio-frequency spectrum.

Furthermore, the government put an emphasis on ICT as an engine of economic growth. Hence, the strategy works to facilitate cooperation between IT and other high value-added sectors, disseminate the latest ICT in those sectors, and support the development of electronic content in Arabic. The strategy also emphasizes the importance of having a competitive industry for achieving its objectives, and states that a competitive business environment helps to eliminate structural barriers, and allows Jordanian talents to compete. It also recognizes the importance of maintaining a high quality infrastructure similar to those found in competing economies to provide a platform for innovative ideas and products to flourish and compete locally and globally. The strategy also emphasizes the importance of aligning educational outcomes with the sector's evolving requirements, given that the educational system in Jordan has not maintained alignment with the demands of the ICT industry. It also stresses on the importance of developing intellectual property in Jordan, and the need for the ICT industry to shift towards becoming a knowledge-based industry. The ICT strategy also covers ICT diffusion into other sectors to improve efficiencies, create jobs, promote exports and propel economic growth. Looking ahead, the strategy aims within the next three years to double the size of the sector to reach US$3 billion, create 35,000 jobs, and increase the internet penetration rate up to 50 percent.

It is not apparent that gender mainstreaming has been adopted during the development of the strategy. This can be attributed to the lack of both gender-segregated data, and gender development objectives at the sector level. This makes it difficult to mainstream gender into the strategy and assess its implications on the women that are working in the sector.

10.2 E-Government Program

The e-government program was launched in 2000, with the main objective of developing Jordan both at the social and at the economical levels through access to government electronic services to the entire population regardless of their economic status, geographical location, and educational level. The program aims to improve the performance of government agencies in terms of efficiency, citizens' approval, time and cost efficiency, services provided, and cross-governmental incorporation.[85] It was established to contribute to developing and managing the transformation of the government of Jordan. The program was designed to depend on the following themes:[86]

1. Applying applications related to electronic services
2. Defining and developing appropriate technological infrastructure
3. Defining and developing the structure of adequate legislative and regulatory environment.
4. Achieving high efficiency through effective process re-engineering.
5. Transforming and developing the fields of education, training, and knowledge transfer change management and restructuring of governmental institutions.

85 Al Hujran, Omar: An Assessment of Jordan's e-government maturity: a user-centric perceptive, 2012

86 http://www.jordan.gov.jo/wps/portal/E-Gov/Home/Welcome/!ut/p/b1/04_SjzQyNTQyMDY2MtSPoI_KSyzLTE8syczPS8wB8aPM4sMsvS3CvNoNDfwNPMwNPI3dvEJCzPyMDdyMgAoigQoMcABHAoL6wWjwEosPPxDgzxNjAwsfHotDDz9PNwNTM1djAoszKAK8Fjh55Gfm6qfG5Vj6anrqAgAOIBCzg!!/dl4/d5/L2dBISEvZoFBIS9nQSEh/

The e-government program is operating on four main pillars that if applied properly would allow the program to act as a catalyst in the application of e-services in the Jordanian government, and coordinate between different governmental departments. These pillars are the Institutional Framework, Legal Framework, ICT Infrastructure, and Business level. Based on these pillars, a comprehensive implementation plan should be able to translate these pillars into projects and programs. The Jordanian government had completed and is currently running the following projects as part of its e-government program: Jordanian e-government portal, Jordanian e-payment gateway, Secure Government Network, information technology standards.[87]

In addition, the e-government program launched three initiatives that aim to push government entities towards exerting more efforts in adopting e-transformation, in order to better serve their beneficiaries and improve the overall process of transformation in Jordan when compared regionally and globally. The three initiatives are:[88]

1. **The e-government award**

   It awards the transformation achievements in the IT and e-government areas. The main objective of this award is to encourage governmental entities and individuals to be creative and succeed in implementing the e-government information and communication technology to promote e-community.

2. **"Mada" – measuring e-government transformation**

   Mada started in 2013, and it measures the e-transformation extent, and it should be conducted semi-annually based on a predefined methodology, indicators, and criteria. The annual report expected to be issued will summarize the assessment process and will be directly submitted to the Prime Ministry through the national e-government steering committee.

87 Ibid.

88 Ibid.

3. "Daleel" – Business Development

The Business development initiatives that will be launched by Jordan's e-government will promote e-government consulting services and employ its accumulative experience in enabling government entities to achieve e-transformation. "Daleel" will act as a catalogue of services that can be provided by the e-government to all governmental entities in Jordan.

Today, around 90 services are offered electronically in Jordan, of which 40 services are mobile-enabled. The program has succeeded in turning many services provided by governmental departments to become offered electronically. The table below identifies some of the e-services provided in Jordan by the percentage of usage. The highest incidence of use is for obtaining information on traffic tickets, and about the weather. Use for any transactionary nature is minimal, such as paying taxes or renewing official documents.

Many challenges and obstacles hold back Jordan's complete conversion to e-government. The first challenge is the financial costs and coordination, since funding for e-government programs is mostly obtained from donors. Jordan cannot plan and execute the program without ensuring enough funding is available for implementation. In addition, the government finds itself undergoing a complex process of coordination between several donor agencies and consulting organizations to secure funding and program consistency. Second, there is a wide digital gap amongst the Jordanian society. This gap has to narrow in order for e-government services to be utilized effectively. Citizens must also be equipped with the necessary technical knowledge and skills to use the internet and PCs. Third, the majority of people in Jordan do not use e-government services because either they are unaware of those services, or they simply do not know how to use them. Effort must be exerted on raising the public's awareness of the e-services that the government provides. Fourth, a number of legal and legislation issues pertaining to e-government and online transactions in general still need to be developed. Regulations that address electronic stamps and signatures for example need to be drafted to enable for the efficient implementation of e-government services. Finally, the Jordanian government needs to tackle the challenge of integration since different departments and agencies within the government itself use different computer and operating systems. [89]

In recent years, Jordan dropped down the ranks in its global e-government ranking, dropping within two years from 51 in 2010 to 98 in 2012.

89 Macrothink Institute, The Difficulties and Possibilities of E-Government: The Case of Jordan, 2013

Table 28:

E-government services by % usage

E-Government Service	%	E-Government Service	%
Information about checking traffic tickets	81.3	Apply for a job	10.1
Information about the weather	51.1	Renew health card	8.1
Renew passport	39.4	Pay taxes	7.9
Renew ID cards	28.4	Tax refund	7.3
Renew a driver's license	18.9	Income tax settlement	7.1
Paying bills	17.2	Tax situation	6.5
Information about car tax	16.8	Renew family document	1.6

Source: Macrothink Institute

Table 29:

E-government readiness ranking – Arab Countries, 2012

Country	Global e-government ranking (2012)	Global e-government ranking (2010)	Index 2012	Index 2010	Index 2008	Index 2005
UAE	28	49	0.7344	0.5349	0.6479	0.5718
Bahrain	36	13	0.6946	0.7363	0.5723	0.5282
KSA	41	58	0.6658	0.5142	0.4935	0.4105
Qatar	48	62	0.6405	0.4928	0.5314	0.4895
Kuwait	63	50	0.5960	0.5290	0.5202	0.4431
Oman	64	82	0.5944	0.4576	0.4691	0.3405
Lebanon	87	93	0.5139	0.4388	0.4840	0.4560
Jordan	98	51	0.4884	0.5278	0.5480	0.4639
Tunisia	103	66	0.4833	0.4826	0.3458	0.3310
Egypt	107	86	0.4611	0.4518	0.4767	0.3793
Morocco	120	126	0.4209	0.3287	0.2944	0.2774
Syria	128	133	0.3705	0.3103	0.3614	0.2871
Algeria	132	131	0.3608	0.3181	0.3515	0.3242
Iraq	137	136	0.3409	0.2996	0.2690	0.3334
Sudan	165	154	0.2610	0.2542	0.2186	0.2370
Yemen	167	164	0.2472	0.2154	0.2142	0.2125

Source: UN Global E-government Survey 2012

11 MAIN OBSERVATIONS

11

Main Observations

A number of observations are made that can be grouped under three main pillars: Education, Training and Labor Market Bridging; Women in Business and Entrepreneurship; Women in the ICT Workplace.

11.1 Education, Training and Labor Market Bridging

Main observations include:

- Teaching methods are traditional and depend mostly on rote learning, substantively neglecting the practical training aspect
- The majority of students choose the IT stream mainly because the curriculum is easier than those of the Scientific and Arts streams. Their chances of getting higher grades on the Tawjihi exam and securing university admission are therefore significantly improved.
- Educational curricula are outdated and unable to keep pace with the rapid development in the ICT field. This is attributed to lack of resources, and the limited capabilities of a good number of faculty members to stay updated
- English language skills of most students and a sizeable number of faculty members are weak, which makes the proper instruction of many ICT courses very challenging
- ICT programs do not develop soft skills and key employability attributes such as communication, approaches to problem solving, and time management skills.
- Academic counseling is weak, inefficient, and is mostly limited to online registration of courses, unsystematic lectures, and trips. Students are also almost never counseled on a one-on-one basis.
- Graduation projects are not carried out jointly with the private sector, thereby limiting the ability of students to turn their projects into viable startups.
- Many local private companies and international corporations attempted to develop the educational process in universities; however, such attempts usually fail due to universities' bureaucracy.
- Internship programs are not systematic and lack consistency and structure. Very few trainees benefit from internships.
- Information on the evolving ICT sector labor market needs is not readily available and is inaccessible to students – students choose their fields of study with no knowledge of their employability potential.
- Graduation projects are not carried out jointly with the private sector, thereby limiting the ability of students to turn their projects into viable startups.
- Technical training is mostly available in Amman, and females residing in the governorates find it difficult to commute and take part in such training activities.
- Due to limited financial resources, parents invest more in their sons' education and training.
- Most training centers that award certificates are located in Amman, therefore, the governorates do not receive much attention in terms of education and training quality.
- Most parents do not accept the idea of their daughters residing away from home to study or train.
- The governorates do not receive much attention in terms of education and training quality.

11.2 Women in Business and Entrepreneurship

Main observations include:

- Lack of support from male members, leaves working women over burdened with many responsibilities because the social structure still depends on gender for specifying roles, where it gives women the reproductive role, and men the productive role in society.
- Women continue to hold a perception of inferiority.
- Society sets certain standards that define what a suitable work environment is for women. Such standards include the number of working hours, the extent of interaction with males, and work location among others.
- High rates of unemployment and economic inactivity amongst females continues to persist.
- Internship programs do not enable school to job transition.
- Limited mobility and access to information. Information regarding job opportunities flows mostly through informal channels that are dominated by males.
- Maternity contributes to the early exit of females from the labor market.
- Limited opportunities for on-the-job and vocational training tailored for females.
- Administrative barriers to home-based employment.
- Laws lack provisions that prohibit gender discrimination in the workplace, and equality of pay for men and women that hold the same position.
- Choice of some professions for women and certain working hours are limited. The minister of labor can specify industries and activities that cannot be occupied by women.
- The ordinance favors men when it comes to benefits – men receive family and cost of living allowance; women do when husband is deceased or handicapped.
- Most employers do no abide by labor law that requires companies with 20 females or more to set up daycare facility so females face a tradeoff between additional income and the cost of childcare.
- The maternity leave period is shorter in labor law than what is stated in civil service regulation.
- Gender discrimination in promotion is more pronounced in the private sector.
- Self-empowerment programs that build women's self confidence in making decisions are weak and not wide-reaching.
- Initiatives lack a gender focus, and the necessary follow up and communication mechanism to evaluate their impact.
- Entrepreneurship is perceived to be a male domain.
- Lack of role models that encourage women to establish their own business

11.3 Women in the ICT Workplace

Main observations include:

- Society sets certain standards that define what a suitable work environment is for women. Such standards include the number of working hours, the extent of interaction with males, and work location among others.
- Information on the evolving ICT sector labor market needs is not readily available and is inaccessible to students – students choose their fields of study with no knowledge of their employability potential.
- The number of universities has grown, and with it the number of prospective trainees. This was not met by a similar growth in companies that can provide training.
- The labor market today is saturated with ICT graduates and cannot absorb the growing number of graduates each year.
- Internship programs do not enable school to job transition.
- A number of professions within the ICT field are deemed inappropriate by society for women.

- Employers in many instances take advantage of their employees, because they are not aware of their legal rights.
- The governorates do not receive much attention for creating job opportunities that are scarce especially for women.
- Initiatives lack gender focus, and the necessary follow up and communication mechanism to evaluate their impact.
- The majority of ICT companies are in Amman, which limits the ability of females residing in the governorates to get employed or undergo any form of on-the-job training.

12 SUGGESTED INTERVENTIONS

Suggested Interventions

Theme 1: Education and Labor Market Bridging

Suggested interventions	Stakeholders	Priority
Sub-theme 1.1: Private Sector Participation The private sector is not actively engaged in the educational process, and especially in the development and realization of graduation projects. Prospects for employment after graduation are therefore weak. Suggested interventions include:		
• **Promote the exchange of expertise between the private sector and universities through the involvement of the private sector in graduation projects.** Many graduation projects are developed without coordination and collaboration with the private sector. UN Women can promote the exchange of expertise between ICT companies, universities, and students by encouraging ICT companies that need to develop a specialized system using a specific programming language to collaborate with universities to execute such tasks as part of the female students' graduation projects. At the same time companies can work on developing the students' technical and life skills.	ICT Companies, Private and Public Universities, ICT Experts and Professors, UN Women	
• **Support the establishment of internship programs for graduating female students.** Internship programs can be instrumental in bridging the gap between the output of academia and labor market needs. UN Women can initiate and support internship programs for graduating female students at universities to become an effective program by encouraging and incentivizing private companies to adopt female students and equip them with the skills they require and ensure their employability through written agreements between these companies and universities.	ICT Companies, Private and Public Universities, UN Women, MOHE	High
• **Encourage companies to develop CSR programs that include internships and on-the-job training opportunities.** Internship programs can be instrumental in bridging the gap between the output of academia and labor market needs. UN Women can increase awareness on the importance of Corporate Social Responsibility and encourage companies to devise internship programs, or adopt graduation projects as part of their CSR program.	ICT Companies, Universities, UN Women	

Suggested interventions	Stakeholders	Priority
Sub-theme 1.2: Life Skills and Curricula Development A growing number of students are graduating without the needed technical and soft skill requirements, thereby reducing their prospects for employment. Suggested interventions include:		
• **Support efforts of the private sector and ICT vendors to introduce relevant programs at universities.** The private sector, along with acclaimed ICT vendors such as Cisco and Microsoft can play an instrumental role in introducing a number of relevant courses at universities in order to equip students with some of the skills needed by the labor market. UN Women can support linkages between private sector firms and ICT vendors and universities, especially those in the governorates.	ICT Companies, Private and Public Universities, ICT Experts and Professors, UN Women, ICT vendors, INJAZ	Medium
• **Develop a model training program between a leading ICT firm and an educational institution.** A leading private sector firm can collaborate with an educational institution such as a public/private university or a community college to disseminate the critical skills and knowhow needed for work in the sector. UN Women can execute a specialized program that enhances students' competencies and equips students and faculty members with a set of life, employment, and research skills through a model implemented in collaboration with a leading ICT firm and an educational institute.	ICT Companies, Private and Public Universities, MOHE, Experts in Human Development and Teaching, UN Women, Int@j	
Sub-theme 1.3: Comprehensive Awareness Programs and Campaigns Parents play a major role in influencing the area of study their daughters choose. This is based mostly on the 'suitable' job opportunity spectrum that the field presents upon graduation. Some of this guidance maybe misinformed. Suggested interventions include:		
• **Activate the role of media in spreading awareness.** The various media outlets can be instrumental in sending messages to parents regarding the various 'suitable' job opportunities in the ICT sector. UN Women can customize certain media messages and send them out through local CBOs, radio stations and a number of social and local media outlets.	local and satellite radio and television stations, advertising and social media firms, CBOs	Low/ Medium

Suggested interventions	Stakeholders	Priority
• **Highlight success stories of women in the ICT sector.** Celebrating successes is inspirational and motivational for ambitious young women that would like to achieve, but do not know how to, and can be insightful for parents. Through the use of various media tools, UN Women can present success stories of women who outperformed in the sector, highlighting how these women overcame the many challenges that women face when entering the workforce, or starting a business.	local and satellite radio and television stations, advertising and social media companies, CBOs	Low/ Medium
• **Introduce means of parental control over the internet content to increase ICT penetration among girls and women.** Many are shunned away from the internet because it contains content that they do not approve of, be it for social, political or economic reasons, and therefore prefer that their daughters remain unexposed to it. Through the use of various media tools, UN Women can highlight the relevance of 'safe' social network use through the deployment of these tools among parents and students and encourage them to take advantage of it in their personal and professional lives. In addition, work on increasing parents' awareness about parental control on Internet censorship to increase the ICT penetration among girls and women.	ICT companies, universities, UN Women, MOHE	
• **Increase awareness about ICT as an economic and social enabler by spreading E-culture.** ICT should be viewed from another angle as an economic and social enabler to women, since it makes it easier for women to establish and run home office businesses. In addition, by spreading e-culture, women that are at home can stay updated with recent trends and technological updates and remain socially active through using various means of social networks. UN Women can launch e- initiatives for cultural change that aim to empower women by spreading e-culture at the national level by collaborating with various stakeholders to create a knowledge-based economy in Jordan.	UN Women, local and satellite radio and television stations, universities	

Suggested interventions	Stakeholders	Priority
Sub-theme 1.4: Academic and Career Counseling Academic and career counseling is very weak and does not provide students with the needed information to make educated decisions about their areas of work and study. Suggested interventions include:		Medium
• **Activate the role of career advisory and guidance centers in spreading awareness.** Career advisory and guidance centers should play a role in spreading awareness and messages to the student body. UN Women can use such platforms to spread awareness regarding the relevance of the sector to students before they enroll in universities and the spectrum of opportunities it offers before students graduate.	MOE, MOHE, UN Women	
• **Develop an integrated information system on the labor market supply and demand.** Information about the available fields of study and the prospects for employment for each area is either missing or fragmented, and if available, students do not know how to use this information to make educated decisions. UN Women can support efforts to develop an integrated system of information on the areas of study and the demanded specializations in the ICT labor market. Information can cover cost of study, level of expected income upon graduation, areas most demanded by the ICT sector, and ICT disciplines demanded by other sectors, etc thereby becoming a credible tool for academic and career guidance.	ICT companies, Private and Public Universities, UN Women, MOHE, DOS, National Corporation for Employment and Training, KAFD, Int@j	

Theme 2: Women in Business and Entrepreneurship

Suggested interventions	Stakeholders	Priority
Sub-theme 2.1: Social definitions of roles Social norms define specific roles and jobs that are suitable for women. Consequently, women generally prefer to work in a culturally acceptable working environment. Suggested interventions include:		
• **Expand the Gender Equity Seal initiative to the ICT sector and companies in the governorates** The UN Women Gender Equity Seal is an excellent initiative that helps improve the work environment for women in the private sector. When the work environment is improved, the negative impact of social norms on the women's employment and career progress become less evident. The initiative includes adopting a code of conduct, revision of human resource practices and improving them to meet the requirements of the equity seal. Prompting successful examples will be very useful for outreach and awareness of the initiative. It is also important for the initiative to incorporate equity of disabled persons. UN Women can expand the Gender Equity Seal to the ICT sector, especially outside Amman.	Chambers of Industry and Trade, Int@j, MoL, E-TVET Fund	High
Sub-theme 2.2: Mobility and Access to Information Women, and particularly those residing in the governorates, have very limited access to information on training opportunities. Limited mobility due to cultural and social restrictions is preventing women from developing their skills and knowledge in new advancements in the ICT sector. Attending ICT training courses is difficult for women because these courses are expensive, they are held late in the evening and most females are not allowed to stay out late, and most of the training centers are located in Amman. Suggested intervention:		
• **Develop online training programs on technical and soft skills needed in the ICT sector** and make them available in the governorates through knowledge centers, NGOs, training centers at universities and schools. Training content to be developed based on required competencies and in Arabic. Supporting e-courses on 'English for ICT' enhances employability of trainees. Consideration for people with disabilities should be taken into consideration. UN Women can champion a pilot e-training initiative in one of the governorates then roll it out to the rest of the country.	KAFD, OASIS500, NGOs, training centers, MoL, Higher Council of Disabled	High

Suggested interventions	Stakeholders	Priority
Sub-theme 2.3: Legal issues The Women Employment Directorate at MoL defined 11 clauses in the labor laws that discriminate against women. Laws lack provisions that prohibit gender discrimination in the workplace and equality of pay for men and women holding the same position. Suggested intervention:		
• **Initiate an advocacy campaign to lobby for an equitable labor law.** A strong advocacy campaign with the participation of civil society, the private sector and MoL could support the suggested modifications. The campaign should focus on the legislators at the upper and lower houses of the parliament (mainly the labor and women committees). UN Women can facilitate this campaign and provide needed technical assistance to enhance the campaign's effectiveness. A priority area of advocacy could be introducing provisions that prohibit discrimination against women in the workplace, while paying careful attention that these provisions do not adversely affect women's employment prospects.	MoL, parliament, civil society, labor unions, syndicates, the media, the private sector, Legislation and Opinion Bureau	Medium/ High
Sub-theme 2.4: Start-up support Jordan has one of the largest gender gaps in early stage entrepreneurship activity in the region. Supporting women startups is important for generating employment opportunities for females. Suggested interventions include:		
• **Increase the number of women benefiting from current entrepreneurship initiatives, especially women from the governorates**	Int@j, Oasis 500, NGOs, MoL, Injaz, KAFD, women-owned enterprises	High
• **Support current start-up initiatives to have a gender focus, especially for women residing outside Amman** Several interventions support start-ups and the share of women beneficiaries varies among them. Stakeholders could work to increase women's participation in these initiatives and especially from the governorates. Training and mentorship support through a network of women in business could enhance the success potential of these interventions. UN Women can lead an effort to map these interventions and work with their management on identifying ways to increase the share of women beneficiaries.		
• **Support women entrepreneurs' access to financial resources to enable them to purchase personal computers** Most entrepreneurship initiatives focus on enabling women by offering them training courses on basic skills. After women pass the course they require access to financial resources to buy personal computers that allows them to translate their ideas into businesses. UN Women can support such initiatives by offering women participants that successfully pass training courses with a personal computer.		

Theme 3: Women in the ICT Workplace

Suggested interventions	Stakeholders	Priority
Sub-theme 1: Improve Access to ICT Labor Market Information Labor market information is lacking, and if available, most students face difficulties accessing it. Suggested interventions include:		
• **Expand Int@j's awareness efforts among students to include gender aspects** Int@j runs periodic awareness campaigns among high school and university students to disseminate information on labor market needs. UN Women can support Int@j by incorporating a gender angle to the campaign, as females have different preferences and needs	Int@j, MoICT, UNWomen	High
• **Support the Sector Skills Organization (SSO) role in running the 'ICT Bridging Academy'** ICT labor market information is severely lacking in the governorates. SSO and civil society organizations in the governorates need to take an active role in awareness campaigns and disseminating information on: ICT labor market needs, job/business opportunities, recent studies, etc. UN Women can champion the initiative and support training programs for females in the governorates, in addition to developing an information portal to be housed in each unit in collaboration with an IT vendor such as Cisco or Microsoft.	NGOs, Municipalities, Intaj, Vendors (Cisco, Microsoft)	
• **Expand the scope of Knowledge Stations** Knowledge Stations have a wide geographical spread, and therefore can be used as venues to serve communities throughout the country. There are currently 180 stations, and many of them are idle, although adequately equipped. The private sector can be invited to activate knowledge stations. UN Women can support efforts to link private sector CSR programs with expanding the scope of knowledge stations.	Private sector, NITC	
• **Use a variety of media tools to disseminate up-to-date information on the ICT sector** Latest trends in the ICT sector, jobs, training programs, and other developments to be documented and disseminated using a variety of media tools such as Facebook, newsletters, TV and radio ads, etc. UN Women can work closely with Oasis 500 along with a media partner to specifically devise message for females.	IREX, UN Women, Oasis 500, community colleges, Media partner	

Suggested interventions	Stakeholders	Priority
Sub-theme 2: Improve Internship Programs for Women and On-the Job Training Opportunities Women, and particularly those residing in the governorates, have very limited access to information on internship programs and on-the-job training opportunities. The limited few that is able to access those opportunities, has limited mobility due to cultural and social restrictions, causing loss of opportunity for many. Suggested interventions include:		
• **Develop 'safe' commute programs for women from homes to internship venues** Conservative families are more inclined to send their daughters for training or undergo an internship program if a reputable entity is organizing their transportation to and from the training/internship venue. UN Women can develop a number of transportation commutes from local gathering points, such as NGOs to the city center.	UN Women Local CBOs	High
• **Expand scope of the internship programs to include remote internships and develop a suitable compensation model and a specific contract** Many internship programs are successful in training graduates. A number of female students who reside and study in the governorates find it difficult to commute to Amman for internships. By encouraging remote internships and developing a special contract and a suitable compensation model based on payment per deliverable, we encourage females from the governorates to participate in such internship programs and eventually they might get employed remotely. UN Women can work with MOICT and MOL on instituting a remote internship program for females and develop a special contract for this purpose.	MoL, Universities, MoICT, Int@j, UN Women, Cisco, Educational Institutions	
• **Set up an internship program for women at Oasis 500 premises** A number of companies are housed at the Oasis 500 venue, and as such can offer a myriad of internship opportunities for women. UN Women can work with Oasis 500 on establishing a 3-month internship program for women that covers the training and skill development needed to equip trainees for the workplace.	Oasis 500, Int@j, educational organizations, UN Women	

Suggested interventions	Stakeholders	Priority
Sub-theme 3: Encourage working from home / part-time and remote employment Enabling women, through ICT tools, to work from home or extending the opportunity to work part-time will have a significant impact on the participation of women in the work force. Suggested interventions include:		
• **Support HR systems at companies and develop an HR guide** A number of companies in Jordan do not have a flexible HR system that can accommodate part-time and remote work, and therefore lack the ability to monitor, evaluate, manage or supervise this flow of work. UN Women can support the development of an HR guide that is based on global best practices so companies can use it for developing their systems to accommodate remote work.	Private sector, Int@j, UN Women, MoL	High
• **Provide rehabilitation after extended leave from work** Most women take a short or an extended leave of absence from work due to child and household obligations after marriage. When they come back to work, they face significant challenges because the nature of the work evolved during their absence. UN Women can support in devising 'rehabilitation' programs for women to help them transition back into the workplace.	UN Women, Social security	
• **Develop a portal for outsourcing and work-from-home opportunities for women** Information on outsourcing and work-from-home opportunities are not readily available, and if they are, they are scattered. UN Women can support the establishment of a portal that houses such opportunities.	Int@j, UN Women	
• **Support Int@j in implementing the National Qualifications Framework for the ICT sector in Jordan** The National Qualifications Framework will serve the ICT sector by allowing proper mapping of qualifications, adopting occupational standards, building career paths, and closing the gap between Academia and the labor market. UN Women can support Int@j in implementing the National Qualifications Framework in Jordan.	UN Women, Universities, MoHE, Private sector	

Annexes

Annexes

Annex I:

Focus Groups Discussion Guide

1 Study Objectives

General Objective: Evaluating the status of women in the Communication and Information Technology (ICT) sector.

Specific Objectives

A. Evaluate the status of Jordanian women in the ICT sector in general.

B. Identify the factors that affect women's decision in working in the ICT sector.

C. Understand and identify the societal attitudes and values about the involvement of women in the workforce in general and the ICT specifically.

D. Identify the obstacles and threats that women face which prevent them from getting involved in the ICT sector.

E. Identify the extent of job opportunities available for women in the ICT sector.

F. Evaluating the quality of education covering ICT and the extent of its adaption to labor market requirements, from the perspective of female students, graduates, and employees.

G. Identify the extent of policies and programs that are sensitive to certain social types in the institutions that work in the ICT sector.

H. Identify the strategies and programs that encourage women to work in the ICT sector.

I. Identify the gap between educational outcomes and the labor market requirements.

J. Receive several suggestions through focus groups, which would strengthen and improve Jordanian women status in the ICT sector and enable them to reach senior positions. Also, identify the suggestions that help strengthen women's role in the ICT sector and enable them to reach decision-making positions in the sector.

K. Identify women success stories in the ICT sector.

2 Focus Groups

2.1 First Group: "Female students"

Female students in the age group of 16-23 years: Students majoring in Information Technology either in public or private schools, and students majoring in ICT in either public or private universities.

2.1.1 Specific objectives to identify:

- Factors that affect women's decision to study and work (the impact imposed by social customs and traditions on women's involvement in the labor market)
- Reasons that made participants in the Focus Group choose the ICT field.
- *Societal trends and opinions about women's involvement in the ICT sector.
- The alignment of the educational system components with the requirements of the labor market (Educational institutions' ability to provide a suitable educational environment)
- The extent of parents support to female ICT students after graduation.

2.1.2 Discussion guide

General question: What do you think of your decision to study ICT?

A. How did you decide to study IT in school or ICT in university?

B. Who are the most influential actors affecting your decision? How did you choose this major? Who are the people or entities you view as experienced and capable of helping in your decision?

C. How are students in grade 10 guided towards specializations in high school?

D. Why did you major in this field?

E. How does society view women that major in this field? What is their opinion of this field?

F. What challenges do you face in your studies?

G. What are your future career expectations in this field?

H. What means you will use to search for a job?

I. How do you view educational quality in terms of curriculum, facilities, available techniques, and faculty members?

J. Throughout your studies in this field, what challenges do you expect to face after graduation?

2.2.3 Target Groups

Target Group	North	Center	South
Girls public high schools	3	3	3
Girls private high schools	3	3	3
Public universities	3	3	3
Private universities	3	3	3
Total	12	12	12

2.2 Second Group: "Employees"

Female employees working in the ICT sector and holding an ICT degree or any other degree combined with an experience of at least two years.

2.2.1 Specific Objectives to identify:

- Level of awareness in labor market regulations specifically those related to women;
- The alignment of the educational system components with the labor market requirements;
- Public opinion and trends towards women's involvement in this field;
- Obstacles women face in the ICT work environment;
- Whether there are any forms of discrimination based on gender in work regulations;
- Specify the opportunities available for women in the work environment in the ICT sector;
- Factors that help women reach senior positions;

2.2.2 Discussion Guide

General Question: In your opinion, which work fields do females prefer in our society? Why?

A. What is the nature of work desired by female, and which entities do they prefer to work for? (public, private, military, ...etc);

B. How compatible is your major and field of work? Why did you work in this field?

C. What organization do you work for? Why did you choose it?

D. How did you get your job?

E. What tools did you use in searching for a job?

F. Do you view women as capable to work in ICT? What are their points of strength and weaknesses in this field?

G. Which field of ICT do women mostly prefer to work in? Why? (Can they work in all ICT specializations?)

H. What is the perspective of those surrounding (society, co-workers, client, etc.) about women's employment in the ICT sector, and which specializations do they prefer?

I. What is the relation between what you learned in university and technical job requirements?

J. What challenges do you face at work and outside?

K. In your opinion, is there any form of discrimination based on gender in your work? (whether based on salaries, career progression, or training courses, etc);

L. How did you sign your contract? Did you read it quickly, review the laws, or got a legal consultation?

M. Are there enough opportunities for women to find a job and reach senior positions?

N. How do you describe an attractive work environment?

O. In your opinion, does your company offer ICT female employees with adequate support?

2.2.3 Target Groups

Target Group	North	Center	South
Female employees working in ICT- programming	3	3	3
Female employees working in ICT- telecom engineering	3	3	3
Female employees working in ICT - computer engineering	3	3	3
Female employees working in ICT - MIS	3	3	3
Total	12	12	12

2.3 Third Group: "Graduates"

Graduates holding an ICT degree, looking for a job, or work in a different field, or don't want to work in the ICT field.

2.3.1 Specific Objectives to identify:

- What are the factors that affect women's decision to work in the ICT sector?
- What are the reasons that pushed women away from working in the ICT sector?
- What obstacles do women face in working in the ICT sector?
- To what extent are women capable of succeeding in the ICT sector?
- What are the tools used to look for jobs in this field?
- What are the prerequisites needed to find a job in the ICT sector?

2.3.2 Discussion Guide

General Question: In your opinion, what fields of work do females prefer in our society? Why?

A. How compatible is your major and field of work? Why did you work in this field?

B. How did you get your job?

C. What tools did you use in searching for a job?

D. Why did you want to work in a field different from what you studied?

E. Do you view women as capable to work in ICT? What are their points of strength and weaknesses in this field?

F. Which field of ICT do women usually prefer to work in? Why? (Can they work in all ICT specializations?)

G. What is the perspective of those surrounding (society, co-workers, clients, etc) about women's employment in the ICT sector, and which specializations do they prefer?

H. What is the relation between what you learned in university and technical job requirements?

I. What challenges do you face in office and outside?

J. In your opinion, is there any form of discrimination based on gender in your work? (whether based on salaries, career progression, or training courses, etc) (If the participant has ever worked)

2.3.3 Target Groups

Target Group	North	Center	South
Female ICT graduates and looking for a job	4	4	4
Female ICT graduates and not looking for a job	4	4	4
Female ICT graduates that worked previously and don't want to work in the ICT field	4	4	4
Total	12	12	12

2.4 Fourth Group: "Parents"

Parents of female ICT students, graduates, or employees.

2.4.1 Specific Objectives to identify:

- Why would a female major in this field from parents perspective?
- What role do parents play in influencing their daughter's choice of major?
- How do parents view female work success chances in the ICT field?
- What role does societal vision, customs, and traditions play in women's work in the ICT sector?
- From the perspective of their parents, what obstacles do females who studied ICT face?

2.4.2 Discussion Guide

General Question: What is the importance of education and work for women?

A. What do you think of women studying ICT, whether in school or university?

B. How do you view women's future in this field regarding job opportunities, career progression, and appropriate income?

C. What role did you play in your daughter's decision regarding her major?

D. What are the feedback and opinions of those surrounding you regarding choosing ICT major?

E. What work conditions do you believe are not suitable for women?

F. To what extent do parents and society have an impact on a girl's opinion when choosing her major?

G. How can you encourage women to get involved and work in the ICT sector, whether through university major or work scope?

2.4.3 Target Groups

Parents of female students – School	4	4	4
Parents of female students – university	4	4	4
Parents of female graduates	4	4	4
Total	12	12	12

Annex II

Targeted groups for personal interviews

19 interviews were conducted according to the following distribution:

1. (4) Men working in companies and entities specialized in ICT and they occupy top leadership positions.
2. (4) Women working in companies and entities specialized in ICT and they occupy top leadership positions.
3. (3) Women that own private companies that operates in the ICT field.
4. (2) Representatives of commissions or local/international organizations that are involved in the ICT sector.
5. (6) ICT specialists that work in the field of administration or teaching in a private and/or public universities and colleges.

Main Questions

1. What are the obstacles facing women's work in the ICT sector
2. The extent of mechanisms available for finding job opportunities in the ICT sector
3. The quality of education and training in this specialization and the skills needed to work in it
4. Which ICT specialty do women usually prefer to work in?
5. Do you think women are capable of working in all specialties within this sector?
6. Are women capable of balancing between work and family obligations and duties?
7. The extent in which social type is taken into account in programs and policies
8. The extent of inequality between males and females in areas of career progression, courses, salaries, and other work benefits
9. How can we make work in ICT more attractive to women?
10. What are the initiatives that encourage women to work in ICT?
11. What are the rules and regulations that support or hinder women at work?
12. In your opinion, what are the factors that challenge or encourage Jordanian women in participating in the ICT field?
13. Do we have the work from home option in Jordan? Do you encourage this type of employment?
14. What do you think are the most important recommendations to promote women's participation in this field in the future?

List of Interviewees

1. **Mr. Haif Bannayan**
   Director
   Queen Rania Teacher Academy

2. **Mr. Farhan Kalaldeh**
   Executive Director
   Queen Rania Centre for Entrepreneurship

3. **Ms. Hala Al Nsour**
   Head of Legal Department
   Telecommunications Regulatory Commission

4. **Ms. Yara Abdel Samad**
   Director of Policies and Strategies
   Ministry of Information and Communications Technology

5. **Ms. Haneen Al Rashid**
   Head of e-intiatives
   Ministry of Information and Communications Technology

6. **Mr. Ayman Murad**
   Head of Partnership and ICT Unit
   UNRWA

7. **Ms. Mais Al Daoud**
   Programs Manager
   Intaj

8. **Mr. Mohamed Jinini**
   Cisco Networking Academy Area Manager – Levant Countries
   Cisco Systems

9. **Mr. Khaled Al Qadi**
   Manager
   JBC private company

10. **Ms. Samar Hassan**
    Senior Systems analyst
    Royal Scientific Society

11. **Ms. Candide Kirk**
    Co-founder and studio head
    Quirkat

12. **Ms. Fida Al Taher**
    Founder and CEO
    Zaytouneh.com

13. **Ms. Hiba Mansour**
    Founder and CEO
    Sajelni.com

14. **Mr. Ashraf Sabha**
    ICT Instructor and a certified CISCO Networking Academy trainer
    Princess Sumaya University of Technology

15. **Ms. Hiba Nasser El Deen**
    ICT instructor
    Middle East University

16. **Ms. Yasmine Al Sakka**
    ICT instructor
    Petra University

17. **Ms. Amal Ammawi**
    ICT instructor
    Al Isra' University

18. **Mr. Ghaith Abanda**
    ICT instructor
    University of Jordan

19. **Mr. Mohammad Al Roussan**
    ICT instructor
    Jordan University of Science and Technology

12.1 Education Initiatives

12.1.1 Education for Employment (E4E)

The "Education for Employment" (E4E) is an International Finance Corporation (IFC) initiative that identifies four Arab countries (Jordan, Egypt, Tunisia, and Morocco) for interventions and provides a framework for achieving this strategy. The program was launched in 2009 and began its actual work in 2010. Under this initiative, the IFC partners with the Islamic Development Bank, as well as consultants from McKinsey and Co., and aims to increase the supply of work-ready students through investment in higher education establishments including technical and vocational education and training, and work readiness program; in addition to providing in-depth country assessments for the improvement of standards and quality assurance systems that highlight solutions for improved matchmaking employment opportunities for young job seekers. Moreover, the E4E initiative further identifies three priority sectors to focus its interventions on: Information and Communication Technology (ICT), healthcare, and tourism. The first project targeted the ICT sector in Jordan.

Jordan has a high number of graduates with degrees or over qualified. However, the range of IT qualifications are narrow in the sense that they predominantly fall into either computer science or computer engineering with the latter being in more demand. What Jordan is left with is a highly knowledgeable society but a weak knowledgeable economy due to the mismatch of qualifications to the skills required by industry. This mismatch, which directly impacts the nation's ability to produce highly skilled technicians, will be the main focus of this initiative. To address this issue, the stakeholders in the E4E initiative welcomed the adoption of an ICT-occupational standards framework to provide employers, present and future employees, training institutions, and other stakeholders with a common reference with which to compare the levels of skills and competence conferred by different qualifications across different providers. The framework will be underpinned by the adoption of an international framework of Occupational Standards for Jordan (NOS), and will provide an instrument for evaluation and planning. The NOS is a database of statements that defines the knowledge, understanding, competencies and performance criteria that an individual must normally exhibit to perform effectively in a particular occupation or occupational category.

Furthermore, the E4E initiative will examine how combinations of training episodes can make a coherent group of competency outcomes, including how they are aligned with occupational standards that both employers can use for recruitment and progression purposes, and individuals may use to assess their employability potential within certain occupational categories. The SQA model for Professional Development Qualifications has very flexible design principles that can accommodate the combination of diverse competencies across discrete episodes of training. This model will be tested for relevance to the ICT training landscape in Jordan.

Generally, this intervention aims to provide a gateway to the acquisition of appropriate skills for new and unemployed ICT graduates. A mechanism is required to give credibility to the collection of competencies that may be acquired across qualifications and courses offered by different training providers. The process, by which these competencies are defined as a 'qualification' appropriate for a specific job, and how they are validly assessed, needs to be accredited to international standards not yet available from accrediting agencies in Jordan. Accreditation by the SQA may represent an intermediate solution.

12.1.2 Education Reform for Knowledge Economy project (ERFKE)

In 2003, The Ministry of Education launched a five-year two-phase Education Reform for Knowledge Economy project (ERFKE). The first phase was implemented from 2003 to 2009 with support from the World Bank and a number of other donor agencies. The second phase of the reform started in 2009 and will end in 2013[1]

The first phase was built based on four components with the joint goal of addressing the main obstacles facing the Jordanian educational system. Through this phase, the program was able to establish 160 new schools, provide existing schools with 650 computer labs and 350 science labs. Additionally, the initiative trained more than 60,000 teachers to adapt to the new curricula of critical thinking, research and group work while integrating ICT into the educational system. Moving on to the current phase, ERFKE II, the Ministry of Education is focusing on community- and school-based programs rather than centralized programs. ERFKE II is designed based on 5 components that address a number of issues, including the improvement of the physical learning environments in a cost effective and sustainable manner to ensure friendly environment for all students; and improving all aspects of teaching and learning in order to achieve full quality education for students. The program also deals with improving early childhood development, vocational education and special education to enhance the learning experience of students in order to help them reach their full potential. The Ministry also aims to strengthen policy and planning to support the achievement of quality learning outcomes at the school level.[2]

12.1.3 Jordan Education Initiative (JEI)

The Jordan Education Initiative (JEI) was established in 2003 as a public-private partnership between Jordan and Cisco Systems.[3]

Cisco Networking Academy program was launched in 1997 in the United States of America in seven states. It was created as a solution for maintaining networks at schools, since they became wired at that time. It aimed to graduate school students that are capable of maintaining and troubleshooting the networks at their own schools. Today, Sixteen years later, hundreds of thousands of students enroll and graduate from the Cisco Networking Academy program worldwide every year. Of those, around 64,000 students are enrolled in the program around the MENA region, which translates to around 6% of total enrollment globally. The Cisco Networking Academy program equip students with the skills needed for building, designing, and maintaining networks; which improve their chances to excel in their career, while satisfying the increasing global demand for networking professionals.[4]

Today, JEI has more than 200 partners from the government, non-government and private sectors. JEI's main goal is to encourage innovation and adaptability in both students and teachers through the use of technology. Students need to nurture creativity and develop crucial skills that will make them competitive in today's global markets. JEI has three main tracks:[5]

1. **Research & Innovation**: The Discovery Schools, sample schools that act as test beds within the project, are fully equipped with the technology model and have different projects applied to them. Each project is in collaboration with different local and/or international partners. The schools are monitored through the implementation process according to a set of performance indicators, and the findings are then shared with the stakeholders.

1 http://kingabdullah.jo/index.php/en_US/initiatives/listing/cid/1.html

2 Ibid

3 King Abdullah II Official Website, www.kingabdullah.jo

4 https://www.netacad.com/web/about-us/about-networking-academy;jsessionid=71F272148F915ADoD6B315F149F18935.node4

5 Jordan Education Initiative Official Website, http://www.jei.org.jo/

2. **Expansion**: As a result of successful experiences with the educational model used in the Discovery Schools, JEI is working on replicating it to as many public schools around the Kingdom as possible. The model involves the use of technology, change management and training. JEI is collaborating with the Madrasati initiative to achieve this.

3. **International Outreach and Collaborations**: Part of JEI's incentive is reaching out to other countries around the world and helping them out. Hence, JEI participates in local and international conferences to promote its educational model. JEI has set up a consultancy arm to offer guidance and help to countries interested in implementing their models[6].

12.1.4 Madrasati

Madrasati is a five-year initiative launched in April 2008 by her Majesty Queen Rania Al-Abdullah. Its mission is to enhance the overall learning environment of 500 selected underprivileged schools across Jordan. It is implemented in two stages; the first stage involves the upgrading of the physical infrastructure of the schools; while, the second stage employs some needs-driven educational programs within the schools. The content of these programs vary, however, they are created for the purposes of providing students with the knowledge, skills and tools that help enhance their overall characters and personalities.[7]

12.1.5 EduWave

Financed by the King Abdullah Fund for Development, EduWave is a one of a kind program both locally and regionally. In 1999, EduWave was first installed in a few public schools and by 2005 was spread to all schools. One of its objectives is to enrich the conventional textbook material by posting lively examples, models, and scientific experiments. Another one is to electronically link all stakeholders, i.e. teachers, students, and even parents, through emails, discussion forums, and online study sessions. Teachers also make use of EduWave in class to further enhance the students' academic experiences in a more visual interactive approach. The program offers e-solutions to help students with their self-study. Not only did Jordanian schools benefit from this, but many other countries around the Middle East have also gained from it.[8]

12.1.6 Kidsmart

This program is linked to the ERFKE strategic framework. IBM has initiated a program known as Kidsmart to bridge the digital gap between advantaged and less advantaged communities.[9] This program includes the Young Explorer, which is a computer that is installed with educational award-wining software, and is housed in brightly colored kid-friendly furniture. The software has been translated to Arabic, and helps children learn and explore concepts in math, science, creative writing and thinking. Two or more children can work together on one computer, thus developing their social and cooperative skills.[10]

6 Ibid

7 31 Madarasati Official Website, www.madrasati.jo

8 32 King Abdullah II Official Website, www.kingabdullah.jo

9 33 Kidsmart Early Learning Program, newsletter, IBM

10 33 Ibid

Annex IV:

12.2 Business Incubators in Jordan

12.2.1 iPARK

Established in 2003 by the Higher Council of Science and Technology as a non-profit incubator, it aims at helping technology startup companies grow and gain market shares. iPARK's objectives are job creation, developing profitable companies, export revenues, research commercialization and entrepreneurship awareness. The services offered for startup companies are incubation services, intellectual property and commercialization services, entrepreneurship development, and investment facilitation.[11]

iPARK's incubation facilities include 48 independent office units that are fully equipped with furniture, communications and networking facilities, IT equipment and logistical support. When needed, an experienced network of advisors strategically support the startups. Additionally, iPARK has partnered with the Queen Rania National Entrepreneurship Competition (QRNEC) to encourage the development of the entrepreneurial skills and competition to create practical and innovative business plans. The Global Entrepreneurship Week connects young entrepreneurs around the world together to support and promote innovation, the generation of new ideas and finding new and improved methods of doing business. To help accelerate the growth of the firms, iPARK has a network known as Bedaya Business Angel Network. This network connects the entrepreneurs with local and international Angel investors and VC firms that are interested in start-ups and early stage businesses.[12]

12.2.2 Al Urdonia Lil Ebda'

The Irbid ICT Business incubator is the first ICT business incubator located outside the capital city of Amman. It is a business incubator that aims to motivate and establish a solid software industry in Northern Jordan. It is dedicated to aid IT graduates to establish their own private software companies, not only in Irbid city, but in the entire Northern region of Jordan. It is made up of five incubation units of different sizes that accommodate different number of incubatees, along with a modern IT infrastructure, and a fully equipped office space, that are fully used by incubated companies. The incubator was established with the objective of focusing on enterprise development, which would create wealth by increasing the survival and growth rate of startup companies. It also aims to encourage people to convert their own original ideas into businesses, and start their own companies, by providing a supporting and stimulating environment for entrepreneurs, and give their startups an advantage over non-incubator new firms out in the market.[13]

12.2.3 OASIS 500

Oasis 500 is a leading business incubator that invests in young entrepreneurs' ideas and offers them the opportunity to build up their startups and provide them with all the necessary funding, training, and coaching they might need to succeed. To enter the process, entrepreneurs from around the Middle East are invited to attend training boot camps, that are usually held four times a year, where they can present their original ideas. Entrepreneurs that present the most convincing ideas will receive an initial funding of around JD 22,000 and are invited to participate in an acceleration program where they'll be offered additional training, coaching, and mentorship opportunities. After the acceleration program, entrepreneurs proceed to the pitching stage, where Oasis 500 and many of its investors usually invest in a selected number of startups and offer them additional funding and office space within Oasis 500 premises.

11 InfoDev Incubator Support Center,

12 IPark Jordan's Technology Hub, http://iparkjo.com/

13 http://www.bic.jo/index.php?option=com_content&view=article&id=166%3Airbid-ict-business-incubato&catid=27%3Anorth-business-incubator-centre&Itemid=110&lang=en

Another way in which Oasis 500 offers entrepreneurs with funds, is through a quarterly event held in which it gives entrepreneurs the opportunity to pitch their ideas in front of high net-worth individuals from around the MENA region and the world.[14]

12.2.4 The Jordan Forum for Business and Professional Women (JFBPW)

The Jordan Forum for Business and Professional Women (JFBPW) is a voluntary based non-governmental organization. Established in 1976, JFBPW's vision is to achieve equal opportunities, rights, and leadership roles for women in the business sector, and ensure effective contribution to the economic growth of the Kingdom. JFBPW partners with other non-profit organizations, sponsors, leading companies and international organizations to expand the interests of women in the professional and business world.

One way that the JFBPW support women in this sector is by providing them with business incubators. Hosted at their Women's Enterprise Center (WEC) and financed by the Higher Counsel for Science and Technology, the business incubator offers the basis for women to start their own businesses. Women from the local community are thus encouraged to establish startup companies by offering them support services that give them a stepping stone with minimum risks. These services include basic business training, administrative help, legal support and counseling free of charge. JFBPW also offer subsidized rental fees, secretary services, marketing for the companies, and technical support which cover professional training, accounting services and feasibility studies.

Furthermore, to help women that live in the more conservative areas and to accustom to their traditions and circumstances, a flexible program is offered. This program is a flexible methodology of business incubators. It offers group incubation services for micro-level or home-based businesses. The program also works around the women's home life and schedule. The services offered are mass sewing production and industrial production such as natural soap.[15]

14 http://www.oasis500.com/startup-investment-funds/

15 vThe Jordan Forum for Business and Professional Women, http://www.bpwa.org.jo/

Annex V:

12.3 Main ICT Initiatives

12.3.1 Knowledge Stations

Launched in 2001, this initiative aimed at establishing several IT and community service centers in Jordan. It was the first practical step towards the installment of IT applications in local communities to facilitate the usage of e-government services in all geographical locations in Jordan. The National IT center was responsible for executing the program and it conducted a study that highlighted the most suitable locations for setting up the knowledge centers in all governorates.[16]

12.3.2 Reach Initiatives

The initiative was launched in 1999, and its strategy included a detailed action plan over a period of five years that would develop the IT industry in Jordan and increase its competitiveness regionally and globally, and establish a solid and effective partnership between the private and public sectors. The initiative focused on five areas which are the promotion of regulatory bodies, human resources development, government support, capital and finance, and infrastructure development.[17] The two updated strategies, Reach 2 and Reach 3, were adopted to enhance competition in the local, regional, and international markets and to highlight and identify success and challenges that Jordan faces in developing an active IT sector. Between 1999 and 2007, ICT became the fastest growing sector of Jordan's economy, where revenues, exports and jobs grew by 50%.[18]

12.3.2 The National Technology Parade

The National Technology Parade is an activity launched by the UN Women as part of its Achieving E-Quality in the ICT Sector Project (AEQ) in collaboration with many Jordanian universities. This activity is one out of many activities conducted by UN Women to prepare women in Jordan to enter the labor market by offering them several opportunities. It allows students to exhibit their own technological projects at the event.[19]

The National Technology Parade is held each year at a different university in Jordan. It aims to encourage and motivate Jordanian university students, especially female students, to innovate and make use of their creative skills. It also provides them with the needed financial and technical resources in order to translate their ideas into realities. It also acts as a catalyst for students to share their ideas and knowledge between themselves and learn from one another.

The parade was launched in 2008 in University of Jordan, and then was hosted by Princess Sumaya University for Technology in 2009, then in Jordan University of Science and Technology in 2010, then at Philadelphia University, Hashemite University, and Mutah University in 2011, 2012, and 2013 respectively.[20]

16 http://www.ks.gov.jo/

17 http://kingabdullah.jo/index.php/en_US/initiatives/view/id/83.html

18 Ibid.

19 http://fetweb.ju.edu.jo/tp/concept.htm

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12.4 Jordan's Global 'Network Readiness Index' global Rankings

Table: Jordan's Global Rankings in 2009 and 2013

	Rank	
	2009 (out of 134)	2013 (out of 144)
Networked Readiness Index	44	47
Political and Regulatory environment	36	48
Effectiveness of law-making bodies	64	84
Laws relating to ICTs	54	53
Judicial Independence	41	48
Efficiency of legal system in settling disputes	---	43
Efficiency of legal system in challenging regs	---	44
Intellectual property protection	36	39
Software piracy rate, % software installed	---	50
No. procedures to enforce a contract	78	78
No. days to enforce a contract	94	107
Business and Innovation Environment	76	40
Availability of latest technology	31	38
Venture capital availability	51	48
Total tax rate, % profits	26	30
No. days to start a business	38	56
No. procedures to start a business	86	74
Intensity of local competition	24	31
Tertiary education gross enrollment rate, %	55	69
Quality of management schools	45	55
Gov't procurement of advanced technology	33	69
Infrastructure and Digital Content	---	81
Electricity production, kWh/Capita	82	74
Mobile Network coverage, % pop	---	51
Int'l Internet bandwidth, kb/s per user	---	97
Secure Internet servers/million pop	77	71
Accessibility of digital content	46	48
Affordability	---	27
Mobile cellular tariffs, PPP $/min	81	29
Fixed broadband Internet tariffs, PPP $/month	46	53
Internet & telephony competition, 0-2(best)	---	58
Skills	---	34
Quality of educational system	27	31
Quality of math & science education	37	28
Secondary education gross enrollment rate, %	---	81
Adult literacy rate, %		75
Individual Usage	73	66
Mobile phone subscriptions / 100 pop	65	47
Individuals using Internet, %	72	82
Households w/personal computers, %	---	57
Households w/Internet access, %	---	61
Broadband Internet subscriptions/ 100 pop	72	87
Mobile broadband subscriptions/ 100 pop	---	84
Use of virtual social networks	---	36
Business Usage	33	55
Firm-level technology absorption	35	28
Capacity for innovation	66	57
PCT patents, applications / million pop	---	84
Business-to-business Internet use	---	50
Business-to-consumer Internet use	---	42
Extent of staff training	---	88
Government Usage	33	56
Importance of ICTs to gov't vision	---	43
Gov't online service index, 0-1 (best)	90	92
Gov't success in ICT promotion	18	34
Economic Impacts	---	49
Impact of ICTs on new services and products	---	47
ICT PCT patents, applications / million pop	---	68
Impact of ICTs on new organizational models	---	46
Knowledge-intensive jobs, % workforce	---	n/a
Social Impacts	---	54
Impact of ICTs on access to basic services	---	48
Internet access in schools	51	44
ICT use and gov't efficiency	29	37
E-participation index, 0-1 (best)	15	91

Source: WEF Global Information Technology Report – 2009,2013

UN Women is the UN organization dedicated to gender equality and the empowerment of women. A global champion for women and girls, UN Women was established to accelerate progress on meeting their needs worldwide.

UN Women supports UN Member States as they set global standards for achieving gender equality, and works with governments and civil society to design laws, policies, pr grammes and services needed to implement these standards. It stands behind women's equal participation in all aspects of life, focu ing on five priority areas: increasing women's leadership and participation; ending violence against women; engaging women in all aspects of peace and security processes; enhancing women's economic empowerment; and making gender equality central to national development planning and budgeting. UN Women also coordinates and promotes the UN system's work in advancing gender equality.

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and the Empowerment of Women

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