

3 **Aligning vocational education and training with labour market needs in Thailand**

This chapter looks at the alignment between the vocational education and training (VET) system and the skill needs in the labour market. It looks at the current states of imbalances in Thailand and zooms in on labour market outcomes of adults with VET qualifications. The chapter discusses how better use of skill intelligence in VET, stronger involvement of employers, and more and better work-based learning opportunities can help improve the alignment of VET with labour market needs.

The alignment between VET and the labour market

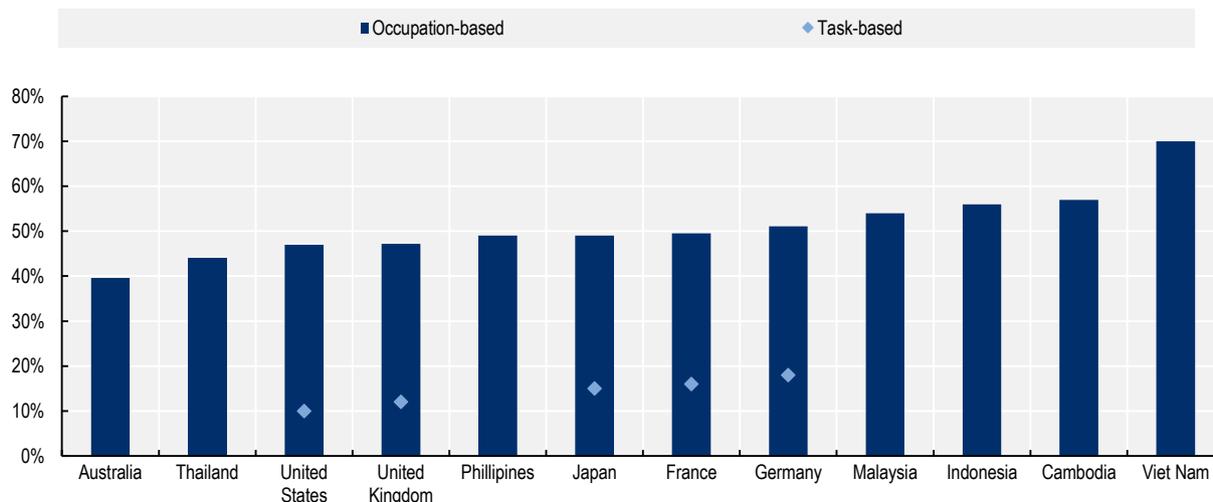
Structural changes can lead to skills imbalances

In light of structural changes that impact the demand for and the supply of skills, it is becoming increasingly important that the skills of workers are effectively aligned with the needs of the labour market. For example, technology can substitute for labour to carry out certain tasks, while complementing labour in other tasks. According to ILO estimates, three out of five jobs in five major ASEAN countries (Cambodia, Indonesia, the Philippines, Thailand, and Viet Nam) face at least a 70% probability of automation (Chang and Huynh, 2016^[1]). Figures for individual countries range from 44% in Thailand to 70% in Viet Nam (see Figure 3.1). Although Thailand's share is the lowest among the ASEAN countries with available data, it is similar to what is estimated for some OECD countries like Australia (40%) and the United States (47%) (see Figure 3.1). Estimates from OECD countries that focus on tasks carried out in a job rather than the occupation, suggest that only around 14% of jobs on average across OECD countries face a high probability of automation (Nedelkoska and Quintini, 2018^[2]), but also that in addition to these, 32% of jobs have a high probability to undergo significant change in the way they are carried out. Hence, the estimated 44% of jobs at high risk of automation in Thailand is likely to comprise both jobs that can be fully automated and jobs that will see significant changes in their content, but will not disappear. In addition, OECD analysis highlights that the risk of job automation is higher among low-skilled workers, women, and workers at low-wage occupations, which may further increase disparities in the labour market (Nedelkoska and Quintini, 2018^[2]). However, these estimates only provide an estimate of possible automation in the next few decades, and many factors could limit technology adoption, including the relative price of technology and attitudes towards technology. The COVID-19 crisis may have encouraged some employers to automate certain tasks, as a way to avoid disruptions and uncertainty in the face of mobility restrictions. Furthermore, it is important to note that these figures only capture potential job destruction and do not account for the (potentially larger) number of new jobs that technology will create. While certain jobs may disappear, others will emerge and a sharp decline in overall employment is unlikely. That being said, the jobs created by technological progress generally require very different skills than the ones that are destroyed, and this could result in substantial skills imbalances (OECD, 2019^[3]).

Likewise, demographic changes contribute to skills imbalances. Thailand is entering a new era of demographic change involving slow population growth and probable eventual decline, along with an aging population. The declining proportion of the working age population will affect economic growth and can result in labour shortages. As of 2016, 11% of the Thai population (about 7.5 million people) are 65 years or older, compared to 5% in 1995. The fertility rate fell from 6.1 in 1965 to 1.5 in 2015, as a result of rising incomes and education levels and the successful National Family Planning Programme launched in 1970 (Office of the Education Council, 2017^[4]). An older population has different needs and consumption patterns, including a stronger demand for personal and health care, which changes the skill needs in the labour market.

Figure 3.1. Many jobs could potentially be partly or fully automated

Share of jobs with high probability of automation, or a probability of significant change



Note: Task-based estimates are regarded as more precise, as they do not assume that all workers in a specific occupation carry out the same type of tasks. The task-based estimates are only available for countries participating in the OECD Survey of Adult Skills (PIAAC).

Source: Adapted from OECD (2020^[5]), *OECD Economic Surveys: Thailand*, <https://doi.org/10.1787/ad2e50fa-en>.

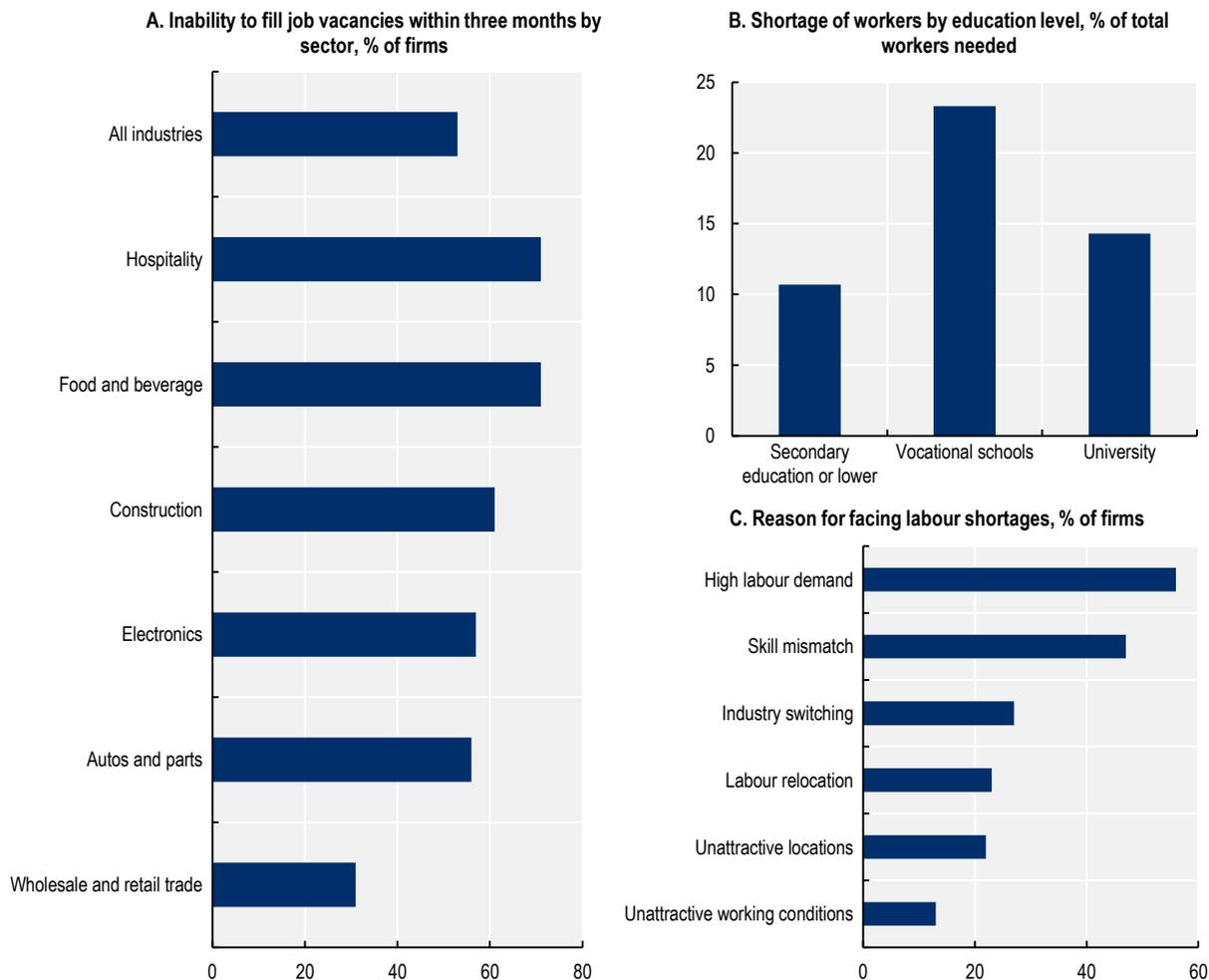
Imbalances between the supply and demand for skills can emerge in the form of ‘skill shortages’ – when adequate skills are hard-to-find in the current labour market – or in the form of ‘skill surpluses’ – when certain skills are in excess in the labour market relative to the demand (OECD, 2017^[6]). In addition, imbalances also comprise skill mismatch when a workers’ skills or qualifications exceed or fall short of those required for the job under current market conditions (OECD, 2017^[6]; Shah and Burke, 2005^[7]). Mismatch can be measured along different dimensions, including skills, qualifications and field of study. Imbalances have been found to have negative consequences for individuals, firms and the economy more broadly, through lower productivity, wages and job satisfaction.

Skills imbalances are common in Thailand

A common way to measure skills shortages is to ask employers about the difficulty they face in finding workers with the right skills to fill their vacancies. A survey conducted by SCB Economic Intelligence Centre among 222 firms in six key sectors in Thailand in 2014 showed that 53% of employers had difficulties filling job vacancies within three months (OECD, 2020^[5]). These difficulties were faced by almost three in four firms in the hospitality and the food and beverage sector and around 60% of firms in the construction sector, while less than one in three firms in the wholesale and retail sector reported hiring difficulties. Moreover, the issue is most pressing for finding workers with vocational degrees. In this category, the shortfall is 23% of the total numbers of workers needed, meaning that for every 100 job openings for vocational graduates at a given time, only 77 recruits are available. This hiring gap is larger than for university graduates (14%) and for those with a high school education or less (11%). There are various reasons for why employers might not be able to fill their vacancies, with the most common reasons among Thai firms being high labour demand (56%) and mismatch between available skills and the skills they need (47%). Chalapati and Chalapati’s (2020^[8]) analysis of the skills system in Thailand confirms that the country does not have enough vocationally skilled workers, and that this has resulted in shortages in the labour market. The lack of relevant vocational skills was confirmed in interviews carried out by the OECD team with Thai government representatives, who highlighted shortage of skilled technicians and operators for the industrial sector that are partially the result of impractical VET programmes – despite efforts to update them.

Figure 3.2. Employers in Thailand face hiring difficulties

Based on survey responses from 222 employers in six key sectors (2014)



Note: Survey conducted in the first quarter of 2014.

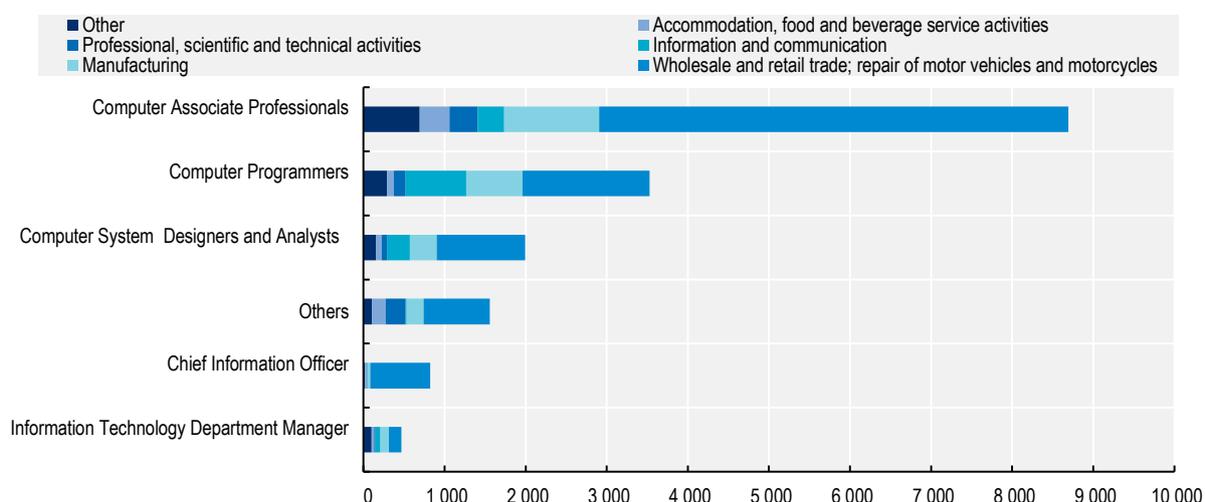
Source: SCB Economic Intelligence Centre (2020^[9]), *Insight – Bridging Thailand’s Labour Gap*, https://www.scbeic.com/en/detail/file/product/1251/e22mxi3krw/ENG_labor_insight_Q1_2015.pdf.

One area in which many countries are facing shortages is digital skills, and this is also the case in Thailand. ILO (2019^[10]) reports that the Thai labour market faces a shortage of highly-skilled ICT specialists, as well as semi-skilled ICT workers that provide support and maintenance for ICT services, including networks, servers, software packages and computer equipment. They attribute the shortage of semi-skilled workers largely to the low quality of vocational education available in Thailand. The 2019 establishment survey on the use of information and communication technology found that firms in Thailand had a need for just over 17 000 information and communication technology (ICT) workers (OECD, 2019^[11]). The strongest demand was for ICT associate workers, accounting for just over half of positions, followed by programmers (21%). Officials from the Association of Thai ICT industry (ATCI) estimate that as many as 90% of the ICT graduates each year are unable to meet the basic qualifications for companies to even begin job-specific training, highlighting a massive problem of under-skilled graduates, and irrelevant and outdated curricula (Tan and Tang, 2016^[12]). Moreover, a survey by IMC Institute in 2013 found that three quarters of the employers in the ICT sector described the lack of emerging ICT skills as the biggest challenge for the industry. Almost half of the respondents cited the lack of knowledge and training facilities as the reason

behind this skills gaps (Tan and Tang, 2016^[12]). An employer survey carried out by the World Economic Forum in 2020 confirms the growing demand for ICT profiles and digital skills in Thailand (World Economic Forum, 2020^[13]). The five job roles most frequently cited by Thai employers as being in high demand are: i) data analyst and scientists, ii) digital marketing and strategy specialists, and iii) big data specialists, iv) AI and machine learning specialists, and v) software and application developers. Likewise, many employers report technology-related skills as being in high demand, alongside certain transversal skills such as analytical thinking, complex problem solving and active learning. The demand for digital skills is likely to continue to grow in the coming years as employers increasingly adopt digital technologies in the workplace. The COVID-19 crisis already led to an increased demand for digital skills in the Thai labour market, resulting in shortages of such skills (see Box 3.1).

Figure 3.3. The number of openings for ICT-related roles is large

Number of workers needed by type of ICT job and industry



Source: National Statistics Office (2019^[11]), The 2019 Establishment Survey on the Use of Information and Communication Technology.

Box 3.1. The impact of the COVID-19 pandemic on skills imbalances in the Thai labour market

The COVID-19 crisis had a significant impact on labour markets around the world, with certain sectors, such as the tourism and hospitality sector being strongly impacted by social distancing measures and travel restrictions. Recent analysis of job postings in OECD countries shows that the volume of job openings was still well below the pre-pandemic levels at the start of 2021, but also that there was significant heterogeneity between sectors and occupations. For example, while labour demand in accommodation and food services was 45% lower in December 2020 than the pre-pandemic level, in transport and storage services online job postings were 30% higher than in January 2020, and online job openings for hospital workers, employees of food retailers and warehouse personnel remained the same or increased compared to the pre-pandemic period.

While Thailand weathered the COVID-19 pandemic well compared to many other countries, the labour market was strongly affected. For example, the pandemic exacerbated already existing shortages in the Thai healthcare sector. At the height of the COVID-19 healthcare crisis, the Thailand Nursing and Midwifery Council called for 400 experienced nurses to take care of the growing number of patients.

According to the NESDC's Social Outlook for Thailand in the last quarter of 2020, employment in technology and digital enterprises has increased significantly during the COVID-19 crisis due to changing business models that have used more robots and artificial intelligence and the Internet. However, as the supply and upskilling/reskilling programmes for workers have not yet responded to the increased demand, this has resulted in labour shortages in high-tech and digital skills groups.

Other sectors are also facing shortages linked to the COVID-19 crisis. This is the case for example for the agricultural sector, which employs a large number of migrant workers (and was facing excess supply of skills before the crisis). With the COVID-19 outbreak and ensuing border closures in Thailand, many migrant workers left Thailand, resulting in labour shortages in the agricultural sector.

Other sectors are faced with excess supply of workers due to falling demand for goods and services. This is particularly the case for the tourism and hospitality sector in Thailand, which has been heavily impacted by lockdowns and the banned entry into Thailand by foreigners. The sector accounts for 9% of employment in Thailand, with many of the workers in this sector at risk of being out of work for extended periods. The number of foreigners visiting Thailand in 2020 fell to 6.7 million, down 83% from the previous year, according to data released by Thailand's Ministry of Tourism and Sports. At least 1 million workers in the country's hospitality sector have been laid off in 2020, according to the Thai Hotels Association.

Source: OECD (2020^[5]), *OECD Economic Surveys: Thailand*, <https://doi.org/10.1787/ad2e50fa-en>; ILO (2020^[14]), *COVID-19 and employment in the tourism sector: Impact and response in Asia and the Pacific*, <https://www.unwto.org/unwto-tourism>; OECD (2021^[15]), "Supporting jobs and companies: A bridge to the recovery phase", *OECD Policy Responses to Coronavirus (COVID-19)*, <http://www.oecd.org/coronavirus/policy-responses/supporting-jobs-and-companies-a-bridge-to-the-recovery-phase-08962553>; NESDC (2020^[16]), *NESDC News: Thailand Social's Outlook of Q4/2020*, https://www.nesdc.go.th/nesdb_en/ewt_dl_link.php?nid=4450&filename=social_dev_report; NikkeiAsia (2021^[17]), *COVID wave crushes Thailand's already hobbled tourism sector*, <https://asia.nikkei.com/Business/Business-trends/COVID-wave-crushes-Thailand-s-already-hobbled-tourism-sector2>.

Using data from the Thai Labour Force survey, the OECD Skills for Jobs indicators measure skills imbalances in Thailand in an internationally comparable way that allows for detailed results by occupation, sector and skill type (see Box 3.2 for details on the methodology). As Table 3.1 shows, shortages can be found across the skills spectrum in Thailand, including in high-skill occupations (Health Professionals, Legal, Social, Cultural and Related Associate Professionals, Business and Administration Professionals, ICT Professionals, Health Associate Professionals, Teaching Professionals), middle-skill occupations

(Metal, Machinery and Related Trades Workers, General and Keyboard Clerks), and low-to-middle skill occupations (Food Preparation Assistants, Protective Services Workers). A similar pattern can be seen at the sector level, with the largest shortages observed in the education sector, the health and social work sector, the mining and quarrying sector, the transportation and storage sector and the manufacturing sector. These imbalances could be the results of several factors, including an inadequate supply (e.g. few university graduates with specialisation in health care, few VET graduates specialised in metal and machinery operations), skills of graduates not matching employers' requirements (e.g. VET and tertiary education graduates from business and administration fields not having the knowledge and technical and soft skills needed for business and administration jobs), and the attractiveness of working conditions (e.g. food preparation assistant job offering low salaries and difficult work schedules). It is important to note that the data refers to the period before the COVID-19 crisis, and therefore reflects structural imbalances that are unrelated to this recent labour market shock (OECD, 2020^[5]).

Table 3.1. Shortages in Thailand are found across the skills spectrum

Occupations facing the strongest shortage pressure	Sectors facing the strongest shortage pressure
Health Professionals	Education
Legal, Social, Cultural and Related Associate Professionals	Human Health and Social Work Activities
Food Preparation Assistants	Mining and Quarrying
Business and Administration Professionals	Transportation and Storage
Metal, Machinery and Related Trades Workers	Manufacturing
Information and Communications Technology Professionals	Administrative and Support Service Activities
General and Keyboard Clerks	Professional, Scientific and Technical Activities
Protective Services Workers	Other Service Activities
Health Associate Professionals	Financial and Insurance Activities
Teaching Professionals	Public administration and Defence; Compulsory Social Security

Note: Refers to 2-digit occupations in the ISCO-08 classification and 1-digit sectors in the NACE rev.2 classification. Data refer to 2018 results. See Box 3.2 for details on the methodology.

Source: OECD (2021^[18]), OECD Skills for Jobs Database, using Thai Labour Force Survey data (2011-2018), <http://www.nso.go.th/sites/2014en/Pages/Statistical%20Themes/Population-Society/Labour/Labour-Force.aspx>.

The shortages observed at the occupational level translate into shortages of cognitive skills, such as mathematical reasoning, writing and reading comprehension, but also certain social skills, like service orientation, and technical skills (e.g. programming and technology design). The knowledge areas found to be most in shortage in Thailand are 'computers and electronics', 'clerical knowledge' and 'customer and personal service'. As Thailand continues to be exposed to global mega-trends, such as population ageing, globalisation and automation, shortages of high-level cognitive skills and social skills are likely to become even more pronounced, as is the case in many OECD countries today. Occupations that have a relatively low probability of change due to automation, which are generally the ones requiring high-level cognitive skills and/or social skills, are already more likely to be in shortage in many OECD countries. In the United States, employment growth has been strongest in jobs requiring high levels of both cognitive skills and social skills (Deming, 2017^[19]). In OECD countries, the occupations that combine high cognitive skills requirements with social skill requirements are the ones that are facing the strongest shortages (OECD, 2020^[5]; OECD, 2017^[6]).

Box 3.2. The OECD Skills for Jobs Indicators

Shortages and surpluses

To analyse the degree of skill shortages and surpluses in countries' labour markets, the Skills for Jobs methodology uses five sub-indicators to extract signals of occupational shortage/surplus pressure: i) employment growth, ii) hours worked growth, iii) unemployment rate,¹ iv) change in the share of underqualified workers, and v) hourly wage growth. For each occupation, the long-run trends of these indicators are measured relative to the economy-wide trends. The five indicators are aggregated into a final occupational shortage index.

To get an understanding of the actual skills that are in shortage or surplus (rather than the occupations), the occupational shortage indicator is translated into a skill need indicator by using information on skills requirements by occupation (from the United States Department of Labor's O*NET database).² The final skills needs indicator shows the degree of shortage or surplus for a wide range of skills, abilities and knowledge types.

Qualification and field-of-study mismatch

Qualification and field-of-study mismatch measure the misalignment between a workers' occupation and his/her qualification level and field of study, respectively. Workers are said to be underqualified when their highest educational attainment is below the usually observed qualification level in the worker's occupation. In the opposite case, when a worker's qualification level is above the standard qualification level in his/her occupation, this worker is overqualified. Similarly, a worker is mismatched in terms of field of study when the field of study of his/her highest attained qualification does not match with the field generally required in the worker's occupation.

1. The Thai Skills for Jobs analysis uses data from the Thai Labour Force Survey (2011-2018), and results for the occupational shortage index are based on four sub-indicators (as variations in the unemployment rate by occupation are too limited to extract meaningful signals about shortage and surplus).

2. The assumption is made that skill requirements by occupations are the same in Thailand as in the United States. While the cross-country validity of O*NET has been confirmed for a range of OECD countries, some concerns have been raised regarding the use of O*NET for lower-income countries.

Source: Adapted from OECD (2017^[6]), *Getting Skills Right: Skills for Jobs Indicators*, <https://dx.doi.org/10.1787/9789264277878-en>.

Finally, in addition to substantial shortages, the Skills for Jobs data also show that the Thai labour market has a significant share of workers who are mismatched in their job in terms of qualification level and/or field. In 2018, 8% of workers were under-qualified for their occupation, meaning that they work in an occupation for which a higher level of qualification is normally required. An additional 34% were over-qualified, meaning that their education level is higher than what is generally required in the occupation they work in (Figure 3.4). This is quite different from the qualification mismatch pattern observed in OECD countries, where on average 19% of workers are under-qualified and 17% over-qualified. However, similar patterns as observed in Thailand can be found in Turkey, Peru and Brazil. The presence of over-qualification in the Thai workforce is consistent with the fact that employers mostly look for low to medium-skilled workers, while the education system is increasingly delivering tertiary educated graduates (see Chapter 2). Under-qualification, on the other hand, might reflect that employers have difficulties finding workers with the right qualification level and resort to hiring under-qualified workers. It should be noted, however, that under-qualified workers are not necessarily under-skilled for their jobs, as often workers acquire skills informally. As discussed in Chapter 2, a system of recognition of prior learning can help to certify these skills and make them more visible to employers (OECD, 2020^[5]).

Figure 3.4. Many workers are employed in occupations that do not match their education

Share of workers mismatched by qualification level or field, 2018



Note: Workers are mismatched by qualification level when their highest obtained qualification (primary education or below, lower-secondary education, upper secondary and post-secondary non-tertiary education, or tertiary education) is higher or lower than the one most commonly observed among workers in the occupation. Workers are mismatched by field of study when the field of their highest obtained qualification does not correspond to the field of their occupation. See Box 3.2 for details on the methodology.

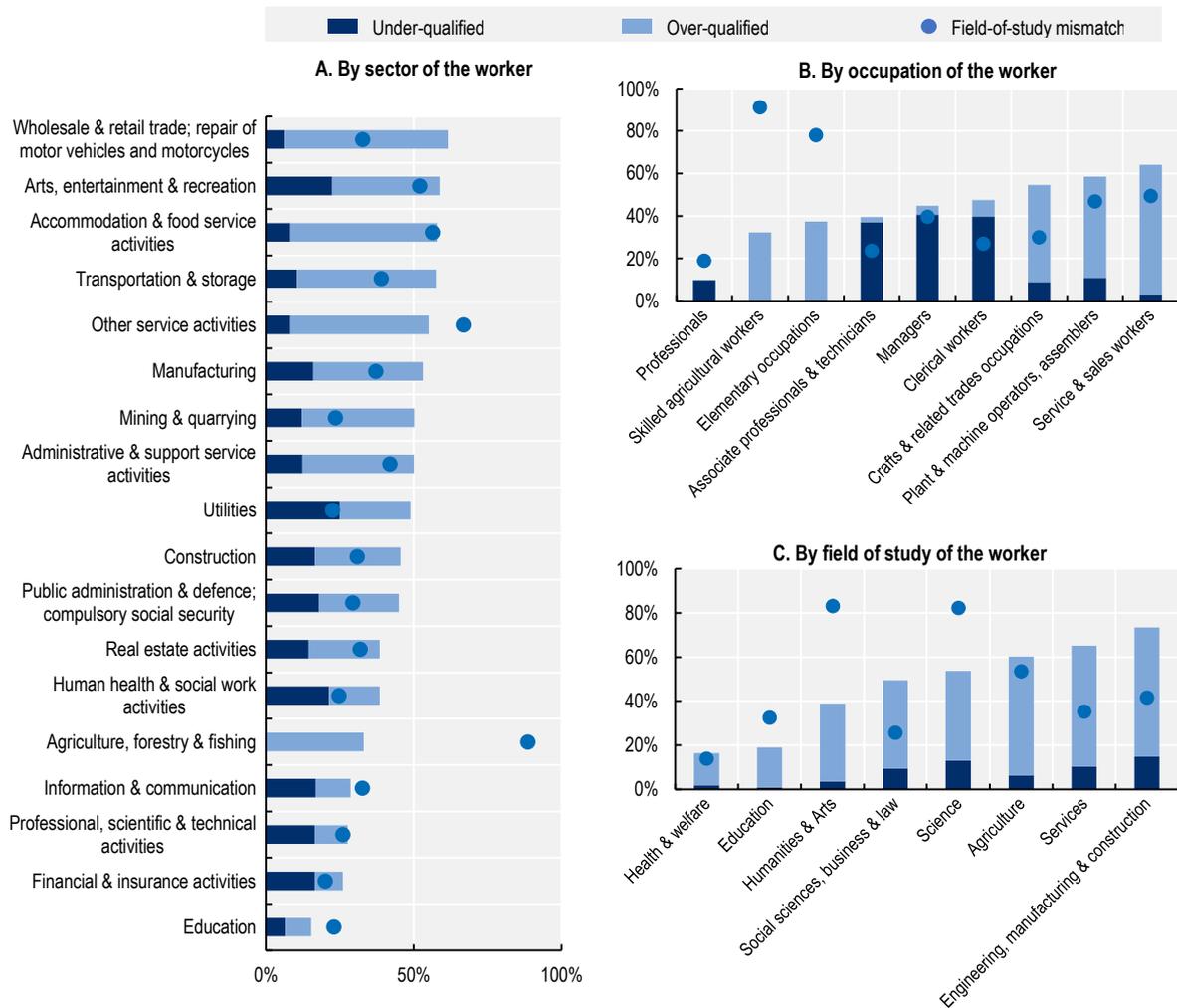
Source: (OECD, 2021^[18]) OECD Skills for Jobs Database, https://stats.oecd.org/Index.aspx?DataSetCode=SKILLS_2018_TOTAL; OECD (2020^[5]), *OECD Economic Surveys: Thailand*, <https://doi.org/10.1787/ad2e50fa-en>.

Over-qualification is most common in Thailand among sales and service workers (61%), followed by Plant & Machine Operators and Assemblers (48%) and Crafts and related trades workers (46%) (see Figure 3.5). The industries with the largest shares of overqualified workers are the Wholesale and Retail industry (55%) and the Accommodation and Food Services industry (50%). By contrast, under-qualification is most common among managers (41%), clerical support workers (40%) and technicians and associate professionals (37%), and in the utilities sector (25%). Mismatch by qualification level is very uncommon in some occupations and industries: Only 10% of professionals and 15% of workers in the education sector are mismatched by qualification level. Workers who have vocational or tertiary degrees in the fields of engineering, manufacturing and construction and in services are most likely to end up working in an occupation that generally requires a lower-level qualification (59% and 55%, respectively, of workers are overqualified). Less than 20% of workers with a vocational or tertiary degree in health and welfare or in education are mismatched by qualification level.

When looking at the field of study rather than the level of education, 37% of Thai workers are mismatched, compared to 32% across OECD countries (Figure 3.4). Field-of-study mismatch is especially common among those who specialised in arts and humanities (83% not working in their field) or in science (82%), while it is least common among graduates in the area of health and welfare (14%). Workers with a vocational or tertiary degree who work in skilled agricultural jobs or in elementary occupations are mostly likely to have specialised in a field unrelated to their job, while this is least likely for those working as professionals. Individuals might decide to work in a field that is unrelated to the one they studied for several reasons, including a lack of job opportunities in their own field and more attractive working conditions in other fields.

Figure 3.5. Over-qualification is most common in sales-related jobs

% of workers mismatched by qualification level or by field of study



Note: Includes all workers aged 16 to 64 who are not currently studying. Field-of-study mismatch refers only to workers with vocational or tertiary degrees. Results by field of study only include workers with vocational or tertiary degrees. See Box 3.2 for details on the methodology.

Source: Authors' calculations using National Statistics Office (2020_[20]), Thai Labour Force Survey data (2011-2018),

<http://www.nso.go.th/sites/2014en/Pages/Statistical%20Themes/Population-Society/Labour/Labour-Force.aspx>.

VET provision is not always well aligned with the needs of the labour market

The above data on skills shortages and mismatch in the Thai labour market show that there is room to improve the alignment of skills demand and supply. VET can play a key role in this respect, as the data show substantial shortages in occupations and sectors for which VET degrees are generally required. This subsection zooms in on the alignment between VET and labour market needs.

VET graduates have relatively strong labour market outcomes

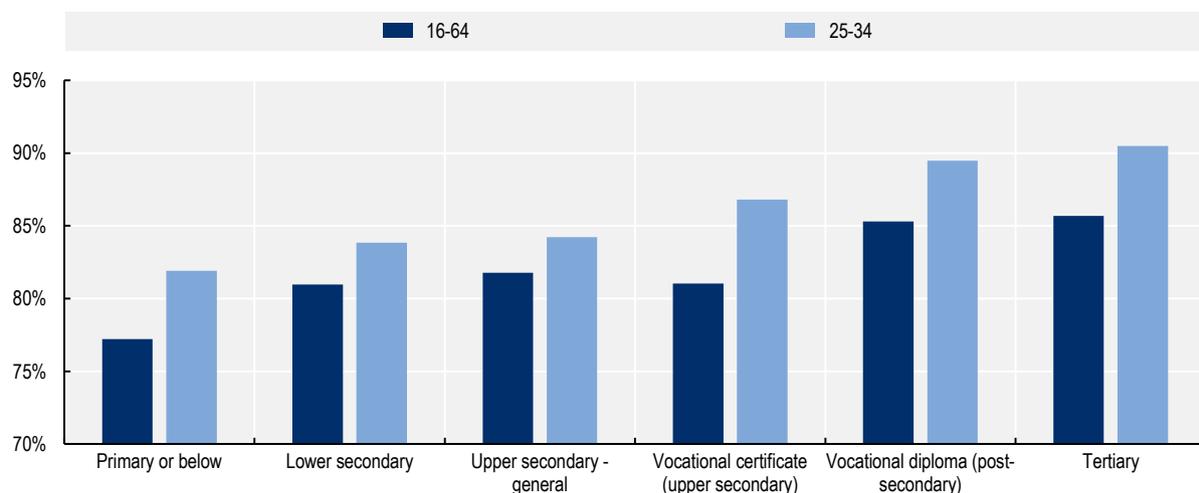
Employment rates in Thailand differ significantly between education levels (see Figure 3.6). Among adults aged 16-64 who are not in formal education, those with a tertiary education degree have an employment rate of 86%, while that of adults who completed at most primary education is only 77%. The employment

rate of adults with a vocational diploma (post-secondary) is almost as high as those with a tertiary education degree (85%). Adults with a vocational certificate (upper-secondary) have lower employment rates (81%) than those with a vocational diploma, and the employment rate of the former group is roughly equal to that of adults who have a general upper secondary education degree or only a lower secondary education degree. When looking only at the group of adults aged 25 to 34 (not in formal education), the pattern looks roughly the same, with the exception that the employment rate of those with a vocational certificate is higher than that of young adults with a general upper secondary education degree (87% vs. 84%). Hence, vocational diplomas give roughly the same access to paid employment than tertiary degree, while vocational certificates are associated with stronger employment outcomes than the general track in upper-secondary education.

When controlling for personal characteristics (age, marital status and gender) and region, the probability of being in employment is significantly higher for adults (aged 16-64 not in formal education) who have a vocational diploma (2 percentage points higher than those who completed at most at primary education) or a tertiary degree (6 percentage points) than those with lower education levels.

Figure 3.6. The employment rate of adults with a VET diploma is as high as among adults with a tertiary education qualification

Employment rate of adults not in formal education, by age (2018)



Source: Authors' calculations using National Statistics Office (2020^[20]), Thai Labour Force Survey data, <http://www.nso.go.th/sites/2014en/Pages/Statistical%20Themes/Population-Society/Labour/Labour-Force.aspx>.

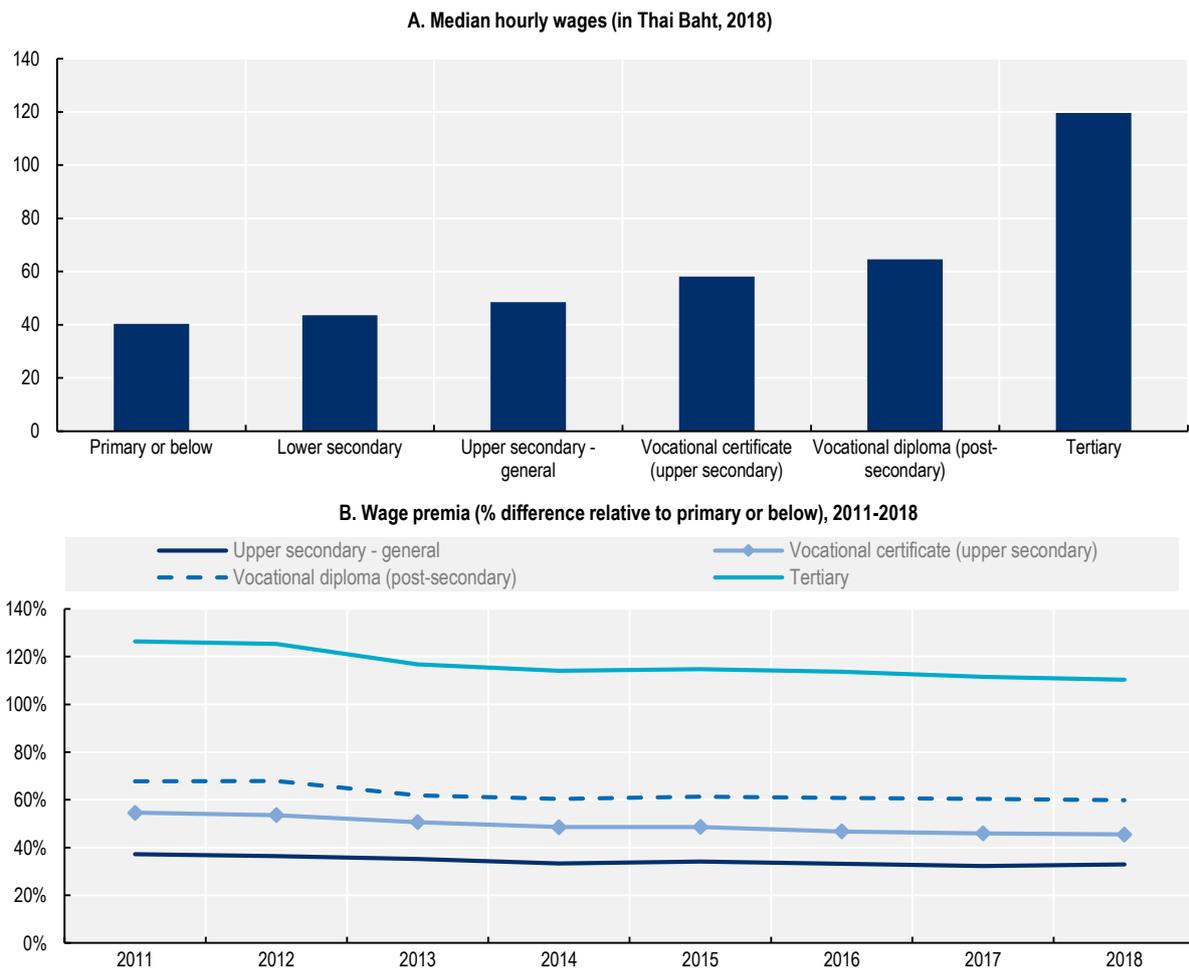
Not only the quantity of jobs matter, but also their quality. Wages are an important aspect of job quality, and data from the Thai labour force survey show that median hourly wages of workers with vocational certificates are higher than those of adults who have completed at most upper secondary general education (20% difference, see Panel A of Figure 3.7). Wages are higher for adults with a vocational diploma than those with a vocational certificate (11% difference). However, wages of tertiary educated workers are much higher, with a difference of 85% between tertiary educated workers and workers with a vocational diploma.

These raw wage differences could reflect differences in the composition of workers, for example in terms of age or gender. However, even when controlling for personal characteristics (age, gender, marital status) and region, differences remain substantial. Panel B of Figure 3.7 shows that –when accounting for these background differences- adults with a general education degree earn 33% more than adults who have completed at most elementary education. For adults with a vocational certificate and vocational diploma,

this wage premium amounts to 45% and 60%, respectively. The wage premium is even higher for tertiary educated workers, at 110%. Hence, these results show that participation in VET pays off –especially at the diploma level-, but also that the benefits are much lower than the benefits associated with obtaining a tertiary education qualification. However, when looking at the trend in wage premia, it is also evident that the gap between vocational qualifications and tertiary education has been on the decline. This is due to a falling wage premium for tertiary educated adults, which is likely a result of the oversupply of graduates – especially in certain fields-of-study for which the demand is low.

Figure 3.7. Vocationally degrees have higher wage returns than general upper secondary education, but lower than tertiary education

Median hourly wages and wage premia



Note: The wage premia in Panel B are the coefficients of a regression of log hourly wages on education (dummies), age and age squared, gender, marital status and region (dummies). The coefficients show the percentage difference in hourly wage between workers with the respective education level and workers who have completed at most elementary education. The premium for lower secondary education is not shown here but is also statistically significant (22% in 2018). Hourly wages have been trimmed at the top and bottom 1%.

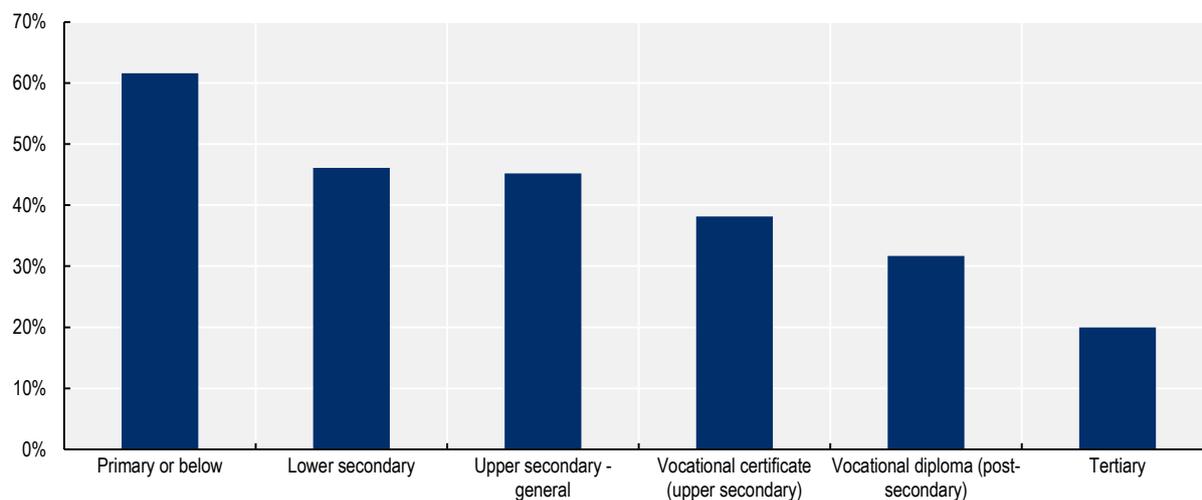
Source: Authors' calculations using National Statistics Office (2020^[20]), Thai Labour Force Survey data (2011-2018), <http://www.nso.go.th/sites/2014en/Pages/Statistical%20Themes/Population-Society/Labour/Labour-Force.aspx>.

These findings are consistent with earlier literature on wage returns to education in Thailand. Hawley (2003^[21]) finds that an additional year of schooling provides an additional 11%–12% of monthly earnings for both men and women, but also that the impact of an additional year of schooling for urban residents is higher than for rural residents. Moreover, vocational secondary education is found to provide higher earnings returns than general secondary education (Hawley, 2003^[21]; Moenjak and Worswick, 2003^[22]). Likewise, Tangtipongkul (2015^[23]) finds that if students decide not to continue to higher education then vocational education attainment will give higher earnings than general education attainment. The results from that analysis also show that secondary vocational education attainment is about eight percentage points higher on private returns and five percentage points higher on social returns than secondary general education. However, a bachelor's degree is found to give the highest private and social returns among all education levels.

Another important aspect of job quality is whether one works in the formal or informal economy. As discussed in Chapter 1 and later in this chapter, Thailand has a relatively large informal economy. Moreover, data from the 2019 Thai informal employment survey show that the share of informal employment decreases with education, with 71% of workers who completed at most elementary education being in informal employment, compared to 54% of those with lower-secondary education, 46% of those with upper-secondary education, and 25% of those with tertiary education (Figure 3.8). While these data are not available by orientation of the programmes (i.e. vocational versus general), proxy measures allow to get a sense of the degree of informality among workers with vocational qualifications. According to data from the 2018 Thai Labour Force Survey, 38% of workers with a vocational certificate and 32% of adults with a vocational diploma are working as self-employed workers without employees or as unpaid family workers. This is lower than among workers with a general upper secondary degree (45%), but substantially higher than among tertiary educated workers (20%).

Figure 3.8. The probability of being in informal employment declines with education level

Share of workers who are self-employed without employees or unpaid family workers (2018)



Note: The Thai Labour Force Survey does not provide information on formal versus informal employment, and therefore a proxy measure had to be used. Using self-employed without employees and unpaid family work as a proxy for informal employment underestimates the true rate of informality. Data from the Survey on Informal Employment show, for example, that 71% of all workers with at most elementary education are in informal employment, compared to 62% in this chart (which only includes workers aged 15-64 who are not in formal education).

Source: Authors' calculations using National Statistics Office (2020^[20]), Thai Labour Force Survey data,

<http://www.nso.go.th/sites/2014en/Pages/Statistical%20Themes/Population-Society/Labour/Labour-Force.aspx>.

VET outcomes differ by field of study

The overall labour market outcomes for adults with a vocational degree hide differences between the specialisation of their studies. As discussed in Chapter 1, the largest fields-of-study in VET in Thailand are industry and commerce/business. Data from the Thai Labour Force Survey show substantial differences in labour market outcomes between different fields of study (see Figure 3.9).¹ Employment rates are just below 80% for adults with vocational diplomas in the fields of services, while they are 90% for vocational diploma holders in engineering, manufacturing and construction and in agriculture. The employment rate of adults with a vocational certificate ranges between 73% in the field of social sciences, business and law, and 89% in the field of engineering, manufacturing and construction. Employment rates of diploma holders are very similar to those of adults with a tertiary degree in the field of engineering, manufacturing and construction, and diploma holders even have a higher employment rate than tertiary educated adults in the field of agriculture. In the field of “social sciences, business and law” –which is among the largest fields for VET students-, tertiary educated adults have better outcomes than adults with a VET degree. Certificate holders generally have lower employment rates than adults with a vocational diploma, except in services.

Likewise, wages differ between fields-of-study. The median wage of VET diploma holders specialised in the field of health and welfare is 33% higher than for those with a VET diploma in science or in services. Differences between fields are smaller for vocational certificate holders. Wages of tertiary education graduates are substantially higher in all fields. Informality also differs between fields-of-study, with workers specialised in health and welfare having the lowest share of informal employment at all education levels and workers specialised in agriculture having the highest informality rate. Informality is higher among certificate holders than diploma holders in all fields. Informality is lower for tertiary educated adults than those with a VET qualification in all fields, but the gap is largest in agriculture and services.

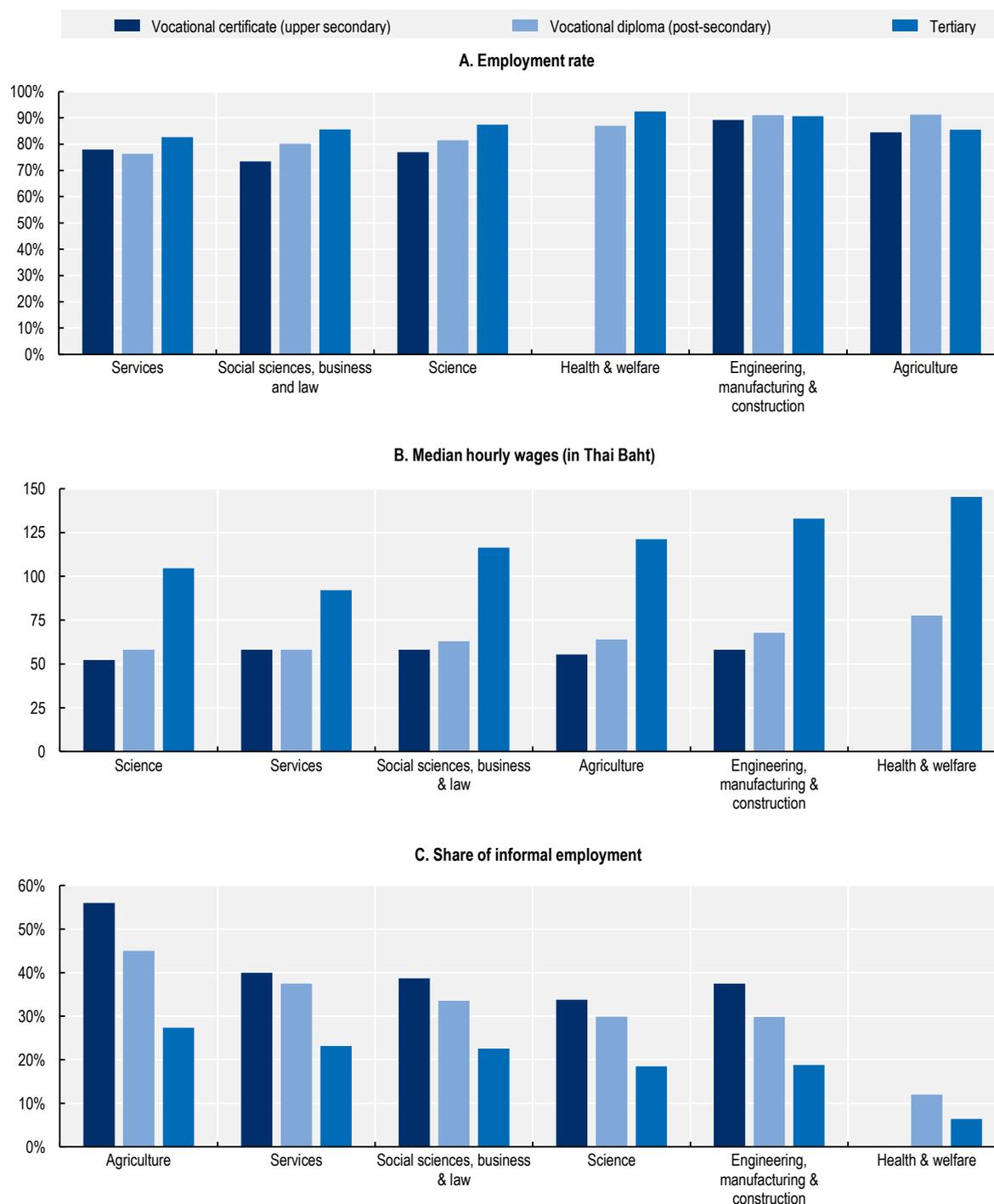
Taken together, these labour market indicators show that VET graduates in the fields of health and welfare (which is a very small VET field) and in the fields of engineering, manufacturing and construction have the best chances of securing high-quality jobs. Nonetheless, the gap between them and tertiary educated workers remains substantial, especially with respect to wages.

The mix of provision differs by region, but this does not always reflect labour market differences

As discussed in Chapter 2, participation in VET differ by region, and certain quality differences are visible, for example in terms of the availability of qualified teachers and of adequate teaching resources. Equally important as ensuring that those who want to participate in VET can do so and have access to high-quality teaching and learning, is to ensure that the types of programmes provided are aligned with the skill needs of the local area. In Thailand, the type of public VET institutions available varies by region, with especially Bangkok standing out (see Figure 3.10). While, in other regions, one in three public VET institutions are industrial and community education colleges, this is only 10% in Bangkok. By contrast, commercial, vocational and polytechnic colleges are relatively more common among public VET institutions in Bangkok than in other regions. Differences between the other regions are relatively small. The Northern and Southern region have relatively more colleges of agriculture and technology among their public VET institutions, while the Central and Northeast regions have more technical colleges in the mix. The types of institutions reflect the economic structure of the regions, with, for example, Bangkok being dominated by the service industry and certain other regions having a relatively large agricultural sector (e.g. the Southern region) (see Chapter 1). As mentioned in Chapter 2, private providers are more likely to be offering business and commerce programmes than more technical programmes.

Figure 3.9. Health and welfare and engineering, manufacturing and construction are the VET fields with the strongest labour market outcomes

Labour market outcomes of adults aged 16-64 who are not in formal education, by education level and field (2018)

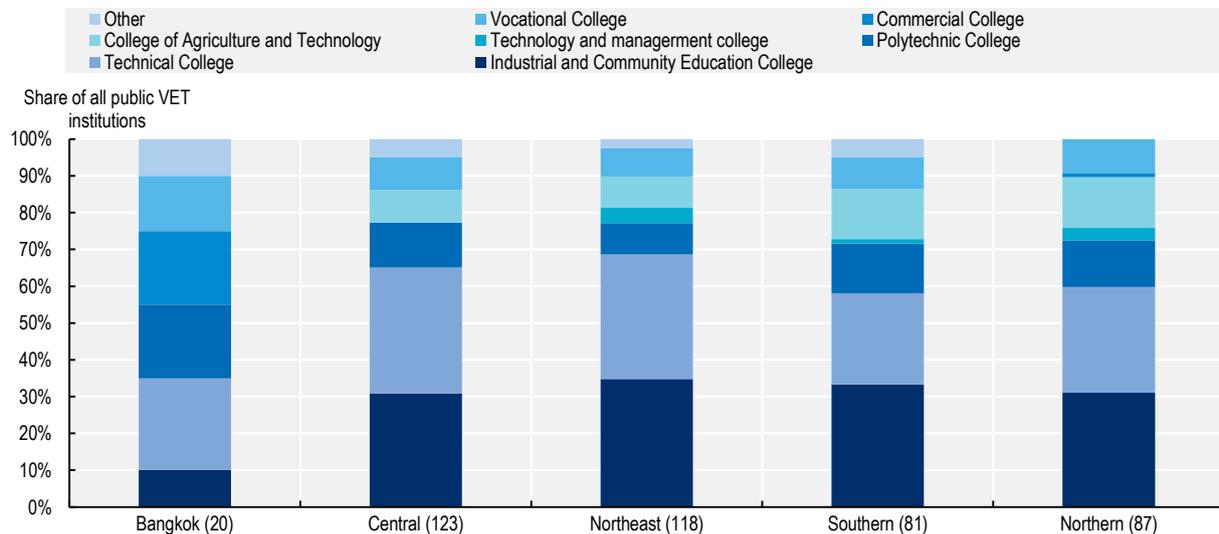


Note: Only sufficiently large fields-of-study for VET are included in these charts. Informal employment in Panel C proxied by self-employment without employees and unpaid family work, and therefore does not represent the full number of informal workers. Field of study is classified according to the 1997 ISCED classification.

Source: Authors' calculations using National Statistics Office (2020_[20]), Labour Force Survey data, <http://www.nso.go.th/sites/2014en/Pages/Statistical%20Themes/Population-Society/Labour/Labour-Force.aspx>.

Figure 3.10. VET institutions in the Bangkok region have a different profile than those in other regions

Composition of public VET institutions under the responsibility of the OVEC



Note: Only includes public institutions that fall under the responsibility of the OVEC. The numbers in brackets refer to the number of public VET institutions in the region. The “Other” category includes all types of institutions for which there are less than five across the regions, i.e. Ship Building Industrial and Technology College, College of Skills Enhancement for Monks and Novices, Vocational College, College of Business Administration and Tourism, Fishery College, Arts and Crafts College, Golden Jubilee Royal Goldsmith College, Vocational Technology College of Science Database. The “College of Agriculture and Technology” category also includes the one “College of Agricultural Technology” in the Southern region.

Source: Authors’ calculations based on Office of the Vocational Education Commission (2019^[24]), Student data statistics for the year 2019, http://www.mis.moe.go.th/index.php?option=com_content&view=article&id=657:%E0%B8%9B%E0%B8%A3%E0%B8%B0%E0%B8%88%E0%B8%B3%E0%B8%9B%E0%B8%B5-2562&catid=173&Itemid=114.

Looking at fields of study of VET students in public institutions also shows some interesting regional differences (see Table 3.2). In all regions except Bangkok between 50 and 60% of students are in the industry field. In Bangkok the largest field is Commerce/Business, accounting for 45% of students. This field is also popular in other regions, accounting for between 25% and 30% of students. Bangkok also has a relatively large share of students in fine arts programmes (16%), while this is negligible in other regions. Difference between the other regions are relatively small, with the exception of the tourism field that is substantially larger in the Southern region (and the Central region to a lesser extent) and the home economics field that is larger in the Northern and Southern regions than in the Northeast and the Central region. The IT field is very small in all regions, in spite of the strong demand for ICT skills (as discussed above). Industry and commerce/business programmes are offered by the large majority of institutions in all regions (except for industry in the Bangkok region). For certain other fields the number of institutions providing them is relatively low, e.g. the tourism field in the Southern region (which has a large tourism sector) and the ICT field across all regions (for which there are many shortages, see above).

Table 3.2. The industry field attracts most students in all regions except Bangkok

Share of VET students and number of public VET institutions

	Northern	Southern	Northeast	Central region	Bangkok
A. share of students per field (%)					
Industry	58.5	51.6	58.9	58.0	28.3
Commerce/business	25.5	26.7	29.3	27.8	44.6
Fine Arts	1.6	1.1	0.8	2.2	15.8
Home Economics	4.6	5.7	2.3	2.9	4.3
Agriculture	5.4	3.5	4.7	2.5	0.0
Fishery	0.0	0.9	0.1	0.2	0.0
Tourism	2.5	8.3	2.3	4.8	6.3
ICT	1.9	2.1	1.6	1.5	0.7
B. Number of institutions offering certain fields					
Industry	69	61	102	101	9
Commerce/business	75	73	116	113	16
Fine Arts	10	6	14	25	6
Home Economics	25	25	31	28	4
Agriculture	12	13	14	14	0
Fishery	4	13	9	9	0
Tourism	25	38	44	61	8
ICT	26	20	39	31	6

Note: Only includes public institutions that fall under the responsibility of the OVEC. Fine arts also includes Entertainment and Music Industry. Source: Authors' calculation based on Office of the Vocational Education Commission (2019^[24]), Student data statistics for the year 2019, http://www.mis.moe.go.th/index.php?option=com_content&view=article&id=657:%E0%B8%9B%E0%B8%A3%E0%B8%B0%E0%B8%88%E0%B8%B3%E0%B8%9B%E0%B8%B5-2562&catid=173&Itemid=114.

Labour market outcomes of VET students also differ strongly between regions, reflecting the different economic structure of the regions (see Chapter 1) and potentially the mismatch between the programmes on offer (and their quality) and the needs of the labour market. Data from the Thai labour force survey show that employment rates are higher in all regions for adults with a vocational diploma than for adults with a vocational certificate (see Figure 3.11). The difference is particularly large in Bangkok (8 percentage points) and in the Northeast (5 percentage points). By contrast, in the South and North employment rates differ only by a few percentage points between these two types of vocational degrees. The Central region is the only region where adults with a vocational diploma have a higher employment rate than tertiary educated adults. Differences between general and vocational upper-secondary education are small in all regions except Bangkok, where the employment rate of adults with a general upper-secondary degree is almost 5 percentage points higher than that of adults with a vocational certificate.

Likewise, in all regions median wages of vocational diploma holders are higher than those of vocational certificate holders, with the gap ranging between 11% in the Southern region and 20% in Bangkok and the North. In all regions the median wage of adults with a general upper-secondary degree is lower than that of adults with a vocational degree at the same level (i.e. vocational certificate), and the difference is largest in Bangkok and the Central region. The wage gap between vocational qualifications and tertiary education is large in all regions, and especially so in the Northeast where the wages of adults with a tertiary degree are more than twice as high as wages of vocational diploma holders.

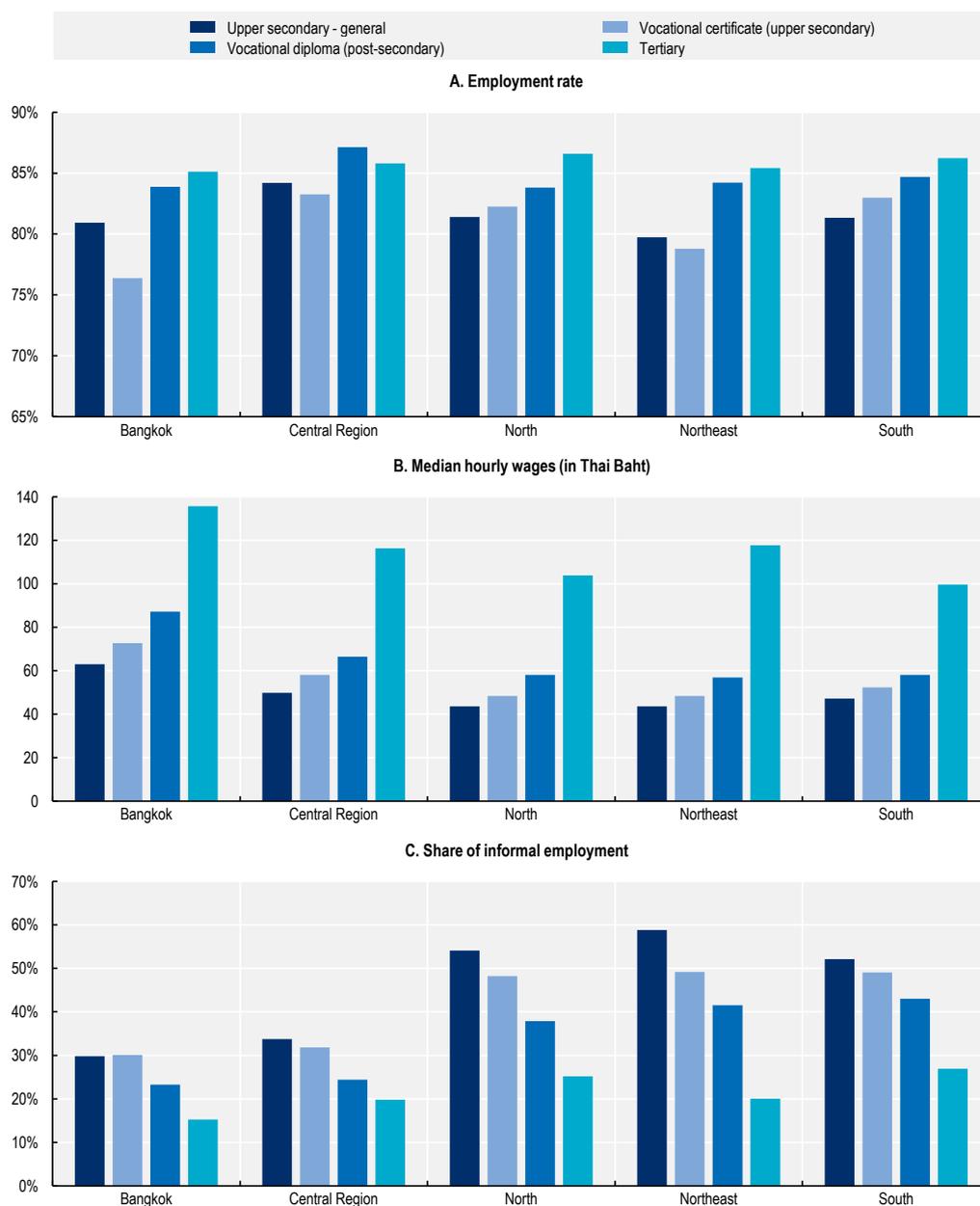
Finally, similar patterns are observed for informality. In all regions except Bangkok, adults with general upper-secondary education are more likely to be in informal employment than those with a vocational certificate. Informal employment is less common for vocational diploma holders than for those with a vocational certificate, with the difference being largest in the Northern region. Adults with tertiary

qualifications are even less likely to be in informal employment in all regions, and in the Northeast the gap between tertiary education and vocational diplomas amounts to 21 percentage points.

Overall, these results show that VET graduates do particularly well in the Central Region, and in Bangkok – albeit only for vocational diplomas. However, even in these regions the wages of adults with VET degrees are substantially lower than those of tertiary educated adults.

Figure 3.11. Labour market outcomes for VET are strongest in Bangkok and the Central Region

Labour market outcomes of adults aged 16-64 who are not in formal education, by education level and region (2018)



Note: Informal employment in Panel C proxied by self-employment without employees and unpaid family work, and therefore does not represent the full number of informal workers.

Source: Authors' calculations using National Statistics Office Thailand (2020_[20]), Thai Labour Force Survey data, <http://www.nso.go.th/sites/2014en/Pages/Statistical%20Themes/Population-Society/Labour/Labour-Force.aspx>.

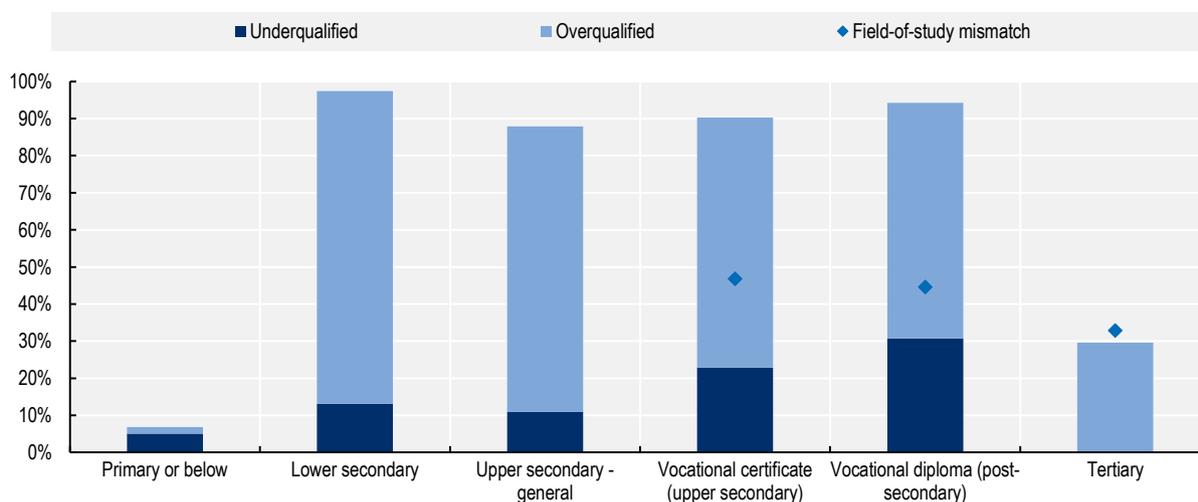
Many VET graduates end up in jobs unrelated to their field of study

As discussed above, mismatch is very common among Thai workers, both in terms of their education level and their education field. Looking at this specifically for adults with a VET degree, Figure 3.12 shows that adults who have a VET degree are more likely than those with a tertiary degree to be over-qualified for their job. While only 30% of workers with a tertiary degree work in occupations that generally require a lower level of education, this is the case for 63% of workers with a vocational diploma and 67% of workers with a vocational certificate. Compared to adults with an upper-secondary degree with general orientation and those with a lower secondary degree, those with a VET degree are less likely to be overqualified and more likely to be under-qualified. This shows that VET does help adults into higher-skilled jobs than general education at the upper-secondary level and lower levels of education, albeit it to a much more limited extent than tertiary education.

Workers with a VET degree are also more likely than those with a tertiary education degree to work in an occupation that is unrelated to their field of study: 45% and 47% of workers with a vocational certificate or a vocational diploma, respectively, are mismatched by field of study, compared to only 33% of workers with a tertiary education degree. This result is surprising, given that VET is mostly designed to immediately prepare students for the labour market.

Figure 3.12. Many adults with VET degrees are mismatched in their job

Percentage of workers mismatched by education level or field, by educational attainment (2018)



Note: Includes all workers aged 16 to 64 who are not currently studying. See Box 3.2 for details on the methodology.

Source: Authors' calculations using National Statistics Office (2020^[20]), Thai Labour Force Survey data,

<http://www.nso.go.th/sites/2014en/Pages/Statistical%20Themes/Population-Society/Labour/Labour-Force.aspx>.

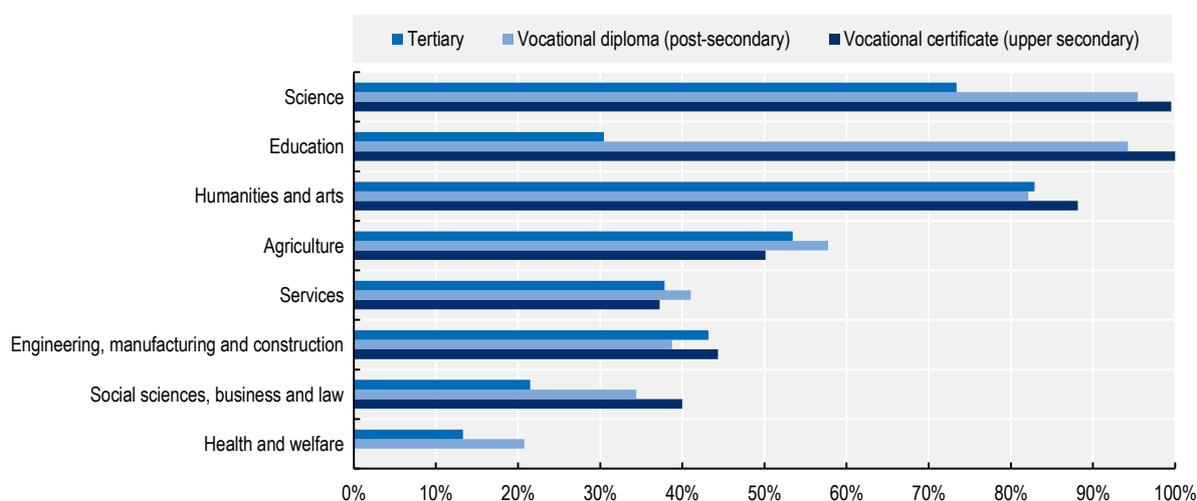
The likelihood of working in an occupation that does not match one's field of study is larger for some programmes than for others (see Figure 3.13). For example, in Thailand almost all adults with a VET degree in education and science work in occupations unrelated to those fields of study. For the field of education this reflects that it is a very small field in the VET sector and this field is mostly delivered at the tertiary level. Adults specialised in education at the tertiary level are relatively unlikely to work in jobs unrelated to the education field, with only 31% of them being mismatched by field of study. For science fields the picture looks different, as this is a relatively large field for VET – at least following the definition used in the Thai Labour Force Survey-, especially at the short cycle tertiary level, and also adults with a tertiary level science degree are likely to be mismatched by field of study (73%). This is surprising given

that the science field also includes computer sciences, and there is strong demand for ICT profiles in the Thai labour market. This could reflect that the skills of the computer science graduates –especially from VET programmes- do not match the needs of employers and/or that careers in ICT jobs are less attractive than other careers.

While having relatively low incidence of field-of-study mismatch, adults with a VET degree in social sciences, business or law are much more likely to be mismatched than adults with a tertiary degree in these fields. The same is true for the field of health and welfare, but this is a very small field in the VET sector.

Figure 3.13. Adults with VET degrees in education or science are very unlikely to end up working in jobs related to their field of study

Percentage of workers with field-of-study mismatch, by field of the highest degree of the worker



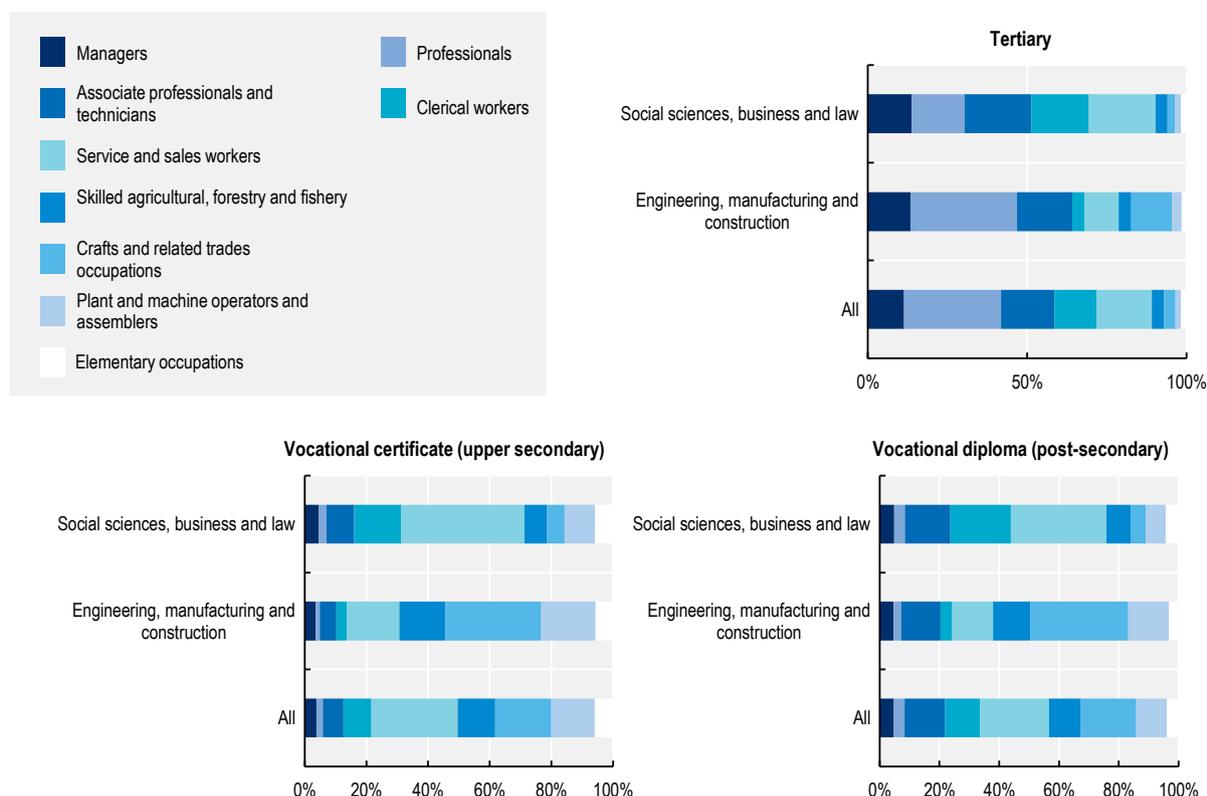
Note: Includes all workers aged 16 to 64 who are not currently studying. See Box 3.2 for details on the methodology. Field of study is classified according to the 1997 ISCED classification.

Source: Authors' calculations using National Statistics Office (2020_[20]), Thai Labour Force Survey data, <http://www.nso.go.th/sites/2014en/Pages/Statistical%20Themes/Population-Society/Labour/Labour-Force.aspx>.

To better understand where adults with a VET degree in a particular field end up, Figure 3.14 shows the distribution of workers over occupations for the two largest fields of study in VET. Almost half of adults with a VET degree (at both levels) with a specialisation in engineering, manufacturing and construction end up in crafts and related trades jobs or as plant and machine operators or assemblers, i.e. medium-skill technical occupations. Only 5% and 13% of adults with an upper secondary or short-cycle tertiary VET degree, respectively, work as associate professionals or technicians, i.e. the higher-skilled occupations often targeted by VET programmes. Around one-fifth of adults with VET degrees in engineering, manufacturing and construction work as clerical or sales and service workers. For the fields of social sciences, business and law, just over half of adults with a VET degree work in clerical or sales and service jobs. Given that this field encompasses many specialisations and sales and services jobs refer to a broad range of occupations, it is hard to assess to what extent these workers are mismatched or not.

Figure 3.14. Many adults with VET degrees work in sales and services jobs

Distribution of workers with a particular education level and field over occupations



Note: Includes all workers aged 16 to 64 who are not currently studying. See Box 3.2 f for details on the methodology. Field of study is classified according to the 1997 ISCED classification.

Source: Authors' calculations using National Statistics Office (2020_[20]), Thai Labour Force Survey data, <http://www.nso.go.th/sites/2014en/Pages/Statistical%20Themes/Population-Society/Labour/Labour-Force.aspx>.

Using skills intelligence to inform VET policies

High-quality information on skills demand and supply can help designing responsive VET policies and programmes that support the Thai economy in getting access to workers with the right skills. This type of information can contribute to avoiding and tackling skills imbalances and to improving labour market outcomes of VET students. Countries differ widely in terms of methods used to identify their skill needs, but also in terms of the level at which these exercises are conducted and stakeholder involvement (OECD, 2016_[25]). In general, an assessment of skill needs should build on a wide range information, including quantitative information from a variety of sources (e.g. labour force survey, employer surveys, vacancy data, graduate tracer surveys) and qualitative information gather from key stakeholders in the skills system. In Malaysia and South Africa, a broad set of indicators using data from a variety of sources is used to measure which occupations are in shortage or high demand (see Box 3.3). Regions and sectors can differ strongly in their skills needs, and therefore it can be useful to carry out assessment by region and/or by sector.

Box 3.3. Understanding occupational shortages

Malaysia

Since 2016, the Malaysian Critical Skills Monitoring Committee, comprised of the Institute for Labour Market Information and Analysis (part of the Ministry of Human Resources) and TalentCorp, publishes annually a list of Malaysian critical occupations. The occupations on the list are considered to face significant labour market shortages that could be alleviated through government interventions. The criteria for being included in the list are that the occupations are skilled, in high demand and are of strategic importance to economic development. To identify the occupational shortages, the Critical Skills Monitoring Committee combines a top-down quantitative analysis with bottom-up qualitative evidence from stakeholders. For the 2019/20 list, a set of 14 indicators were used looking at information on employment, wages, working hours, education levels, and vacancies. The bottom-up approach comprised a Call-for-Evidence survey of employers as well as focus group discussions and consultations with employers and industry associations. In addition to this, findings from sector-based Environmental Scan and other talents studies as well as examination of administrative data are also incorporated in qualitative analysis.

South Africa

In South Africa, the Department for Higher Education and Training publishes every other year a List of Occupations in High Demand. The list includes occupations that experience strong employment growth and/or face shortages in the labour market. To compile the list, a bottom-up quantitative component and a top-down qualitative component are combined. The quantitative part of the exercise uses nine indicators to measure employment pressure, wage pressure, vacancy pressure, and strategic demand by occupation. The quantitative evidence was cross-checked with qualitative inputs, such as for example the sectors skills plans developed by the Sector Education and Training Alliances. The 2020 List of Occupations in High Demand includes a total of 345 detailed occupations.

Source: DNA Economics (2020^[26]), *The 2020 List of Occupations in High Demand: A Technical Report*. Critical Skills Monitoring Committee (2020^[27]) *Critical Occupations List 2019/2020: Technical Report*, https://www.talentcorp.com.my/clients/TalentCorp_2016_7A6571AE-D9D0-4175-B35D-99EC514F2D24/contentms/img/TalentCorp_CriticalOccupationsList_TechReport_2019-2020_Final.pdf. OECD (2019^[28]), *OECD Economic Surveys: Malaysia 2019*, <https://dx.doi.org/10.1787/eaaa4190-en>.

In countries, results from skills assessment and anticipation exercise have mainly been used by governments to update occupational standards; design or revise training policies for workers or the unemployed; design, revise or decide on the allocation of courses provided in formal education (especially VET programmes and apprenticeships, see Box 3.4 for examples from Australia and South Africa). In addition, some governments use this information to guide migration policy, as well as their transition to a digital or green economy. Social partners (employer organisations and trade unions) also use this information to lobby governments on education and employment policy, develop training programmes, or provide advice to their members on skill development. Both social partners and governments use the information for broad dissemination purposes to inform workers and students about trends in current or future skill demand and supply (OECD, 2016^[25]). Despite some good practices in the use of skill assessment and anticipation information in countries, governments and social partners still face several barriers when it comes to using the available information. In general, the identified barriers are twofold: i) involving and co-ordinating with stakeholders; and ii) bringing the skills assessment and anticipation exercises closer to the needs and requirements of policy-makers (OECD, 2016^[25]).

Box 3.4. Using skills intelligence to inform VET policies

Australia

In recognition that understanding where the jobs in demand are, and what skills are needed to do those jobs, is of crucial importance for building a strong economy for the future, Australia set up National Skills Commission in July 2020 to monitor, research and analyse employment dynamics across different demographic groups, industries, occupations and regions. The focus of the commission is on three long-term outcomes:

- To make an enduring and relevant contribution to labour market information.
- To improve the quality, accessibility and relevance of VET.
- To contribute to a labour market that effectively aligns skills needs with education and training.

The Commission's analyses provide students, industry and governments with more information than ever before about how effective courses – and the VET system overall – are at leading students into quality jobs in areas of skill demand. This information will help students make better choices about what to study and guide government decisions about where to invest public funds.

South Africa

The South African List of Occupations in High Demand (see Box 3.3) is designed to be used for enrolment planning at universities, TVET colleges and other education and training institutions; for the development of new qualifications, especially to respond to new and emerging occupations and skills needs; for resource allocation processes; and for career guidance for learners and jobseekers. For example, one of the objectives of the South African National Skills Fund is to fund 190 000 learners for education and training towards occupations featuring on the list of occupations in high demand over the period 2020-2025.

Source: Australian Government (2020^[29]), *National Skills Commission*, <https://www.nationalskillscommission.gov.au/>. National Skills Fund (2020^[30]), *National Skills Fund: Annual Performance Plan for 2020/21*, https://static.pmg.org.za/DHET/Addendum_to_the_NSF_AnnualPerformancePlan_2020-2021.pdf. Republic of South Africa (2020^[31]), "National List of Occupations in High Demand: 2020", *Government Gazette*, Vol. Government Notices/No. 1272, <https://www.dhet.gov.za/SiteAssets/Latest%20News/November%202020/Gazette-%202020%20National%20List%20of%20Occupations%20in%20High%20Demand.pdf>.

In Thailand, a data-driven analysis of skill needs does not seem to be carried out in a regular and holistic way. Several analyses have been done for specific sectors or regions (e.g. for the new S-curve industries and for the Eastern Economic Corridor). Every few years, the National Statistics office carries out an employer survey to understand labour demand (the latest one dates back to 2013). Finally, on a monthly basis, information is provided about vacancies and jobs fulfilled by industry, occupation and province. Taking stock of these exercises and facilitating knowledge sharing between the actors involved, could foster better collection and use of skill needs information in Thailand, including for VET policy-making (OECD, 2020^[5]).

As discussed above, information about labour market outcomes of VET students provide interesting insights that can be used in VET policy-making. To gather more detailed information on the labour market outcomes of VET students, a tracer study can be put into place. Such a tracer study allows following VET graduates in the labour market or further education at different points after graduation. Information can be collected on the time needed to find a job, characteristics of the jobs (e.g. occupation, tasks, wages, working time arrangements), reasons for working in jobs outside of one's field etc. Moreover, if these tracer studies collect detailed information about the type of VET training the graduate went through (e.g. dual programmes, other forms of work-based learning, detailed field of study, private versus public institutions), it is also possible to compare outcomes by types of VET provision. This type of information can be used to improve the quality of VET and to align programmes better with the needs of the labour market (OECD, 2020^[5]). Box 3.5 provides more details and examples of tracer surveys.

Box 3.5. Tracer surveys in VET

The purpose and design of tracer surveys

Tracer studies are widespread in higher education but also often employed in the VET sector. Research from the European Commission shows that 19 member states (out of a total of 28 member states at the time of the analysis) have implemented at least one tracer study on a regular basis. Moreover, tracking is a legal obligation in Estonia, Finland, Portugal and Sweden. Tracer studies can be the responsibility of national-level institutions or of VET providers.

Programmes or projects seeking reform of VET, which try to improve skills match and the transition from school to work, use data from tracer studies to measure their effectiveness. Education institutions are also increasingly interested in feedback from their former students to improve their study programmes, and to show new applicants how their graduates have managed the transition to employment. Graduates are usually invited to provide feedback about their experiences on the labour market one to two years after graduation. The information required from the graduates commonly includes:

- duration of search for the first job; methods of job search
- employment status at the time of the survey (about one to two years after graduation)
- income level
- working time; type of contract
- job title; economic sector (private or public); economic branch
- required knowledge and skills (competencies)
- relationships between study and work (horizontal and vertical match)
- further education and training
- regional and international mobility
- personal background characteristics.

Sometimes this core information from graduates is supplemented with aspects of educational experiences before and during the course of study/training, such as the knowledge and skills gained, practical and work experience, evaluation of the study conditions and provisions. Such information is especially useful if the tracer study is to allow conclusions about the relevance of elements of education/training (such as the curriculum) to the labour market.

The Study on the Employment of VET Graduates in the Philippines

In the Philippines, the Technical Education and Skills Development Authority (TESDA) runs annually a study on the employment of VET graduates, which is a tracer survey of recent VET graduates. The survey includes questions on the profile of the graduate; training, competency assessment and certification; and employment status of graduate before training, after training and at the time of the survey. The survey intends to assess the efficiency and effectiveness of VET provisions based on the employment outcomes of its graduates. Results of the study also serve as a feedback mechanism on the implementation of VET programmes and policies. Likewise, findings from the study are important inputs in the formulation of new policies or in the review or amendment of existing ones.

Source: ETF, ILO and Cedefop (2016^[32]) Carrying out tracer studies: Guide to anticipating and matching skills and jobs - Volume 6, https://www.etf.europa.eu/sites/default/files/m/45A4CE81F3398029C1258048005BEFB8_Vol.%206%20Carrying%20out%20tracer%20studies.pdf. TESDA (2019^[33]) Study on the Employment of TVET Graduates - full report, https://tesda.gov.ph/Uploads/File/Researches/2019_SETG_Final%20Report.pdf ; European Commission (2018^[34]) Mapping of VET graduate tracking measures in EU Member States, <https://op.europa.eu/en/publication-detail/-/publication/00d61a86-48fc-11e8-be1d-01aa75ed71a1#document-info>.

Engaging stakeholders in the design and delivery of VET

All VET systems need mechanisms to make sure that the number of people trained in different occupations matches labour market needs— and, within each field, that the mix of specific and general skills is aligned with skill requirements in the related sectors and occupations in the labour market. One important strategy for creating responsive VET systems that contribute to aligning the demand and supply of skills is to involve employers and trade unions in different aspects of VET (OECD, 2010^[35]). Thailand’s VET system, as in many other countries, suffers from weak partnership with labour market actors – employers more specifically. This leaves the vocational system less equipped to respond to the requirements of the economy and less able to support the transition of young people into good jobs by equipping them with relevant skills. Ensuring a strong involvement of social partners in determining VET policy and provision, either through consultation or directly within decision-making processes, characterises effective VET because it helps ensure that the design and delivery of provision reflects both labour market demand and the competing needs to be attractive to employers, prospective learners and to society (OECD, 2010^[35]; OECD, 2014^[36]). Countries should construct effective mechanisms to involve social partners at each governance level where VET policy is being determined (Bergseng, 2019^[37]).

Complex governance arrangements in VET hinder social partner involvement

The governance of the VET system is complex and fragmented

The governance of a VET system relates to the structure of VET, how it is operated and financed, as well as the system of quality assurance which underpins it. Governance is defined as the formal and informal arrangements that determine how decisions relating to provision are made, who makes them and on what basis. Effective VET systems are based upon governance mechanisms that carefully balance multiple interests. There is not one right form of governance model for education or for VET that can be implemented across all countries. Successful models can be substantially different and still lead to good outcomes (Bergseng, 2019^[37]).

As discussed in Chapter 1, the Ministry of Education is responsible for formal VET programmes in Thailand. VET institutions are managed by the Office of the Vocational Education Commission (OVEC) – under the Ministry of Education (UNESCO-UNEVOC, 2015^[38]). In addition, the OVEC shares these responsibilities with many different actors, such as Ministry of Higher Education, Science, Research and Innovation (MHESI), Department of Skill Development (DSD), Ministry of Labour (MoL), Thailand Professional Qualification Institute (TPQI), Office of National Education Standards and Quality Assessment (ONESQA), but also actors from the industrial and business sector, such as Federation of Thai Industries, Thai Chamber of Commerce, and Tourism Council of Thailand (Office of the Educational Council, 2020^[39]). For example, the Ministry of Transport has its own VET programmes in the field of logistics and transport; and the Ministry of Tourism and Sports designs and delivers VET programmes for tour guides and hotel and hospitality personnel (Ministry of Labour, 2020^[40]). Such a division of responsibilities for VET leads to uncoordinated governance and a system that is difficult to navigate for students and inhibits social partner engagement, with implications for the quality and attractiveness of the provision (as also discussed in Chapter 2). In many countries, there are some steering structures to support the governance of the VET system (see Box 3.6 for an example of stakeholder engagement in Switzerland).

Box 3.6. Stakeholder engagement in Switzerland

The involvement of professional organisations in VET policy making is required by law in Switzerland. The term “professional organisations” in Switzerland refers to trade associations, employer associations and trade unions, and includes both companies and business professionals.

Professional organisations have the leading role in the content and examination process of both secondary and postsecondary VET programmes (in Switzerland postsecondary VET is referred to as “professional education and training”, PET). Professional organisations in postsecondary VET, as in secondary level VET, draft core curricula for PET college degree programmes, which are then approved by the Swiss authorities (Confederation). National examinations leading to a federal diploma are also led by professional organisations. They ensure those federal PET diplomas are relevant to the needs of the profession and the labour market. Professional organisations draft examination rules, which cover admission requirements, occupational profiles, the knowledge and skills to be acquired, qualification procedures and the legally protected title. They also conduct examinations. The role of Swiss authorities (at Confederation level) includes approving examination rules, supervising examinations and issuing federal diplomas.

Source: Fazekas and Field (2013^[41]) *A Skills beyond School Review of Switzerland*, <https://dx.doi.org/10.1787/9789264062665-en>.

There has been a trend in Thailand, as in many other countries, to increase local autonomy in the organisation of the education system, including in VET. OVEC has recently decentralised governance arrangement by establishing the centre for promotion and development of vocational education in five regions, to promote the academic development, and the Provincial Vocational Education Service Area in five regions, to link with the groups of vocational schools at the provincial level (Office of the Vocational Education Commission, 2020^[42]). There are also 77 provincial VET committees organised by the colleges. But it seems that this might have contributed to a lack of coherence and cooperation in VET policies, especially since it did not always go hand-in-hand with capacity building. In such cases, an overarching steering body for the VET system would enhance the coherency, and consequently the quality, of the VET provision.

Efforts are being made to strengthen collaboration with private sector stakeholders

Stakeholders and observers of the Thai VET system have shared concerns about the lack of industry involvement in the design and the steering of VET programmes, and in its funding. Some companies, such as 7 Eleven, prefer to set up their own education and training facilities (Chalapati and Chalapati, 2020^[8]).

Recent efforts in Thailand have aimed at strengthening cooperation with industry for a better matching of VET provision with labour market needs. The TPQI (Thailand Professional Qualification Institute) has developed occupational standards in 52 sectors and 835 occupations, accounting for 2 174 qualifications, together with the Ministry of Education, OVEC, TPQI (Thailand Professional Qualification Institute), DSD (Department of Skills Development) and the Office of the Education Council, and in link with the ASEAN Qualifications referencing Framework. Those standards typically include skill sets in digital literacy, English proficiency and e-commerce and production management. OVEC is working with TPQI to integrate those standards into existing VET curriculum. By the end of 2021, it is expected that at least 25 areas of occupational curriculum offered in 120 colleges will have been reviewed and revised according occupational standards of TPQI and DSD. Moreover, twenty-five networks of colleges that offer programmes in the same fields were created, to share resources and develop learning communities and to better collaborate with the industry (TPQI, 2021^[43]).

The Ministry of Education and the Ministry of Labour each have their own system to engage stakeholders, which in itself reflects the issues regarding lack of co-ordination and fragmentation. Within the Ministry of Education, a national Joint Public and Private Committee for Vocational Education (PPC for VE) was established in 2014. PPC for VE committees comprise industrial representatives, education leaders, teachers, and representatives from related agencies and organisations (skills standards agencies, universities, employer associations such as the Federation of Thai Industry and the Chamber of Commerce). Together 33 occupational cluster steering committees were created, chaired by an industry representative, in sectors such as automotive, electronics and electricity, ICT, logistics, food moulding, tourism, petroleum and petrochemical (see Box 3.7 for a description of the main objectives of these subcommittees).

Box 3.7. Sectoral committees in Thailand

Joint Public and Private Committee for Vocational Education (PPC for VE) were established in 2014. PPC for VE committees comprise industrial representatives, education leaders, teachers, and representatives from related agencies and organisations. Together 33 occupational cluster steering committees were created, chaired by an industry representative, in sectors such as automotive, electronics and electricity, ICT, logistics, food moulding, tourism, petroleum and petrochemical.

The main objectives of the clusters are to develop twelve operational frameworks:

1. analysis of VET labour demand
2. analysis of VET labour supply
3. identifying competency standards
4. curriculum improvement
5. selection and implementation of competency-based curricula in pilot institutions and provision of dual vocational education or apprenticeships
6. training of teachers and trainers in companies
7. development of learning and teaching media and equipment
8. improvement of the learning environment
9. strengthening, testing and assessing the system
10. monitoring and evaluation
11. testing occupational standards
12. promotion of work placement and career path development.

The committees contributed to improve the quality of VET, especially in terms of identification of demand, competency standards for curriculum development, workplace learning experience of teachers, and apprenticeship programmes. However, PPC for VE committees are not involved in budget decisions.

Source: Goncalves (2019^[44]), *Financing TVET: A Comparative Analysis in Six Asian Countries*, Agence Française de Développement, <https://www.afd.fr/en/ressources/financing-tvet-comparative-analysis-six-asian-countries>.

Within the Ministry of Labour, DSD has put its effort in extending skill development networks through the memorandum of understandings in various fields with its potential partners, both public and private. At the national level, there is a National Skill Development and Vocational Training Coordination Board (NVBTC) which is a national bipartite mechanism consisting of representatives from both public and private sector, having the deputy prime minister as a chair of the board. The main function of this Board is to provide recommendations on human resource development at the national level and to set up a master plan on

skill development. At the regional level, there is a similar board to the NVBTC known as Provincial Skill Development and Vocational Training Coordination Sub-committee (PBVTC) whose primary roles are to regulate and carry out workforce development activities at provincial level and to give advice to other related agencies in the province on human resource development (Ministry of Labour, 2020^[40]). However, neither provinces nor vocational institutions enjoy particular freedom in adapting the content of VET programmes to the local economy – with few exceptions (OECD, 2019^[11]).

A balanced VET system should reflect the interest of all the stakeholders

In responsive VET systems, vocational provision rests on a systematic assessment of employer needs, now and in the future. However, if provision is determined exclusively on the basis of employers' views, some risks emerge. Employers may want very narrow skills in occupational niches, or skills for declining industries and for low quality jobs, or they may want an oversupply of skills to drive down wages in the associated occupations. Industries in structural decline may also complain of skills shortages because they cannot attract workers into low wage positions with few obvious career prospects. In the latter case, adjustments to the vocational training system will not solve these problems. Therefore employer demands need to be kept in balance with the interests of society at large, including the interests of the student (OECD, 2010^[35]). Negotiating VET provision with both employers and unions provides valuable information to governments seeking to ensure the design of VET qualifications meets labour market needs while remaining attractive to learners. Effective engagement will ensure that the interests of a professional sector outweigh those of individual employers. The role of the trade unions is also important, because they can balance, for example, the tendency of employers to focus too much on short-term firm-specific skills and excessively long apprenticeships which reduce employer costs (Bergseng, 2019^[37]; OECD, 2010^[35]; OECD, 2018^[45]). Across the OECD countries, the engagement of social partners varies from purely advisory to decision making. For example in some countries with apprenticeship systems, such as Denmark and Norway, social partners can decide on the content of the programmes (Kuczera and Jeon, 2019^[46]).

Achieving the ideal balance of responsibilities between actors from the education system and actors from the employment system on decisions related to all processes of VET, from curriculum design through application and updating, can be challenging. The skills provided by VET programmes benefit employers directly. The distribution of benefits will depend on the mix of skills being learnt – for example skills specific to an industrial sector yield benefits to that sector. The distribution of benefits should ideally be reflected in the distribution of funding responsibilities so as to provide the right incentives for optimal skills provision. In response to these shared benefits, a variety of funding models have emerged, involving some sharing of the costs of provision between government, student, and employer. Some contributions will be in kind, for example in terms of the time and facilities contributed by employers to workplace training (OECD, 2010^[35]). However, there is an asymmetry in the information and resources available to educators and employers (Renold et al., 2018^[47]), which complicates setting up fair funding mechanisms.

A study of governance systems in relatively high-performing VET systems in Germany, Switzerland, Denmark, the Netherlands and Austria, Emmenegger, Graf and Trampusch (2018^[48]) identified six core areas of decision-making in VET: i) system development, ii) content definition, iii) matching the demand and supply, iv) organisation of the training, v) financing, and vi) monitoring, examination and certification. Understanding who does what in these areas and which stakeholders to involve and how to do that, can guide Thailand in reviewing its governance arrangement.

Responsiveness at the regional and local level is important

Bodies involving social partners to steer the system can be established nationally, regionally, according to economic sectors, or even at the level of individual institutions (OECD, 2010^[35]). In Thailand, although sectoral co-operation is possible, for example through the occupational cluster steering committees

mentioned before, decentralised co-operation between social partners and authorities is very limited. This is a matter of concern, as the demands of different economic sectors for skills vary significantly across regions (see Chapter 1 and above). Co-operation between social partners and VET schools is not institutionalised and varies considerably. While schools and employers collaborate on work-based placements for students, and schools are expected to have a good understanding of employer needs, provision is distorted by the dominant role of large employers. In Thailand, there is scope to strengthen co-operation with social partners, especially employers, at the regional level. This could take the form for example of VET-specific advisory bodies, who could also ensure a close contact between the labour market and institutions. Such regional committees, representing the diversity of the regional economy in terms of firm size and sector of activity, could allow the provision to reflect and be relevant to the breadth of the related labour market.

Collaboration between VET institutions and other stakeholders is crucial for getting the offer in line with demand. At the local level, provincial authorities, local private sectors and schools should join forces to tailor the content of curricula to regional needs, as they differ across the country. They are indeed best positioned to incorporate current and future needs into the content of VET programmes.

Funding incentives can also be used for steering partnerships between VET institutions and employers. In Sweden, for example, to launch a programme, an education provider has to show that there is labour market demand for the skills provided by the programme, and that it has a framework to engage employers. This means that institutions are eligible for public funds when they can form a partnership with employers willing to offer the workplace training (OECD, 2014^[36]). But it should be noted that research in financial and non-financial incentives for VET programmes in general, and apprenticeships in particular, showed only a relatively small proportion of employers will increase the provision of education and training places in response to financial incentives. Such schemes usually involve substantial deadweight. A further risk is that financial incentives may succeed in engaging employers who are primarily interested in the subsidy, rather than training students (Kuczera, 2017^[49]). While involvement at national level allows for broad advice on VET policy, employer engagement at local level can help to improve the links and partnerships between the workplace and individual VET institutions (OECD, 2010^[35]). Consultations bodies can also be created at the institutional level, to decide for example on the number of VET school admissions by programme of study. Collaboration with social partners locally can enable greater co-operation between local schools and employers in relation to the sourcing of work placements (see Box 3.8 for an example from Denmark).

Box 3.8. Formalised local co-operation between VET institutions and employers in Denmark

Each vocational college (providing school-based education and training) in Denmark works with at least one local training committee. Training committees include representatives of local employers and employees appointed by national trade committees, and representatives of staff, management and students appointed by colleges.

Local training committees work closely with colleges to adapt the content of VET programmes to local needs, strengthen contacts between the college and local employers, and support colleges with the delivery of programmes, for example by securing work placements for students. They also serve as a link between local and national levels, ensuring that national committees have a good overview of local circumstances and that local policy is aligned with the national objectives. For example, they assist and advise national trade committees in approving local enterprises as qualified training establishments and in mediating conflicts between apprentices and enterprises. National committees can hand over obligations to the local trade committees if they are better taken care of at the local level.

Source: Kuczera and Jeon (2019^[46]), *Vocational Education and Training in Sweden*, <https://dx.doi.org/10.1787/g2g9fac5-en>.

The VET system does not cater to some parts of the Thai economy

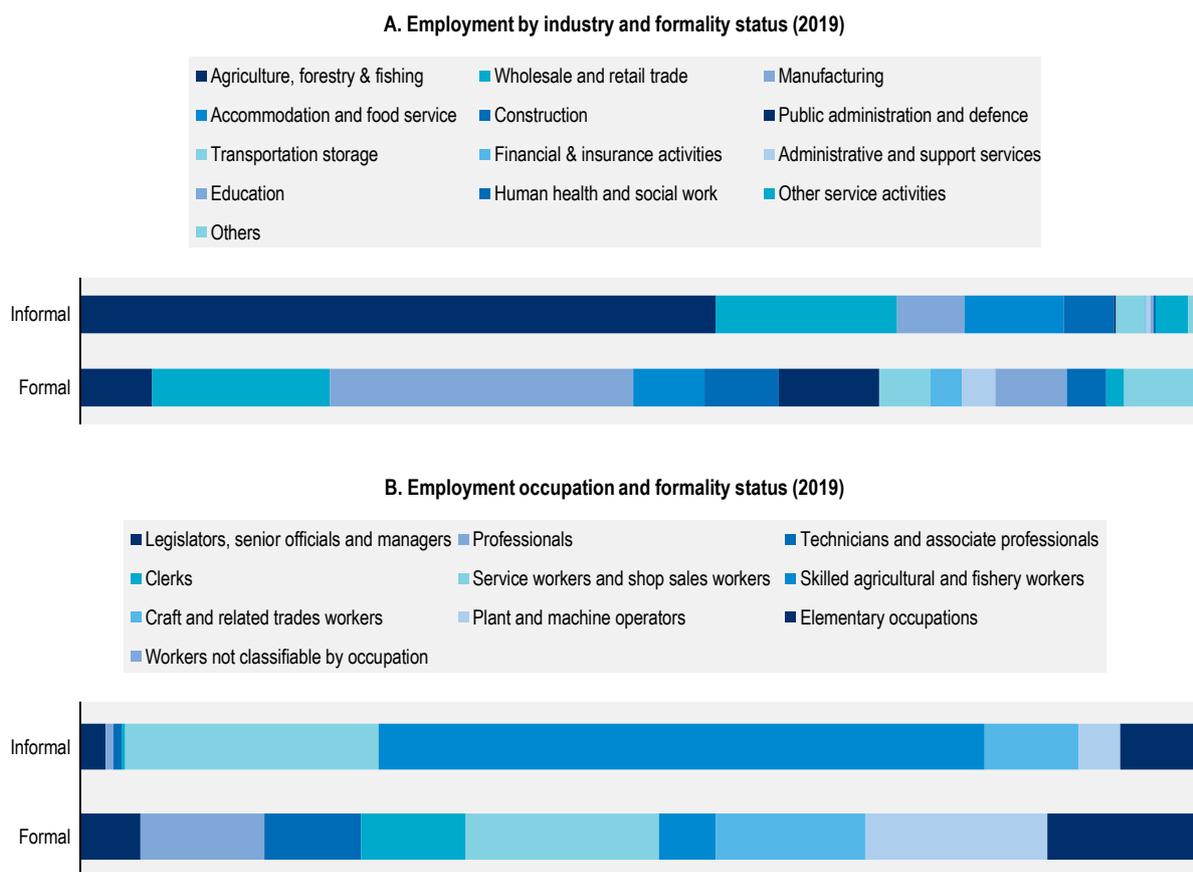
The current strategy for stakeholder engagement in the Thai VET system focuses on getting large employers on board. As such, one of the main concerns in the VET sector is that it mostly caters to the needs of big companies. However, in 2016, there were approximately 3.01 million SMEs in Thailand, which constituted more than 99% of all enterprises. They altogether contributed to 42% of the country's GDP and accounted for 79% of total private sector employment (OECD, 2020^[50]). The value added created by small-sized enterprises grew faster than that of other firms in recent years. This implies that SMEs are an important source of economic growth in Thailand (OECD, 2020^[5]). In spite of their important role in the Thai economy and labour market, SMEs are only involved to a limited extent in the VET system, and especially those operating in the informal sector. As a result, their skill needs are not sufficiently taken into account in the design and delivery of VET.

There are more than 1 million unregistered SMEs, most of them engaging in agriculture-related activities (OECD, 2011^[51]). As discussed in Chapter 1, almost one in two workers are employed in informal jobs in Thailand. The informal economy is heterogeneous and is made up of increasingly diverse group of workers and enterprises in both rural and urban areas operating with no work-based social protection. Many informal economy workers engage in multiple informal and sometimes formal activities, usually multiple part-time activities, that might vary according to the time of year or season (OECD/ILO, 2019^[52]).

Informality can be found in different sectors, to varying extent. In 2019, out of almost 6 million jobs in the retail and trade sector, more than 3.2 million were informal (55%) (see Figure 3.15). Accommodation and food services jobs also remain highly informal, with an informality rate of 62%. Other sectors, such as construction and manufacturing, also show a large share of informal jobs (45% and 21% respectively). Informality is most common in low- and middle-skill jobs, but interestingly, even a non-negligible proportion of professionals, technicians and individuals in managerial positions work under informal arrangements. In 2019, 7% of professionals, 9% of technicians and 33% of workers in managerial positions in Thailand had informal jobs (see Figure 3.15, Panel B).

Efforts have to be made to ensure that smaller companies are consulted and get to have a say in the design and steering of the VET system, to make sure that the system works for the different sectors of the labour market. Involving also the informal sector is important, alongside policies to reduce the informality rate. One of the policy concern with informal enterprises is how to retain its employment-generating potential while making them economically more profitable as well as compliant with regulations (Bhattacharya, 2019^[53]). Box 3.9 describes how digital technologies can contribute to the formalisation of the economy, and also help certify the skills of workers in informal sectors. More training and better skills in informal sector companies, could help to raise their productivity, stimulate the overall economy and support socio-economic development. VET can provide opportunities for training to informal sector business owners and workers, but it needs to be flexible and adult-friendly, as described in Chapter 2. Informal sector employers often lack the financial resources to provide training opportunities for their workers and worry about workers leaving the informal sector once trained. Additional support might therefore be needed to ensure that informal sector employers provide training.

Figure 3.15. Informality is most common in agricultural and sales jobs



Source: National Statistical Office, Ministry of Digital Economy and Society (2020^[54]), The Informal Employment Survey 2019, http://www.nso.go.th/sites/2014en/Survey/social/labour/informalEmployment/2019/2562_Full_Report.pdf.

Box 3.9. ICT to recognise the skills of informal workers and reduce informality

While a section of people who run informal businesses voluntarily do so in search of profit and growth, a large section is “forced” to earn livelihoods as entrepreneurs due to unavailability of decent jobs in the formal sector. Scaling up may not be a goal for the owners of informal businesses, because they are unwilling to accept the risks associated with the larger scale of operation (Banerjee and Duflo, 2011^[55]).

Reducing costs of formalisation is one policy lever to reduce the level of informality. The platform economy may constitute an opportunity for many workers to formalise, since it can reduce the costs of formalisation and improve monitoring of economic activity through the digitalisation of transactions. For example in Indonesia, a country where almost 60% of the workforce is working in the informal sector and where at least a third of formal jobs are of poor quality (OECD, 2019^[3]), platform work for motorcycle taxi drivers facilitated access to social protection for workers. For example, GoJek offers help to its drivers to subscribe to the government health insurance programme, while at Grab Bike workers are automatically enrolled in the government's professional insurance programme (Fanggidae, Sagala and Ningrum, 2016^[56]). Of course, platform work is not a panacea for the problem of informality, if anything because the sector is still very small. The OECD has recommended that policy makers

mandate platforms to collect personal income taxes and social security contributions on behalf of the workers (OECD, 2019^[3]). While digital platforms may indeed open new markets for some, the sector is heterogeneous and in some cases it also bears the risk of informalising formal employment (Bhattacharya, 2019^[53]; OECD/ILO, 2019^[52]).

Another policy lever to curb informality is to increase the perceived benefits of formality (e.g. by improving service delivery, and linking social security contributions to the benefits received) and improve enforcement mechanisms (OECD, 2015^[57]). Digital labour platforms, using mobile internet technology, can link informal workers to customers. For example, an online platform in Kenya, Lynk, connects thousands of customers to informal sector workers, from artisans and carpenters to chefs and hairdressers. Many of these platforms also offer built-in skills training and certification, signalling credibility to employers (see Chapter 2 on certifying skills of adults and RPL mechanisms) (OECD, 2020^[58]).

Source: Banerjee and Duflo (2011^[55]), "Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty", *Population and Development Review*, Vol. 37/4, pp. 796-797, <http://dx.doi.org/10.1111/j.1728-4457.2011.00462.x>; OECD (2019^[3]), *OECD Employment Outlook 2019: The Future of Work*, <https://dx.doi.org/10.1787/9ee00155-en>; Bhattacharya (2019^[53]), "ICT solutions for the informal sector in developing economies: What can one expect?", *The Electronic Journal of Information Systems in Developing Countries*, Vol. 85/3, p. e12075, <http://dx.doi.org/10.1002/isd2.12075>; Fanggidae, Sagala and Ningrum (2016^[56]), *On-Demand Transport Workers in Indonesia: Toward understanding the sharing economy in emerging markets*, <http://www.justjobsnetwork.org>; OECD (2020^[58]), *OECD Employment Outlook 2020: Worker Security and the COVID-19 Crisis*, <https://dx.doi.org/10.1787/1686c758-en>.

Work-based learning to support VET students in developing the right skills

Not all VET students have access to quality work-based learning

In theory, students in VET in Thailand have an opportunity to take part in work-based learning (WBL) in companies, for at least one semester in the case of school-based VET programmes (i.e. all programmes excluding the dual programmes). WBL typically takes place during the fifth and/or sixth semesters for upper secondary students, and third and/or fourth semesters for postsecondary ones, with each institutions deciding. WBL is credit-bearing and typically lasts 18 weeks. VET institutions collaborate directly with enterprises and set goals for students. The placements are graded according to the curriculum (Office of the Education Council, 2017^[4]). In practice, the length and the quality depends of the willingness of employers to offer high-quality placements to students. Recent programmes, such as the Factory-in-School initiative from the Ministry of Education, push for the inclusion of more WBL in the vocational school programmes.

The workplace provides a strong learning environment, and facilitates recruitment; while trainees contribute to output. Work-based learning opportunities are also a direct expression of employer needs. Expanding opportunities for work-based learning should go hand in hand with strong quality assurance mechanisms, to ensure that these work-based learning opportunities indeed allow students to develop the skills related to their field of study. To realise the benefits of work-based learning, it should be made an integrated element of the vocational programmes, rather than an add-on. This means that the learning outcomes expected from the work-based learning component need to be defined, so that what the student has learnt can be assessed. Quality standards for work-based learning help to avoid the allocation of students to unskilled tasks and ensure they acquire useful occupational skills. Such standards may cover the content and duration of training, the assessment of training outcomes and the competences of those who supervise trainees (see Box 3.10 for an example from Denmark) (OECD, 2014^[36]).

Box 3.10. Quality framework for WBL in Denmark

All postsecondary VET programmes in Denmark include a minimum of three months of work-based learning, and six months in professional bachelors' programmes. Following their placement, students report back to their training provider and they are assessed to see if they have met their learning objectives. In-company supervisors need to have a solid knowledge of the theoretical content of the student's course and have sufficient time and resources to offer guidance. Quality assurance has three key features:

- Quality assurance is built into the work placement arrangements, and plays a decisive role in the accreditation of new programmes.
- Attention is given to making these placements as useful as possible for both vocational programmes and employers, and the analysis of those links forms part of the accreditation process.
- The work placements are closely linked to learning outcomes. Students apply concepts learnt in the study programme at the workplace, linking theory to practice.

Source: OECD (2014^[36]), *Skills beyond School: Synthesis Report*, <https://dx.doi.org/10.1787/9789264214682-en>.

The dual system is a promising evolution

One widely-known form of work-based learning is apprenticeships, also called in some national contexts the dual system. Such programmes combine learning in the workplace with school-based learning in a structured way. In most cases, dual programmes last several years. Most often the apprentice is considered an employee, and has a work contract and a salary (OECD, 2019^[11]).

The concept of dual programmes has been around in Thailand for many years, but was only formally established as part of the Vocational Education Act in 2008, with the goal of linking the VET curriculum courses in colleges with internships in the workplace (Burapharat and Chupradit, 2009^[59]). Every programme in both secondary and post-secondary vocational education can be delivered under the dual education mode. This is a strength of the Thai VET system and it echoes the situation in some OECD countries, where the same qualifications can be pursued either as a school-based qualification or a work based ones. There are important benefits as it allows to adapt to the characteristics of students and the different employers, while also opening-up dual training in non-traditional trades, such as ICT or business (OECD, 2018^[45]).

In dual programmes, students spend more than half of the time in the workplace, combining 3-4 days in the workplace and 1-2 days in the VET institutions. But the exact organisation of the learning periods in VET institutions and in the workplace depends on the agreement between the industry and the training institutions, as well as students and parents: students might alternate on a weekly or monthly basis (Office of the Education Council, 2017^[4]; Goncalves, 2019^[44]). Across countries, how on-the-job and off-the-job components alternate varies: in Austria, Germany and Switzerland, they are typically alternated within a week, in Ireland in blocks of several weeks. In Norway, a two-year long school-based component is followed by two years spent in the workplace (OECD, 2018^[45]).

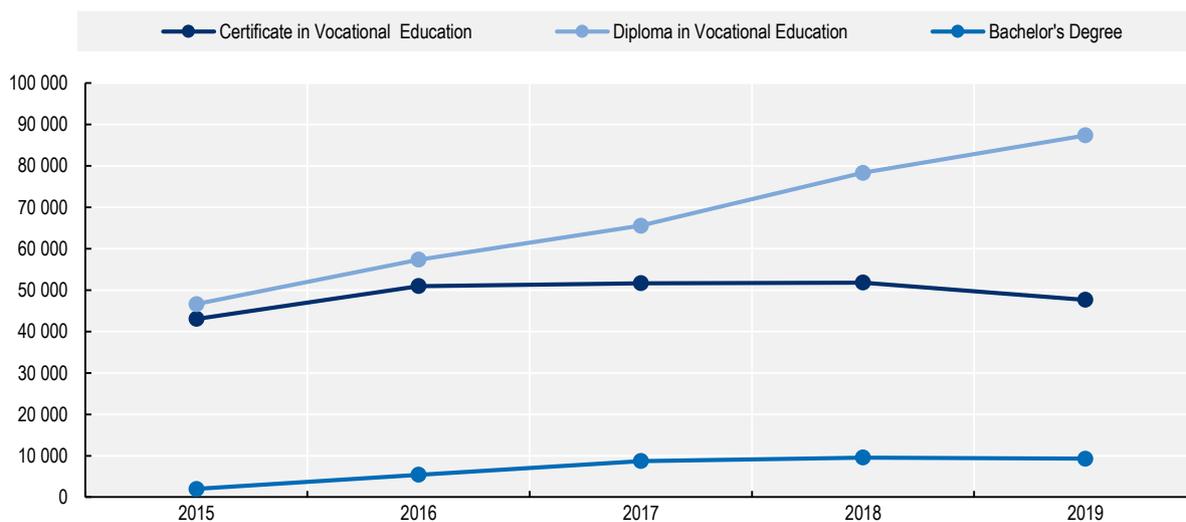
The number of students enrolled in dual programmes depends on the availability of work placements. The number of students in the dual VET system increased steadily in recent years, especially in diploma programmes. In 2019, around 87 000 diploma students and 47 000 certificate students were in the dual system. These numbers increased by 87% and 11%, respectively, in the period 2015-2019. 19 300 employers provided training places for these dual VET students in 2019. To encourage employers

to participate in the system, the Thai government implemented a 100% tax exemption for expenditure incurred because of the apprenticeship. In addition, the Department of Skills Development provides subsidies for expenses of training, transportation of apprentices and accommodation, uniform and safety equipment, as well as equipment for training and insurance.

Dual programmes must be of high quality to compete with alternative pathways. Beyond the immediate financial implications of different pathways, individual choices, linked often to parental preferences, depend on the prospects that people feel they offer. If apprenticeships are of high quality, employment outcomes for apprenticeship graduates will be higher. Evidence for France shows that employment outcomes are higher for graduate apprentices than for students with equivalent school-based qualifications (Couppié and Gasquet, 2021^[60]). But when apprenticeships are poor quality, apprenticeship becomes a second choice and those who can will pursue other options. With apprenticeships of poor quality, employers cannot rely on them as a proof of strong occupational skills, so it makes sense for them to prefer graduates of school-based programmes or those with a postsecondary or tertiary qualification (OECD, 2018^[45]). In Thailand, there have been recent efforts to strengthen the quality of the dual programmes: OVEC provides guidelines and related documents to training institutions to help them work collaboratively with industry. Trainers in industries must be qualified according to the standards of the apprenticeship programme (Goncalves, 2019^[44]). But stakeholders have also pointed that there are quality issues regarding the training received in the workplace, with students something doing unqualified and irrelevant tasks.

Figure 3.16. Dual vocational education is on the rise in Thailand

Number of students participating in dual vocational education (2015-2019)



Sources: Office of the Vocational Education Commission (2020^[61]), Number of Dual Vocational Students Academic Year 2015-2017 by Grade, <http://techno.vec.go.th/ประชาสัมพันธ์/รายละเอียดข่าว/tabid/766/ArticleId/21080/language/th-TH/2558-2560.aspx>; Office of the Vocational Education Commission (2021^[62]), Number of Dual Vocational Students Academic Year 2018 by Region, Province, Name of Institution, Program, and Grade, <http://techno.vec.go.th/ประชาสัมพันธ์/รายละเอียดข่าว/tabid/766/ArticleId/20713/language/th-TH/20173.aspx>; Dual Vocational Education Center (2021^[63]), Report on the Number of Companies participating in Dual Vocational Education, <https://dve.vec.go.th/index.php?app/report/ajax&m>.

Principles to continue strengthening apprenticeships in Thailand

Differences in the design of schemes affect how attractive apprenticeships will be for potential apprentices and employers, as well as how it will affect public finances. Building apprenticeships in countries where apprenticeships are uncommon or creating new programmes in economic sectors that typically rely on other forms of training is challenging. Some simple principles underpin effective provision (OECD, 2018^[45]):

- Social partners should be involved in the design and implementation of apprenticeship schemes. This is essential to encourage their engagement with apprenticeship and ensure that programmes are suited to their needs and capacity to provide placements.
- Competition between apprenticeships and alternative learning pathways (e.g. school-based programmes, postsecondary or tertiary education) needs to be fair.
- Apprenticeships are easier to implement where formal qualifications bring substantial benefits to the learner.

Box 3.11 gives some indications on how design features can have an impact on the policy aim.

Box 3.11. Adjusting the parameters of apprenticeship schemes, depending on the policy objectives

An OECD study on apprenticeships (OECD, 2018^[45]) used cost-benefits analysis to discuss how different design features influence the provision of apprenticeships :

- **Apprenticeship duration:** During the initial stages of apprenticeships, apprentices tend to contribute little to productive work, and often cost more than they produce. At the final stages, apprentices can contribute to production with their skills but are still cheaper than skilled workers, which can allow employers to reap net benefits.
- **How apprenticeship is organised:** While apprentices are learning off-the-job they develop job-relevant skills, but do not contribute to production. What exactly apprentices do while on-the-job is also important: productive work always benefits employers, whereas learning activities bring benefits later when apprentices use their newly learnt skills to work. With care, learning can often be integrated into productive work, yielding higher benefits for firms.
- **Incentives:** Firms may receive subsidies or benefit from tax breaks when they take on an apprentice. Some incentives may be non-financial, like linking the award of public procurement contracts to the provision of apprenticeship.
- **Apprentice wages:** Representing the largest share of costs to employers, how apprentice wages are set and their amount have a strong impact on the cost-benefit balance. While policy makers typically do not set apprentice wages, policy tools can influence them.
- **Apprentice characteristics:** Apprentices with stronger skills will be more productive throughout the apprenticeship than those with weaker skills, and will generate higher benefits for the employer.

Other elements to take into account are part of the broader country context.

- **Wage context:** Apprenticeships will be a financially more appealing for employers if there is a large difference between the wages of apprentices and those of skilled workers. Minimum wage laws and collective bargaining agreements are often important as they affect the wage costs of workers and apprentices.

- **Labour market features:** There will be more room to reap “recruitment benefits” when hiring in the external labour market is hard and expensive. This is the case when the labour market is tight, so jobs are abundant and relatively few are in search of a job. Informality also has an impact.
- **Occupation:** How long it takes for an apprentice to become proficient at a job varies across occupations, as does the cost of equipment involved, so the cost-benefit balance during apprenticeship varies. Potential “recruitment benefits” also vary: hiring costs tend to be higher in jobs that require sophisticated technical skills.
- **Firm size:** The cost-benefit balance during apprenticeship varies with firm size: larger firms exploit economies of scale (e.g. training several apprentices on the same equipment), and sometimes have better opportunities to train apprentices while involving them in production. On the other hand, larger firms tend to train more in technical occupations (with higher training costs) than smaller firms, which often hire apprentices in the crafts sector. Larger firms are more likely to realise “recruitment benefits”, as they tend to face higher hiring costs and recruit more often their apprentices as skilled workers.

The apprentice wage and labour market prospects affect the attractiveness of apprenticeship to young people or adults considering training options. When apprenticeships are more attractive, employers will have a greater pool of better prepared, skilled applicants and a lower risk of costly drop-out.

Source: OECD (2018^[45]), *Seven Questions about Apprenticeships: Answers from International Experience*, <https://dx.doi.org/10.1787/9789264306486-en>.

Across countries, the popular image of an apprentice is often of working in a skilled trade or craft, like construction or manufacturing. This accurately reflects the apprenticeship landscape in many countries, where apprenticeships are most common in manufacturing and construction. But this constrains apprenticeships to a small part of the labour market. Over the past decades, OECD economies have seen a shift in employment away from manufacturing and towards services, and in some countries the apprenticeship offer has evolved in the same direction. In Switzerland for example, the three most popular apprenticeship occupations are commercial employee, retail clerk and healthcare worker. In Germany, the three most popular apprenticeship occupations are in management and retail sectors (OECD, 2018^[45]). Various countries have created apprenticeships in the IT sector, at different education levels, in response to the strong demand for IT-related skills in the labour market (see Box 3.12 for examples).

Box 3.12. Apprenticeships in IT

IT apprenticeships in Switzerland

In Switzerland, students in the VET system can pursue an IT apprenticeship. This IT vocational training programme takes four years to complete. Apprentices spend one to two days per week in a vocational training school and have the choice of three specialisations, namely application development, business informatics and systems administration/ engineering. More than 90% of IT degrees are based on apprenticeships and vocational training. The number of IT apprenticeships is on the rise, increasing with almost 50% in the period 2006-2017. In 2017, IT featured among the top five fields that welcomed the most VET students.

ICT Associate Apprenticeship programmes in Ireland

In Ireland, new apprenticeship programmes were introduced in 2018 in the fields of software development, network engineering, and cybersecurity. These 2-year apprenticeship training programmes lead to a level-6 qualification (i.e. ISCED-4). In the first 6 months, students attend full-time off-the-job training and development. In months 7 to 18, they combine 3 days at work with 2-days off-the-job training, while in the last 6 months they spend 4 days in work and only one day in off-the-job training.

Source: Vandeweyer and Verhagen (2020^[64]), "The changing labour market for graduates from medium-level vocational education and training", *OECD Social, Employment and Migration Working Papers*, No. 244, <https://dx.doi.org/10.1787/503bcecb-en>.

International evidence suggests that small firms are less likely than large ones to offer apprenticeships. In Switzerland, for example, around 25% of companies with fewer than 10 employees provide apprenticeships, compared to 80% of large firms employing 100 people or more (Muehleemann, 2016^[65]). Small firms may lack the capacity to plan and determine training needs. They will be less efficient in offering training: large firms can train several apprentices using one instructor and for them bearing the fixed costs of dealing with administrative requirements will be easier to handle. Small firms may also be unable to train for the full range of skills required by a particular apprenticeship qualification (OECD, 2018^[45]). Also, the bigger the employer, the more likely it is to retain apprenticeship graduates as skilled workers. This might happen either because small firms cannot offer a job to their qualified apprentice as a skilled worker or because their apprenticeship graduates prefer to work for larger employers with better career prospects. In the absence of long-term benefits from recruitment, many small firms will only provide apprenticeships if they can recoup their investment by the end of the training period. Despite these hurdles, across OECD countries SMEs are major providers of apprenticeships. In countries with available data from the Survey of Adult Skills, a product of the Programme for the International Assessment of Adult Competencies (PIAAC) (i.e. Austria, Australia, Canada, Denmark, Netherlands), over half of all apprentices work in firms with 50 or fewer employees (OECD, 2018^[45]).

To support SMEs to take on apprentices, countries can establish external bodies take over some of the tasks generated by the provision of apprenticeship, e.g. searching for a suitable apprentice or dealing with administrative tasks, and they can also organise the sharing of apprentices between several employers. Such bodies can be run and managed by employers themselves or by a third party (OECD, 2018^[45]) (see Box 3.13). Inter-company bodies or networks can also allow pooling of resources, sharing information and exchanging knowledge. For example, a lead company may bear the overall responsibility for training, while specific training modules may be delivered by partner companies. Larger firms may offer periods of training in their training workshops to apprentices of their supply chain partners, usually SMEs. In Switzerland for example, host company networks (*Lehrbetriebsverbände*) group together enterprises to share the responsibilities of apprenticeship training. This arrangement is especially aimed at maximising the training potential of those companies that are too small and/or specialised to cover all the competencies specified in a defined VET curriculum as a singular entity, but may be able to offer the full spectrum by joining forces to train apprentices as a group. Usually, one enterprise or a separate organisation takes the role of coordinator and organizes the coaching, training and rotation of apprentices between various companies during their apprenticeship (ILO, 2017^[66]).

Some of the most promising non-financial incentives aim to support employers in getting the best out of apprentices – for example by providing assistance with the administrative aspects of setting up an apprenticeships, or by offering training for workplace trainers (Kuczera, 2017^[49]). Owing to their limited size and resources, SMEs often find it difficult to train qualified workers to supervise apprentices. Evidence suggests that better prepared apprentice supervisors underpin high-quality training (BIBB, 2009^[67]). But to meet these requirement, SMEs need targeted support focused on flexible and customised training

provision for trainers. For example in Norway training for apprentice supervisors is free to participants, and delivered by counties, schools or training offices, but optional. Counties provide the course, learning materials, subsistence and travel expenses, while firms pay supervisors during the course (OECD, 2018^[45]).

Box 3.13. Bodies to support SMEs with apprenticeships

Australia

Group training organisations (GTOs) are not-for-profit organisations supported by public authorities, with some charges to host employers. GTOs employ apprentices and hire them out to host employers, sometimes focusing on a particular industry or region. Their tasks include selecting apprentices adapted to the needs of employers; arranging and monitoring training both on- and-off-the job; taking care of administrative duties; and ensuring that apprentices receive a broad range of training experience, sometimes by rotating them to different firms.

Norway

Training offices (*opplæringskontor*) are owned by companies and funded through state grants (firms typically pay half of the apprenticeship subsidy they receive to training agencies). They aim to establish new apprenticeship places, supervise training firms, train apprentice supervisors and deal with administrative tasks. Many training offices organise the theoretical part of training and sign the apprenticeship contracts on behalf of firms. About 70-80% of firms with apprentices are associated with training offices. They played an important role supporting apprenticeships and ensuring their quality.

Source: OECD (2018^[45]), *Seven Questions about Apprenticeships: Answers from International Experience*, <https://dx.doi.org/10.1787/9789264306486-en>.

Conclusion

There are unbalances in Thailand between the skills taught in the education and training system and those needed by the labour market, in which VET plays an essential role. VET graduates have relatively strong labour market outcomes, but they differ strongly between regions, reflecting the differences in the economic structures, and between fields-of-study. Employers report hiring difficulties for certain VET profiles and a mismatch between the skills of VET graduates and their needs. In addition, a significant share of workers with VET qualifications are employed in jobs that do not match their qualification level and/or field. These findings suggest misalignment between the VET programmes on offer (and their content and quality) and the needs of the labour market.

Aligning VET provision with the needs of the labour market, at the national but also at the local and sectoral levels, means using high-quality information on skills demand and supply. Responsive VET programmes can use quantitative information from a variety of sources (e.g. labour force survey, employer surveys, vacancy data, graduate tracer surveys). Such measures have to be complement with mechanisms that engage relevant stakeholders in the design and delivery of VET, at each level where VET policy is being determined. The complex VET system in Thailand complicates such stakeholder engagement. Currently, employer engagement in Thailand is mostly focussed on large companies, and the needs of SMEs and the informal economy are not sufficiently reflected. Quality work-based learning in all VET programmes and the development of apprenticeships is a strong policy tool to build a more responsive system that fosters strong labour market outcomes for students. The recent efforts to further develop the Thai dual system are a step in the right direction, but more can be done to ensure that work-based learning is of high quality.

Key recommendations

Using skills intelligence in VET

- Develop robust tools to regularly assess skill needs at the national, regional and sectoral level, using a variety of quantitative and qualitative information. One of the tools should allow for a detailed analysis of labour market outcomes of VET graduates, possibly using tracer surveys.
- Create a knowledge-sharing platform to bring together the different skill needs assessment exercises carried out by different actors, and use the results from these exercises to inform VET policies and curricula.

Engaging stakeholders in the design and delivery of VET

Facilitating the engagement of stakeholders in VET

- Overcome silos between the different Ministries and agencies involved in VET, especially between the Ministry of Education and Ministry of Labour.
- Review governance mechanisms in VET to enable relevant stakeholders to be sufficiently engaged to make sure that the content of the programmes, and their size, meets the needs of the labour market and workers.
- Design mechanisms to also involve smaller employers and the informal economy, to ensure their needs are also reflected in the design and delivery of VET programmes.
- Allow for a regional and local flexibility in VET, engaging employers at that level too. Make sure that VET institutions can also collaborate with employers directly, for example through the inclusion of employers on boards.

Strengthening work-based learning

- Ensure that the students in school-based programmes have access to quality placements. To strengthen the quality of work-based learning, put in place quality standards that help ensure the students develop the necessary skills at the workplace. Provide training to in-company supervisors so they have the capacity to effectively support students.
- Collect data on dual programmes, that alternate learning at school and in the workplace, to see how and where these programmes are used. This includes information on the types of programmes and fields in which the students are enrolled, student characteristics, and details on the employers providing dual programmes. This information will help monitor the system, fill gaps in dual VET provision, and ensure equal access for a diverse group of students and employers.
- To strengthen dual programmes, review financial and non-financial incentives for employers, and ensure that the provision is not distorted by them. Such incentives can also help such programmes more attractive for SMEs.
- Make sure the dual system can also meet the needs of SMEs. This can be done by setting up external bodies to support employers in taking on VET students or by encouraging large employers and SMEs to jointly provide dual programmes. As a starting point, analyse the barriers that SMEs currently face to provide work-based learning, so that any support measure can be designed to overcome such barriers.

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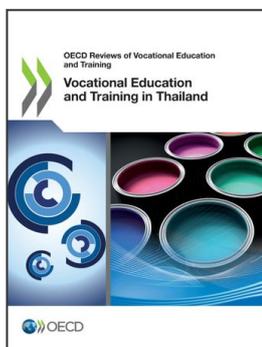
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Note

¹ Fields-of-study in the Thai labour force survey are classified according to ISCED 1997. These fields are different from the categories used by OVEC in their reporting.



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