

The gap between the supply and demand sides in the engineering and electrical industrial sector

Executive Summary

The number of establishments in the engineering and electrical industrial sector is (233) establishments, which employ about (5,536) employees of both sexes, distributed in the order of (88.4%) in the Central Region, and about (10.7%) in the Northern region, and finally the percentage of(0.9%) in the southern region. The majority of operating establishments in the sector are individually owned (sole proprietorship) reaching (51.5 percent), in accordance with their legal status, followed by partnership accounting for (31.8%), and finally about (13.3%) of establishments are limited liabilities establishments.

The establishments in the engineering and electrical industrial sector classified into three major groups: small-sized establishments (employing 1-5 workers) with (59.2%), next are the large-sized establishments (employing 11 workers and more) with (26.2%), and medium-sized establishments (employing 6-10 employees) with (14.6%). It is should be noticed that (53.6%) of the operating establishments in this sector showed a decrease in demand for its production in the year 2012, and also expected a decline in demand for their products during the years (2013-2015).

Employees in this sector are distributed according to gender as follows: (95.6%) are males compared with only (4.4%) females. In addition, we find that the majority of male employees have educational level of technical apprenticeship and less than secondary high school, with a percentage for both of (31.3%), while we find that (62.6%) of working females in the sector have educational level of a bachelor degree and (18.3%) having educational level of diploma. On the other hand, (94.6%) of those working in this sector are Jordanians, compared with (5.4%) being non-Jordanians, the percentage is considered very near in the central and northern regions but the percentage is higher in the southern region.

The study shows that the occupations which are the most employable are as follows: assembly workers of electrical and electronic equipment, production supervisor, cooling systems mechanic, operator of melting furnaces and piping, all departmental general clerks, assembly of mechanical equipment laborer, and welders. These are the most employable occupations in the engineering and electrical industrial sector. These occupations are in existence in the central region, however, in the northern region the occupations are: production supervisor, operator of melting furnaces and piping, and production mechanic. These are the occupation which are widely spread among employees in the sector. In the southern region, the occupation which are the most occupied are metal sheets and plates and cooling system mechanic.

The engineering and electrical industrial sector concentrate in a major way on employing males in general. In addition females, are present in a group of occupation, but in a small percentage. Also demand for workers is concentrated in the central region, with the size of demand for occupations in this sector for the years (2013-2015) reaching (472) in the central region, compared with (13) in the northern region with total demand size reaching (211) for the year 2013 for males compared with (39) for females. but the expected demand size will decrease to (170) in 2014, and will decrease again to (65) in 2015.

In general there exist demand for the years(2013-2015) for the following occupation: technical mechanic / production, electrical welder, wire extensions/general residential and industrial, electrician/ home appliances, electrician/ other, operators of plastic production industrial machinery, assembly workers/ cooling appliance, and assembly workers/ washing machine, while the demand for females is in the following occupations: production supervisor / assembly of mechanical products, assembly workers/ cooling appliance, and manual packing workers. It is worth mentioning that there will arise a need for new workers on the basis of business expansion, this is matter call for being optimistic that the size of demand will increase for workers in the years (2013-2015) which is resulting from business expansion ranging between (86% - 100%) rather than just being a result of just normal job rotation.

The study indicated that the most demanded skill among the careers in the sector are: professional safety skills in lines all mechanical equipment, transferring them and handling such equipment (technical mechanic occupation/ production), welding metals using Teeg welding (electrical welding occupation), the skill of diagnosing malfunctions of measurement equipment and maintenance of such equipment (for electric wiring/ general residential and industrial, electrician/ home appliances), and the skill of assembling electrical boards (for worker assembly of cooling equipment).

The results of the collected data analyzed indicates that more than (84%) of working establishments in the sector do not have interest in employing females. The main reason for this being the nature of work in the sector not suitable for women. But in general there is still an employment for females in this sector by at least (15.5%) in the following occupations: assembly workers/ cooling appliance, production supervisor/ assembly of mechanical equipment, and manual packing workers. This demand is specifically limited to the central region, while there is no demand for female in the rest of the regions of the Kingdom in the engineering and electrical industrial sector with exception of drawing occupation in the northern region. From another point, the number of workers with disabilities was (22) workers were employed exclusively in the central region and they make (0.4%) only, and they work in nine different occupations in the same sector. However, most of occupations that are concentrated in general information clerks, assembly workers of radio and TV sets.

The study results disclose that (67%) of the establishments that do not face any difficulties in recruitment, while (41.2%) of the establishments (mostly of whom are single owned/sole proprietorship) face difficulties in recruitment, these difficulties are resulting for the major part from shortage of workers who have the required skills, in addition to the shortage of labor who have positive values and attitudes towards work. With regards to the methods used in recruitment, the study disclose that the direct recruitment through personal contacts is the most widely used by (63%), next comes recruitment through newspapers and websites with (21%), and finally recruitment through employment agencies with (10%).

The number of special training programs for this sector is (51) training program, and the number of graduates reached (17,170) graduates during the years (2010-2012). The larger percentage of them graduated from the building electrician program with (20.7%), then installation and maintenance of cooling and heating equipment with (19.3%), next is the program electrician/ general residential and industrial with (7.4%), and finally communications technician / general with (6.6%).

On the other hand, the number of male graduates from special training programs in this sector about (14,667) graduate during the years (2010-2012). The greater majority of them graduated from the building electrician program reaching (24.2%), then the program of installation and maintenance of cooling and heating equipment with (22.6%), followed by electrical wiring program/ general residential and industrial with (8.7%), then communications technician/ general (7.8%) . In comparison, the number of female graduates in the engineering and electrical industrial sector reached (684) graduates during the years (2010-2012). A large percentage of them graduated from the electronic technicians/ computer technician program reaching (36.1%), then is the program electronic office machines/ installation and maintenance with (26.2%), and last communication technician/ general program with (16.5%).

The results of the study disclose that the number of trainees with disabilities has reached (40) trainees who are concentrated in the three training programs: mechanics/ installation and maintenance of cooling and heating equipment program with (18 trainees), then the electrician/ general maintenance of machines program with (17 trainees), and finally the program for assembly workers/ cooling equipment with (5 trainees), all of these people have received this training exclusively in the Vocational Training Corporation and in the private sector (General Deluxe). When providers of training programs were asked about the future training opportunities for this category of society, we found there are three institutions who are willing and able to offer training programs.

courses to increase efficiency provided by training institutions are diversified, and in general the greater participation is to enroll in the pipes welding course with total participants of (85) trainees for the years (2010-2012), followed by

welding pipes type G6 with total trainees (66) trainees for the years (2010-2012), then an electronic television space receivers course for totaling (30) participants. It is noticed that increasing efficiency courses are concentrated in the Central Region of the kingdom with the exception of the course on valves and pressure valves in hydraulic and pneumatic systems (4 trainees), and pressure pumps maintenance (11 trainees), in addition to the course for electronic television space receivers (30 trainees) in the northern region. It should be noted that the Vocational Training Corporation will offer a professional future programs to train 50 trainees distributed in order of (20) participants in the production supervisor program, and (20) trainees in operators program and still another program in electronics with (10) participants.

From the above we conclude that there exist a very large numerical gap estimated to be (16,685) as excess supply. which means that the market is able to absorb what amounts to (3%) from supply size, while it is expected that the remainder of the percentage which is (97%) will be unemployed. This is indicative of the lack of good planning for the supply with respect to institutions providing training programs and in the different demanded field programs.

With regards to the technical skills which business owners insisted on the necessity of availability in workers at their workplaces and in those who will be recruited, since most of these skills are not incorporated within offered training programs. Because of that and in light of the results of this study it should be recommended the necessity to offer training programs which include these demanded technical skills which can be summarized as follows: occupational safety within assembly lines of mechanical equipment, transferring them and handling of such equipment, technical drawing using a computer programs (AutoCAD), reading electronic drawing and electronic boards, cutting metals utilizing plasma, metal welding using teeg welding, sharpening and maintenance for cutting tools, reading codes of mechanical and electrical parts for mechanical equipment and assembly blueprints and drawings for its assembly, diagnosing failure of measurement appliances and equipment and conducting maintenance for such equipment, programming and running the

micro-controller, and finally assembling and installing switches which works with modern sensors.

It is possible to accommodate existing demand through continuing training programs and increasing efficiency courses which are considered specialized and specific to a large part. The study insist on the necessity of institutions providing training to take into consideration this demand and to ensure to offer demanded training programs from business owners for every region. These programs can be integrated into existing programs or implemented in the form of raising the technical efficiency courses/programs.

As the nature of the general skills support for employment in both supply and demand sides, it was observed that the training institutions offer all the skills demanded by business owners and to a sufficient degree, in addition to other additional skills which are not mentioned by business owners. Accordingly, there is no gap between supply and demand in connection with general skills supportive of employment in the engineering and electrical industrial sector .

The gap analysis between supply and demand for female shows that there is a future demand for females to work in this sector estimated at (100) job opportunities for the years (2013-2015). The expected demand is distributed within the various administrative and technical occupations. In addition, it was found that there exists a supply of females, thus the surveyed data indicated that (684) trainees have graduated from different training programs provided by training institutions. Here we notice the preliminary numerical gap between what is supplied and what is demanded (584 of females do not have demand to absorb them within the engineering and electrical industrial sector).

Looking at the details of demanded occupation and female graduates specialization supplied, we notice that there is a big and clear imbalance in the labor market of this sector. Hence, it is clear that disequilibrium exists between supply and demand, and that there is a gap in some specializations in favor of supply (unemployment indicator) and another gap in favor of demand, which is indicative to Specialization capable of creating jobs in the engineering and electrical industries for females sector during the years (2013-2015).

With regards to the gap of supply and demand for people with a disabilities, the data which is included in the survey point out that there are (12) establishments in the engineering and electrical industrial sector are ready to provide (18) job opportunities. On the other hand, two training institutions announced that there are (40) trainees with disabilities are being trained In three different program. Therefore, the study find that there is a gap between what is demanded and what is supplied in terms of training programs for people with disabilities in the engineering and electrical industrial sector. the study insist on the necessity to provide demanded training programs for this group in society .

Based on the above, the study recommends that the Employment – Technical And Vocational Educational And Training Council should form national teams to develop sectoral policies in the field of training and employment of Jordanian work force in the engineering and electrical industrial sector. it also recommends the need for training programs providers to review and develop the required training programs in the sector, and the integration of real life skills and pioneering which are supporting employment in a compulsory package in all its training programs, and cancel any training programs that are not needed for the labor market in the engineering and electrical industrial sector. The study also recommend the necessity that the Ministry Of Labor take steps in applying gradual policy of replacing non–Jordanian workers with Jordanian workers.