International Labour Organization

AGENZIA ITALIANA PER LA COOPERAZIONE ALLO SVILUPPO

جمعية الصناعيين اللبنانيين
ASSOCIATION OF LEBANESE INDUSTRIALISTS

SKILLS ANTICIPATION SURVEY

PLASTIC SECTOR

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This skills anticipation survey was conducted online between November and December 2022 as part of a larger project in partnership between the Association of Lebanese Industrialists (ALI) and the International Labor Organization (ILO) in order to mitigate skills mismatch facing both workers and employers alike. The survey was sent to 136 enterprises in the plastics sector registered as members of ALI, out of which 37 took part in answering the questions. These companies were located in most parts of the country; the majority were small to medium sized enterprises and exported their products, and over 20 per cent had more than a quarter of their workforce made up of females as well as foreign workers.

Results reveal a significant lack of skills among existing workforce, as well as difficulty in finding and retaining workers equipped with the skills needed. This gap is particularly significant at the level of technical and professional associates where industry specific technical skills are needed. In addition to the lack of skills among the existing employees, most respondents revealed labor shortages in technical occupations as well such as machinery operations and maintenance. While most respondents expressed an intention to open new vacancies in the coming 12 months, they also expressed concerns of recruitment difficulties especially at the technical level.

Maintaining machinery, operating machinery, and technical skills related to specific equipment or processes used in the establishment were revealed to be the three most frequently skills reported as lacking among respondents who expressed lack of skills within their existing workforce. The majority of respondents expressed an interest in new hiring to overcome this lack of skills. Survey results reveal that a solid 80 per cent of respondents believe that recruitment will be most numerous at the level of technical and associate professionals. Interestingly, around half of respondents reported providing training to their employees to cover an existing skill gap or to prepare for the introduction of new production techniques. Respondents who did not provide any training in the past 12 months attributed this decision to difficulties such as lack of budget for training or lack of knowledge of training institutions capable of attending to their skill shortages. This problem was expressed as either lack of access to training institutions capable of developing the skills of the existing workforce or an incompatibility of the curricula offered at those institutions with employer needs.

The report concludes there is a real gap in the technical and vocational occupations inflicting serious challenges on the businesses of the surveyed enterprises. Results reveal that not only did the participants express difficulty in recruiting workers with the relevant technical skills for these occupations, particularly in machine operations, and machine maintenance, but they also suffered from a lack of skills among their existing workforce. Many companies provide training to staff and others would participate if relevant training programs were available and easily accessible on a flexible basis. There are current and up-coming vacancies in the plastics sector that can be filled by TVET graduates with the right skill sets; hiring such workers can improve an establishment's production processes and output.

Recommendations to alleviate these challenges include improved information exchange between training providers and employers that also entails strengthening of the role of the National Employment Office. Others are workforce development initiatives to enhance training among current workers, and support training providers to develop fit for purpose training for employers. Strengthening equity in both training providers and employers can be encouraged by supporting development of training plans and a gender strategy for business establishments and a gender office at training providers. Development partners can help to organize workshops in training methods, development of competency based training, and related topics. Further research expanding the number and depth of similar skills assessment surveys is advisable.

LIST OF ACRONYMS

ALI	Association of Lebanese Industrialists
CAS	Central Administration of Statistics
ILO	International Labour Organization
IDAL	Investment Development Authority of Lebanon
ISCO	International Standard Classification of Occupations
PS	Plastics Sector
TVET	Technical and Vocational Education and Training

LIST OF FIGURES

METHODOLOGY

This project comes as part of a larger cooperation between the ILO and ALI that aims to strengthen skills anticipation and availability of up-to-date information on skills competencies and occupation needs in the labor market in Lebanon. In order to improve the design of market-based skills training and better align skills supply with labour market demand, regular data collection therein is of the utmost importance.

It is a multistage process that began with target population selection, followed by questionnaire development and dissemination, and completed with data collection and analysis. The target population of this study is defined as ALI registered members operating in the plastic sector. This sector was selected to conduct the pilot study primarily because it offers the largest pool of enterprises available in ALI database, which will allow for better geographic coverage and would provide a better response rate which would ultimately reflect positively on the statistical soundness of results obtained. According to the latest data available to ALI, there are currently 304 factories classified under the plastics and rubber sector (as per the data source received from the Ministry of Industry dated August 2021). Out of this set, ALI has 136 enterprises registered as members. This group has constituted the target population for this survey, defined as the set of ALI registered industrialists that operate in the plastics sector.

While this is not an exhaustive list of all the industrial firms in the plastics sector in Lebanon, it is nonetheless considered a reasonable compilation of the main actors in the sector. In addition, ALI registered members stretch over different geographies across the country covering more distant areas such as Saida, Beqaa, and Tripoli, that are considered some of the most underdeveloped micro economies in the country. From these 136 ALI members, 37 responded to this survey representing a nearly 27 per cent response rate from a mix of different sized companies distributed among most governorates of the country. This set of respondents constitutes the self-selected sample of this survey. More details are provided below.

Table 1: Distribution of respondents

	Baalback-Hermel	Beirut	Bekaa	Mount Lebanon	Nabatieh	North	South	Total
No. of respondents	0	1	5	23	1	2	5	**37**
No. of ALI registered companies	1	5	18	97	1	5	9	**136**
Fraction of factories in each governorate	0.74%	3.67%	13.24%	71.32%	0.74%	3.67%	6.62%	**100%**
Respondents from each governorate	0%	20%	27.78%	23.71%	100%	40%	55.56%	**27.21%**

ALI developed an online questionnaire hosted on the Survey Monkey platform. The questions of the survey rest on principles in labor economics and best practices in TVET support programs [1]. It was designed in accordance with ISCO 08 occupation classifications, and was finalized under the supervision and with technical inputs from ILO local and international experts.

The questionnaire comprised four sections; the first section covered general information about enterprises who participated in this survey, such as their size, geographic location, and gender composition of their labor structure, in addition to their outlook on the future of their business in the coming 12 months, and the crisis induced challenges they are currently facing.

The second section investigated their current workforce and the potential existence of skill gaps. This section attempted to locate this skill gap in terms of geography, and types of occupations within the enterprise.

[1] Questionnaire adapted from the guide to anticipating and matching skills and jobs Vol.5 (ILO, CEDEFOP, ETF)

The third section looks at the types of occupations in demand, the skills they require and their geographic distribution.

The fourth section looked at the workforce development programs put in place, as well as the reasons behind these programs or in many cases, the lack thereof.

In total, the survey was constituted of 28 questions. It was made available in both Arabic and English in the attempt to mitigate any challenges that might arise on the part of respondents due to language barrier. However, data reveals that the majority of respondents (32 out of 37 respondents, an estimated 86 per cent) have relied upon the English version in their answer. The survey was disseminated via email to ALI members and was followed by one email follow-up and multiple follow-ups by phone. The response window for this survey remained open for a total duration of 12 days, taking into consideration the timeline of the project, and other considerations such as official holidays, and peak times for enterprises given end of fiscal year obligations. The response rate of the survey (27 per cent) suggests that survey culture has yet to be established as a given among enterprises in Lebanon. However, this survey does indeed serve as a useful step not only to provide an empirical backdrop for future policy interventions in the field, but also to help institutionalize surveys as a generally accepted practice.

For the past three years, Lebanon has been dealing with a series of financial and political crises that took their toll on the country's already burdened economy. These challenges, along with the Covid 19 pandemic that paralyzed economies around the world, have set the unemployment rate in the country on an alarming upward trend, manifesting itself primarily among social classes whose economic resilience had already reached its limits prior to the lockdowns. As per the Lebanon Follow-up Labour Force Survey (CAS-ILO 2022), the unemployment rate increased from 11.4 percent in 2018-19 to 29.6 percent in 2022, and the youth unemployment rate (15–24 years old) increased from 23.3 per cent in 2018-2019 to 47.8 per cent in January 2022. The female unemployment rate (32.7 per cent) was somewhat higher than the male rate (28.4 per cent) while the adult rate was (25.6 per cent). The labor force participation rate dropped from 48.8 percent in 2018-2019 to 43.4 percent in 2022; the labor force participation rate for both men and women has decreased for all age groups between 2018-2019 and January 2022. This empirically reinforces the need for a government-led policy response to address these issues.

Improving labor force participation is a multifaceted policy objective that stretches across several areas including but not restricted to - demographic structure of the society, economic growth and development that affects demand on labor, quality of education and training that affect the supply of labor, and labor market information asymmetry that can render both demand and supply sides of the labor market oblivious to existing opportunities. One of the most important barriers to entry into the labor market in Lebanon is the mismatch between skills currently demanded by employers and skills currently possessed by laborers which hinders progress towards full and productive employment in the country. This incongruity has its roots in the weak relevance of the current education system, in particular, the technical and vocational education and training (TVET) system in Lebanon to private sector requirements, meaning that the skills provided by training and education institutions do not adequately respond to existing labour market needs.

Identifying the labour market skills needs has been so far dependent on efforts driven by development agencies. In the absence of regular exchange between industries and training institutes and up-to-date information on skills competencies and occupation needs and on technology advancements in the production processes, TVET provision will remain delinked from the actual skills requirements of employers which further affects the productivity and growth in various economic sectors. Accordingly, there is a need for an efficient mechanism to regularly anticipate skills needs in rapidly changing labour market to a) better understand skills supply and demand gaps in a specific sector; b) ensure that learners can develop appropriate skills for the future; and c) inform lifelong policies and programs.

In this regard, the Association of Lebanese Industrialists (ALI) and the International Labour Organization (ILO) have joined efforts to help job seekers (youth and adults) better integrate in the labor market with a focus on improving the market-relevance of TVET programs. The ILO and ALI are working together to strengthen skills anticipation and availability of up-to-date labour market information on skills and occupation needs. This partnership aims to respond to the need for regular data collection on skills demand to identify, design, and implement priority training programs for the industrial sector. Both ALI and ILO believe that an empirically grounded understanding of sector specific skills mismatch yields double folded benefits. On one hand, it will better orient job seekers and workers in their efforts to improve their employability by acquiring the right skills, and on the other it will support employers in their search for adequately-skilled labor, and thereby enhance their production processes.

In order to explore the skills mismatch and institutionalize a regular skills anticipation process in the industrial sector, a pilot survey has been conducted in November-December 2022, covering the plastics sector. This sector has been selected as pilot for several reasons elaborated in the methodology section of this report. The Investment Development Authority of Lebanon (IDAL) classifies the plastic sector under the more general umbrella of the chemical industry, which is one of the most prominent industries in the Lebanese economy and is considered to be a major player in regional market. Production in the chemical industry in Lebanon is mainly concentrated in plastics, cosmetics, pharmaceuticals, fertilizers and soaps. According to the latest data available from IDAL, this industry stood at USD 437 million in terms of Gross Value added back in 2017. Chemical companies account for 13 per cent of the total industrial firms in Lebanon, comprising 633 companies, with more than 60 per cent of them located in Mount Lebanon and more than 10 per cent in the Bekaa [2]. 304 of which operate in the plastic sector as per the latest data available to ALI [3]. Meaning that at least more than half of enterprises classified in the chemicals industry operate in the plastic sector. Data from IDAL revealed that plastic sector exports ranked in the top five Lebanese

[2] IDAL - Sectors in Focus - Industry - Chemical Industry (investinlebanon.gov.lb)

[3] Ministry of Industry, August 2021

industrial exports back in 2019 [4]. This is a testimony to its important contribution to the Lebanese economy, not only in terms of consumer goods, and exports, but also in job creation.

In the future, ALI is set to conduct the same process of data collection and analysis in other sectors to grasp a more comprehensive view of the industrial economy in Lebanon with its challenges and opportunities including skills needs.

This report presents the findings of the survey which was conducted within the context of the ILO *Improved Access to Employment Opportunities for Lebanese and Refugee Graduates from Skills Training project* implemented with funding from Italian Agency for Development Cooperation (AICS) and aiming to strengthen the employability of job seekers based on market needs and provide post-training support to graduates in order to improve their chances of acquiring jobs.

[4] IDAL - Sectors in Focus - Industry (investinlebanon.gov.lb)

OVERVIEW OF SURVEYED ENTERPRISES IN PLASTICS SECTOR

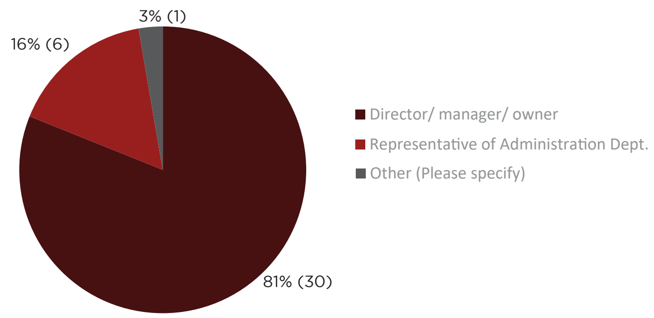
- Around 82 per cent of respondents were directors / managers and about 41% of surveyed enterprises were limited liability companies.
- About 79 per cent of surveyed enterprises were small to medium size, and the majority was in Mount Lebanon.
- In most surveyed enterprises, female workers constituted up to 25% of the total workers and foreign workers constituted up to 25% of total workers
- Although seemingly contradictory, business shutdown, and development of innovative products are the two most frequently reported likely scenarios vis a vis the current crises in the country.
- Power shortages and lack of skilled labor due to migration were the two most frequently reported crises-induced challenges.

This section provides a general description of the characteristics of surveyed enterprises including size, location, workforce composition and impact of the crises on their business.

Characteristics of surveyed enterprises

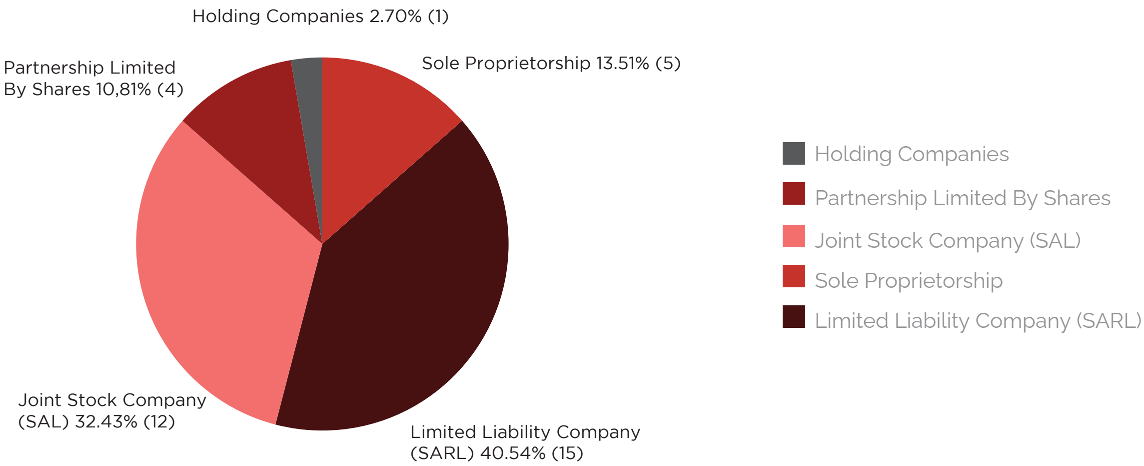
The companies in the plastics sector produce a variety of products in categories such as mattresses, packing and shipping products, sheets, nylon films, sanitary towels, tubes and plastic barrels among others. The respondents who participated in this survey were predominantly at the top of the management hierarchy in their respective enterprises.

Figure 1. Status of respondents in the survey (n=37)



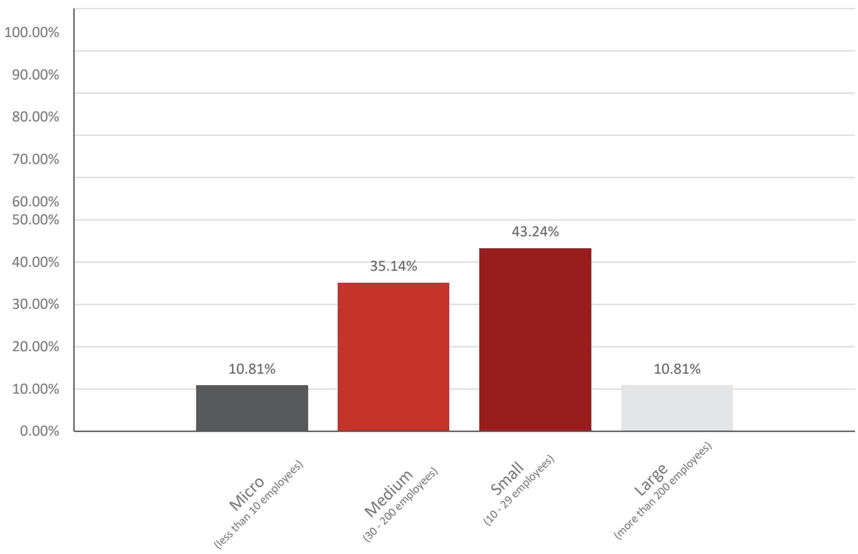
The enterprises represented in the survey were predominantly either limited liability companies (around 40 per cent) or Joint Stock companies (around 33 per cent).

Figure 2: Distribution of surveyed enterprises by their legal form (n=37)



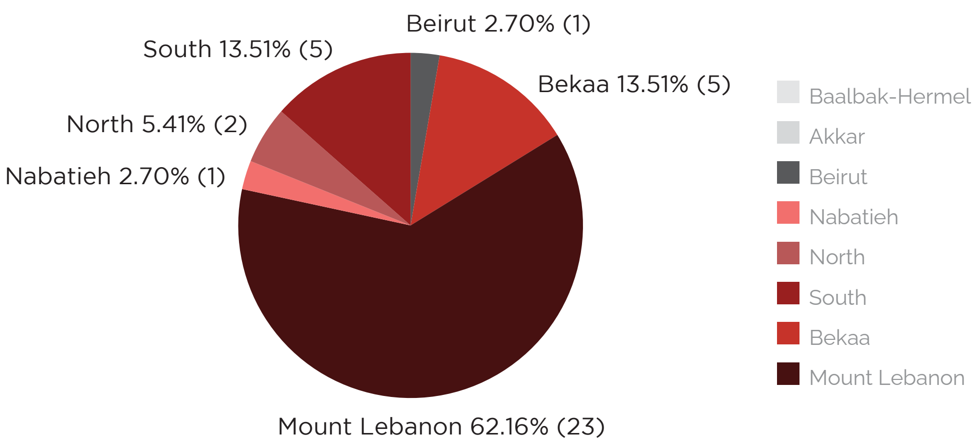
The majority of surveyed enterprises are small (35 per cent) or medium (43 per cent). Micro and large enterprises account for 10 per cent respectively

Figure 3. Distribution of surveyed enterprises by size



While the majority of respondents are concentrated in Mount Lebanon, the survey does provide some coverage of remote areas as participants are spread over more distant Governorates such as Nabatieh, Bekaa, and the North. While this heavy concentration in Mount Lebanon can be indicative of a spatial bias in the survey it also reflects the reality of where enterprises are concentrated in the country.

Figure 4. Distribution of surveyed enterprises by region

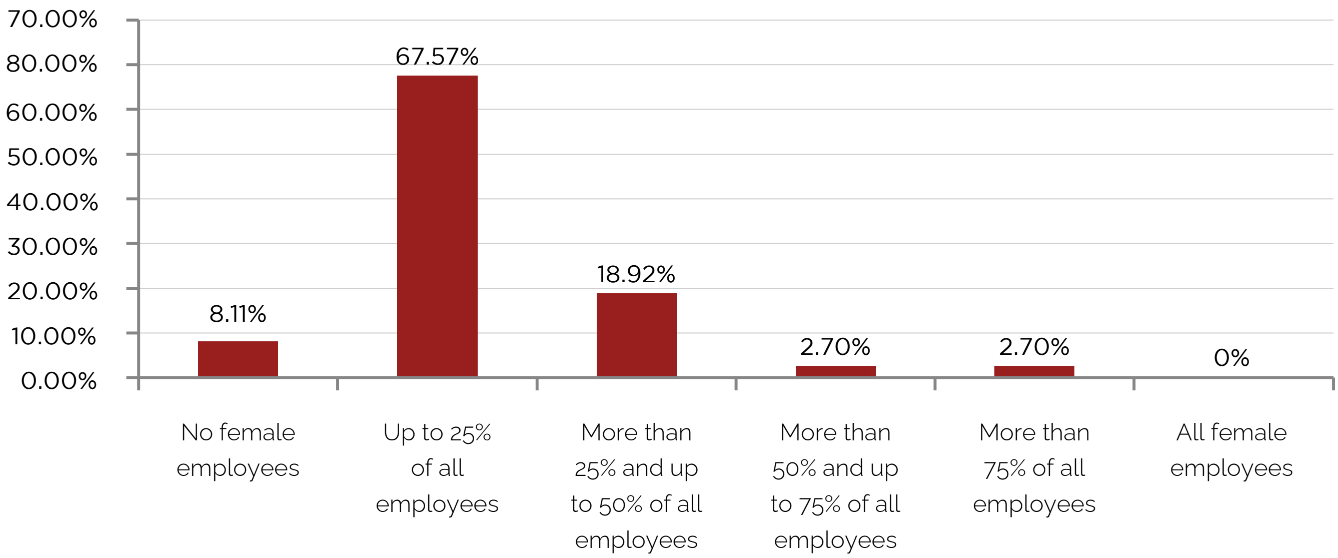


Nearly 90 per cent of the 37 surveyed enterprises export their products. This is likely a reflection of decreased demand for many products in Lebanon due to the recent crises. Of the 29 respondents identified as small to medium enterprises, 25 export their products. Nearly 40 per cent of respondents have the following three characteristics in common: they are located in Mount Lebanon, are small to medium in size, and export their products.

Characteristics of current workforce in surveyed enterprises

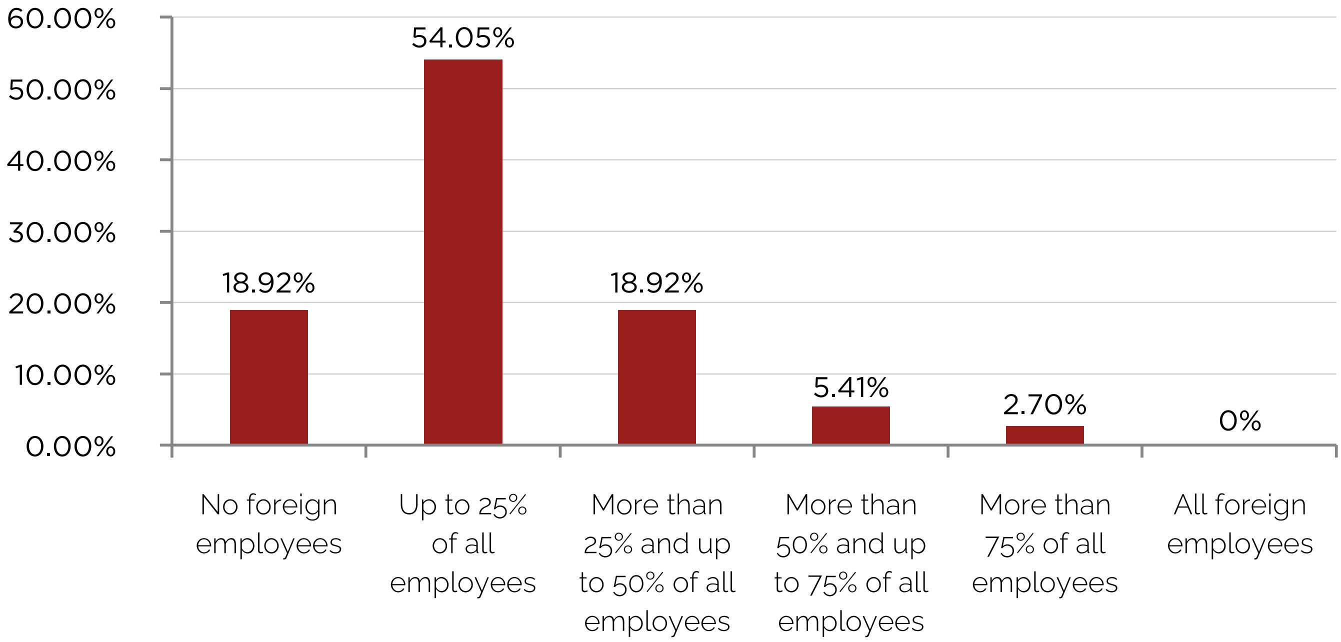
A look into the gender distribution of workers in surveyed enterprises shows an under-representation of women in the sector. Data from this survey reveal that nearly 68 per cent of respondents reported that women constituted up to 25 per cent of their existing employees, only two respondents reported a women-dominated labor composition. These two respondents have the following features: one is a medium size enterprise, located in the Beqaa area, and the other is a large enterprise located in the Mount Lebanon, and they are both product exporters. Respondents who revealed women constituted up to a quarter of their workforce represented enterprises who produced a wide array of products ranging from mattresses, to plastic bottles, and pipes, as well as sanitary towels and other products.

Figure 5: Proportion of female employees in the enterprise



The survey reveals that around 54 per cent of respondents (20 out of 37 respondents) have reported that foreign workers constitute up to 25 per cent of all employees. Of this group, the majority are located in Mount Lebanon (13 out of 20), and they are small to medium, product exporting enterprises. Interestingly, the majority of respondents who have reported not having any foreign workers share these same characteristics.

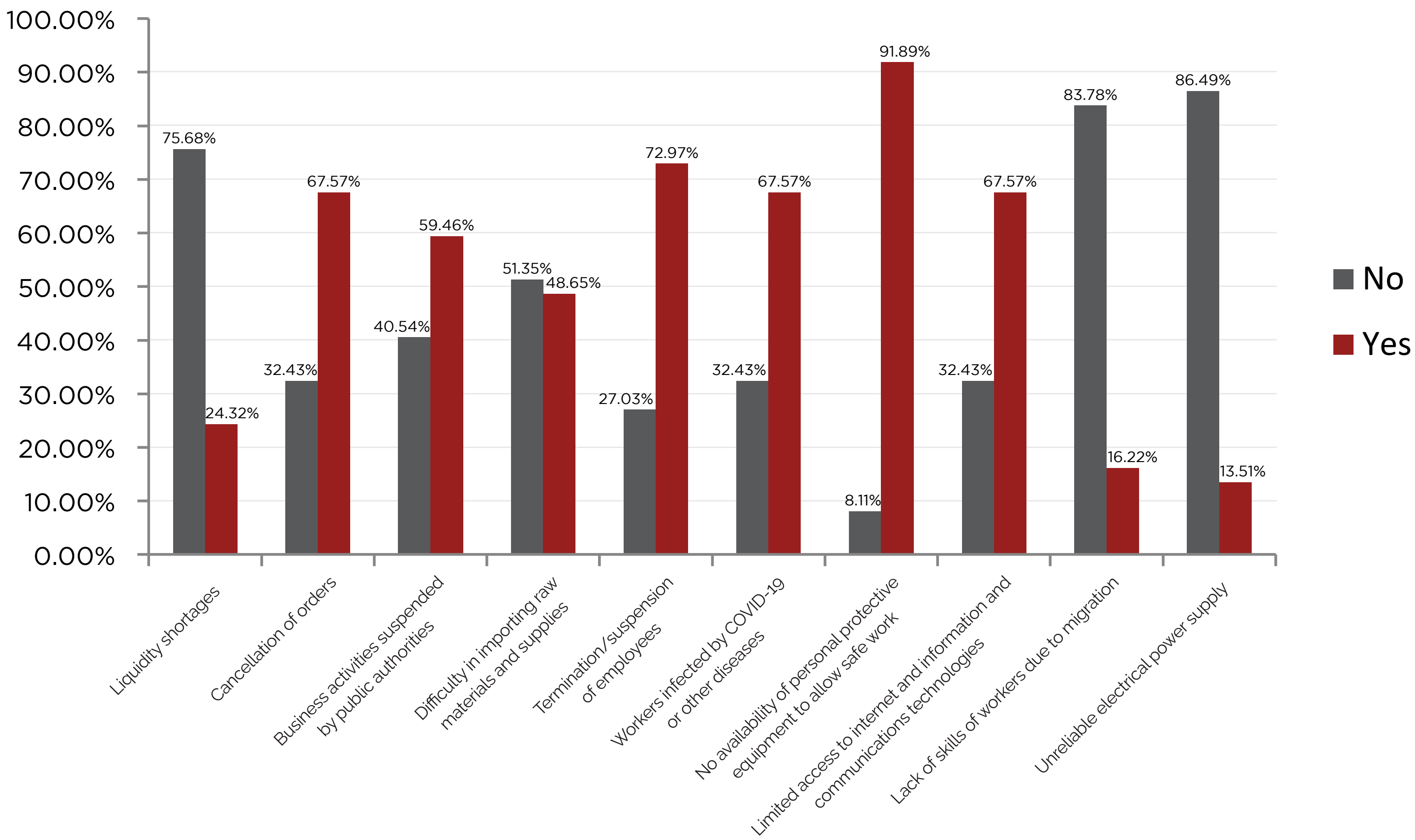
Figure 6. Proportion of foreign employees in enterprise



Difficulties enterprise is experiencing directly related to the current crisis-situation in Lebanon

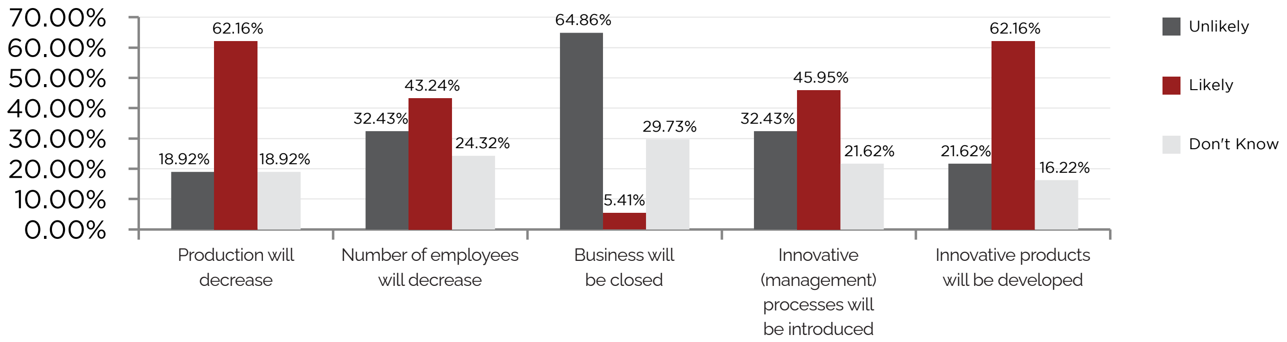
The vast majority of surveyed enterprises reported experiencing three main difficulties as result of the crisis including power shortage (87 per cent), lack of skilled labour (around 84 per cent), and liquidity shortages (around 75 per cent). While the electricity hurdle is an equal opportunity offender across different geographies in the country, there seems to be a clear concentration of respondents who reported facing lack of skilled labor due to migration in Mount Lebanon, predominantly among small to medium enterprises. Data shows that out of the 31 respondents who reported this problem (that of lack of skills), 18 respondents are located in Mount Lebanon, and they range between small and medium enterprises.

Figure 7. Difficulties related to current crisis-situation in Lebanon experienced by enterprises



Consequences of crises on business in next 6 months

Figure 8. Likelihood of different scenarios to happen in light of Lebanese crisis as per enterprises represented in survey



During these challenges and uncertainties long term planning becomes acutely difficult. Businesses must adapt their strategies to the constantly shifting economic and political circumstances of the country. Around 62 per cent of the respondents perceived that it is likely that their production levels will decrease over the coming 6 months. Interestingly, 62 per cent of respondents reported a perceived likelihood of product innovation in the same upcoming period. Entrepreneurial speculation is one of the most powerful indicators of the reality and outlook of a given market. Responses to this question suggest there is still some optimism for the plastic sector in Lebanon. Nearly 65 per cent perceived it unlikely for their businesses to close, while 30 per cent were uncertain on whether they will remain in business, and only 5 per cent of the respondents reported a likelihood of closing. The two respondents who reported the likelihood of closing down their businesses are located in Mount Lebanon (a micro enterprise, with up to 25 per cent women workers) and one in the North (a medium enterprise, employing women between 50 to 75 per cent of total workers).

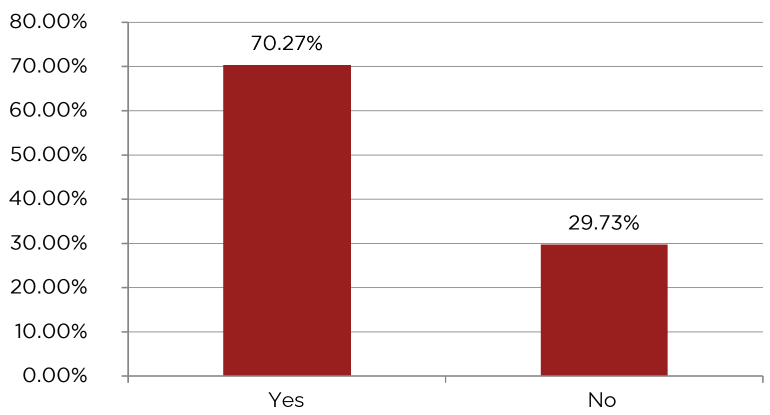
SKILLS GAPS OF CURRENT WORKFORCE

- The majority of respondents reported facing lack of skills with current employees.
- Technicians, and plant and machine operators, were the most frequently reported occupations where skills are lacking.
- New hiring of local workers and further training were the two most frequently reported skill gap mitigation plans by respondents who reported having lack of skills.

This section provides an overview on skills gaps among the existing workforce of surveyed enterprises in the plastics sector and mitigation measures considered to address this gap.

Establishments indicating skills gaps

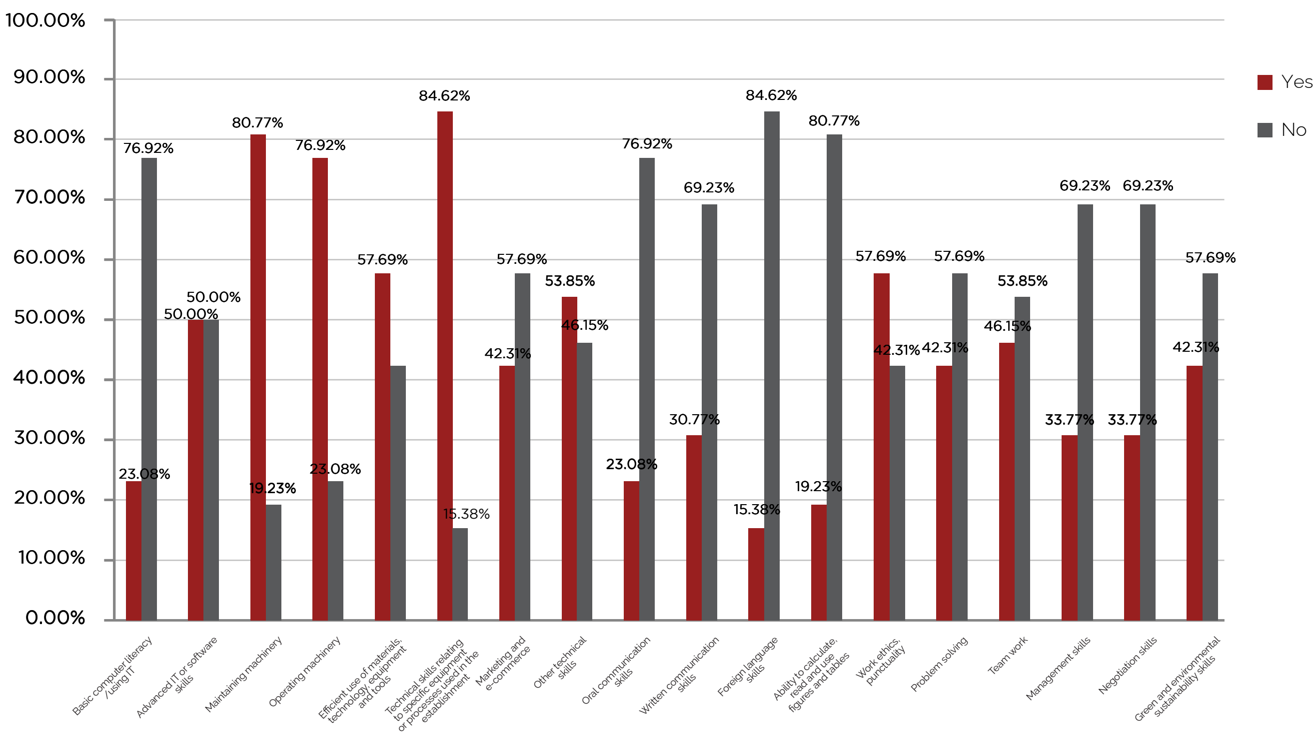
Figure 9. Existence of lack of skills problem with current workforce among enterprises in the survey



These results logically mirror those presented in Figure 7 above where lack of skilled labor was revealed to be one of the most frequently reported challenges by the respondents in this survey. Around 70 per cent of surveyed enterprises reported experiencing "lack of skills" problems among their current workforce. Out of the 26 respondents who reported a skill gap problem within their current workforce, 16 respondents are located in Mount Lebanon, 2 are located in the North, and 3 in the South, 1 in Nabatieh, and 3 in Beqaa.

Areas where skills are lacking

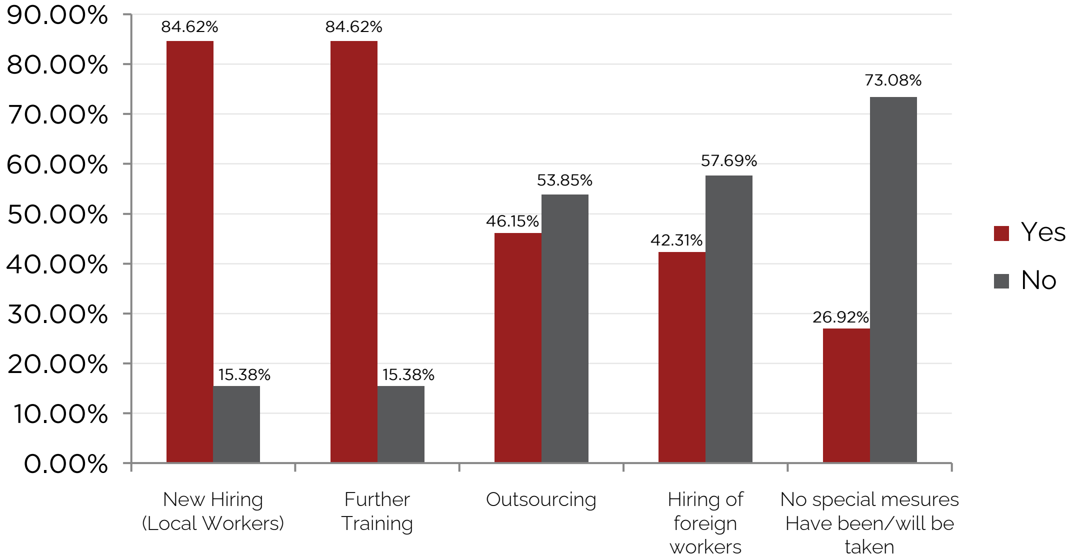
Figure 10. Lacking skills among current workforce



Maintaining machinery, operating machinery, and technical skills related to specific equipment or processes used in the establishment were revealed to be the three most frequently skills reported as lacking among respondents who expressed lack of skills within their existing workforce. Other skills such as efficient use of materials, technology and equipment, other technical skills, as well as work ethics and punctuality were also frequently reported as lacking among current workers of respective enterprises. Out of the 21 respondents who reported a lack in skills pertaining to maintaining machinery, 12 respondents are located in Mount Lebanon, and the rest are dispersed across other Governorates. A similar concentration is found among respondents who reported a lack of machine operation skills (with 13 out of 20 respondents) and a lack in special technical skills (with 12 out of 22 respondents) were from that area as well). Against the backdrop of previous responses, notably pertaining to the crises induced difficulties businesses are currently facing, it is evident that the lack of skills is a serious problem affecting business in this sector.

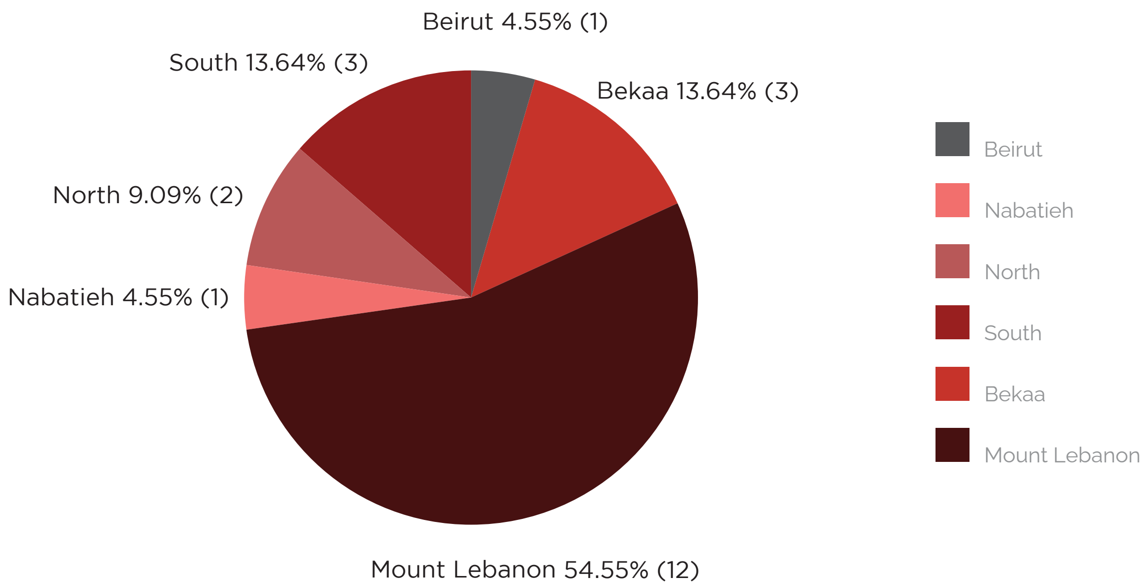
Plans to overcome the lack of skills

Figure 11. Enterprises' plans to overcome lack of skills challenge



In the attempt to mitigate the effects of this lack of skills, data from the survey reveals an explicit intent towards new hiring of local workers and further training of existing workers with both courses of action scoring at around 85 per cent. Interestingly, only 42 per cent of respondents facing lack of skills expressed an interest in hiring foreign workers (this group is predominantly constituted of medium enterprises located in Mount Lebanon). Moreover, only around 27 per cent of respondents expressed a disinterest in acting on the issue.

Figure 12. Geographic distribution of enterprises who reported new hiring of local workers



One revealing insight was reached by cross tabulating this data with results obtained from Figure 8 above. This has shown that out of the 23 respondents anticipating the introduction of innovative products, 14 have revealed that they would resort to new hiring of local workers in the coming 12 months to overcome this issue. In terms of geographic distribution, the majority respondents who reported new hiring of local workers are in Mount Lebanon.

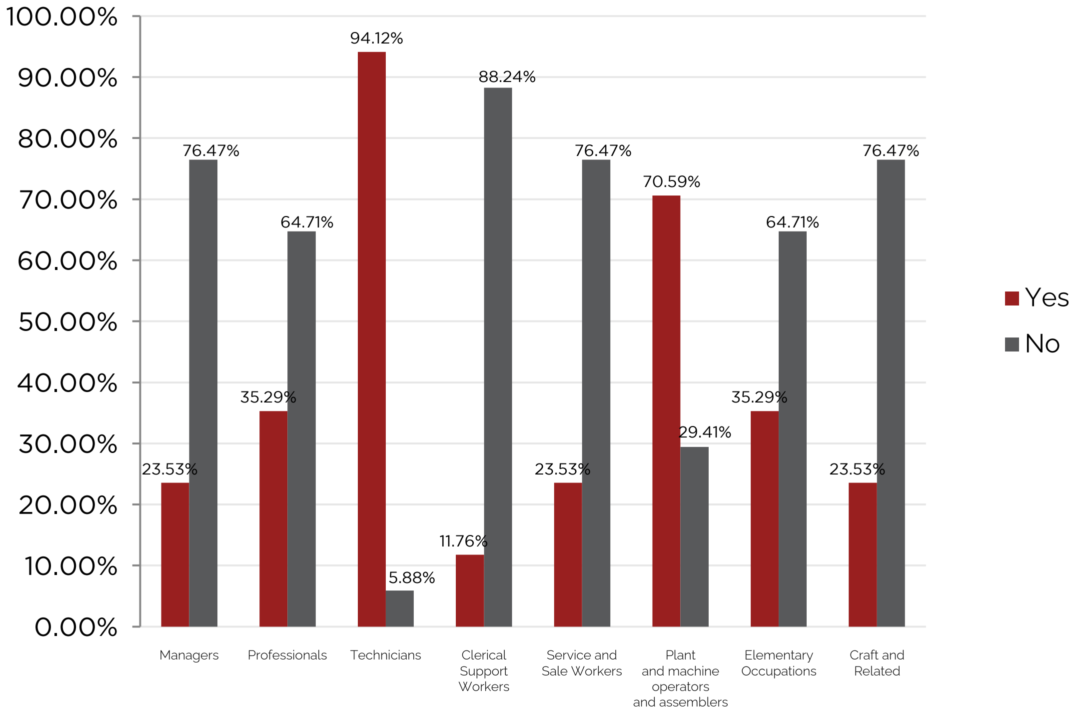
OCCUPATIONS IN DEMAND

- Almost all respondents expressed skills shortage at the level of technicians and associate professionals; the second most frequently reported skills shortage is found at the level of plant and machine operators. The majority of enterprises who expressed willingness to open vacancies in the coming 12 months are in these occupations.
- The majority of respondents expressed a need for technicians as well as plant and machine operators.
- Introduction of new production techniques were the most frequently reported reasons for new hiring.
- Word of mouth was the most frequently reported recruitment channel, with online job portals coming in second.
- Majority of respondents are currently hiring technicians, machine and plant operators. These occupations were reported hard to fill by most respondents currently hiring.
- All respondents reported lack of skilled labor as one of the reasons why these occupations are proving hard to fill.
- Majority of respondents reported that these hiring difficulties are leading to loss of business to competitors and to overworking their current workforce.

This section explores labour shortages in the plastics sector. It identifies the occupations most needed by establishments suffering labour shortages currently and what vacancies might be expected over the next year. The key skills and qualities deemed desirable in new recruits are pinpointed and the reasons for hiring new recruits explored. Employers use different channels to recruit new staff, and the popularity of different channels is described. This section further identifies existing vacancies, their locations, which vacancies are hard to fill and why. The impact on the establishment of not filling these vacancies is also outlined.

Most needed occupations in enterprises with labour shortages

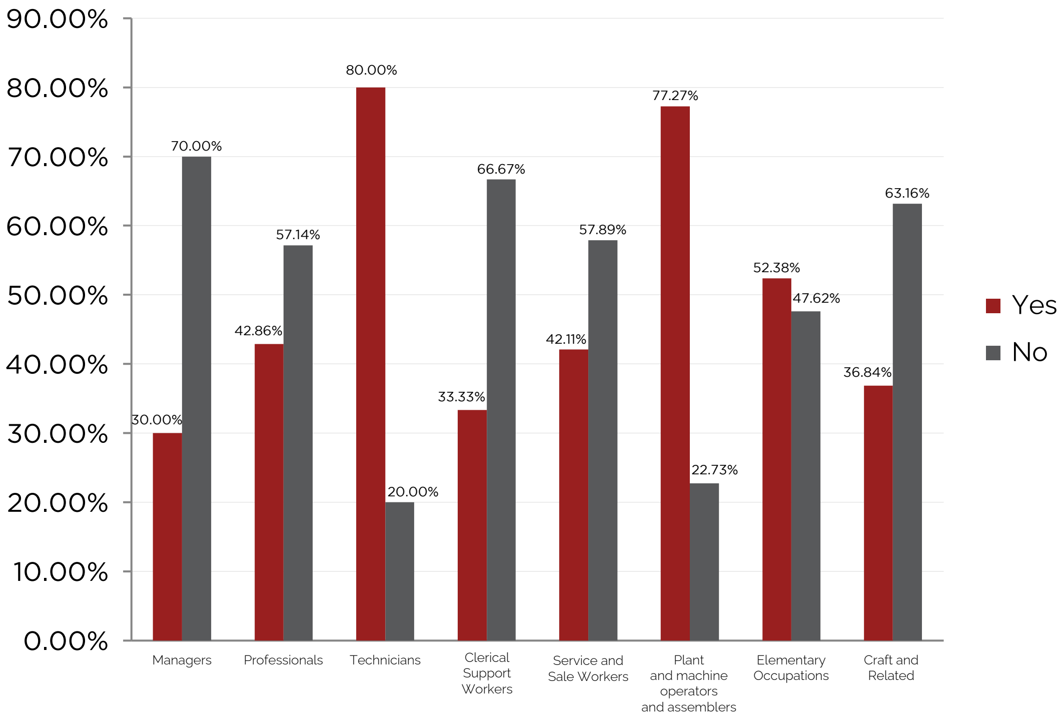
Figure 13. Occupations where labor shortages are most acute



While 54 per cent of respondents do not appear to suffer from labor shortages as per the data, nearly 46 per cent of respondents said their enterprise does suffer from labor shortages. Among those reporting labour shortages, almost all of them (around 94 per cent) expressed deficiencies at the level of technicians and associate professionals; the second most frequently reported deficiency is found at the level of plant and machine operators (70 per cent of respondents). Elementary occupations and professionals were equally reported as lacking at an approximated 35 per cent each. The above presented results indicate that lack of skills of the current workforce, as well as labor shortages, are primarily reflected at the technical and vocational level.

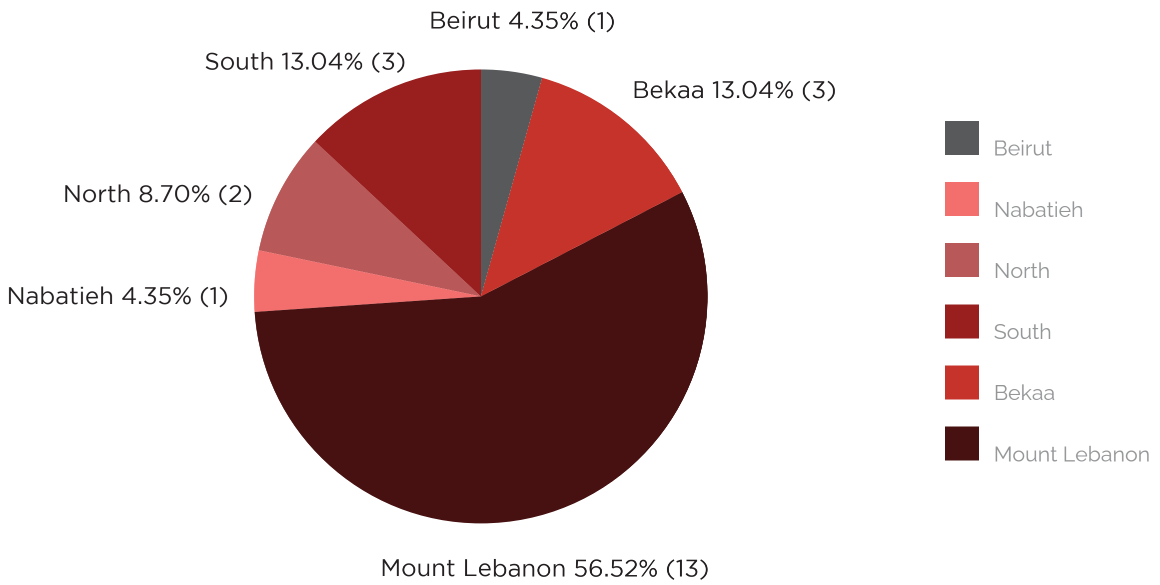
Vacancies Opening in Next 12 Months

Figure 14. Frequency of reported occupations in which new vacancies will be open



Around 62 per cent of respondents do plan on opening new vacancies in the coming 12 months, of which 80 per cent believe that recruitment will be most numerous at the level of technical and associate professionals (predominantly medium enterprises) and around 77 per cent believe that recruitment will also be numerous among plant and machine operators (predominantly small enterprises). The third most frequently reported vacancy to be opened is pertaining to elementary occupations that consists of simple and routine tasks such as cleaners, doorkeepers or laborers (This was most frequently reported by medium enterprises). These statistics go in parallel with the findings presented above and reiterate once again a substantial gap in personnel needed at the technical and vocational level.

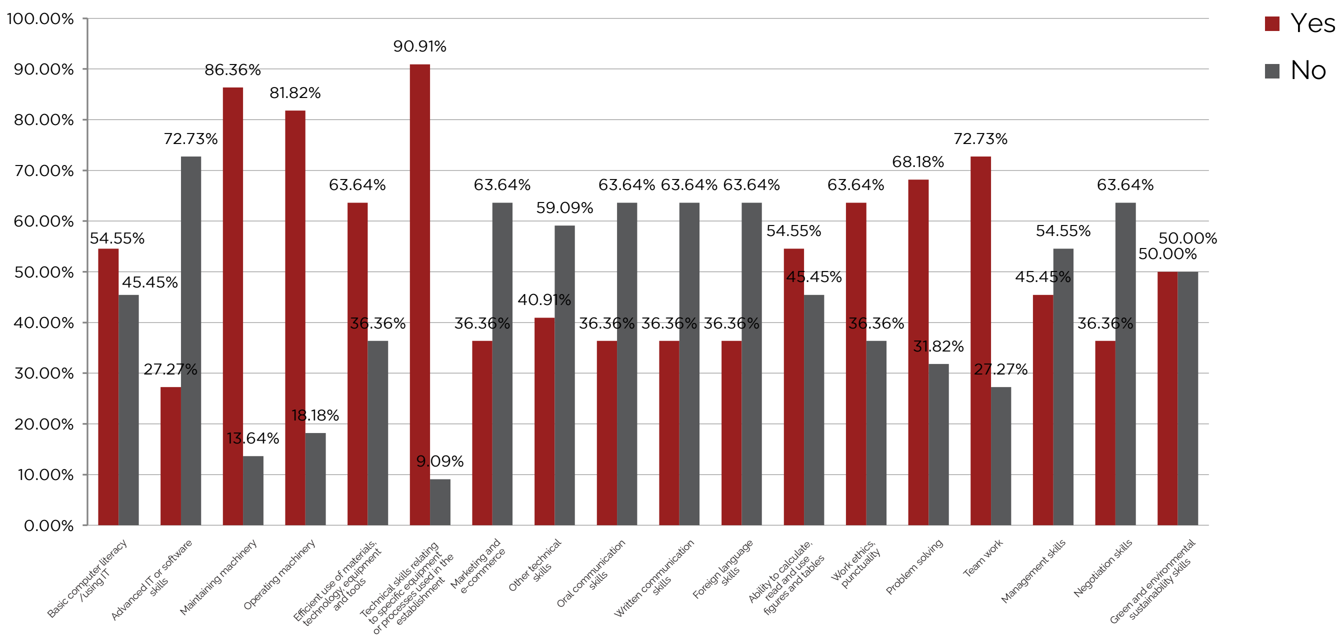
Figure 15. Geographic distribution of new openings in the coming 12 months (n=23)



Data reveals that the majority of these new vacancies will be concentrated in Mount Lebanon as 56 per cent of respondents who declared they will be opening new vacancies in the coming 12 months (meaning 13 out of 23 respondents) are located in that area. In addition, around 13 per cent of respondents who declared having new vacancies in the coming 12 months are located in Beqaa, and an another 13 per cent located in the South. Moreover, only 1 enterprise from those who declared having new vacancies is located in Beirut, and similarity data revealed only 1 enterprise located in Nabatieh, and the remaining 2 enterprises from the pool who declared having new vacancies in the coming 12 months are located in the North.

Key skills and qualities desired in recruits to fill vacancies

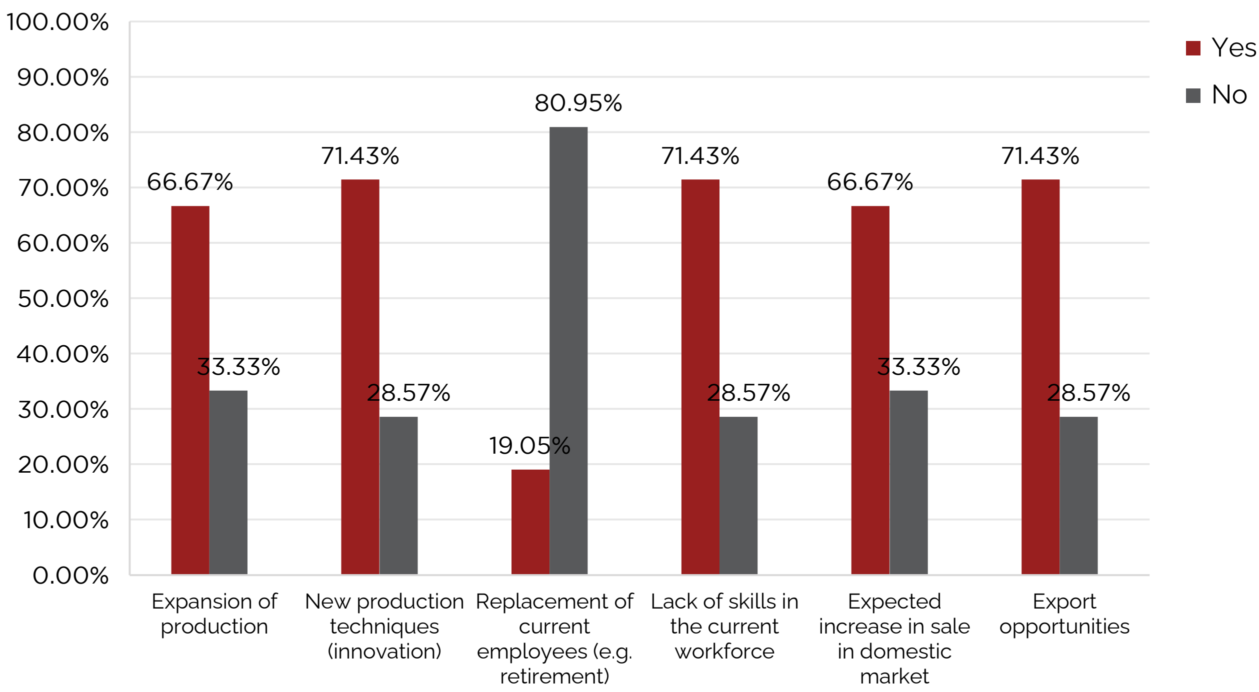
Figure 16. Key skills and qualities desired in workers needed to fill vacancies



When asked about the skills and qualities desired among the people who will be filling in these anticipated vacancies, nearly 91 per cent of respondents have expressed an interest in technical skills relating to specific equipment or processes used in the establishment. A close second, about 86 per cent, have expressed an interest in machinery maintenance skills, followed by 81 per cent of respondents revealing an interest in machinery operation skills.

Reasons for recruiting new employees

Figure 17. Main reasons for recruiting new employees

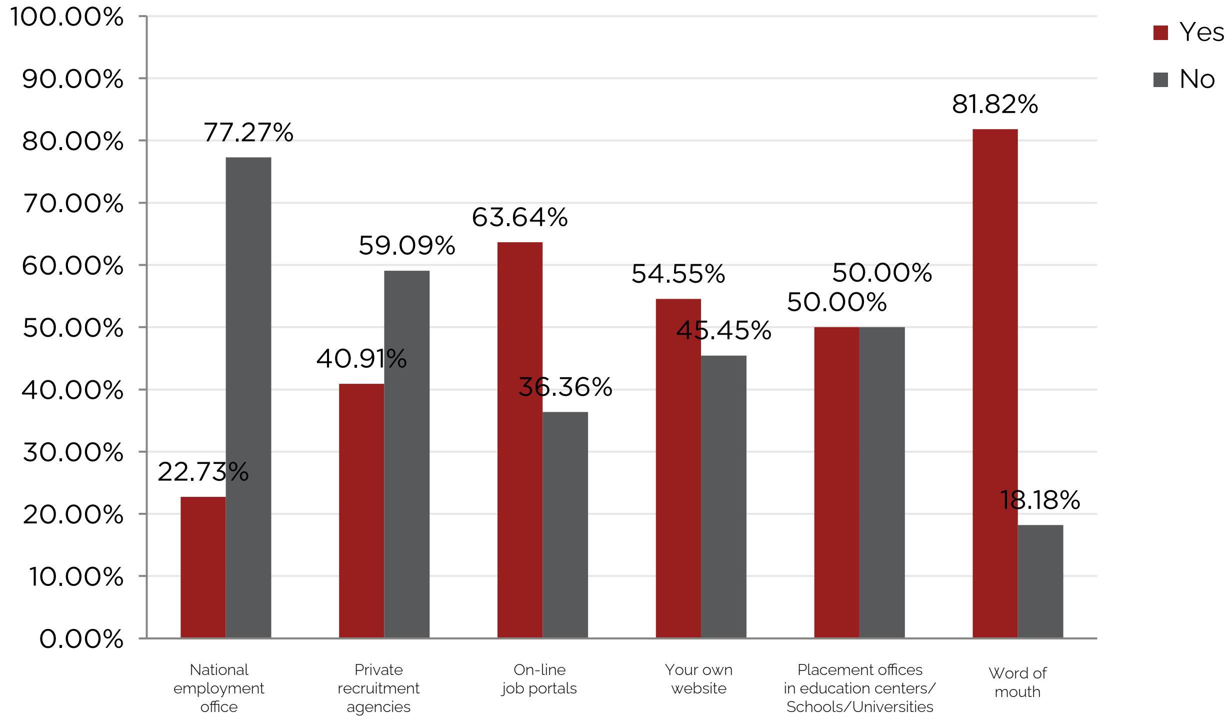


With regards the factors motivating this new wave of recruitment, results reveal a tie among the introduction of new production techniques, new export opportunities, and the lack of skills in the current workforce at nearly 72 per cent of respondents each. In a similar ballpark, results show that other factors such as expansion of production, and an expected increase in domestic sales were also reported as being causally related to the opening of new vacancies (at around 67 per cent of respondents each). Interestingly, only an estimated 19 per cent of respondents linked the opening of these vacancies to the replacement of current employees.

Recruitment channels planned for use

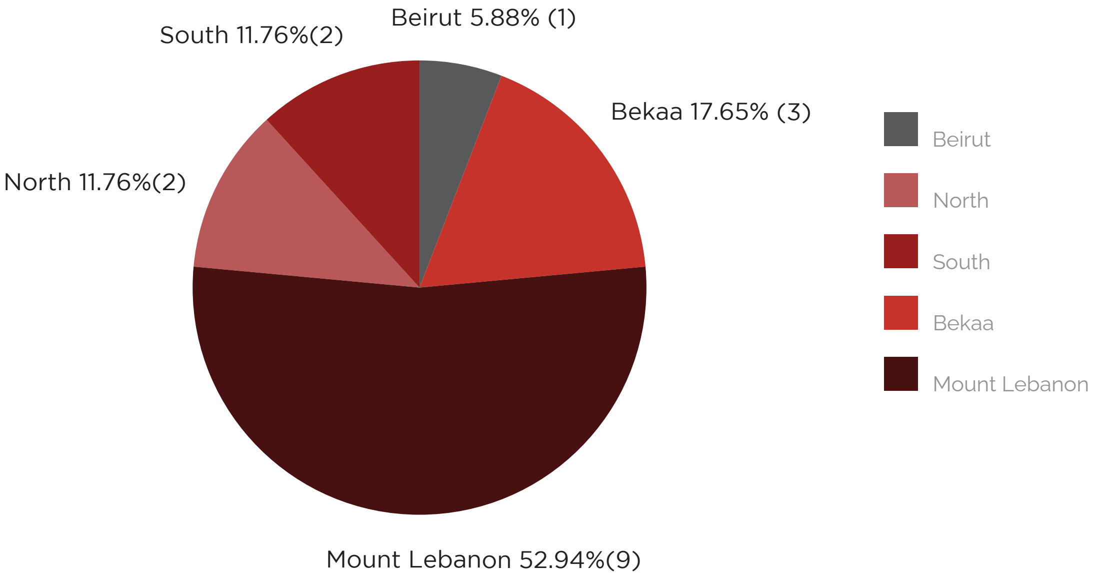
Word of mouth was the most frequently reported as the preferred recruitment channel for around 81 per cent of respondents who expressed their intention to open new vacancies in the coming 12 months, followed by online job portals and enterprises' personal websites. The National Employment Office (NEO) was the least relied upon recruitment channel scoring only around 23 per cent. Private recruitment agencies come second to last with an estimated 41 per cent, while 50 per cent of respondents would consider placement offices in education and training centers. This data is particularly helpful for any support intervention that might take place in the future, since it allows support groups to mitigate any potential asymmetry of labor market information by identifying the existing recruitment mechanisms in place and improving them. Meaning, that improving job posting and job search in the recruitment channels most frequently relied upon by respondents, might mitigate the lack of skills challenge enterprises in this sector are facing.

Figure 18. Preferred recruitment channels by surveyed enterprises



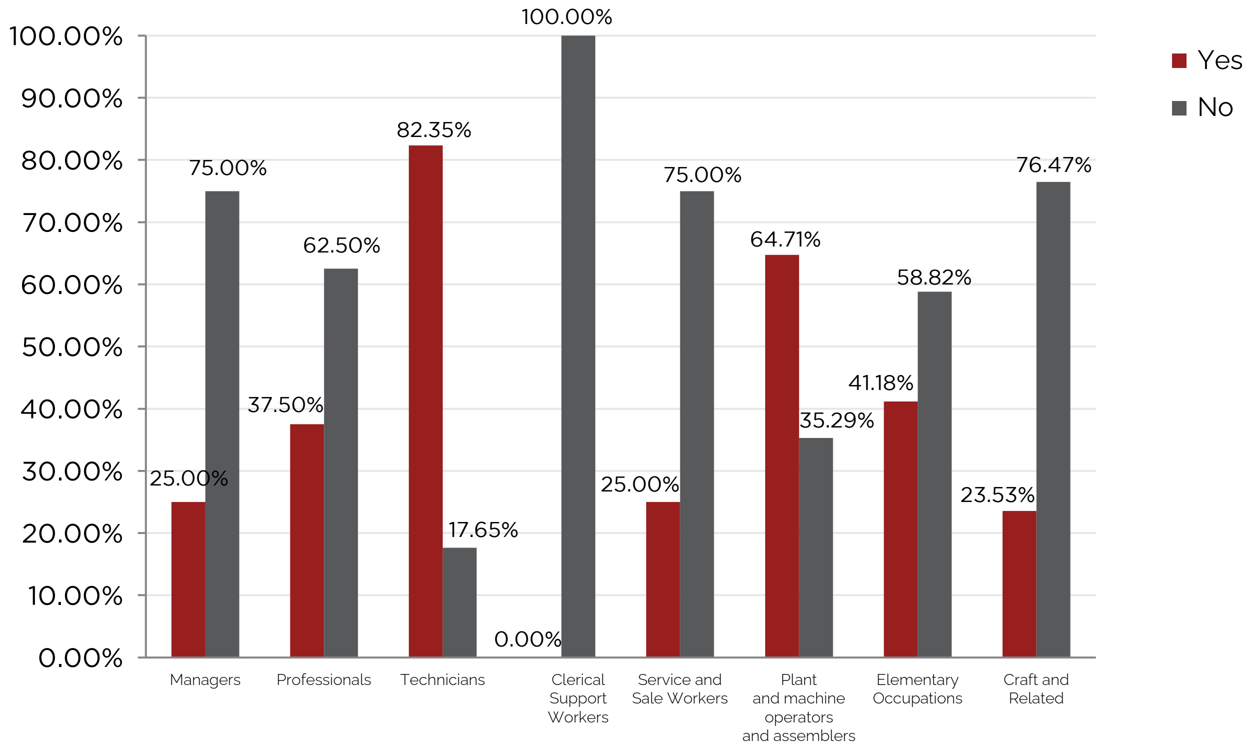
Information on current vacancies

Figure 19. Distribution of respondents who reported currently having vacancies by region



Data from the survey reveals that 17 out 37 respondents (47 per cent) currently have open vacancies with the majority located in Mount Lebanon.

Figure 20. Distribution of current vacancies by occupations where vacancies are currently open among surveyed enterprises

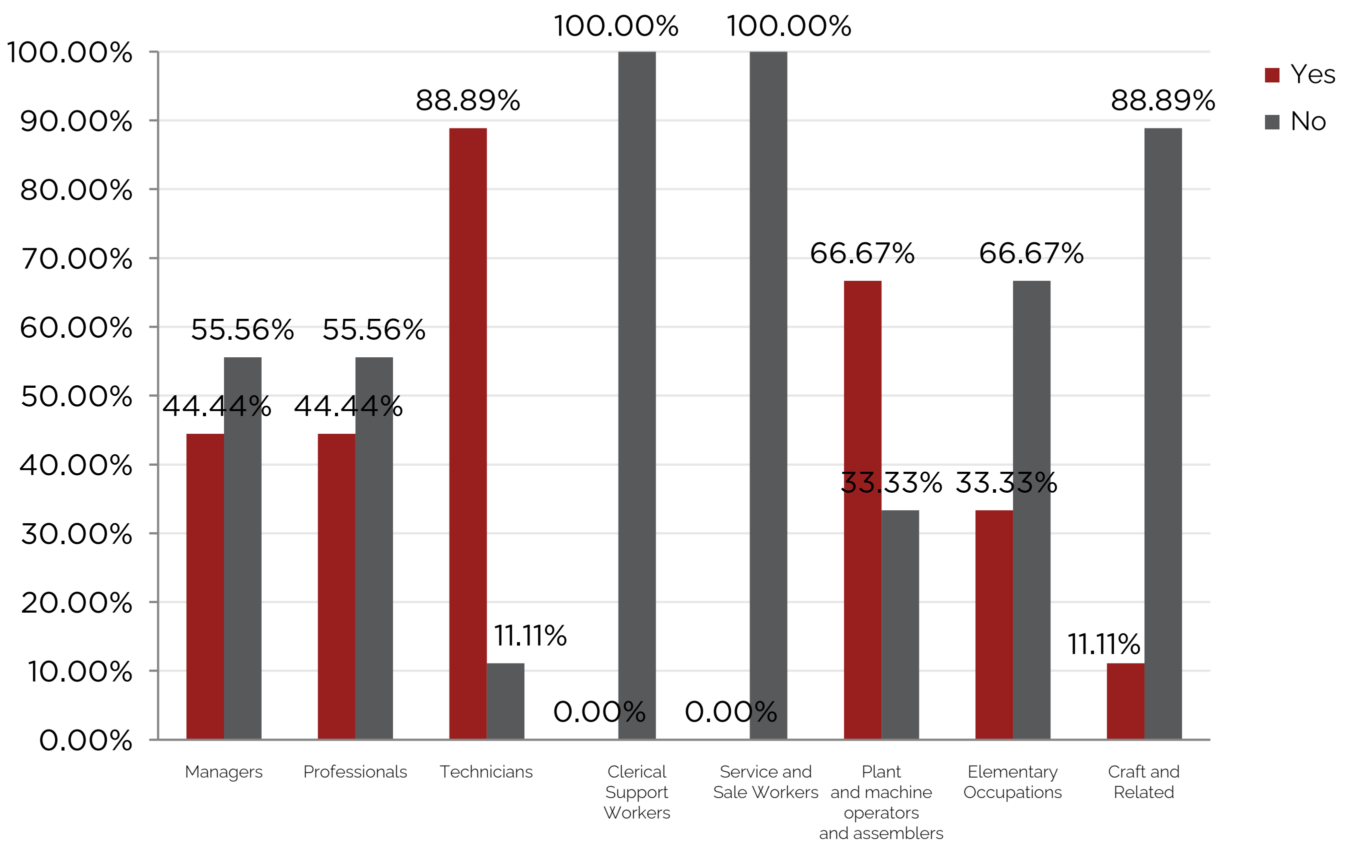


Among that group, around 82 per cent have reported having open vacancies in the field of technical and associate professionals with plant and machine operators coming in second at an estimated 64 per cent of respondents. While results do reveal current openings in other occupations, the high concentration of openings among respondents in these occupations, in particular, echo previous survey findings, especially pertaining to skills that are lacking, and labor shortages.

Difficulties in filling vacancies

Among those who declared having open vacancies currently, half of them were encountering difficulties filling in some occupations. Around 89 per cent of respondents reported difficulties filling occupations in the group of technicians and associate professionals; the majority of which were small enterprises. However, none of them reported difficulties filling in less technically intensive vacancies such as clerical support and service and sales. Plant and machine operators were found to be the second most difficult occupations to fill with almost 67 per cent of respondents who are currently hiring (the majority of which were small enterprises), followed by managers and professionals at 44 per cent respectively.

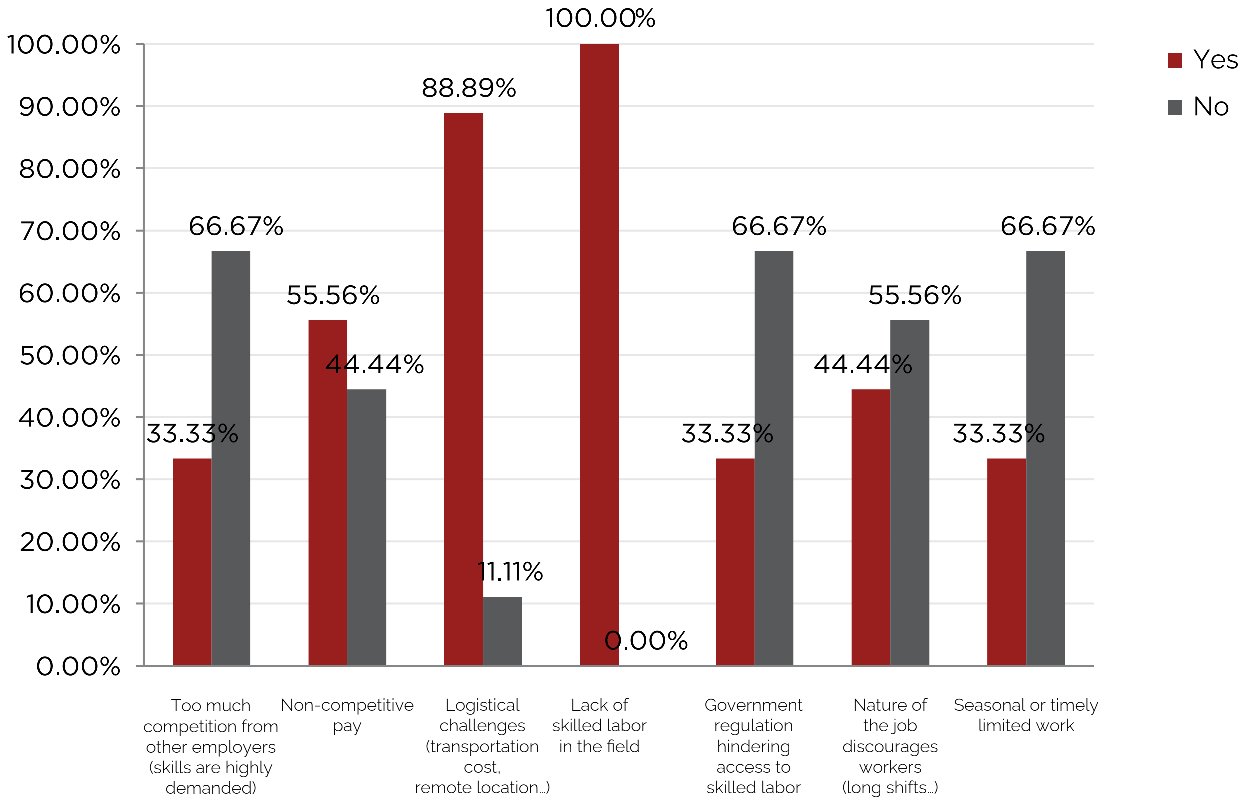
Figure 21. Occupations proving hard to fill among enterprises who currently have open vacancies



Why vacancies were hard to fill

There is an overwhelming consensus among respondents (100 per cent) that lack of skilled labor is the main reasons behind this difficulty. Logistical challenges such as transportation costs and accommodations come a close second with nearly 88 per cent of respondents attributed their hiring difficulties to logistical factors. Non-competitive pay was another reason that stood out among responses, at nearly 56 per cent. While some respondents reported other factors as being causally tied with hiring difficulties, lack of skilled labor presents itself as the most pressing issue to address.

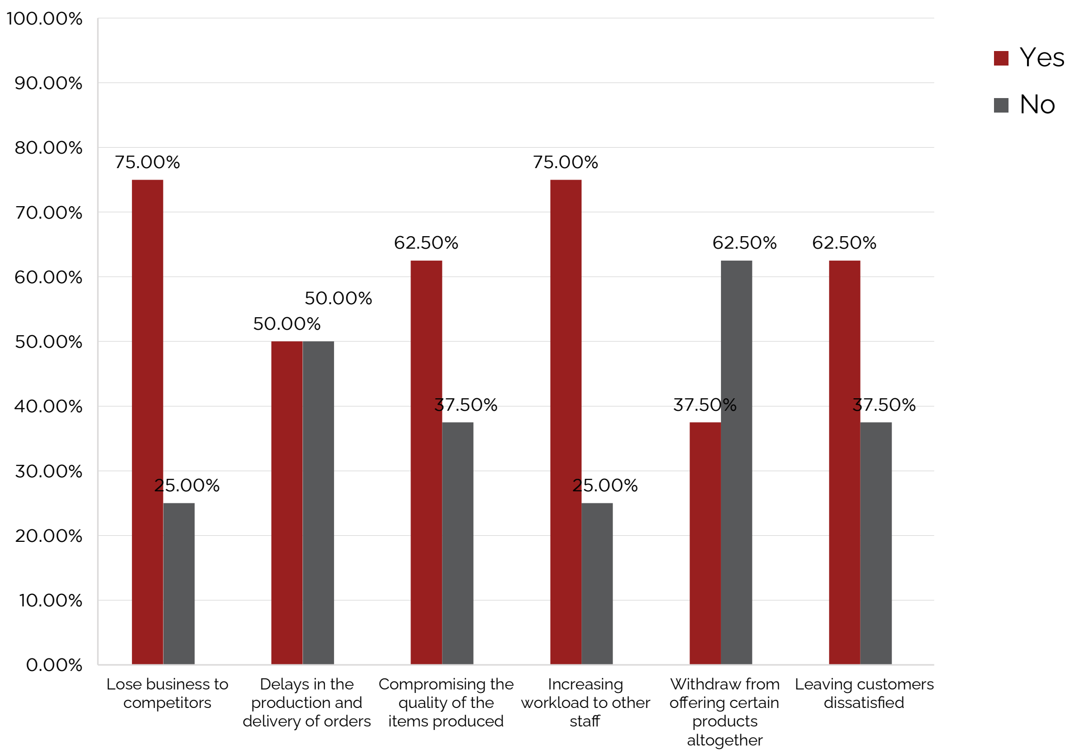
Figure 22. Reasons why vacancies are proving hard to fill



Effects on establishments of not filling vacancies

To understand the impact of this difficulty, respondents were asked whether this encumbrance is manifesting itself in certain aspects of their business. Increasing workload on other staff and losing business to competitors were the most frequently reported consequences of this recruitment challenge with both earning 75 per cent of responses. Survey data reveals that Increasing workload on other employees is most frequently reported by small organizations (10 – 29 employees) at a rate of nearly 57% of respondents who answered this question. Interestingly, all companies who reported losing business to competitors were either small or medium enterprises, indicating that recruitment challenges did not affect large enterprises that way. Moreover, compromises on quality of products and customers' dissatisfaction come in close second at around 63 per cent and was predominantly reported by small enterprises. These responses are alarming as the perceived consequences of hiring difficulties experienced by the surveyed enterprises have negative impacts on their operations and sustainability. Results from this survey present yet another empirical attestation to what is widely known in labor economic theory and strategic management theory: overworking employees will lead to reduced productivity and will compromise quality of production leaving thus customers unsatisfied. This will inevitably lead to a loss of business to competitors.

Figure 23. Repercussions of hard to fill vacancies on enterprises



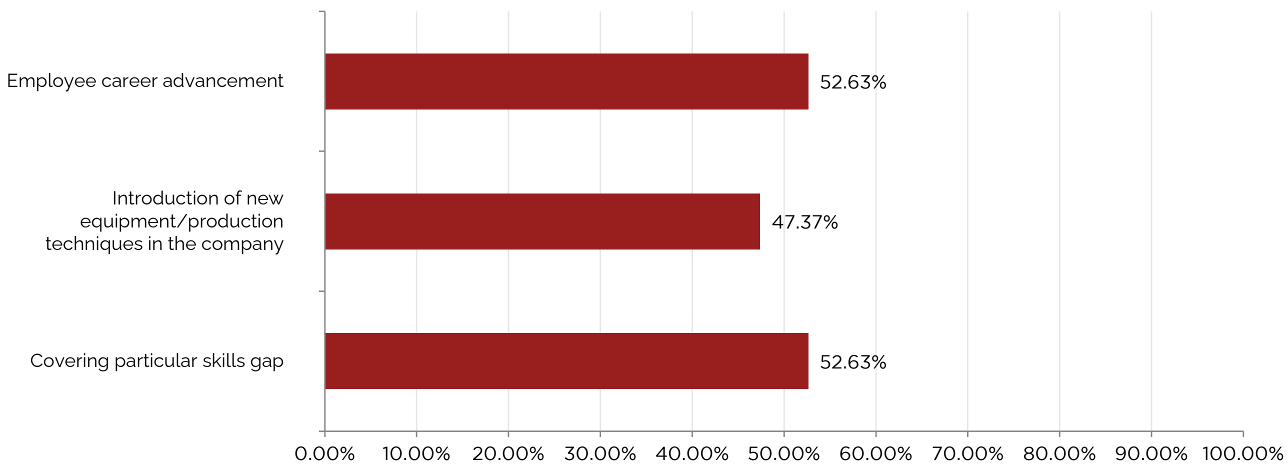
WORKFORCE DEVELOPMENT

- Almost half of respondents provided employee training in the past 12 months. Covering skill gap was one of the most frequently reported reasons behind these trainings.
- Among respondents who did not provide employee training, no available training in the needed domain was the most frequently reported reason.

In this section, the survey delves into the important issue of workforce development that is proven to be one of the main drivers of masked unemployment especially considering changing technologies and production techniques. Deficiencies in this area also have serious repercussions on businesses as it compromises their ability to tap into growth opportunities. The questions hereafter explore the motivations underlying the decisions by respondents on workforce development. The survey questions also seek to identify the hindrances facing workforce development and understand the reasons for not providing such services to employees.

Training Provision and Reasons for Training

Figure 24. Main reasons for carrying out training programs by respondents who reported providing training to their employees in the past 12 months



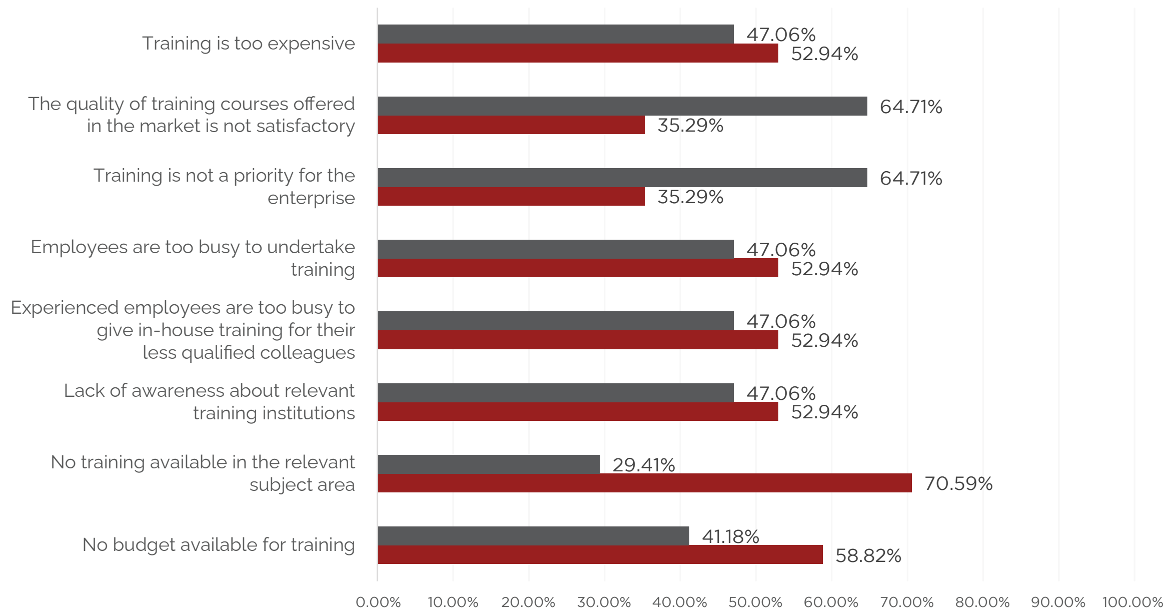
In earlier responses in this survey, although participants described a lack of skills among their existing workforce, there was little correlation between their newly open vacancies and workforce replacement.

The current questions were set to understand whether or not there was a workforce development mechanism put in place among the surveyed enterprises. Data revealed around 55 per cent of respondents did indeed provide training to their employees in the past 12 months. Among this group, i.e. those who provided training, nearly 53 per cent reported that these trainings were intended to cover existing skill gaps. A similar estimate was also revealed for employee career development. The introduction of new equipment and processes was not too far off earning around 48 per cent of responses. This is not surprising especially as it echoes earlier responses where participants have attributed their interest in hiring to the adoption of new production techniques and the expansion to new markets.

Reasons for not Training

Among respondents who did not provide training for their employees, nearly 70 per cent of them reported it was due to lack of training available in the relevant subject area. Around 59 per cent of them reported no budget available for training; by comparison, 53 per cent reported finding the training too expensive. Interestingly, 53 per cent of respondents attributed their lack training provision to a lack of awareness about relevant training institutions. In addition, at 53 per cent the lack of employee training provision was linked to experienced employees being too busy to give in-house training to their less qualified colleagues, as well as employees in general being too busy to undertake any training. An estimated 36 per cent of respondents found the quality of training courses offered in the market to be unsatisfactory. 36 per cent of respondents considered these trainings as a priority for their respective enterprises but 64% held the opposite view.

Figure 25. Main reasons why respondents refrained from providing employee training in the past 12 months



The conclusions are written as a summary statement in the first two paragraphs followed by additional remarks on results from specific parts of the survey.

The results of this survey were consistent overall and suggest a real gap in the technical and vocational occupations inflicting serious challenges on the businesses of the surveyed enterprises. Results reveal that not only did the participants express difficulty in recruiting workers with the relevant technical skills for these occupations, in particular plant and machine operators and technicians for machine maintenance, but they also suffered from a lack of skills among their existing workforce. Respondents who expressed difficulty in finding technical training curricula compatible with their needs were statistically dominant. (Recall that an estimated 69% of respondents failed to provide employee training due to unavailability of adequate training programs). With a large majority of respondents reporting losing business to competition as a result of insufficient numbers of skilled workers, attending to this challenge becomes of the utmost importance.

Results reveal a two-fold opportunity: i) workers who possess the right skills will find new employment avenues thereby improving their economic situation, and ii) employers who retain or recruit the qualified technical staff will be able to improve their production and avoid losses along the way. The data presented in this report suggests that the plastics sector (as represented by the respondents who took part in the survey) has several benefits to reap should proper action be put in place.

Skills gaps in current workforce

There are skills gaps in the current workforce. Most respondents indicated they would provide training to help overcome the skills gaps but faced challenges in funding and delivering the best training. TVET programs that combine both relevant technical and generic skills could help address these skills gaps with the current workforce.

Occupations in demand

Just over 94% of respondents indicated the most in-demand occupational category was technicians and associate professionals which are typically the output of TVET colleges. A smaller but still significant number of respondents also noted demand for plant and machine operators and assemblers. Such personnel are often persons with less than secondary education who are hired and trained on the job. Support to enterprises to train such persons would increase their work efficiency.

New vacancies

Nearly two-thirds of respondents indicated their establishments would be opening new vacancies in the coming 12 months. The occupations to be recruited most are at the level of technicians and associate professionals, and plant and machine operators and assemblers. These vacancy categories align with those listed above in occupations in demand. However, there is expected to be significant recruitment of other occupations including elementary occupations and professionals and service and sales workers. Given the occupations in demand and upcoming vacancies in the plastics sector, there are current and future employment opportunities for TVET graduates with the right skill sets. The survey results pointed to the skill sets needed as recapped below.

Skills in demand

Both technical and generic skills are needed according to 80-90 per cent of survey respondents. Technical skills identified include maintaining and operating machinery, capacity to work with specific equipment and processes used in the establishment, as well as efficient use of materials, technology, equipment and tools. Generic skills in demand include teamwork, work ethics, problem solving, ability to calculate, green and environment sustainability skills. It is likely development of these skills will require cooperation between training providers and business establishments to allow development of both hard and soft skills.

Recruitment practices

The survey highlighted the preferred method for recruitment is word of mouth, but with other methods also prevalent including placement offices in colleges and through company websites. Private recruitment agencies come second to last in preference; using the National Employment Office was the least preferred option. Findings suggest there is a need to better connect information on the supply side (types and numbers of trainees in TVET institutions) with information on the demand side (current and upcoming vacancies in business establishments), and there is an opportunity for the NEO to establish a well-functioning labour market information system that would better link the two.

Current vacancies and difficulties in filling them

Just over 46 per cent of respondents indicated they have current vacancies primarily for technicians and associate professionals, and for in plant and machine operators and assemblers. 100% of respondents agreed that the reason for these vacancies being hard to fill was the lack of skilled labor in the field. Increasing the supply of technicians and plant and machine operators is advisable, but they will not be available to fill existing vacancies in the short term unless workplace learning arrangements can be established that enable trainees to develop and sharpen relevant skill sets.

Workforce development

Nearly 55 per cent of respondents indicated they provided training to their staff in the last 12 months for varied reasons including career development and to tackle the introduction of new equipment. The most common reason for not providing training was non-availability of training in the relevant subject area with a related reason being the poor quality of training on the market. Other reasons indicated for not providing training were no funds for training, internal staff were too busy to give or attend training, and there was a lack of awareness of training institutions which might provide training. The first point reinforces the need to help training providers in partnership with private establishments develop fit-for-purpose training. There is a clear need for enhanced information sharing between training providers on their program offerings and services and employers with their staff and skill set requirements.

Based on the survey findings and our conclusions, a multi-faceted strategy is proposed that would entail the following actions.

Data / Information sharing

01 Mitigate the asymmetry of information between employers and employment seekers by simultaneously improving the recruitment mechanisms of enterprises and enhancing the job search skills of workers. These efforts could involve posting of job vacancies at the establishment, at nearby training institutions, and by sending them to agencies such as the NEO. Training providers, NGO's and other agencies can organize training in job search skills for their trainees or clients.

02 Establish information channels that would allow business establishments to communicate their skills and occupation needs to training institutions which will in turn allow them to tailor their programs accordingly. As an example, ALI could help companies organize participation at job fairs, in the traditional media and on social media, and to present at career days at vocational schools.

03 Strengthen the role of the National Employment Office the original mandate of which is to mitigate asymmetry of information pertaining to the labor market. Support to expand and promote a labour market information system would allow job-seekers to post their profile and employers to post current vacancies. Such as system would also generate reports indicating job demand in different occupations and sectors, versus labour supply in those same areas.

04 Raise awareness among establishments in the plastics (and other) sector(s) about TVET programs delivered by existing non-profit organizations in the country, and share job demand information with these NGOs. Identify NGO or other entities that already have an information sharing system on programs and services offered by NGOs in the arena of skills development, or would be open to create such a platform to enhance communication between businesses in search of skilled workers and these organizations.

Workforce development

05 Improve access to relevant cost effective TVET programs and institutions that would enhance the quality of workforce development training among existing workers. Training providers could modularize existing programs or develop new short courses which are job specific and easier for persons to access. Operating outside normal business hours, such as on weekends or in the evening, can make training more readily available to workers. Business establishments could set up training rooms onsite and make their equipment available for hands-on practice under supervision.

06 Provide assistance to training providers to enable better design, development and delivery of competency-based training in response to industry training needs.

a) TVET providers can be aided through international development projects and/or local collaborative efforts to develop revised curricula, produce up-dated training materials, enhance instructor skills, and support better integration of under-represented groups, such as women, and persons with disabilities. ALI can help coordinate industry sector involvement by linking interested establishments with training providers able and willing to partner with them in different ways.

b) Encourage establishments in the plastics sector to engage with training providers through mechanisms such as participation in college advisory boards, placement of trainees in workplace learning, and back to work experience for TVET institution instructors.

Business support

07 Provide assistance to establishments to plan and conduct training needs assessments of their staff. Such workshops could be organized with cooperation of ALI and the ILO.

08 Assist in-company managers to develop a company training plan that would specify company needs, strategies and partnerships.

09 Offer train the trainer programs to enterprises so they can offer plan and deliver quality internal training.

Gender/Equity

10 Encourage business establishments to develop an equity policy that reflects gender and foreign worker engagement. The ILO could assist ALI develop this service for its members through workshops and briefing materials.

11 Encourage training providers to develop a gender policy and consider establishment of an equity officer position. Such initiatives can encourage more females to join institutions as instructors and trainees leading to more qualified females available to work in establishments.

Further research

12 Periodically conduct similar skills assessment surveys in order to assess the effectiveness of any policy intervention and identify new room for support where needed.

Annex 1 – ISCO classification for occupations

ISCO major groups classification	Description
Managers	This group includes chief executives; general and corporate managers; managing director; administrative, finance, production, service and sale manager….
Professionals	This group includes engineers, lawyers, economists, computing professionals, that require skills at graduate and postgraduate education
Technicians and associate professionals	This group performs mostly technical and related tasks, typically require skills at upper secondary or tertiary education
Clerical support workers	Such as secretaries, cashier; require skills at least lower secondary educations
Service and sale workers	Workers who demonstrate and sell goods. Most occupations require skills at least lower secondary education
Plant and machine operators and assemblers	This group operates and monitors industrial machinery and equipment, or assembles products.
Elementary occupations	This group consists of simple and routine tasks such as cleaners, doorkeepers or laborers
Craft and related trades workers	handicrafts goods which involve the performance of complex physical duties that normally involve initiative, manual dexterity and other practical skills

Annex 2 - List of occupations in the plastics sector

- Company manager
- Factory manager
- Warehouse manager
- Delivery manager
- Purchase/procurement supervisor
- Accounting supervisor
- Invoicing supervisor
- Invoicing officers
- Sales supervisor
- Sales officers
- Marketing officer
- Social media officer
- Maintenance technicians
- Machine operators/machine workers
- Waste press worker
- Plant and Machine assembler
- Driver
- Driver's assistant
- Concierge
- Cleaner
- Packing laborer

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