

Executive Summary of the ICT Sector

The number of establishments operating in the communications and information technology sector reached 6876 establishments employing about 25925 workers, distributed by 68% in the central region, 25% in the north and 7% the South. The majority of establishments operating in the sector are individual enterprises (86%) according to their legal entity. The establishments in the ICT sector that were classified as small enterprises (5-1 workers) are 94%, followed by large establishments (11 workers and more) of 4% and medium-sized enterprises (10-6 workers) of (2%). It is worth noting that the majority of establishments reported that the demand for their products decreased in the years 2017-2019 by 63%, while 13% of the establishments reported an increase in the demand for their products during this period, and about 24% experienced changes to their production during that period.

Workers in the sector are divided by 84% for males versus 16% for females. 96% of the employees in this sector are Jordanian nationals, compared with 4% of non-Jordanians. The study showed that the most busy occupations in the sector are: ICT sector a career of programmer (7.3%), ICT sales specialists (6.5%), (4.4%), advertising and marketing professionals (3.4%), and electronic / computer technicians (2.8%).

The demand for jobs in this sector for the years (2017-2019) were approximately (12,738), and the size of demand on males (7,765) compared to (4,973) females. In general, the demand for the years (2017-2019) focused on the professions of ICT sales professionals, telephone exchange operators, advertising and marketing specialists, programmers, vendor / other, communications engineers. While the demand for females is concentrated in the professions of ICT sales professionals, telephone exchange operators, advertising and marketing specialists, programmer, electrical / general engineer, vendor / communications engineer, chief technology officer (CTO), designer and programmer Database Designer and Developer.

The need for new workers based on expansion was greater than turnover, which meant creating new job opportunities, with an expansion-based demand ratio of 66% and a turn-around ratio of 30%.

The study showed that the most skills required within the professions of the sector are: the allocation of projects and programs for people and the coordination and review of their activities, the programming language Net. CCNA-Wireless, CCNA-WIRELESS, knowledge of electrical equipment and specifications, development of standards for operation and maintenance of electrical and electronic systems and equipment, CCNA CCNA, electrical and electronic troubleshooting and inspection, installation, maintenance and repair of electronics, supervision of installation and commissioning of electrical and electronic systems and equipment, Java programming language (Java), Oracle databases.

The results of the data analysis indicate that most of the establishments operating in the sector do not want to appoint females (94%), mainly due to lack of need followed by the nature of work that does not suit women. (About 81% of enterprises that do not intend to hire females were from the wholesale and retail trade activity).

The future demand for females reached 4,973 jobs and concentrated in the central region. On the other hand, the number of workers with disabilities reached (110) workers concentrated in the central and northern regions, constituting only (0.42%). The results of the study also show that establishments in the ICT sector do not prefer employing people with disabilities, but in general, 493 establishments announced that they will provide (555) jobs in different professions, the most important of which are the seller / programmer, electronic / computer technician, electronic phones.

The results of the study revealed that 10% of the establishments (mostly individual establishments) face difficulties in hiring due to the shortage of workers who have positive values and attitudes towards work and supporting skills for employment, the shortage of workers with the required skills, and the shortage of academically qualified workers.

In terms of the methods used for recruitment, the study showed that direct recruitment through personal contacts is the most frequently used (76%). Employers were asked about the difficulties and challenges facing the ICT sector. 29% of respondents said that higher taxes affect the performance of the sector while 20% cited the laws and regulations governing the work.

In terms of training programs, the number of training programs for this sector reached (30) training programs, and the number of graduates reached about (19430) during the years (2014-2016). The majority graduated from a program (25%), software developer (13%) and software engineer (11%). Graduates of training providers in the ICT sector were distributed regionally (61%) in the central region and 32% in the North and (7%) in the South regions, respectively. On the other hand, the graduates of the training providers in this sector are gendered by (53%) males and (47%) females.

The study also showed that the majority of graduates of the training providers for the years (2016-2014) were from Al-Balqa Applied University (17%), the Hashemite University (8%) then the Community Colleges / Balqa University, Yarmouk University, (7%), and approximately 6% of the vocational training institution. In terms of content, it was found that 49% of the graduates of the training centers received training in the percentage of applied content (89%), while the percentage of graduates who received training in the applied content ratio reached 84% (19%).

With regard to persons with disabilities and the role of training providers in their training, the results of the study did not show any specialised programs for this group on courses to raise the efficiency provided by the training providers. In general, computer network engineering courses ranked first in terms of the number of trainees for the period 2016-2014 with 130 trainees, followed by cellular maintenance courses by (54) trainees, 31) trainees. In general, the percentage of males trainees in these courses was the greatest percentage, reaching (80%) compared to (20%) for females. Computer network engineering courses had the highest percentage of male and female trainees, with 41% and 27% respectively. While the second rank between the sexes was in favour of maintenance of mobile devices for males, while it was in favour of Matlab for females.

We conclude that there is a very large numerical gap estimated at (6698) as oversupply, which means that the market is unable to absorb 100% of the supply and there will be a market supply surplus of 53% of the total demand. Existing demand can be met through ongoing training programs and the expansion and diversification of efficiency and diversification courses that are more specific. The study emphasises the need for the providers to train for this demand and to ensure the provision of training programs required for employers regionally. This can be integrated into existing programs or implemented in the form of technical upgrading courses / programs.

With regard to the technical skill that the employers emphasised to be available in the workplace and in the intended appointment, they are mostly not included in the training programs offered. Therefore, in view of the results of this study, it should be recommended that training programs provide the required technical skills that can be summarised in: Adobe Illustrator, Adobe Premiere, AUTODESK 3D Max, CCNA Security, CCNA, CCNA-Wireless, Core Solutions of Microsoft Exchange Servers, Fiber Communication, GSM, HTML5, CSS, Hyper-v in Windows Server, JavaScript.

The analysis of the gap between supply and demand for females shows that there is an initial digital gap between what is offered and what is required and is estimated at (4116) excess supply within the ICT sector, and the supply and demand gap for people with disabilities. The gap can be limited to this

category, although (493) establishments have announced that they will provide (555) jobs in different professions, the most important seller / other, programmer, electronic technician / computer, electronic phones.

Based on the above, the study recommends that the Council for Employment and the Training and Vocational Education should form a national team to formulate sectoral policies in the field of training and employment of the Jordanian workforce in the ICT sector. The training providers would review and develop the required training programs in the sector, and integrate life skills, leadership and support for employment as a mandatory program in all their training programs. There would be a need to review any training programs that are not required for the labor market in the sector, and to open new programs inspired by the large demand in the labor market. The study also recommends that the Ministry of Labor should implement the gradual replacement of Jordanian labor in place of expatriate labor.