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SKILLS ANTICIPATION -LEBANON

COMPILED SECTORAL ANALYSIS
REPORT FOR

Printing and Packaging

Public infrastructure

Healthcare

Sectors

MARCH
2023



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This report is a compilation of the findings of three sectoral studies prepared in 2022 by the ILO under the joint ILO – UNICEF project “Towards improved formal and non-formal Technical and Vocational Education and Training in Lebanon.” The studies focused on the labour market skills gaps and challenges in Lebanon’s healthcare, public infrastructure, and printing and publishing sectors, and analyzed the current situation using similar studies conducted in 2018-2019 as a benchmark. The studies benefited from the inputs of ILO experts at the Regional Office for the Arab States including National TVET programme Coordinator Rania Hokayem, Senior Skills and Employability Specialist Kishore Kumar Singh, and Senior Employers Affairs Specialist Paolo Salvai.

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Executive Summary

The triple crises of the COVID epidemic, the near collapse of the financial sector, and the Beirut explosion have had a serious impact on establishments working in public infrastructure, health care and the printing and packaging sectors in Lebanon. Employment in these sectors was reduced substantially during the crises with only a few exceptions, such as in telecommunications. In public infrastructure including water and electricity supply, employment was reduced by nearly two-thirds, in healthcare 95% of hospitals were forced to downsize their operations, and most companies in manufacturing and production (printing and packaging) downsized their operations. The situation has been exacerbated by lack of government reforms that are conditions for foreign aid which is especially needed to prevent collapse in the health sector and in water supply and transport.

Major issues facing establishments include limited access to electrical supply and finance, increasing cost of raw materials, as well as difficulty in finding and retaining skilled staff.

Brain drain is serious challenge for employers with well-qualified persons such as engineers, nurses and tradespersons departing for better opportunities abroad. Many establishments are offering training as an incentive to keep their workers, as well as making changes in their pay schedule.

Still, there are demands for skilled labour at various levels in the different sectors, for example, machine operators, construction personnel, and medical professionals especially nurses. There continues to be dissatisfaction with the skill sets that TVET graduands develop at training providers with observations across the board that the training has too little practical, hands-on experience and that instructors lack business and industry exposure. There is a call for curriculum reform in partnership with employers to include not only more practical skills but also enhanced generic skills such as computer literacy, team work, and problem-solving. Numerous respondents also noted that TVET graduates would be more attractive to employers with an extra set of specialized skills, such as safety and occupational health certification for construction workers. Such training could be provided through short-courses combined with work attachments.

In all three sectors reviewed, there is under-representation of persons with disabilities, and for women too, except in the healthcare sector where women make up a large percentage of workers. The value of adding these groups to the labour market is not well understood in country and efforts should be made to communicate this message to the public. There is also the observation from many survey participants that TVET in general is not valued as much as university education, and this negative perception contributes to lack of interest from youth and their families when considering career options.

On a more positive note, some companies have used the crises as an opportunity to explore new technology such as renewable energy to tackle energy shortages. Survey respondents saw the need for better coordination and communication among establishments in their sector, and support for the National Employment Office to provide enhanced services such as job and job applicant listing.

Introduction

The International Labour Organization (ILO) and UNICEF Lebanon commissioned 3 sectoral analysis reports in 2018 to identify labour markets trends, projections and skills gaps in the Healthcare, Public Infrastructure and Printing & Packaging sectors. The sectors were selected in collaboration with the National Employment Office based on their contribution to national output and employment. The selection also factored in the relevant governmental strategies focused on the growth potential of these industries and their ability to absorb TVET graduates across their different value chains. The studies relied on qualitative and quantitative methods to provide a full understanding of the sector's organization, value chains and employment constraints. The studies also relied on a number of sources, including syndicates, private sector actors and government agencies to draw the landscape in which these sectors operate and how training programs can be optimized to better respond to the needs of each industry as a means to facilitate their growth all while empowering local youth. In each sector, around 70 companies participated in the research, and more than 400 surveys were conducted in close partnership/collaboration with relevant syndicates.

Exhaustive and brief analysis reports were developed in 2019 highlighting (i) key factors affecting the sector's employment and growth, (ii) the skills on demand in the sector, (iii) common practices for skills development within the sector.

Since 2019, however, Lebanon has been struggling to cope with a prolonged economic and financial crisis, the outbreak of COVID-19, and the Beirut blast. Therefore, there was a need to update those market assessment briefs to reflect the impact of the current multifaceted crisis in the country on the surveyed sectors.

Three follow-up studies in the same sectors were completed during 2022 and this compiled analysis report will highlight differences between now and the situation in 2018 or 2019.

The current studies used qualitative research methods including desk review, key informant interviews and focus group discussion and information from them is widely used in this consolidated report.

The goal is producing knowledge about the labour market needs and gaps that can be filled by developing TVET. Recommendations on policy modification and skills intervention strategy are included.

Background and Context ¹

Lebanon is a small country with a primarily consumer-oriented economy dominated by services, trade, and a high dependence on imports. Since 2019, the country is facing an economic and financial crisis, including severe currency devaluation and inflation, the effects of COVID and the explosion at Beirut port. Three years since the beginning of the crisis, the economic situation in Lebanon remains dire, as the country's GDP is estimated to have declined by 10.5% in 2021, following a 21.4% contraction in 2020. Political gridlock and corruption are further exacerbating the collapse, as policymakers do not seem set intent on designing and implementing a plan to mitigate the impact of the crisis and perform structural reforms that can attract foreign investment and aid packages.

The development of the Lebanon's labour market faces severe threats at once, most notably; (1) political instability coupled with the ongoing devaluation of the national currency, (2) the consequences of the regulations and lockdowns due to the COVID-19 pandemic, (3) record-high oil prices as a result of the war in Ukraine, (4) the burden of hosting 1.5 million Syrian refugees in a crisis-ridden country ², (5) the brain drain of skilled and talented workers, particularly youth, especially since 2019.

Owing to these challenges, the national labour market is in a critical situation, according to the Lebanon Follow-Up Labour Force Survey conducted by Lebanon's Central Administration of Statistics (CAS) and the International Labour Organisation (ILO) in 2022. The study found that Lebanon's unemployment rate increased from 11.4% in 2018-2019 to 29.6% in January 2022 indicating that almost one third of the active labour force was unemployed by the beginning of the current year. Unemployment is affecting women more than men, with the female unemployment rate standing at 32.7% in comparison to the male rate (28.4%). In parallel, the youth unemployment rate (47.8%) is almost twice the adult rate (25.6%). Labour underutilization recorded a dramatic increase, from 16.2% in 2018-2019 to 50.1% in January 2022. The highest degree of labour underutilization was among the youth population (15-24 years old), which stands today at 64.7%, in comparison to 29.4% in 2018-2019. Finally, the survey found that informal employment now accounts for over 60% of total employment in Lebanon ^{3,4}.

Technical and vocational education and training (TVET) suffers from insufficient funding, and as a result TVET institutions are poorly equipped which leads to more theory based rather than practical training. Moreover, teachers and instructors are often underqualified and not up to date with the latest trends in their profession. Even though most have academic backgrounds, they usually exhibit shortfalls in the specific areas of TVET provisions ⁵. As a result, the country's labour market suffers severe shortages in technical occupations and skill gaps, effectively weakening the ability of relevant industries to benefit from a highly trained and competitive workforce.

During the crises, the ILO conducted several interventions to help address challenges including activities supporting TVET under the overall National Strategic Framework 2018-2022 (upstream and downstream levels). At the policy level these included review of skills interventions in Lebanon, including challenges, gaps and priorities. There was also work on governance and standardization of approaches and services for skills development, as well as capacity building to TVET providers (both formal and non-formal). The ILO with partners such as the Lebanese Association of Lebanese Industrialists and various industry associations conducted market studies on skills in demand (public infrastructure, craft, health, agriculture, agri-business, printing and packaging, community-based assessment in 7 regions. The ILO was also engaged in developing occupation standards and competency-based curricula as per identified market demand.

This compiled analysis report provides a summary of key findings and recommendations from the three follow-up studies conducted in 2022 for the ILO in the public infrastructure, healthcare and printing and packaging sectors and shows changes in the situation since before the crises.

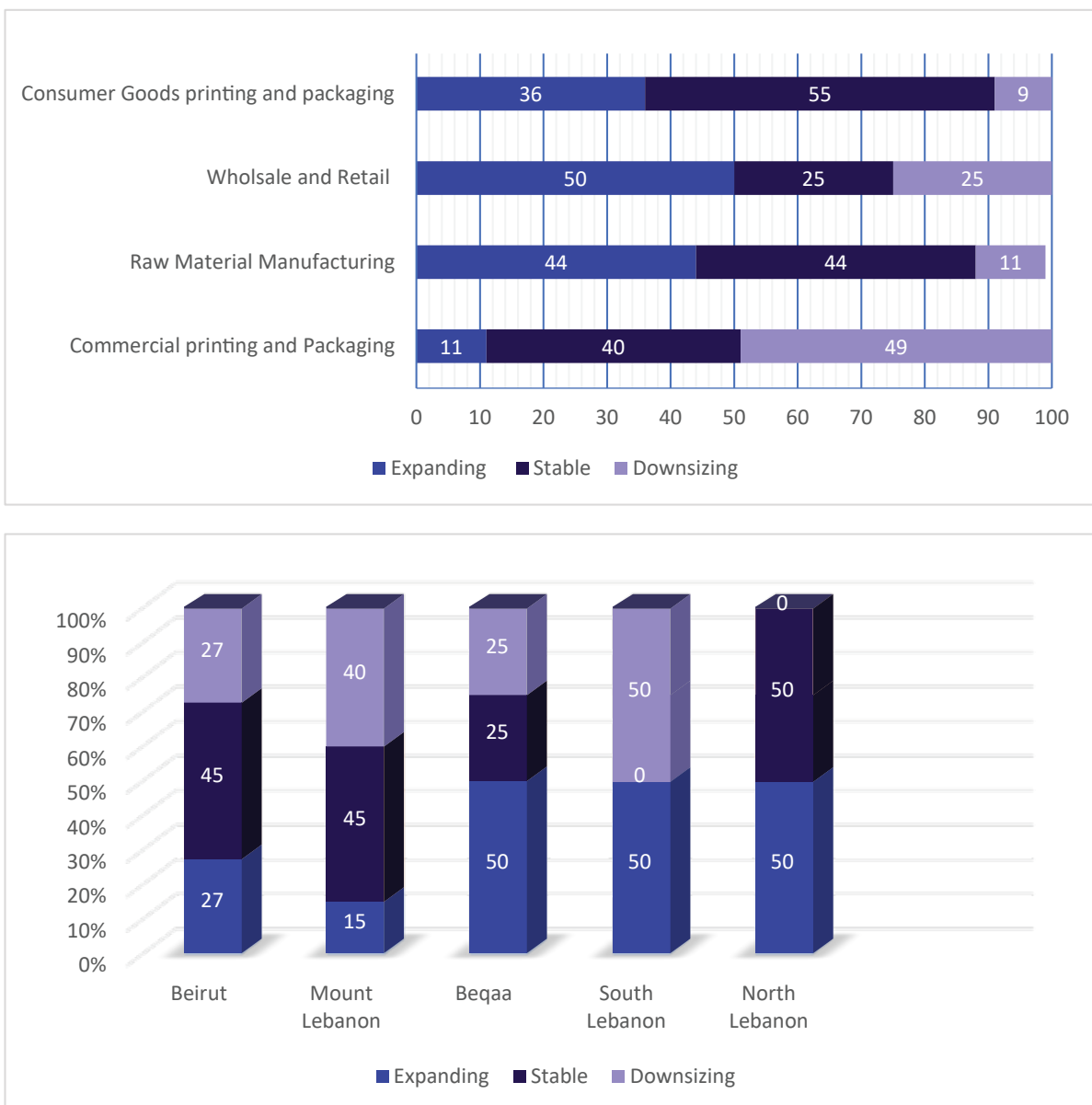
1. The 2022 report on printing and packaging provided a detailed description of the situation in Lebanon and significant portions of that description are used here.
2. UNHCR. (2022, January). Lebanon factsheet. Global Focus. Retrieved July 15, 2022, from <https://reporting.unhcr.org/document/1787>
3. Informal employment is employment that is not covered or is insufficiently covered by formal arrangements and protections.
4. International Labour Organisation. (2022, May 12). Lebanon and the ILO release up-to-date data on national labour market. ILO. Retrieved July 15, 2022, from https://www.ilo.org/beirut/media-centre/news/WCMS_844831/lang-en/index.htm.
5. UNEVOC, TVET Country Profile: Lebanon June 2019, IRO Journal on Sustainable Wireless Systems, 01.02 (2019) <<https://doi.org/10.36548/jsws.2019.2>>.

Sector Growth

With just a few exceptions, the 2022 studies reported negative growth and significant loss of staff in the three sectors reviewed compared to the situation as reported in 2018 or 2019 and before the crises.

For example, in the printing and packaging sector in 2018, there was a mixed situation reported depending on the sub-sector and governorate where the companies operated. 50% of companies in the wholesale and retail sub-sector were expanding while nearly half of those in commercial printing and packaging were down-sizing. There were also some differences according to location of establishments.

Figure 1: Growth trends by (sub-) sector and location in printing and packaging in Lebanon (2018) ⁶



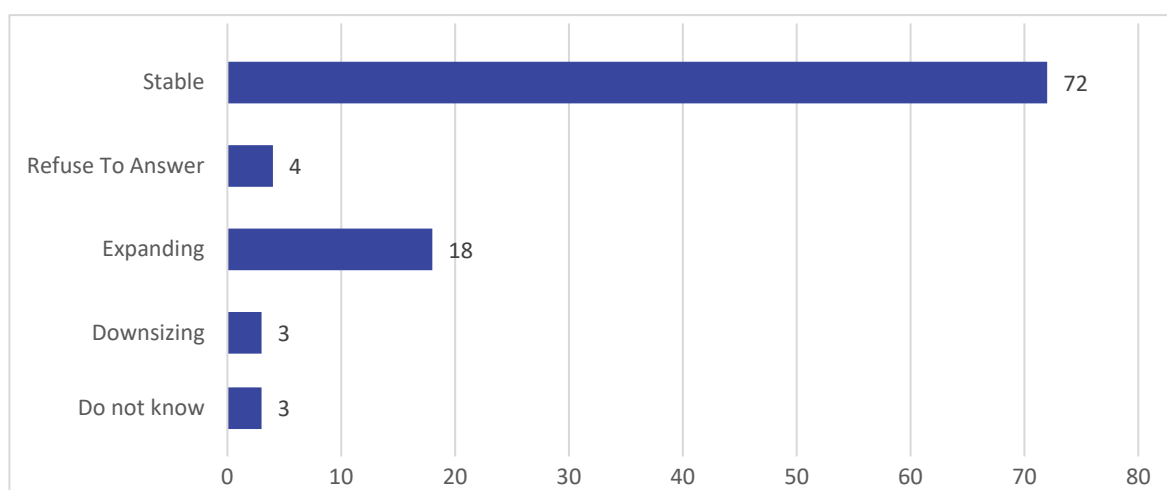
6. Employment needs assessment study for the printing and packaging sectors in Lebanon, Validation workshop presentation, Euromena Consulting for ILO, 2019.

Sectors' growth, needs and challenges

By comparison, according to 2022 survey results, most participants in manufacturing and production downsized their operations whereas companies working in wholesale and retail packaging witnessed growth.

In the public infrastructure sector, the 2018-2019 report focusing on water, roads and telecommunications indicated most companies reported a stable performance, which means they experienced no growth or decline in business activity, whereas a few stated that they were expanding and a couple of companies mentioned that they were downsizing. (See Figure 2) By contrast, during in-depth interviews in 2022, many company representatives revealed a dire situation in the construction and infrastructure sector due to a decrease in revenues resulting from a drop in the number of clients and projects.

Figure 2. Public Infrastructure growth relating to their sales, staff and operations (2018) ⁷



In the healthcare sector, the 2018 study ⁸ described an on-going expansion across the sector and all healthcare establishments. Table 1 ⁹ below shows average labor growth of 7% across the healthcare sector over the period 2016-2018. However, the report also noted disparity in the healthcare system between Beirut and the rest of the country. For example, most hospitals, medical equipment importers and suppliers are in Beirut and Mount Lebanon. The public health network comprised of some 650 active dispensaries and more than 200 Primary Health Care Centres (PHCs) is more widespread and offers services across all governates. In 2019, the PHC network was expanding; however, the 2022 study suggest they are barely able to maintain day-to-day operations. Some 95% of hospitals were forced to downsize their operations since 2019 and there is a danger some will close especially those owned by individuals.

Table 1: Growth in labor across the health care sector over three years (2016-2018)

Labour Increase per Institution per Subsector	2016	2017	2018	New Employees per Institution
Private Hospitals	263	274	282	19
Governmental Hospitals	173	175	187	14
PHCs	77	80	88	11
Private Laboratories	9	12	13	4
Pharmaceuticals Manufacturers	138	151	167	29
Waste Management Companies	500	540	560	60
Medical Devices Distributors	170	180	190	20
Sector Total	1,333	1,412	1,487	157

7. Public Infrastructure Labour Market Study, ILO 2018-2019.

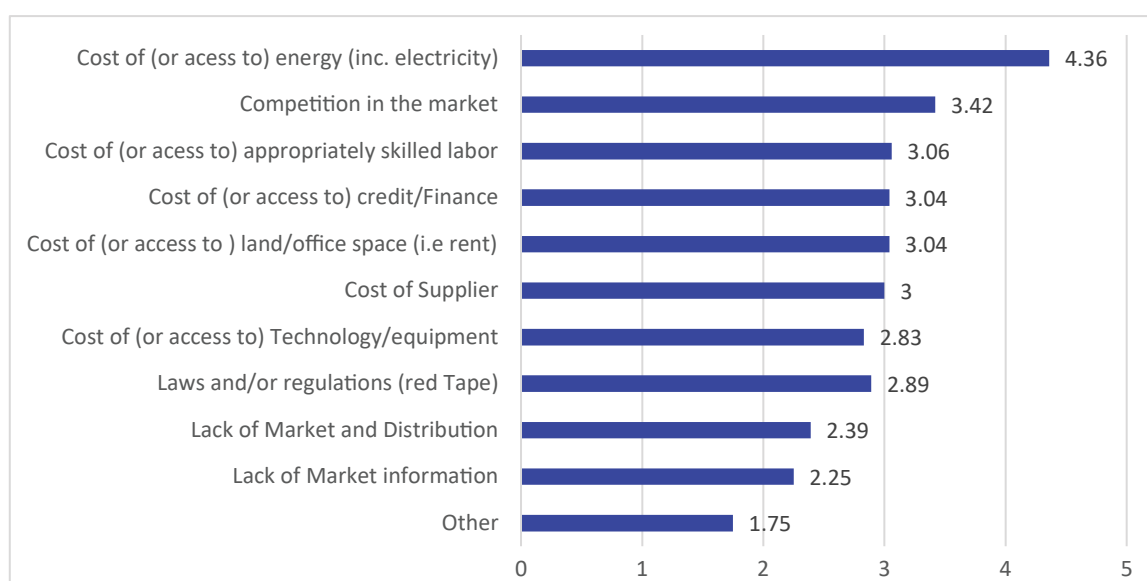
8. Lebanon's Healthcare sector - Overview of labour market, gaps and challenges, ILO 2022.

9. Employment needs assessment study for the healthcare sector in Lebanon, ILO 2018-2019.

Needs and Challenges

In the printing and publishing sector, exports decreased significantly as a result of the financial crisis and the effects of COVID, imports also decreased. Obstacles to growth identified in the 2018 study are shown in Figure 3. The most common challenges included cost of energy, competition, and access to labor; whereas the 2022 study¹⁰ highlighted material challenges such as energy disruptions, the rising cost of paper, collapse of the banking sector and youth migration. These items were closely followed by access to funds and financing, and access to appropriately skilled labour.

Figure 3: Common Challenges Cited by Printing and Packaging Employers ¹¹(2018) (scale from 0 to 5)



Similar challenges faced actors in the public infrastructure sector where changes in the procurement process and tendering processes, as a result of the financial crisis, disruptions in accessing raw materials and energy shortages are problematic. During the 2018 study, market competition and rising energy costs were perceived to be the biggest challenges. However, the recent focus group discussions (2022) indicated access to credit/finance and the cost of raw materials top the list as shown in Figure 4. Each sub-sector studied, water, transport, and telecommunications each face other challenges.

- Water sub-sector - Faces chronic challenges, many resulting from obsolete financial management, inadequate tariffs, low collection and subscription rates, unpaid arrears, and unbilled usage ¹². The current crisis is adding further financial and budgetary deficits, with the depreciation of the salaries of public servants causing shortages of technicians. The impact of the crisis is worsened by the sector's incomplete and outdated legal and institutional frameworks.
- Transport sub-sector – Lebanon's transport infrastructure has suffered from years of under-investment, oversaturation, overuse, and insufficient spending. The sub-sector is currently facing unprecedented challenges linked to record-high fuel prices that are increasing transportation costs.
- Telecommunications sub-sector– The 2022 study indicated the increase in fuel costs and energy disruptions significantly interfered with services. Operations have become dependent on electrical supply from government or private generators. However, despite these challenges the sub-sector has seen growth partially due to more reliance on telecommunications during COVID and partially due to increased engagement of companies in Lebanon doing contracts in the Gulf countries as activity for them in Lebanon decreased.

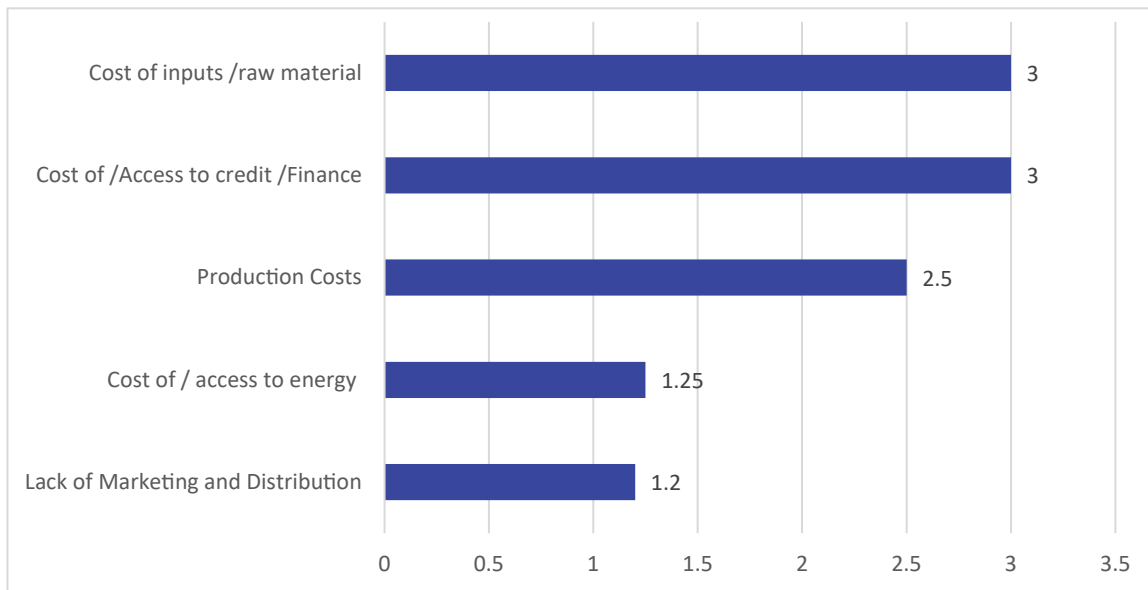
10. Lebanon's Printing and packaging sector – Overview of labour market, gaps and challenges, ILO 2022.

11. Employment needs assessment study for the printing and packaging sectors in Lebanon, ILO 2018-2019.

12. Water that is pumped and then lost or unaccounted for.

Sectors' growth, needs and challenges

Figure 4: Ranking of the impact of some challenges on future growth of and within the public infrastructure sector ¹³ (scale from 0 to +5) (2022)



The main challenges for the healthcare sector in 2018 in surveyed establishments were the cost of or access to energy as well as technology, the cost of supplies, and competition. Recent focus group discussions reveal the top recurring challenges facing healthcare establishments over the past 3 years have been the inaccessibility of financial resources, the shortages of qualified workers and rising costs of infrastructure and equipment.

A significant challenge for all sectors has been the lack of government action to ameliorate the effects of the crises and carry out needed reforms required in order for Lebanon to qualify for assistance from international partners. One survey participant described the government as “missing in action”.

On the brighter side, some firms in the printing and packaging sector were exploring more sustainable and environmentally sound energy sources such as solar power. Data from 2018 and 2022 identified opportunities for growth that stems from a rising demand for recyclable materials and increased development of advanced technologies. In addition, stakeholders anticipated growing demand for raw materials due to on-going difficulties to import them. The use of cash-based transactions instead of credit or bank transfers sped up transactions, consolidated relationships between suppliers and manufacturers and mitigated the effects of the banking crisis.

Recovery Plans

The 2022 report on the printing and packaging industry concluded mitigating the impact of the crisis on the sector requires a complete overhaul of Lebanon’s industrial ecosystem, from its infrastructure to the public perception surrounding it. Any sustainable and efficient overhaul strategy needs to invest in developing the sector’s workforce. However, limiting such initiatives will only have a cosmetic impact if they are not conceived as part of a multilateral strategy to tackle structural weaknesses in this industry.

For the infrastructure sector, financial investment is needed across its value chain and an action plan is required that can fill the gaps in the labour market. The government needs to make the required structural reforms that can unlock foreign aid and energize the sector.

13. Lebanon’s public infrastructure sector – Overview of labour market, gaps and challenges, ILO 2022.

Sectors' growth, needs and challenges

The health care study casts doubt on the sector's ability to sustain its activities on the short to medium term in the current circumstances. As reported by the various stakeholders, shortages in skilled personnel and critical material resources are threatening day to day operations. These actors consider there must be a governmental strategy to support the sector specifically, and tackle the financial crisis in general or the health system may collapse.

Key Takeaways

- *Companies in all three sectors have been negatively affected by challenges in provision of basic services such as electricity, limited access to finance, and increasing costs of raw materials and equipment. They are also challenged by a lack of qualified workers often caused by reduced wages, migration, and sometimes difficult working conditions.*
- *Except for the telecom sector and part of the printing and packaging sector there has been a drop in the number of employees in the companies surveyed.*
- *Numerous establishments and services such as those in water and transport are in a dire situation and may close or collapse without support.*
- *The situation in the health sector is also ominous.*
- *Government planning and intervention strategies are needed to overcome systemic issues*

Employment levels

The crises in Lebanon forced most firms in all sectors apart from those in the telecommunications sub-sector and part of the printing and packaging sector to down-size staff numbers. The public infrastructure sector reported an average decrease of 33% in their number of employees since 2019. Only the telecom establishment reported a 40% increase in the number of its employees.

Data collection from the 2022 study on healthcare shows that the sector's labour force decreased by around 40-50% since the end of 2018.

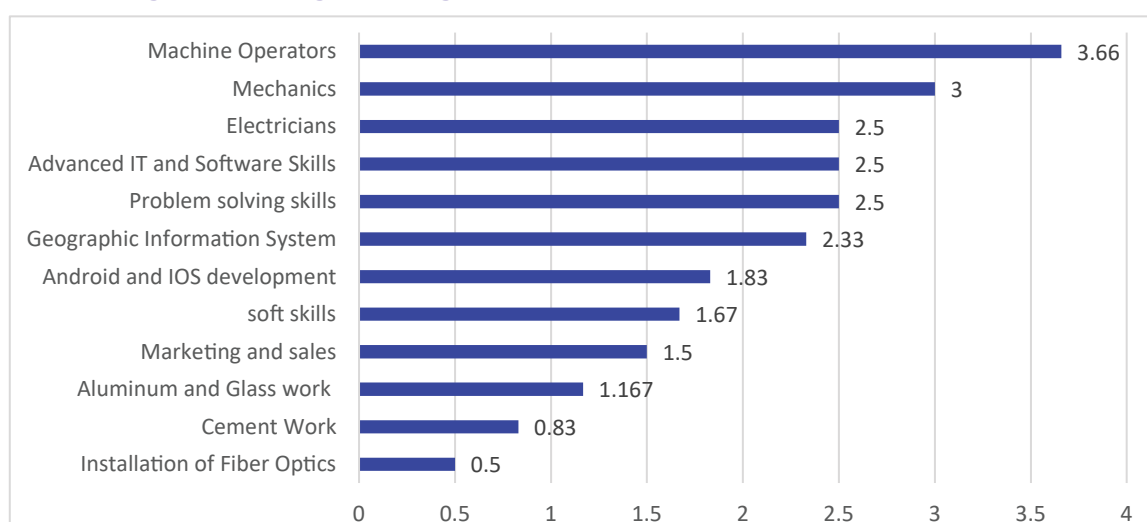
In the printing and packaging sector several firms had to cease operations indefinitely with some larger firms taking over their departing staff.

Effects on skills needs

Findings from ILO's 2018 study in the printing and packaging sector indicated the most common skills perceived to be difficult to find in the labour market were (1) specific technical skills, (2) foreign language skills, (3) advanced IT or software skills, (4) problem solving skills, and (5) basic computer literacy/using IT. The 2022 study indicated the need for specialized technical skills remained a top priority, but also an increased demand for foreign language skills to deal with international customers and to read technical manuals only available in English. (See Figure 5)

For the infrastructure sector, the skills shortages in 2022 were similar to those in 2018 in that technical knowledge in mechanics and machine operations were the most difficult skills to find (average of 3.5/5). The graph below shows the updated rating results for skills shortages.

Figure 5: Ranking of shortage of skills in the labour market (scale 0 to +5) (2022)

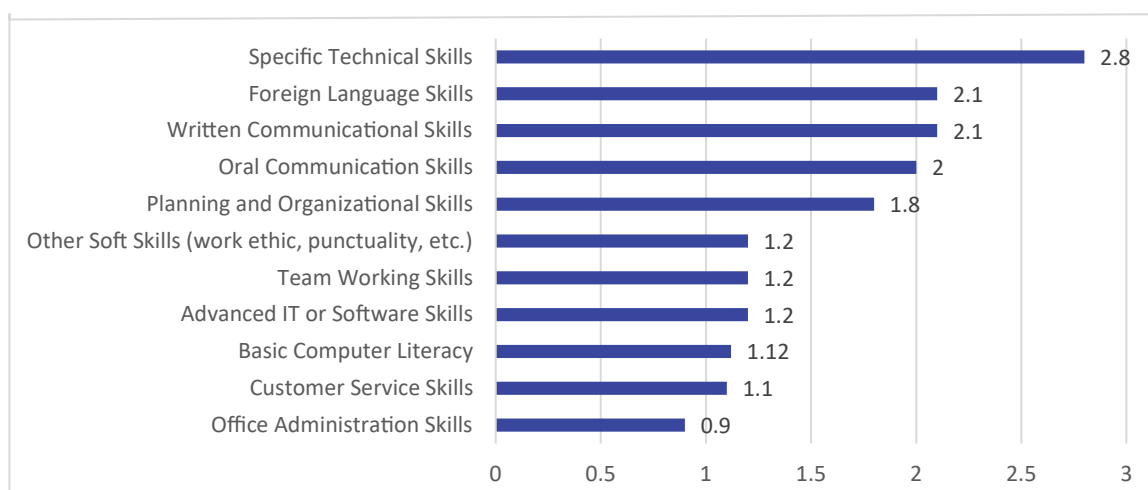


Impact of crisis on skills, competencies and occupations, variation in employment and workforce needs

In the healthcare sector, data collected reveals discrepancies between the skills sought by employers and the technical knowledge of young graduates, especially those with TVET backgrounds. In many cases, the obsolescence of TVET healthcare programs is reducing the competitiveness of students with vocational background. This mismatch is occurring at a time when all employers are suffering from severe shortages in various occupations that can be filled with TVET graduates.

Focus group participants in the 2022 healthcare study, as well as the president of the order of nurses, considered that the most lacking competencies in the job market are specialized competencies for each occupation. Other gaps highlighted are related to personal aptitude, leadership, administrative and management, mainly communication, organisational, planning, and problem-solving skills, as well as teamwork; computer literacy and information technology skills. The same shortages were identified in the 2018 study, indicating that the mismatch might be the result of structural differences between curricula and employer needs

Figure 6: Ranking of skills from most to least lacking by surveyed establishments – printing and packaging (2022) (scale from 0 to +5)



The healthcare workforce mainly consists of full-time workers due to the nature of the work in the medical field and the situation has not changed since the 2018 study. The 2022 study reported 95% of private hospitals were forced to downsize their operations since October 2019. Relatedly, data collection conducted in the context of this study shows that the sector's labour force decreased by around 40-50% since the end of 2018. As an example, around 2,500 nurses left the country since 2019 ¹⁴.

14. Key informant interview with Dr. Rima Kazan; president of the Lebanese Order of Nurses on 2 June 2022.

Salaries

Salaries in the healthcare sector have decreased since the 2018 survey. In the current study, apart from doctors, salary for the other type of staff including nurses, paramedical practitioners and others ranged from \$100 to \$200 per month compared to an average of \$450/month in 2018. Low salaries are one driver in healthcare personnel seeking opportunities elsewhere. By comparison, salaries in the infrastructure sector are higher as shown below.

Table 2: Average salary per occupation in the infrastructure sector within surveyed establishments in fresh USD (2022)

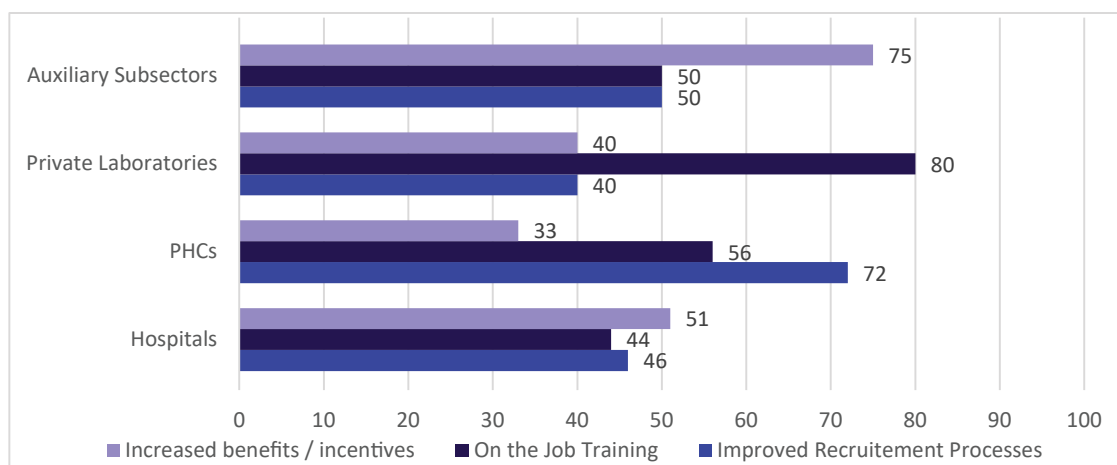
Occupation	Average salary within surveyed establishments
Engineers	1500 USD
Managers	1000 USD
High-Skilled Technical Workers	700 USD
Low-Skilled Technical Workers	300 USD
Administrative Workers	300 USD

Salaries in the printing and publishing sector have also decreased, for example, workers with technical or specialized skills make in the range of 201-400 USD in 2022 as compared with an average monthly wage of 700-1500 USD in 2018.

Responding to needs

To compensate for low wages, surveyed establishments in the healthcare sector reported attempts to increase social benefits and skills development for current personnel. See Figure 7. Also, participants reported lowering the bar for new employees, by requiring less experience for certain positions. Even in difficult circumstances, parts of the healthcare sector are still offering many employment opportunities due to high turnover rates and vacancies. Demand for workers remains relatively high and gaps exist across departments and occupations – especially those requiring technical qualifications. However, the main obstacle preventing the filling of these gaps is low wages, and in many cases hard working conditions that are discouraging individuals from pursuing career in the sector. The 2018 study yielded similar findings.

Figure 7: Strategies Used in the Health Sector to Overcome Shortages (2022)



Establishments in other sectors use these and other strategies such as moving their specialized staff to overseas offices to keep their current personnel and expertise on-board.

Effects on Social Inclusion

Nationality - Reports across all sectors reflect a strong preference for hiring Lebanese nationals except where there are shortages in occupations such as factory type labour in the printing sector or occasionally those with higher qualifications in specialized areas where no Lebanese worker is available. However, it is likely the employment of foreign nationals/refugees goes under-reported since often the work in construction, for example, is short-term and informal.

Disability - Concerning the employment of persons with disabilities, there were relatively few reported as being employed in the infrastructure sector, or in the health sector. In the printing and publishing sector most establishments reported having between 1% and 10% of their workforce having a disability. The current survey showed them working mostly in the manufacturing and production occupations as opposed to the 2018 survey which indicated they mostly occupied administrative positions. Larger firms reported having the most PWDs probably because of the government regulations that do not apply to micro and small firms.

Gender - Data collected during the FGD revealed gender inequalities across the printing and packaging that manifest through an under-representation of women in many firms. In 2018, the gender divide was the largest within manufacturing/production-related jobs. Women constituted 40% of the managerial and administrative workforce, but only 5% of employees stationed on production lines. Conversely, the establishments participating in the recent FGD ranked the ratio of women among their workforce per division as being highest in manufacturing and production followed by financing and accounting, customer service and general management, while the lowest reported ratio was in IT, revealing significant inconsistencies with the findings from the 2018 study.

On the other hand, women fill a high number of positions in the health sector. 79% of nurses are women and establishment representatives noted that 50% to 75% of their employees were women which mirrored findings from 2018. In the public infrastructure sector, women make up about 26.6 % of employees. The survey also revealed that smaller businesses have a higher tendency to hire more women than medium-sized establishments. When comparing by sub-sector, the telecom-specialized establishment hired women across all four occupation groups, a practice that was not as common in water and transport sub-sectors. Women were most present in engineering and administrative positions, with data revealing that on average women consisted between 25% and 50% of workforces. However, they are under-represented in low and high-skilled positions, where most firms reported less than 25% female participation.

Key Takeaways

- *Despite downsizing in many companies, there continue to be vacancies due to turnover of local staff and the need to hire staff with new sets of skills for innovative processes and technology.*
- *Specialized skills for groups of workers such as nurses, and special technical skills in other occupations are in demand. In construction, certification in occupational health and safety is required to meet requirements for international projects.*
- *Generic skills continue to be in demand for occupations across all three sectors*
- *Salaries have dropped since 2018 which makes hiring of new personnel challenging. Establishments are responding by providing other inducements for current workers and prospective workers such as professional development through on-the-job training, adjusted payment schedules and increased benefits and incentives.*
- *There continues to be a gender divide in terms of access to different types of employment where even in the health sector there are few females in top management positions.*
- *Despite government regulations there are relatively few PWDs employed in the three sectors reviewed.*
- *Most companies except in limited areas of worker shortages prefer to hire Lebanese nationals.*

Healthcare

The 2022 study indicates nursing departments are experiencing the most vacancies. Other departments suffering from vacancies, to a lesser degree, include human resources, radiology and medical imaging and laboratories. These findings are consistent with data from the 2018 study where the future jobs most in demand would be registered nurses, lab technicians, and then administrators, radiologists, and practical/applied nurse. The sector is in 2022 still offering many employment opportunities due to high turnover rates and vacancies.

Specialization and certification courses for healthcare trainees in all TVET programs, in cooperation with stakeholders would improve their eligibility for more positions.

Examples include:

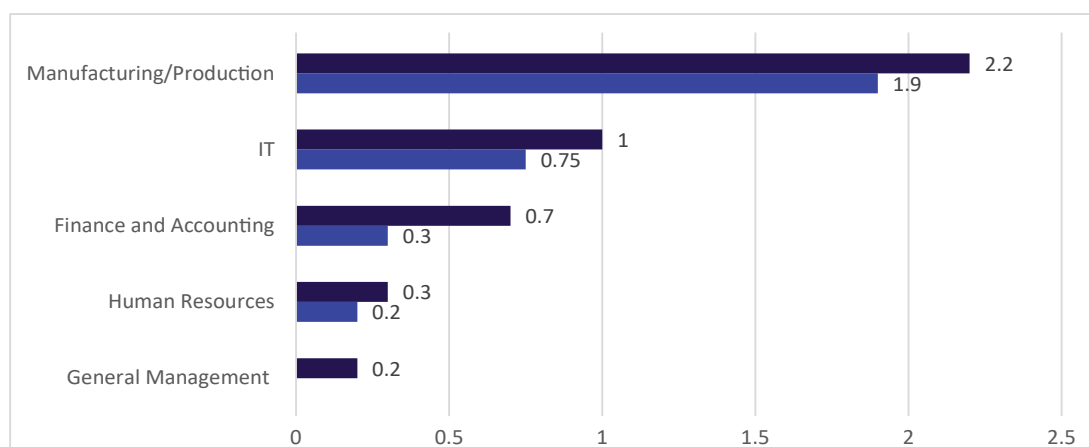
- High level specialised and technical training for assistant nurses, practical nurses, and registered nurses.
- Technical training programs targeting healthcare assistants, laboratory technicians, and equipment maintenance technicians.
- Specializations in the management and response to infectious diseases or mass casualty incidents (large scale disasters) building on the sector's experience during the response to the Covid pandemic and the Beirut Blast.

Both the literature review and the focus group discussions in 2022 point to the importance of guiding TVET students into career paths that are in currently in demand; such as information technology specialists, qualified assistants, practical nurses, and quality and control technicians in healthcare.

Printing and Packaging

In 2022, study participants indicated that most establishments suffered from staff shortages on the manufacturing side including manufacturing labourers, paper products machine operators and manufacturing supervisors. The concentration of vacancies per department reflected the findings from the 2018 study.

Figure 8: Reported vacancies per department printing and packaging sector (2022)



Emerging skills needs and occupations in demand

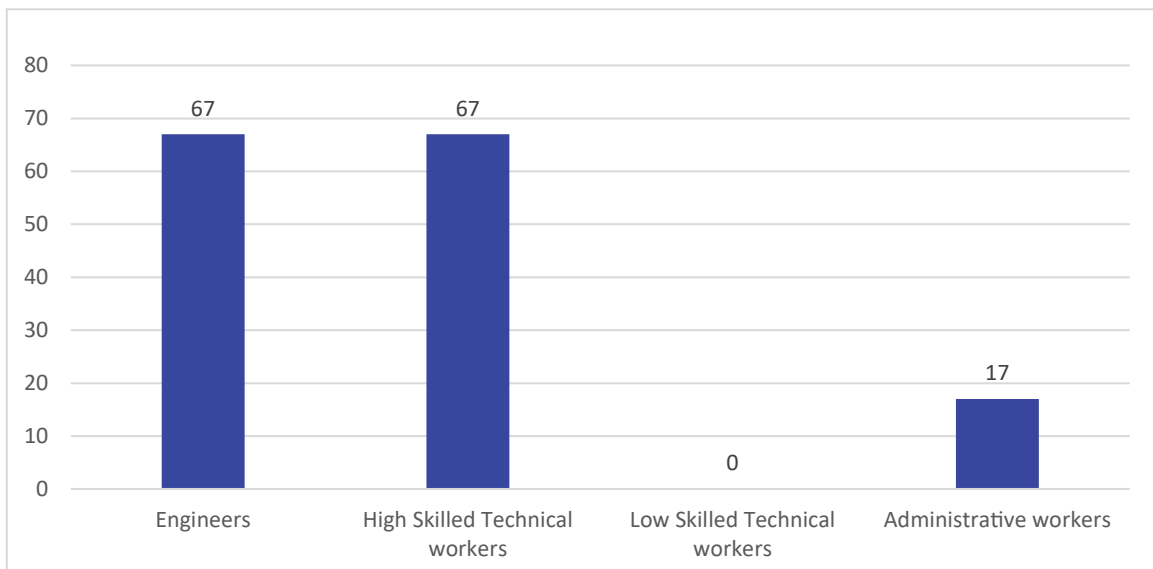
Other data at the occupational level in the 2022 study, revealed needs for mechanical and electrical engineering technical specialists, as well as process control technicians. Half of the establishments reported vacancies for industrial and product engineers, pulp and papermaking plant machine operators and freight handlers. Around a third reported vacancies for print finishing, commercial sales representatives, accounting associate professionals, secretaries, graphic designers, photographic product machine operators and binding workers.

In the same study, participants reported that specialization in mechanics and industrial production is the most in demand, followed by industrial electronics, advertising/graphic arts, and printing arts. Graphic designers need a good grasp of copyright, patent and legal considerations, all of which are essential to comply with international regulations and standards in packaging and labelling design.

Public infrastructure

In the 2022 survey, focus group participants reported vacancies in engineering and high-skilled technical positions, while only one medium establishment reporting vacancies in administrative positions. Conversely, no shortages were reported in low-skilled positions. The high vacancy rates for high-skilled technicians are consistent with the findings from the 2018 study.

Figure 9: Percentage of vacancies per occupation within surveyed establishments (2022)



Half of the focus group participants communicated a high demand for basic and advanced IT or software skills, while all of them emphasized the growing importance of non-technical competence and management processes, such as office administration, team work, oral communication and customer service. Demand for skills varied in comparison with the 2018 study, when surveyed establishments prioritized demand for specific technical skills (60%) followed non-technical knowledge (such as common sense, work ethic, etc.), and advanced IT skills (35%).

Emerging skills needs and occupations in demand

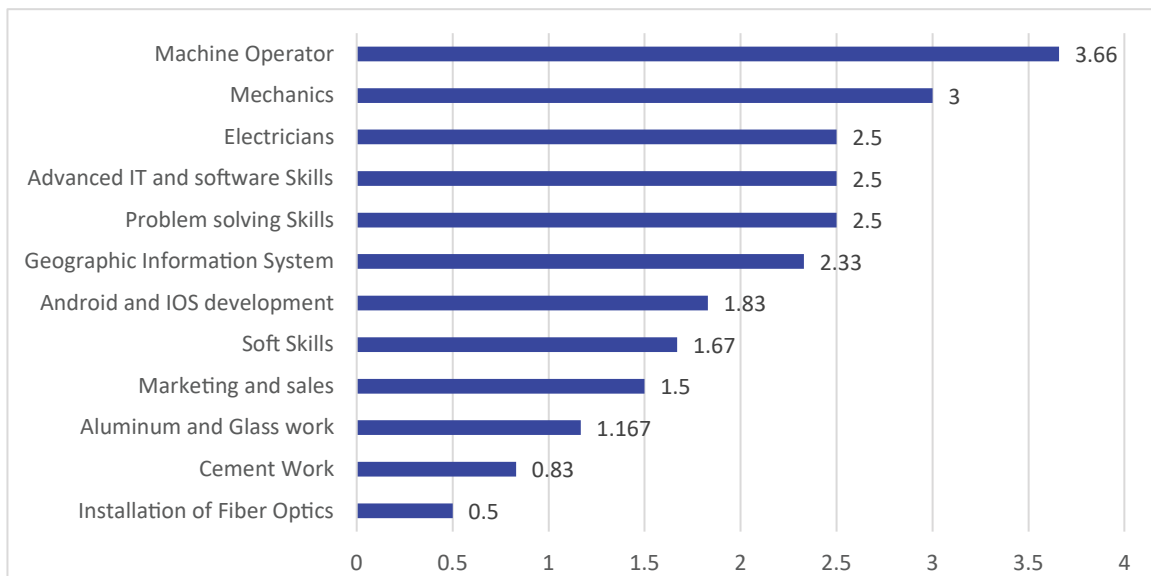
In addition to the above, there is currently a high demand for safety certifications among skilled technical workers (especially for scaffolding and welding) and in maintenance certificates (such as tower cranes...). They also reiterated the gap in the labour market of the following 19 technical occupations: (1) certified welders, (2) operators, (3) surveyors, (4) estimators, (5) quality-control specialists, (6) safety control, (7) cost controllers, (8) heavy-duty drivers (bulldozers, cranes), (9) general contracting and civil foremen, (10) scaffolders, (11) trenchless operators, (12) riggers, (13) cobblers, (14) cement masons, (15) health and safety controllers, (16) safety managers, (17) quality managers, (18) IT, and (19) software developers.

According to survey participants, there is a lack of governmental regulation and weak enforcement of existing regulation, especially regarding safety measures and other criteria often sought after by private and international clients. Training in these skills is currently unavailable due to the outdated curricula.

The telecom specialized establishment expressed a need for more digital skills and certifications, especially in software engineering and development especially in the dot net, digital transformation, digital marketing, robotics, and machine intelligence.

Regarding skills shortages, in line with the 2018 study, technical knowledge in mechanics and machine operations were the most difficult skills to find (average of 3.5/5). The graph below shows the rating results for skills shortages.

Figure 10: Ranking of shortage of skills in the labour market (scale 0 to +5) (2022)



During the survey discussion, several establishments noted that the skills mismatch is partially the result of the absence of regulations or the non-enforcement of existing codes that require workers to be certified, especially in relation to safety and hazardous working conditions.

Conclusions

A review of the conclusions provided in the three sector studies conducted under ILO auspices revealed several common themes that are listed here.

1. Energy shortages and limited access to finance are having a negative impact on all sectors. That said, there is a continuous demand for adequately and appropriately trained workers in many occupations.
2. High-skilled technical workers are the hardest to recruit as a result of brain drain and the inability to match wages offered abroad. Difficult working conditions can also be an issue in attracting and retaining workers.
3. TVET graduates need enhanced skills sets - They need to be more equipped with practical knowledge, and soft skills, as well as emerging skills and certification training. Currently, curricula for occupations in all three sectors are out-dated.
4. The lack of government leadership in responding to the crises has meant establishments find it difficult to make their own plans for continuity and future planning. Such plans are needed for establishments to maintain operations and retain staff.
5. Long term solutions cannot be limited to workforce development but must involve creative responses by enterprises, government action and international support to improve public infrastructure, financial services, and health provision. Better data gathering within the sectors is also required.
6. There continue to be challenges integrating more women, persons with disabilities and refugees into the labour force.

The recommendations from the three sector reports are summarised as follows.

Policy and Communications

1. Strengthen government entities tasked with approving new TVET programs so the approval process for new programs is streamlined and innovative approaches to teaching and learning are enabled.
2. Support the launching of the National Employment Office (NEO) on-line platform for collecting and reporting job vacancies as well as listing job seekers.
3. Commission further and more in-depth studies of different sub-sectors within each major sector to identify more accurately skills needs, job vacancies as well as coping strategies.
4. Acknowledge and address social tensions and communitarian stigmas stemming from misconceptions of skills development programs.
5. Increase awareness to foster diversity and equitable economic participation for women, persons with disabilities, and non-nationals/refugees.
6. Communicate the inherent and practical value of TVET, and of the different types of jobs in the community ranging from the factory floor to the hospital ward, and from the construction site to infrastructure like roads, water and information technology.
7. Lobby for increased grants and development projects with international partners particularly in public infrastructure and healthcare provision.
8. Promote cooperation networks within and between sectors to share challenges, coping mechanisms, and strategies for retaining workers.
9. In the healthcare sector, create, maintain and develop connected care information systems and technologies and enhance primary and emergency health care to reduce unnecessary hospital admissions.

Skills Intervention

10. Increase the amount of practical and hands-on components in all curricula so TVET graduates have the necessary skill sets to respond to current and future job demands. As part of the adjusted provision, training providers in association with the private sector should provide more short courses that enable TVET graduates to expand the range of jobs they can perform and make them more attractive to employers. Examples include occupational health and safety training and certifications, digital certifications for software engineering and digital transformation, as well as programmes targeting healthcare assistants, laboratory technicians, and assistant/practical nurses.
 11. Reinforce the role of the Association of Lebanese Industrialists and syndicates to promote private sector-training provider collaboration, skills demand collection, and to play an advocacy role among its members, the public and the Government.
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Recommendations

12. Provide support to training providers so they can make the required curriculum adjustments including development of new resource material, assessment methods, and instructor training.
13. Support the strengthening of linkages between training providers and the private sector through training school/college boards with private sector members, work-based learning for trainees as well as instructors, and other means such as the establishment of “teaching factories”.
14. Monitor international trends in the industry such as new technology and the focus on greening industry and TVET so that both industry and training providers are aware of and can react to these trends.

Multifaceted approach

The participants in the healthcare sector studies suggested a three-pronged approach to handling the current crises.

1. Address the needs of the current work force.
2. Prepare the workers of the future.
3. Provide assistance to the healthcare institutions.

Such an approach would benefit all sectors reviewed.

THE LEBANESE GOVERNMENT NEEDS TO IMPLEMENT REQUIRED REFORMS TO ENABLE DEVELOPMENT PARTNERS TO COOPERATE AND HELP ADDRESS THE SERIOUS CHALLENGES FACING THE COUNTRY.

Printing and Packaging

Vacancies among surveyed establishments were reported to be highest in manufacturing and production, followed by specialized and technical services and IT, and lowest in general management and customer service.

The data collected reveals that most establishments suffered from shortages in manufacturing labourers, paper products machine operators and manufacturing supervisors.

There are needs for mechanical and electrical engineering technical specialists, as well as process control technicians. Half of the establishments reported vacancies for industrial and product engineers, pulp and papermaking plant machine operators and freight handlers. Around a third reported vacancies for print finishing, commercial sales representatives, accounting associate professionals, secretaries, graphic designers, photographic product machine operators and binding workers. Conversely, almost no participants mentioned vacancies for plastic product machine operators, general office clerk, chemical engineering technicians, heavy truck and lorry drivers, and crane, hoist and related plant operators.

Focus group discussion participants reported that specialization in mechanics and industrial production is the most in demand, followed by industrial electronics, advertising/graphic arts, and printing arts.

Public Infrastructure

The sector's labour force can be divided in four categories of occupations: engineers, high-skilled technical workers (workers with science, technology, engineering, an mathematics knowledge and skills in their jobs based on diplomas or degrees – these include surveyors, certified controllers, software developers, draftsmen, and similar occupations), low-skilled technical workers (work that requires little experience or training to do, usually done by workers with specific and limited certifications if any, such as concrete mixers, cleaners, technical assistants, cement mixers, stone pavers, plasterers, masons and similar occupations), and administrative staff.

Vacancies in engineering and high-skilled technical positions are reported, while only one medium establishment reporting vacancies in administrative positions. Conversely, no shortages were reported in low-skilled positions.

There are vacancies in these nineteen technical occupations: (1) certified welders, (2) operators, (3) surveyors, (4) estimators, (5) quality-control specialists, (6) safety control, (7) cost controllers, (8) heavy-duty drivers (bulldozers, cranes), (9) general contracting and civil foremen, (10) scaffolders, (11) trenchless operators, (12) riggers, (13) cobblers, (14) cement masons, (15) health and safety controllers, (16) safety managers, (17) quality managers, (18) IT, and (19) software developers.

The telecom specialized establishment expressed a need for more digital skills and certifications, especially in software engineering and development especially in the dot net, digital transformation, digital marketing, robotics, and machine intelligence.

Healthcare

Nursing departments are experiencing the most vacancies. Other departments suffering from vacancies, to a lesser degree, include human resources, radiology and medical imaging and laboratories.

There are openings for information technology specialists, qualified assistants, practical nurses, and quality and control technicians in healthcare that could be filled by TVET graduands particularly if they enhance their skill sets with specialized training..

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