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► Trends, characteristics and COVID-19 impact on youth not in employment, education or training (NEET) in Thailand



- ▶ **Trends, characteristics and COVID-19 impact on youth not in employment, education or training (NEET) in Thailand**

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► Preface and acknowledgements

As Thailand transitions into a “complete-aged society”¹, equipping young women and men with relevant skills demanded in the labour market and engaging them in productive employment and decent work are key for the future of the economy as well as the country’s development and society as a whole. Despite having a low overall unemployment rate before the COVID-19 pandemic, Thailand’s youth unemployment rate has been on the rise since 2010. Skill mismatch and an inefficient school-based career guidance system have resulted in young people facing various obstacles transitioning from school to work. The COVID-19 pandemic has further exacerbated the situation through massive disruption to Thailand’s economy and labour market. Youth faced disruption to their education and training, job disruptions through reduced working hours, earnings and job losses, and difficulties transitioning from school to work and moving between jobs. As a result, a significant number of young women and men are currently not in employment, education or training (NEET).

The ILO and its tripartite constituents have a long-standing commitment to promote youth employment. Supporting economic, social and environmental transitions for full, productive and freely chosen employment and decent work for all, including youth, is a key area of work in the global ILO results framework for 2022-23. Moreover, Sustainable Development Goal (SDG) target 8.6 aims for a substantial reduction in the proportion of youth not in employment, education or training, with SDG indicator 8.6.1 focusing on NEET youth (aged 15–24 years). In addition, Outcome 1.1 of Thailand’s Decent Work Country Programme (DWCP 2019-22) also focuses on increased decent and productive employment as a result of effective demand-based and gender-responsive employment services and improved and expanded promotion of technical and vocational skills with a particular focus on the employability of youth and older persons of all genders.

In this connection, the *Trends, characteristics and COVID-19 impact on youth not in employment, education or training (NEET) in Thailand* report focuses on the NEET population between the ages of 15 to 24 in Thailand. The report examines the NEET characteristics, identifies the socio-economic and demographic indicators associated with NEET and analyses the impact of the COVID-19 crisis on the NEET status.

The research was prepared by the ILO Country Office for Thailand, Cambodia and Lao People’s Democratic Republic. Jessica Vechbanyongratana, PhD is the report’s main author under the overall technical guidance of Felix Weidenkaff, Makiko Matsumoto, Jittima Srisuknam, and Kawita Niwatananun. Chadapim Udomsornayuth provided administrative support throughout the process, and Chantitda Wiwatchanon provided publication and communication support.

The research team also wishes to acknowledge the technical inputs, helpful comments and suggestions provided by the following ILO officials: Akiko Sakamoto, Julien Magnat, Joni Simpson, Sara Elder, Dong Eung Lee, and Yuki Otsuji.

Understanding the heterogeneity of youth NEET and the underlying challenges faced by them is key to inform targeted and effective policy interventions. The report therefore not only aims to raise awareness about the current situation of youth NEET in Thailand. The findings of this report can inform the development of targeted policy recommendations to address the diverse challenges encountered by youth NEET with a view to enhancing young people’s ability and opportunity for a human-centred recovery in the labour market.



Mr Graeme Buckley
Director

ILO Decent Work Technical Support Team for East and South-East Asia and the Pacific and
Country Office for Thailand, Cambodia and Lao People’s Democratic Republic

¹ The Office of the National Economic and Social Development Council (NESDC) provides yearly data on the elderly population and the data is available in Thai at: <https://www.nesdc.go.th/main.php?filename=social>



► Executive summary

The future of the Thai economy depends on its young people and the ability to transform their educational investments into decent work opportunities. A situation where a significant number of young women and men are not in employment, education or training (NEET) represents a lost opportunity for future economic development and growth. In this context, the purpose of this study is to characterize youth between the ages of 15 and 24 who are not in employment, education, or training in Thailand across time and space using nationally representative data from the third quarter of the Thailand Labor Force Survey (LFS) for the period of 2011-2020. The goals of the study are: 1) to characterize the trends and the spatial distribution of NEET youth using various disaggregated measures of NEET; 2) to identify socio-economic and demographic correlates with NEET status of youth in Thailand; and 3) analyse the early impact of the COVID-19 crisis on NEET status.

This study quantifies NEET using both broad and disaggregated measures. The broad NEET measure follows the ILO definition covering youth 15-24 years of age who are not currently enrolled in school and who are not working at the time of the survey. The NEET status includes a heterogeneous group of young persons in society and requires further disaggregated analysis to understand their labour market dynamics. The broad NEET measure is disaggregated based on whether an individual is seeking work and available for work. The three measures used in this study include: 1) unemployed; 2) inactive not in education; and 3) marginal labour market attachment. The study applies the guidelines of the International Conference of Labour Statisticians (ICLS), in particular the resolution concerning statistics of work, employment and labour underutilization, adopted by the 19th ICLS (2013). Inactive not in education refers to individuals who are not actively in education or training, not seeking work and not available for work. Individuals who are marginally attached to the labour force includes those who are not in education or training and who are “unavailable job seekers” – those who would like to work but are not currently available for work – and “available potential job seekers” – those who are available for work but who are not currently seeking employment. In addition to these disaggregated measures of NEET, the specific country context of Thailand calls for an additional related vulnerable employment measure: youth who are not in education and are contributing family workers who may or may not be paid directly for their work contributions.

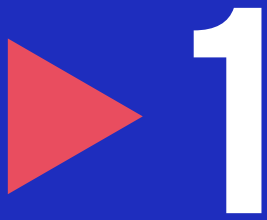
Key findings at the national level

- The number of youth ages 15 to 24 in NEET status (broad measure) increased from 1.24 million out of 10.35 million (12.0 per cent) in 2011 to 1.42 million out of 9.20 million (15.5 per cent) in 2020. The number of young women in NEET status over the 2011-2020 period changed from 865,125 (17.1 per cent) to 863,216 (19.0 per cent), and for young men from 379,245 (7.2 per cent) to 558,430 (12.0 per cent). Contributing family worker status decreased from approximately 616,155 to 349,364 (12.2 to 7.7 per cent) for young women and from approximately 1.09 million to 612,424 (20.5 to 13.1 per cent) for young men over the same period.
- When disaggregating the NEET rate, the incidence of youth unemployment and marginal labour market attachment increased during the COVID-19 crisis. For young men, the share of unemployed increased from 1.6 per cent in 2018/2019 to 2.5 per cent in 2020, while the share who were marginally attached to the labour market increased from 0.6 to 1.0 per cent over the same period. Between 2018/2019 and 2020, young women saw the share of unemployed increase from 1.6 to 2.4 per cent and the share of marginally attached to the labour market increase from 0.6 to 0.9 per cent.
- In 2020, a total of 81,246 of 1.30 million (6.3 per cent) 15-17-year-old male youth and 477,184 of 3.36 million (14.2 per cent) 18-24-year-old male youth were in NEET status. For young women, 66,860 of 1.26 million (5.3 per cent) 15-17-year-olds and 796,356 of 3.28 million (24.3 per cent) 18-24-year-olds were in NEET status in 2020. Relative to 18-24-year-olds, NEET rates across all disaggregated measures were lower for 15-17-year-olds who have access to tuition-free education.

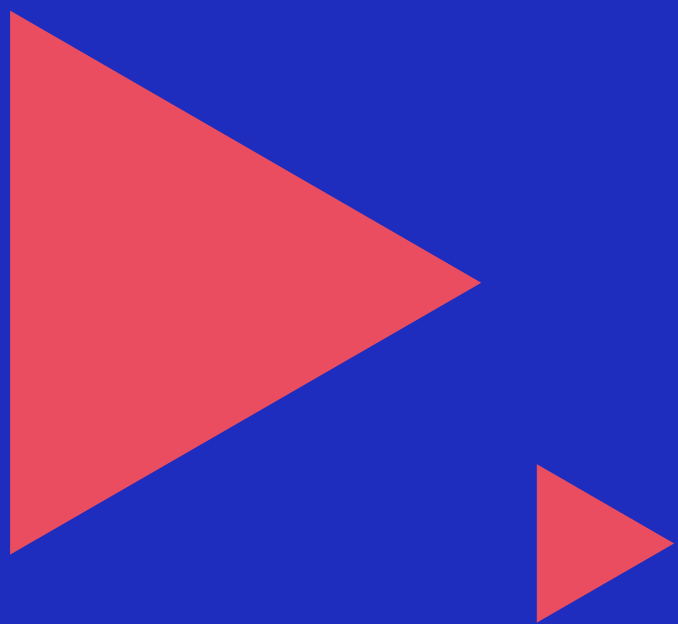
- A total of 421,913 of 1.04 million (40.7 per cent) married young women were classified as NEET in 2020. The high NEET rate among married young women is driven primarily by the inactive and not in education status.
- Youth with post-secondary education have relatively high incidences of unemployment and marginal labour market attachment relative to youth with secondary education or less. In 2020, out of 169,952 young male university graduates, 26,993 (15.9 per cent) were unemployed and 9,249 (5.4 per cent) were marginally attached to the labour market. For the 370,816 young university educated women, 55,540 (15.0 per cent) were unemployed and 15,064 (4.1 per cent) were marginally attached to the labour market.
- While marriage is associated with a higher likelihood of inactive and not in education status for women, young married women who are university educated have a lower incidence of inactive not in education status.
- In 2020, young women living in urban areas with more diverse labour market opportunities were less likely to be NEET (15.4 per cent) than young women living in rural areas (21.8 per cent). Young men living in urban and rural areas experience similar NEET rates (11.0 and 12.7 per cent, respectively).
- Young women from provinces where more than half of employment is in agriculture were more likely to be NEET (21.5 per cent) than young women from provinces with less than half of workers in agriculture (17.9 per cent) in 2020. However, the incidence of unemployment is higher for young women from provinces where less than half of employment is in agriculture (2.9 per cent compared to 1.3 per cent).
- Among NEET women who are inactive and not in education, 74.0 per cent are engaged in household care work. In contrast, young men who are inactive and not in education are more likely to be unavailable for work because they are living with an illness (22.0 per cent) or taking a break from education and the labour market (32.1 per cent).
- Of the 1.0 per cent of youth who are available potential job seekers, the most common reasons why they are not seeking employment is that they looked but could not find a job or were unable to find a suitable job.

Key findings at the provincial level

- The incidence of NEET status for both young women and young men increased across most provinces in Thailand between 2011 and 2020.
- Young women are more likely to be inactive and not in education than young men; however, the incidence of being inactive and not in education increased for young men and largely remained stable for young women across the country between 2011 and 2020.
- The share of youth who are unemployed increased for both men and women across Thailand between 2011 and 2020 in part due to the COVID-19 crisis.
- Marginal labour market attachment increased for both young women and young men between 2011 and 2020, particularly in the upper northeast and the south for men and in the lower northeast for women.
- The share of youth who are contributing family workers who are not in education largely declined between 2011 and 2020; however, the status remains common in agricultural areas, particularly in the lower northeast, west, and northwest areas of the country.



Overview of Thailand's labour market



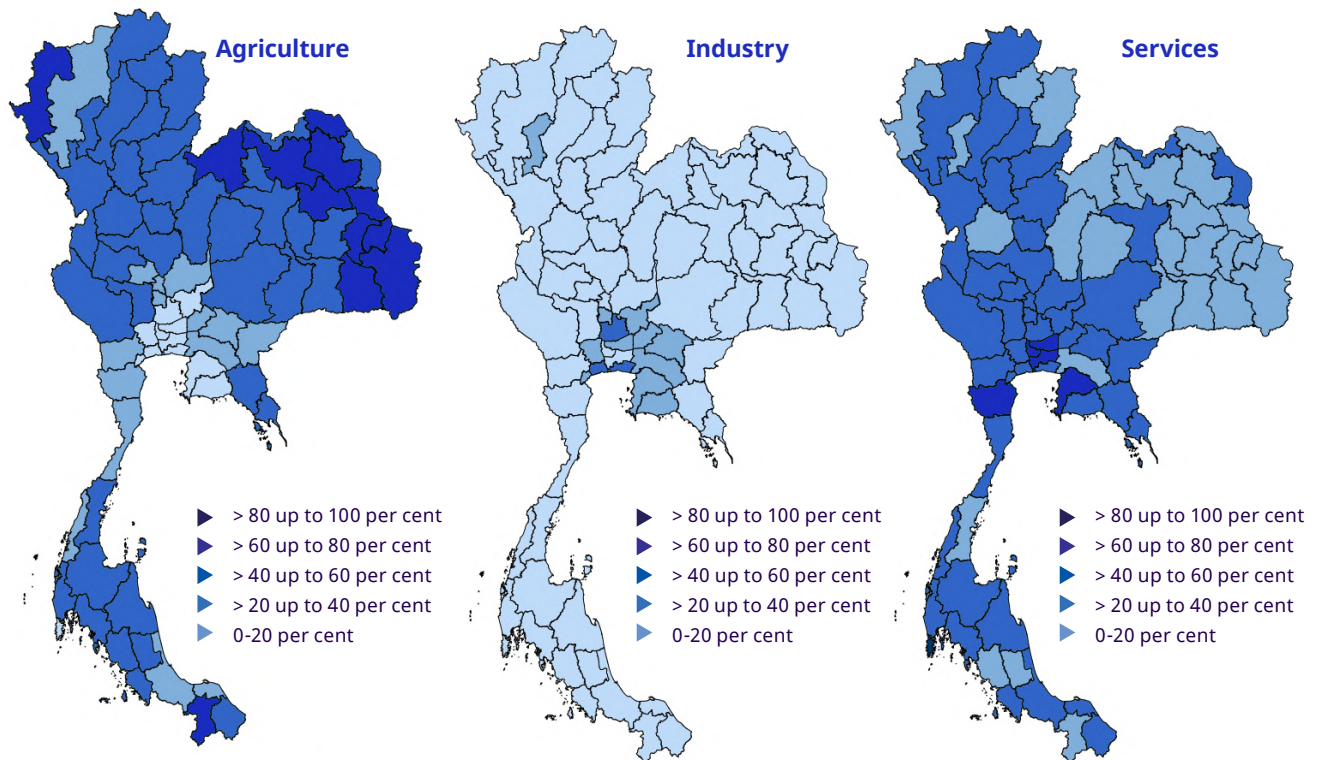


► 1. Overview of Thailand's labour market

As of 2020, Thailand had an overall population of almost 70 million people (World Bank n.d.) and a labour force of over 38 million people (NSO 2020b). The country is classified as a middle-income country with an economy that was traditionally based on agriculture. Since the 1980s, the government has encouraged the development of manufacturing and export-led growth, resulting in the establishment of numerous industrial estates, particularly in the central and eastern regions (Baker and Phongpaichit 2009). The government encouraged the development of the tourism sector starting in the 1990s, which resulted in the rapid expansion of the service sector in tourist destinations such as the provinces of Phuket and Chonburi

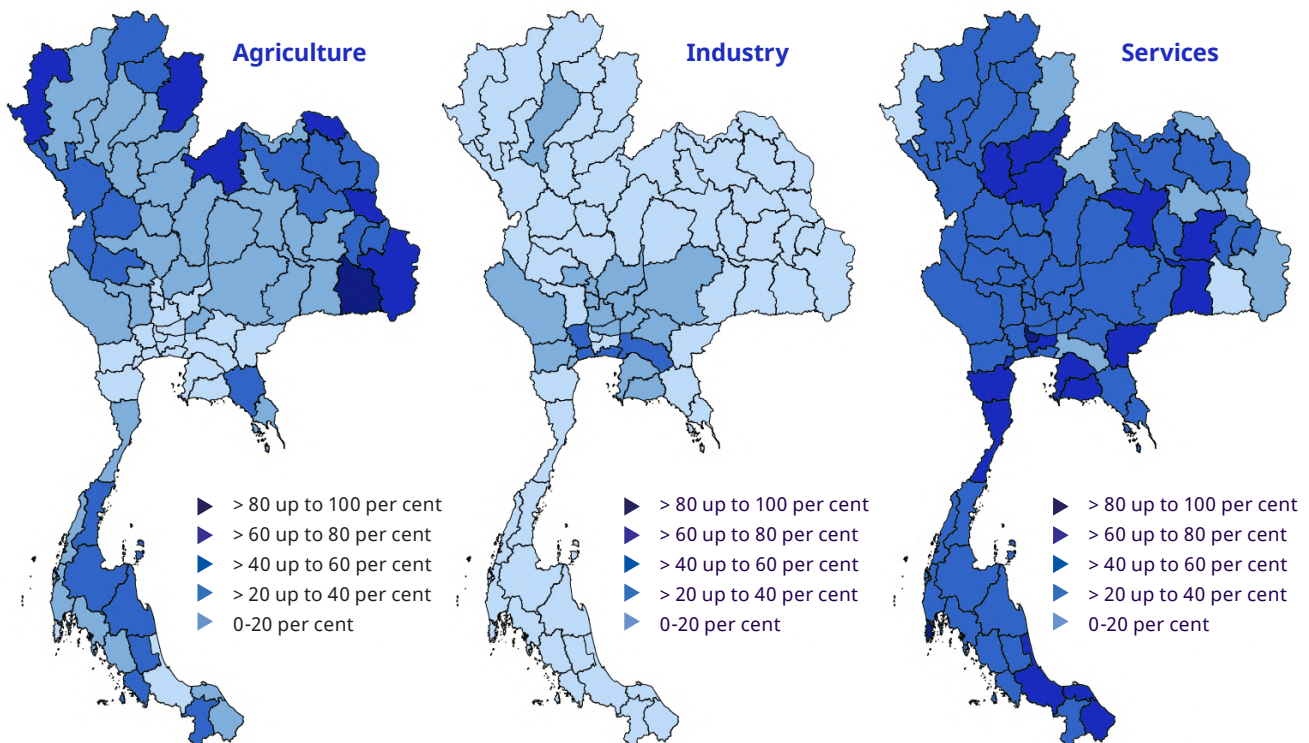
The sectoral composition of employment diverges between the 15-24-year-old youth workforce and general 15+ workforce. Young workers are less likely to work in agriculture and more likely to work in industry and services than the general working population. Figures 1.1 and 1.2 illustrate the shares of employment by sector (agriculture, industry and services) for the general 15+ working population and youth workers between the ages of 15 and 24, respectively. The first map in figure 1.1 depicts the overall share of labour engaged in agriculture by province. Agriculture is most prevalent in provinces located outside Thailand's centre. Agriculture as a source of employment is important in the north-eastern region of the country where in many provinces more than 60.0 per cent of the labour force is involved in agriculture. In contrast, the provinces surrounding Bangkok and provinces located along the eastern seaboard where the government has made concerted efforts to develop industry have the highest shares of workers working in industry at over 20.0 per cent. In terms of the service sector, the provinces that have the highest shares of workers in services tend to be in tourism dependent areas, including Phuket and Chonburi. Service sector workers make up 79.0 per cent of the workers in Bangkok owing to its diverse labour market. The lowest concentration of service sector workers is where agriculture is the dominant economic activity, particularly in the northeast.

► Figure 1.1 Sectoral employment shares by province for workers ages 15+, Q3 2020



Source: Author's calculations from table 4, NSO (2020a).

► Figure 1.2 Sectoral employment shares by province for workers ages 15-24, Q3 2020



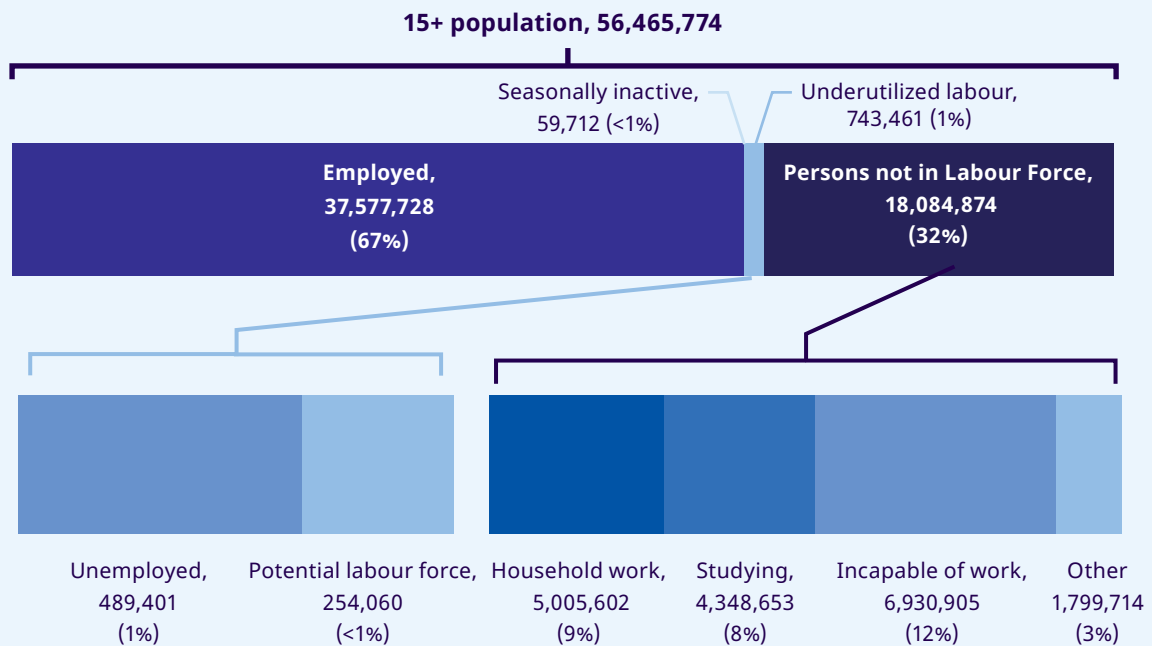
Source: Author's calculations from the Q3 2020 Thai Labor Force Survey.

For young workers between the ages of 15 and 24, the sectoral employment patterns diverge slightly from the overall workforce, as shown in figure 1.2. The map of agricultural employment shares indicates that young workers are less likely to be employed in agriculture compared to the general labour force across most of the country. Youth are more likely to work in industry across the central part of the country compared to the general workforce. Youth are also more likely to be employed in the service sector than the general working population, particularly in north-eastern and southern Thailand.

Starting in the 1970s, the government made concerted efforts to expand education and spur economic development. Primary and secondary schooling were greatly expanded in the 1970s and 1980s. As of 2002, children in Thailand are required to complete nine years of education and gain a lower secondary school diploma. In addition to increasing the number of years for compulsory schooling, the government also implemented tuition-free education through upper secondary school, thereby reducing the cost to complete high school and providing a gateway to higher education. With the expansion of university education in the 1990s and 2000s and the implementation of loan programmes to help cover the costs of university tuition and fees, the number of youths completing higher education has increased dramatically. The gross enrolment rate for secondary education was 113.8 per cent in 2020, while the gross enrolment rate for tertiary education was 49.3 per cent in 2016 (World Bank n.d.).

In 2020, the 15-24-year-old youth population was 9.20 million, of which 3.66 million (39.8 per cent) were in the current labour force and 5.54 million (58.9 per cent) were not in the current labour force. The labour force participation rate for youth declined in the last decade due to increasing participation in education. Figures 1.3 and 1.4 illustrate the breakdown of the 15+ population and the 15-24-year-old population, respectively, between those in the labour force and those not in the labour force in the third quarter of 2020. In 2020, Thailand's age 15+ population stood at 56.47 million people, of which 9.20 million were between the ages of 15 and 24. A total of 38.07 million people were in the Thai labour force in 2020, making the overall labour force participation rate 67.4 per cent. A total of 459,752 men and 195,899 women between the ages of 15 and 19 years old were in the labour force in 2020. The labour force participation rates for these young men and women stood at 20.8 and 9.1 per cent, respectively. For older youth between the ages 20 and 24, 1.71 million men and 1.29 million women were in the 2020 labour force, representing respective labour force participation rates of 70.2 and 54.0 per cent, respectively. Figure 1.5 shows that the labour force participation rates for youth have fallen over the last decade for both men and women. Much of the decline can be linked to increasing participation in education both at the secondary and tertiary levels.

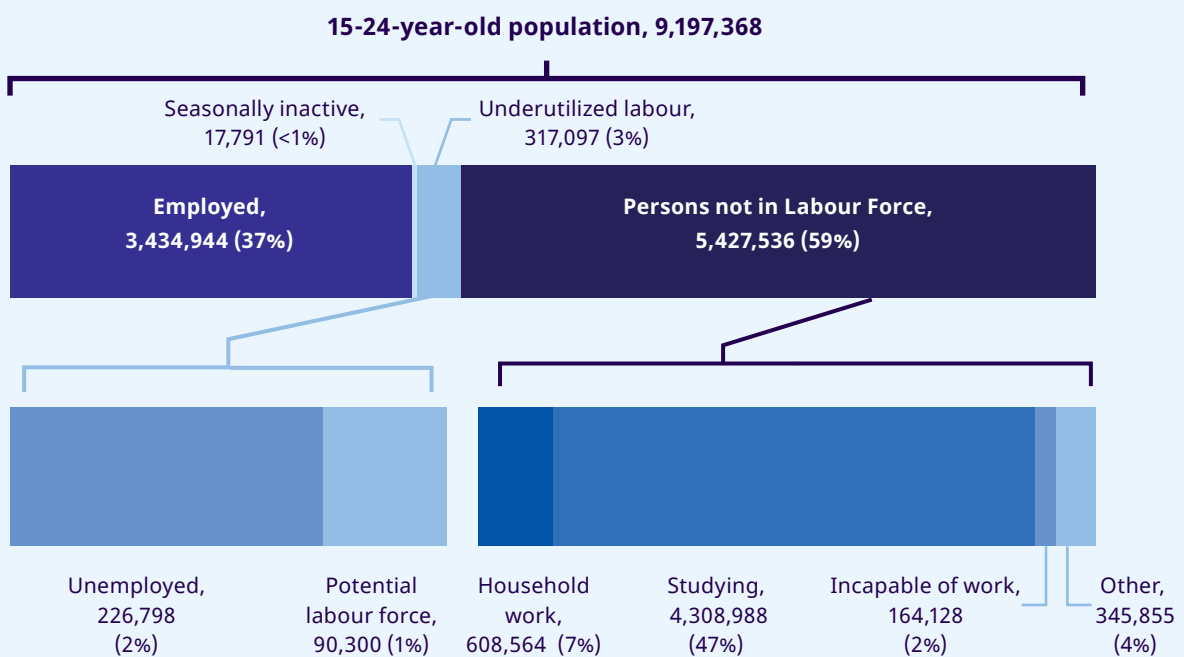
► Figure 1.3 Labour market breakdown of 15+ population, Q3 2020



Notes: Potential labour force includes individuals who are available potential jobseekers (available but not seeking work) and unavailable jobseekers (actively seeking but unavailable for work). The category, “incapable of work” includes individuals living with illness or disability, as well as those who are too old or young to work.

Source: Author’s calculations from the Q3 2020 Thai Labor Force Survey.

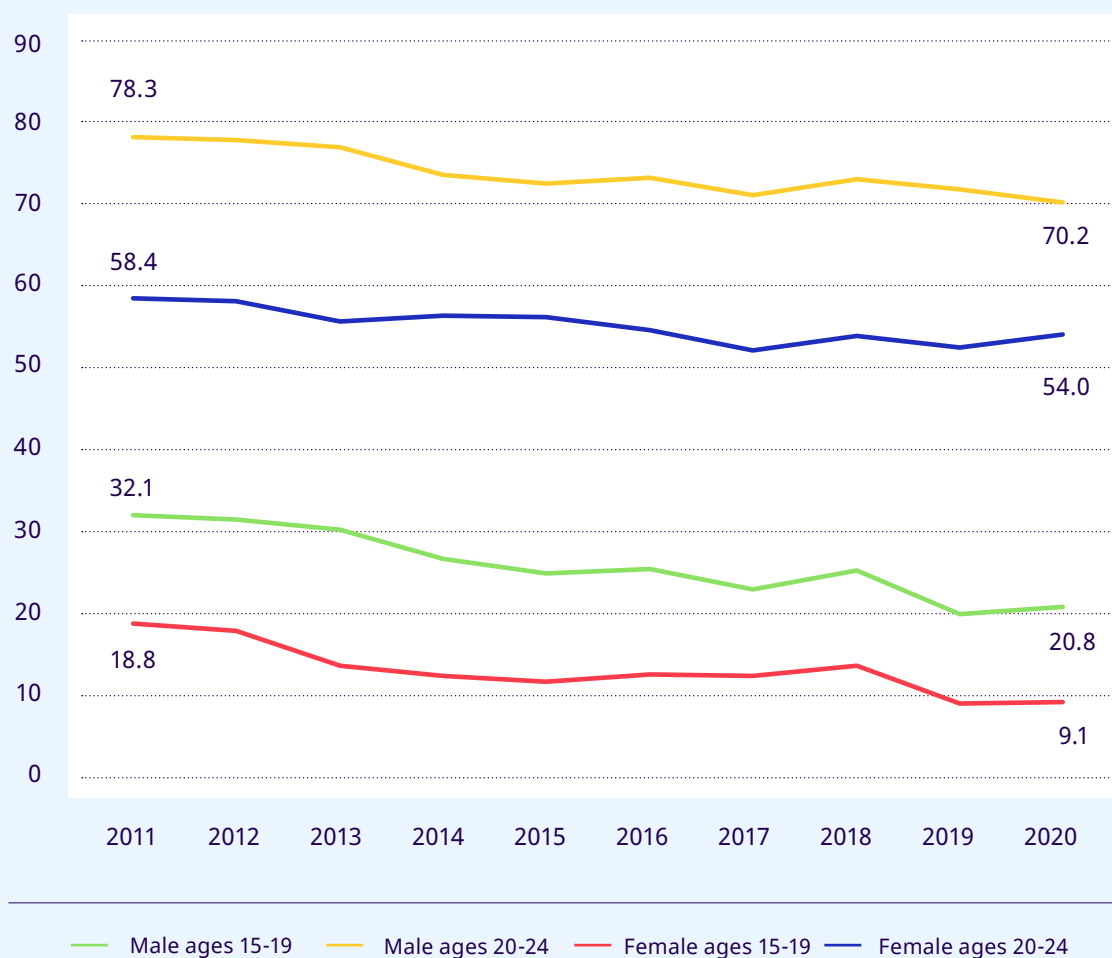
► Figure 1.4 Labour market breakdown of 15-24-year-old population, Q3 2020



Notes: Potential labour force includes individuals who are available potential jobseekers (available but not seeking work) and unavailable jobseekers (actively seeking but unavailable for work). The category, “incapable of work” includes individuals living with illness or disability, as well as those who are too young to work. Figures might not add up due to rounding.

Source: Author’s calculations from the Q3 2020 Thai Labor Force Survey.

► Figure 1.5 Youth labour force participation rates, Q3 2011-Q3 2020 (%)

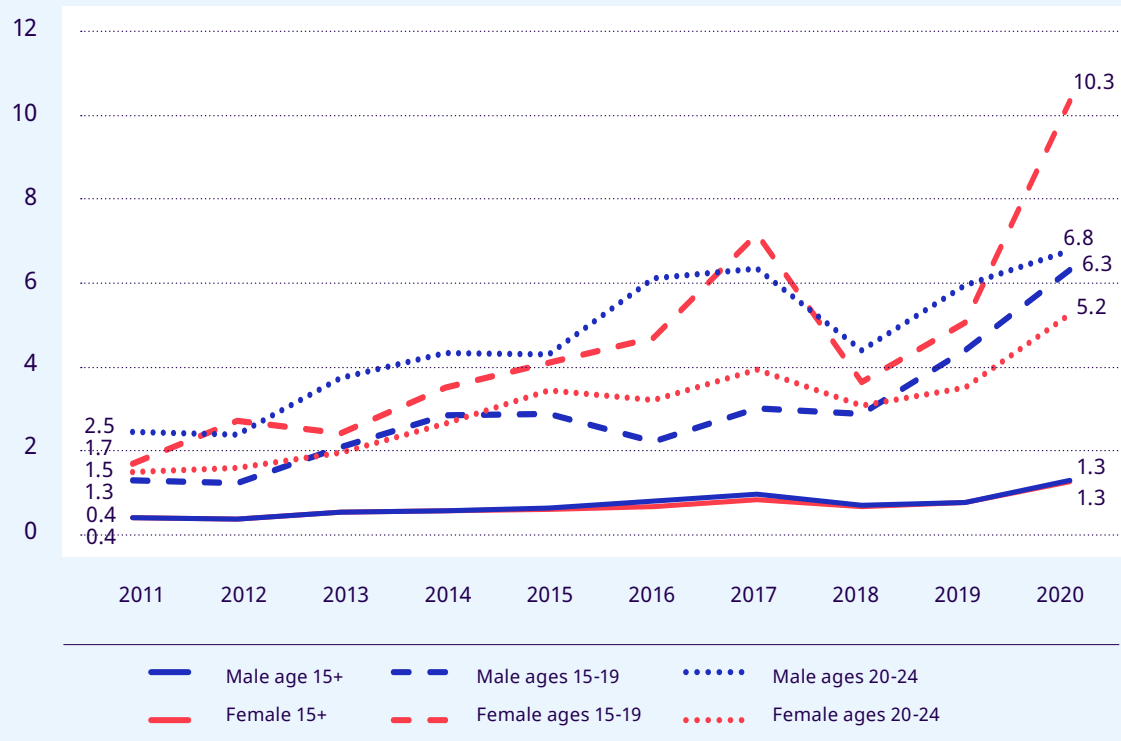


Notes: Potential labour force includes individuals who are available potential jobseekers (available but not seeking work) and unavailable jobseekers (actively seeking but unavailable for work). The category, “incapable of work” includes individuals living with illness or disability, as well as those who are too old or young to work.

Source: Author’s calculations from the Q3 2020 Thai Labor Force Survey.

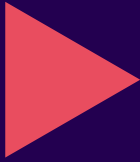
The unemployment rates for male youth increased from 1.3 to 6.3 per cent for 15-19-year-olds and 1.5 to 5.2 per cent for 20-24-year-olds between 2011 and 2020. The unemployment rates for female youth increased from 1.7 to 10.3 per cent for 15-19-year-olds and 2.5 to 6.8 per cent for 20-24-year-olds over the same period. In contrast, the 15+ unemployment rates for men and women are relatively low, peaking at 1.3 per cent for both in 2020. Thailand has experienced very low overall unemployment since its recovery from the Asian Financial Crisis in the early 2000s. Although Thailand’s overall unemployment rate is perennially low, it is important to note that available work is largely informal and concentrated in low-wage occupations (NSO 2020c). Figure 1.6 shows that over the last decade, the unemployment rate has hovered around 1.0 per cent for the overall labour force with a jump to 1.3 per cent in 2020 coinciding with the COVID-19 crisis. Like other countries, youth unemployment for both men and women are consistently higher than for the overall labour force. The unemployment rates for both men and women in the 15-24 age group increased over the last decade, whereas the overall unemployment rate remained steady, indicating that youth are increasingly having different labour market experiences than mid- and late-career workers. Men ages 15-19 and 20-24 years old faced unemployment rates of 6.3 and 5.2 per cent, respectively, while women ages 15-19 and 20-24 years old had unemployment rates of 10.3 and 6.8 per cent, respectively, in 2020.

► Figure 1.6 Unemployment rates by age, Q3 2011-Q3 2020 (%)



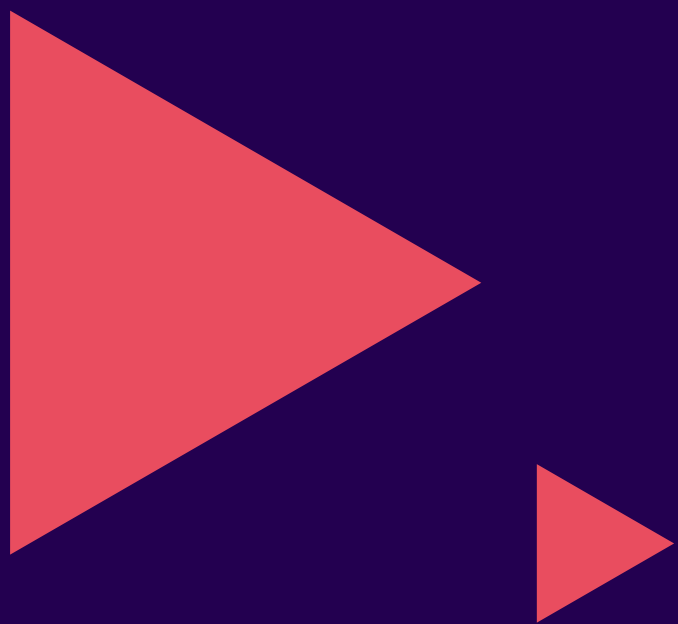
Source: Author's calculations from the Q3 2011-Q3 2020 Thai Labor Force Surveys.

This section has provided an overview of Thailand's labour market situation and dynamics that are relevant to youth employment and NEET status. The sectoral employment composition varies widely across provinces, with services and industry dominating the central part of the country, and agriculture in the peripheral provinces. Enrolment rates in secondary and tertiary education are high, indicating potential conflicts between human capital investments and the type and quality of employment opportunities available to young people. The rapid increases in the youth unemployment rates over the last decade may be a symptom of these overall dynamics. Beyond unemployment, there are concerns that youth are increasingly becoming disengaged with the labour market, whether it be because of an increased burden of care work within the household or because youth have become discouraged due to the lack of quality employment opportunities and drop out of the labour force entirely. The next section will define broad and disaggregated NEET measures that will be used to further explore trends in youths' experiences in the Thai labour market both across time and space.



2

Defining NEET





► 2. Defining NEET

2.1 Official NEET measure

Interest in youth NEET rates and the potential impacts of high NEET rates on the economy have gained traction over the last two decades, reflected in target 8.6 of the Sustainable Development Goals to substantially reduce the proportion of youth not in employment, education or training. The ILO defines NEET as “the percentage of youth (15-24 years old) who are not in employment and not in education or training” (ILO 2013). The indicator is calculated as follows:

$$NEET\% = \frac{N_{total} - (N_{emp} + N_{edu})}{N_{total}}$$

where N_{total} is the total number of youth 15-24 years old, N_{emp} is the number of youth employed, and N_{edu} is the number of youth in education and training but not in employment. A youth is considered employed if they have worked for pay or are self-employed over a brief reference period. A youth is considered to be in education if they are currently undertaking formal or informal education in areas that are classified by the International Standard Classification of Education (ISCED) (ILO 2013).

2.2 Heterogeneity of NEET youth

This NEET definition captures the percentage of youth aged 15-24 who are not in education and are either unemployed or inactive in the labour market. According to the ILO (2013, 40), comparing the NEET rate to the unemployment rate can provide a useful indicator of the severity of the problem of discouraged youth workers. However, young people who are categorized as NEET are not homogenous. In an ILO technical brief, Elder (2015) discusses how the NEET rate as a labour market indicator can be misleading. Elder (2015) shows that a similar aggregate NEET rate across a set of sample countries hides country-specific labour market dynamics.

Once the NEET rate is disaggregated into “unemployed youth” and “inactive non-students” it becomes clear that NEET is driven by unemployment in some countries and inactive non-students in others. When the samples are stratified by sex, it becomes apparent that unemployment drives NEET status among young men, while NEET women are more likely to be inactive non-students (Elder, 2015). The main lesson from this work is that the aggregate NEET indicator does not capture a single labour market experience for youth and that researchers and policymakers need to disaggregate the NEET measure to understand the labour market situation for youth who fall outside of employment, education and training.

Concerns over the use of the aggregate NEET measure have led to various disaggregated NEET measures; however, to date, there are no international standard disaggregated measures. For example, five disaggregated NEET measures defined by Eurofound (2016) and used for European Union countries include conventionally unemployed, unavailable, disengaged, opportunity seekers and voluntary NEET. The category “opportunity seekers” refers to youth who are waiting for desired work or educational opportunities, while “voluntary NEET” includes youth who are engaged in enrichment activities such as travel during a gap year. While these categories may be helpful for characterising the NEET situation and youth labour market experience in Europe, they might not be as useful for low- and middle-income countries from both conceptual and practical perspectives. Thus, specific country situations must be considered when defining disaggregated NEET categories for analysis.

2.3 Measuring NEET in Thailand

Elder (2015, 9) suggests that to understand a country's NEET situation more fully, one should consider using three separate measures of NEET: 1) unemployed; 2) inactive not in education; and 3) vulnerable employment.² With this guidance in mind, the following analysis measures NEET using both broad and disaggregated measures. The broad NEET measure follows the ILO definition covering youth 15-24 years of age who are not currently enrolled in school and who are not working at the time of the survey.³ This broad NEET measure is then disaggregated based on whether an individual is seeking work and available for work. The three measures include: 1) unemployed; 2) inactive not in education; and 3) marginal labour market attachment, where marginal labour market attachment is composed of unavailable jobseekers and available potential jobseekers.⁴ The definition for each category is illustrated in figure 2.1.

► Figure 2.1 Defining disaggregated measures of NEET

		<u>Available for work</u>	
		Yes	No
Seeking employment	Yes	Unemployed	Marginal labour market attachment (unavailable jobseeker)
	No	Marginal labour market attachment (available potential jobseeker)	Inactive not in education

In addition to these disaggregated measures of NEET, the specific country context of Thailand calls for an additional related vulnerable employment measure. The concept of NEET was developed within a high-income country context with mature formal labour markets. However, despite its upper-middle-income country status, more than half of Thailand's labour force is informal with much of the rural population engaged in agriculture (NSO, 2020). Youth who are not currently in education may be contributing family workers who may or may not be paid directly for their work contributions. While a contributing family worker is considered employed by national standards and

² Note that "vulnerable employment" is not strictly NEET. Elder (2015, 7) argues that limited labour market and educational opportunities may force youth into low-quality employment with few opportunities for career growth and stability.

³ Due to data limitations, measures of training outside of formal education are not available.

⁴ "Unavailable jobseekers" and "available potential jobseekers" are analysed together under the category, "marginal labour market attachment," due to small numbers in the Thai labour market.

contributes towards household welfare, concerns about this category of worker mirrors concerns about NEET youth. One concern is that youth who are not in education and are engaged in unpaid and largely informal work may have limited labour market opportunities. Furthermore, youth not in education and who are contributing family workers may not utilize skills gained from previous educational investments and, as mentioned by Elder (2015), work in jobs that potentially provide limited opportunities for gaining additional skills and training necessary for future career growth.

The data analysis in this study primarily relies on individual-level survey data from the Thailand Labor Force Survey (LFS) covering the years 2011 to 2020 (third quarter).⁵ The LFS data is used to construct various NEET indicators at the national and provincial levels.⁶ The first is the broad measure of NEET as defined by the ILO and captures all types of NEET youth. The second more narrow measure captures conventionally unemployed youth. The third concept captures NEET youth who are inactive and not in education. Finally, the fourth category is youth who are marginally attached to the labour market, meaning that they are either available potential job seekers or unavailable job seekers. The LFS is also used to capture youth who are contributing family workers who are not in education.

All measures are expressed as a share of the 15-24-year-old population. In addition to the individual-level data from the LFS, the analysis is supplemented with provincial and national level data collected from aggregate statistical reports from the National Economic and Social Development Council (NESDC) and the National Statistical Office of Thailand (NSO).

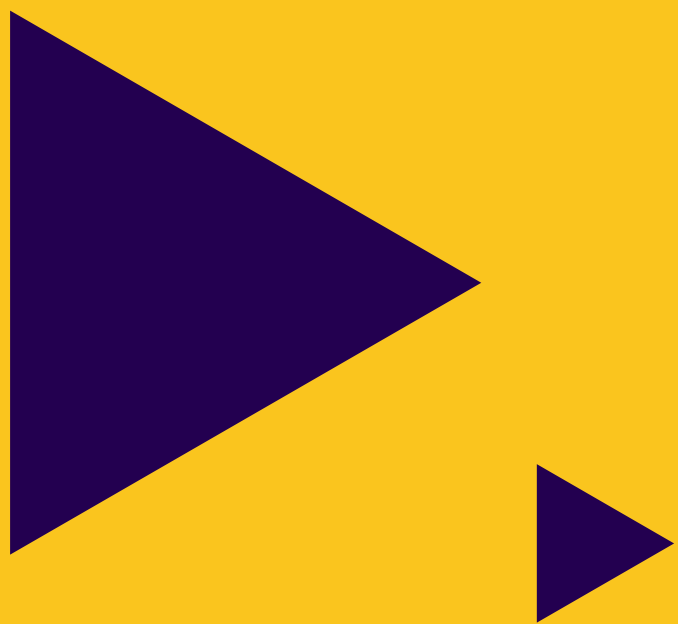
⁵ Third quarter LFS data is used because it best captures “full employment” given the agricultural seasons in Thailand (Susangkornkarn and Chalamwong 1996). Another reason for the choice is because the third quarter of 2020 captures the labour market following the lifting of COVID-19 containment measures starting in May 2020 and the resumption of economic activities.

⁶ Table A.1 in Annex 1 contains a detailed explanation of the coding of the NEET and contributing family worker and not in education variables.





NEET at the national level





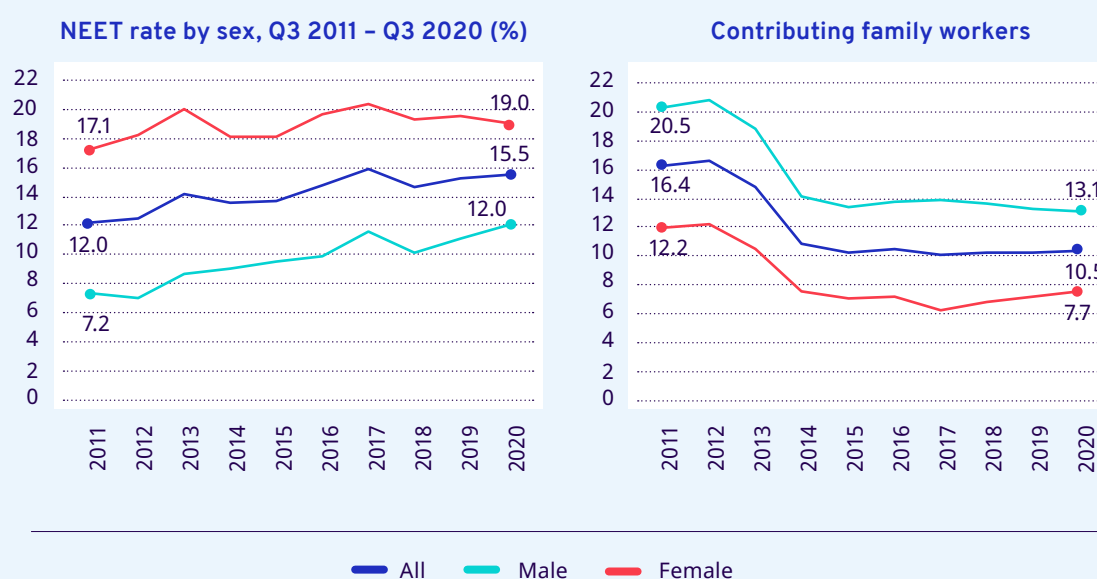
► 3. NEET at the national level

3.1 NEET and contributing family workers not in education at the national level

The number of young women in NEET status over the 2011-2020 period changed from 865,125 (17.1 per cent) to 863,216 (19.0 per cent), and for young men from 379,245 (7.2 per cent) to 558,430 (12.0 per cent). Contributing family worker status decreased from approximately 616,155 to 349,364 (12.2 to 7.7 per cent) for young women and from approximately 1.09 million to 612,424 (20.5 to 13.1 per cent) for young men over the same period. The analysis begins with an overview of trends in NEET and contributing family workers who are not in education at the national level over the period of 2011 to 2020. The analysis is disaggregated by sex to highlight that young men and young woman in Thailand have different labour market experiences. The number of youth ages 15 to 24 in NEET status was almost 1.42 million out of a total of almost 9.20 million in 2020. Of the total NEET youth in 2020, 558,430 were men and 863,216 were women. In addition, a total of 961,788 youth were classified as contributing family workers in 2020, including 612,424 men and 349,364 women. To understand how these figures compare to the overall youth population, figure 3.1 depicts the national NEET rates (broad measure) and incidence of contributing family work for those not in education for both young men and women over the period of 2011 to 2020. A few observations are worth noting. First, the incidence of NEET among Thailand's youth has risen steadily over the last decade, from 7.2 to 12.0 per cent for men and 17.1 to 19.0 per cent among women. Second, NEET rates are much higher for young women than men.

The related measure, contributing family work for individuals not in education, has fallen since 2011. While young women are more likely to be classified as NEET, it is young men who are more likely to be contributing family workers who are not in education in Thailand.

► Figure 3.1 NEET and contributing family workers not in education as shares of the 15-24-year-old population, Q3 2011-Q3 2020 (%)

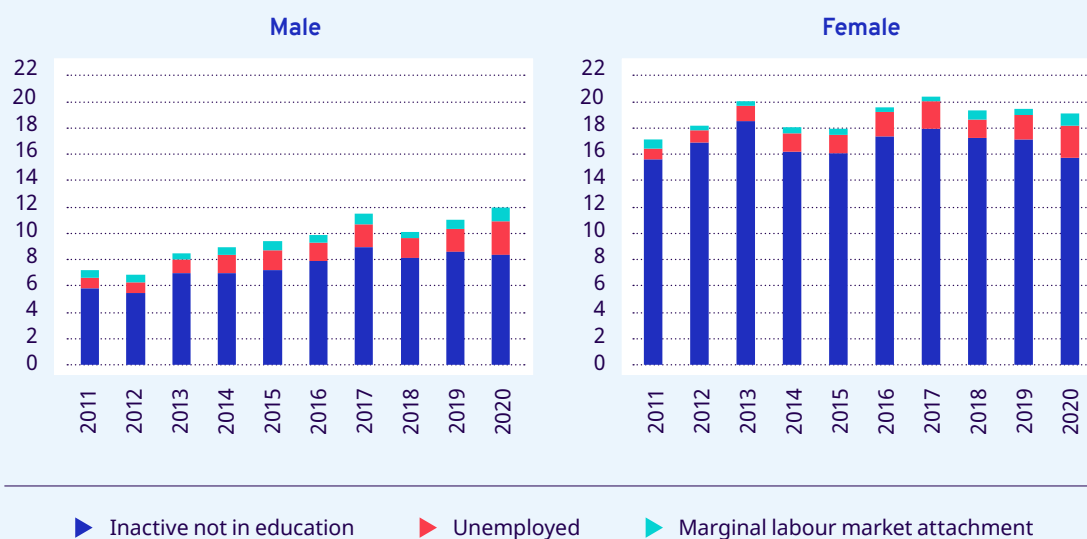


Source: Author's calculations from the Q3 2011-Q3 2020 Thai Labor Force Surveys.

This large difference between NEET rates by sex illustrated in figure 3.1 demonstrates the need to disaggregate the broad NEET measure into the three disaggregated measures – inactive not in education, unemployed, and marginally attached to the labour market. Overall, 391,871 male and 714,779 female youth were inactive and not in education in 2020.

The analysis below in section 3.3 shows that the gender discrepancy is largely due to women's role in household care. In terms of unemployment, 118,035 male and 107,420 female youth were unemployed in 2020, representing 2.5 per cent of the youth population. Likewise, the number of youths who were marginally attached to the labour market as either unavailable jobseekers or available potential jobseekers was 48,524 men and 41,016 women in 2020, representing less than 1.0 per cent of the youth population.

► **Figure 3.2 Disaggregated NEET measures as shares of the 15-24-year-old population by gender, Q3 2011-Q3 2020 (%)**



Source: Author's calculations from the Q3 2011-Q3 2020 Thai Labor Force Surveys.

The majority of NEET youth are classified as inactive and not in education, particularly women.

Figure 3.2 further presents disaggregated NEET rate trends for both young men and women over the period 2011-2020. For both young men and women, the largest group of NEET over the entire period is inactive and not in education. For young men, the incidence of being inactive and not in education has increased over the last decade from 5.9 to 8.4 per cent. Young women in an inactive and not in education status ranged between 15.5 and 17.9 per cent but fell to 15.7 per cent in 2020. The reason why young women have much higher rates of being inactive and not in education is largely due to care work in the household. The reasons for inactivity will be explored in depth below.

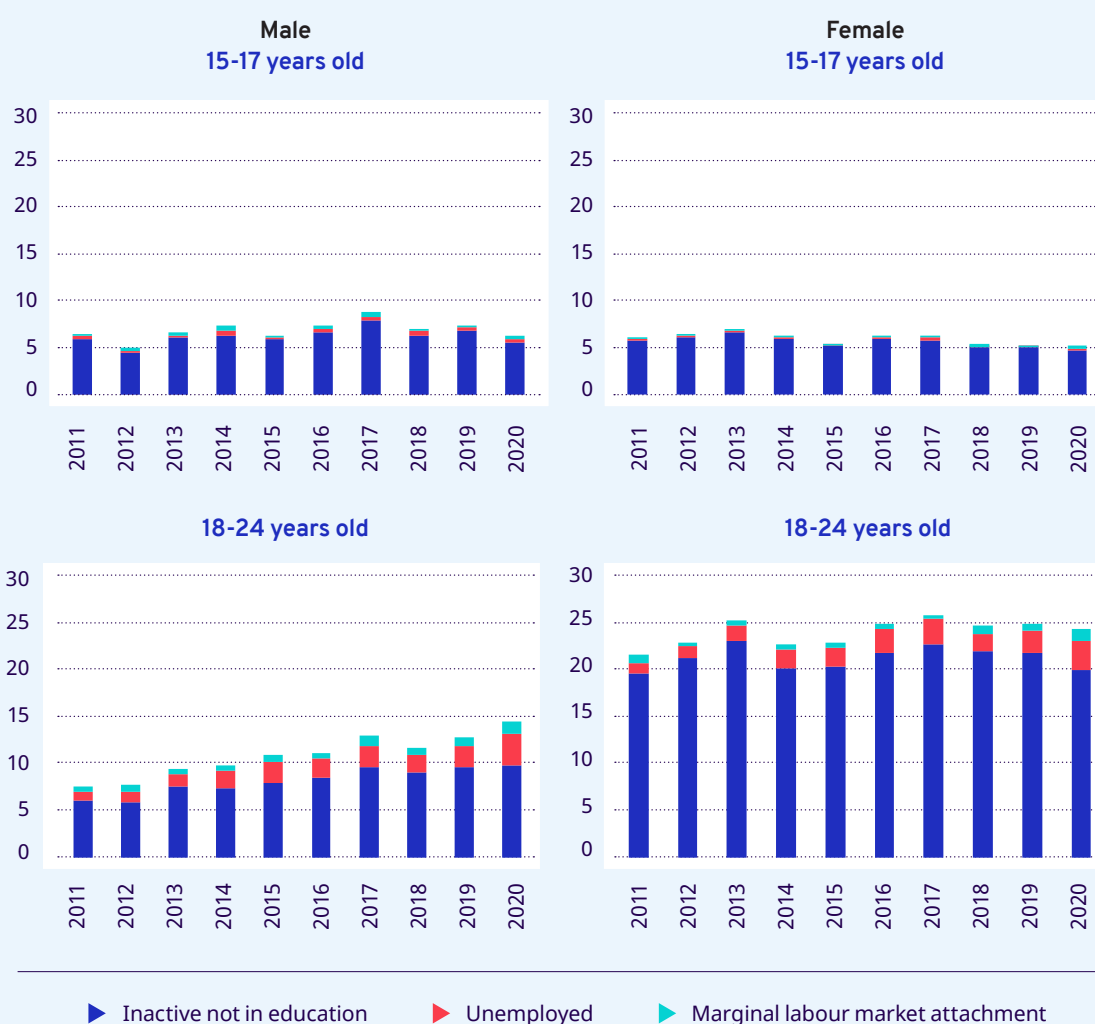
Figure 3.2 also indicates that conventional unemployment has increased among both young men and women. The share of male youth who are unemployed has increased from 0.8 to 2.5 per cent, while the share of female youth who are unemployed has increased from 0.9 to 2.4 per cent between 2011 and 2020. Although the share of youth who are unemployed has increased, the share remains low compared to labour market inactivity for youth not in education. Additionally, the group of youth who are marginally attached to the labour market – including discouraged workers who have given up looking for employment – is very small. Marginally attached men account for no more than 1.0 per cent of male youth over the period, while marginally attached women account for at most 0.9 per cent of female youth. The takeaway from these statistics is that NEET status is growing among Thai youth, but that unemployment and marginal labour market attachment rates are moderate relative to the inactive not in education status.

3.2 Disaggregated NEET measures by demographic groups

The national aggregate NEET statistics may mask NEET dynamics within various demographic groups. This section explores differences in the disaggregated NEET measures by gender stratified by age, marital status, education, location, and presence of agricultural activities. Figure 3.3 presents disaggregated NEET rates by age groups: 15-17-year-olds and 18-24-year-olds. The youth are grouped in this way for two reasons. First, 15-17-year-olds have access to tuition-free upper secondary education through grade 12 (although not compulsory) and thus are more likely to be in education. The 18-24-year-old age group does not have similar access to free education and is not as likely to be enrolled in school.

Second, the Labour Protection Act B.E. 2541 (1998) stipulates several restrictions on employing youth between the ages 15-17, such as requirements to report youth employees to labour inspectors, limitations on the types of jobs youth can perform, restrictions on work hours, among others. These requirements and limitations in effect make hiring youth ages 15-17 more costly to employers, thus potentially making it more difficult for this group to find employment.

► **Figure 3.3** Disaggregated NEET measures as shares of the 15-24-year-old population by age and gender, Q3 2011-Q3 2020 (%)

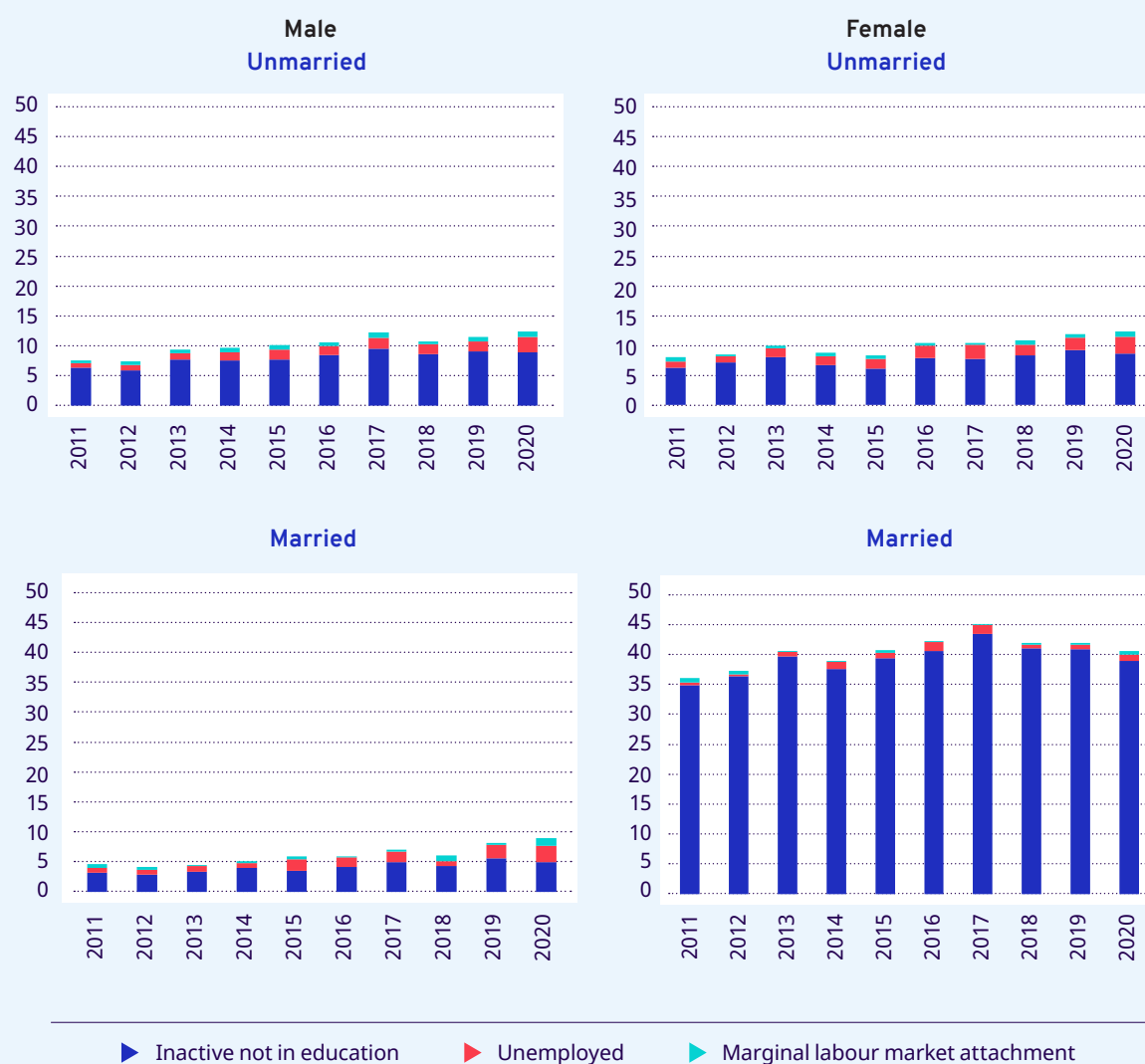


Source: Author's calculations from the Q3 2011-Q3 2020 Thai Labor Force Surveys.

In 2020, a total of 81,246 of 1.30 million (6.3 per cent) 15-17-year-old male youth and 477,184 of 3.36 million (14.2 per cent) 18-24-year-old male youth were in NEET status. For young women, 66,860 of 1.26 million (5.3 per cent) 15-17-year-olds and 796,356 of 3.28 million (24.3 per cent) 18-24-year-olds were in NEET status in 2020. Relative to 18-24-year-olds, NEET rates across all disaggregated measures are lower for 15-17-year-olds who have access to tuition-free education.

Figure 3.3 confirms that for younger individuals who are more likely to be in education, NEET rates are relatively low, ranging from 5.1 to 8.8 per cent for 15-17-year-old men and 5.3 to 7.1 per cent among 15-17-year-old women. Even though there are legal constraints to hiring 15-17-year-olds, this is not reflected in the share of 15-17-year-olds who are unemployed which averages less than 0.5 per cent over the period. The NEET rate for 18-24-year-old men has risen from 7.4 to 14.2 per cent over the last decade. The rise is driven by increases in all three disaggregated NEET measures, particularly unemployment. NEET women in the 18-24 age range increased from 21.6 to 24.3 per cent of the age group over the period. NEET status for this group is primarily composed of individuals who are not in education, inactive in the labour market and largely engaged in household care, although the rate of inactive not in education has decreased in recent years. Like for men, unemployment has increased significantly over the past decade for this group.

► Figure 3.4 Disaggregated NEET measures as shares of the 15-24-year-old population by marital status and gender, Q3 2011-Q3 2020 (%)

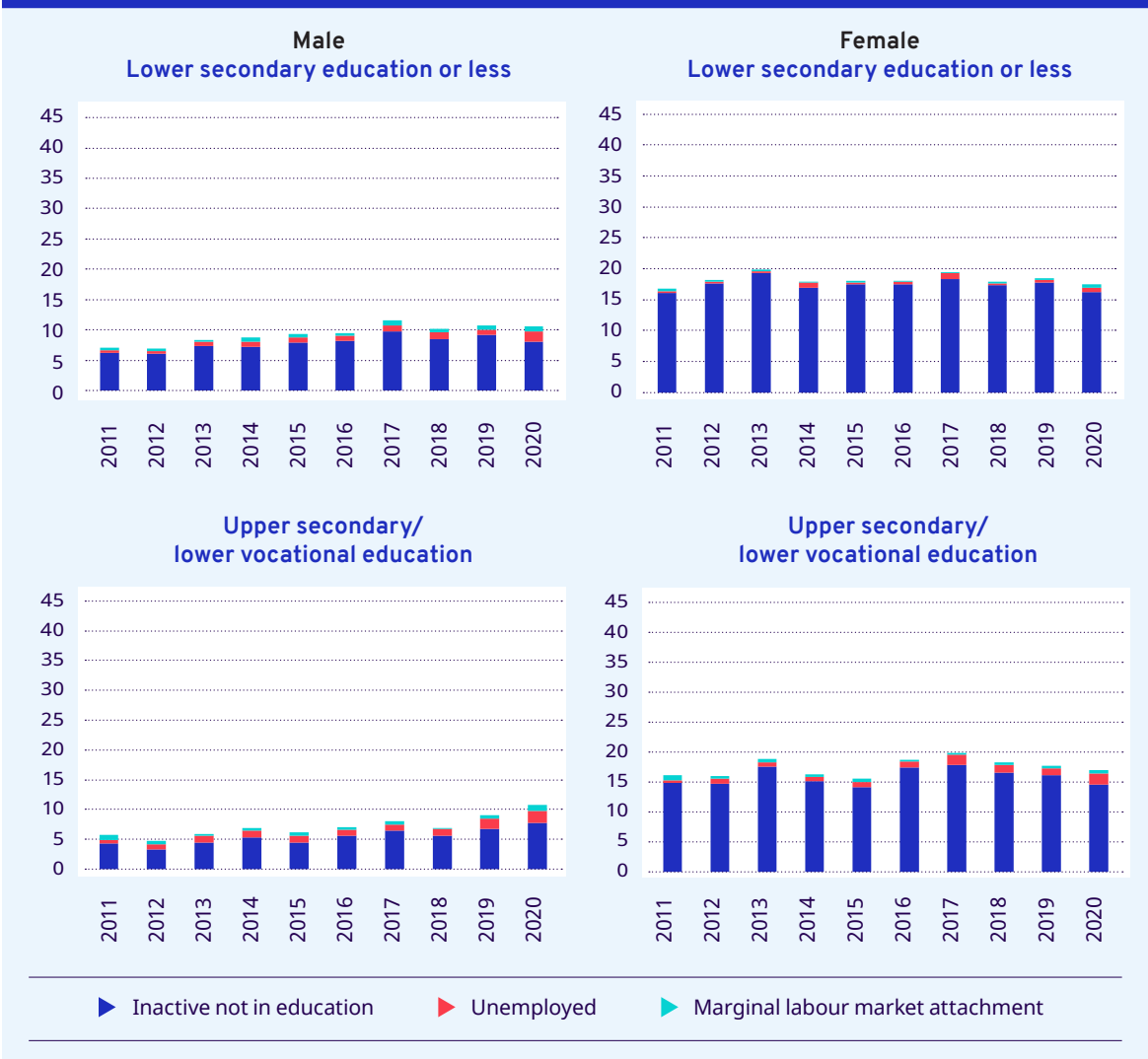


Source: Author's calculations from the Q3 2011-Q3 2020 Thai Labor Force Surveys.

A total of 421,913 of 1.04 million (40.7 per cent) married young women were classified as NEET in 2020. The high NEET rate among married young women is driven primarily by the inactive and not in education status. Figure 3.4 presents NEET rates among married and unmarried young men and women.⁷ The proportion of male youth who are married averages 15.0 per cent over the period. For women the proportion of female youth who are married declined significantly from 32.0 per cent in 2011 to 23.0 per cent in 2020. For both unmarried young men and women, NEET rates never reach more than 13.0 per cent for either group. However, NEET status diverges between married young men and married young women due to social norms and gendered roles within the married household. Married young men are unlikely to be NEET with low rates of labour market inactivity, unemployment and marginal labour market attachment. Married young men are likely to be engaged in the labour market either in paid work or as contributing family workers (mean of 22.0 per cent over the period) to support the married household.

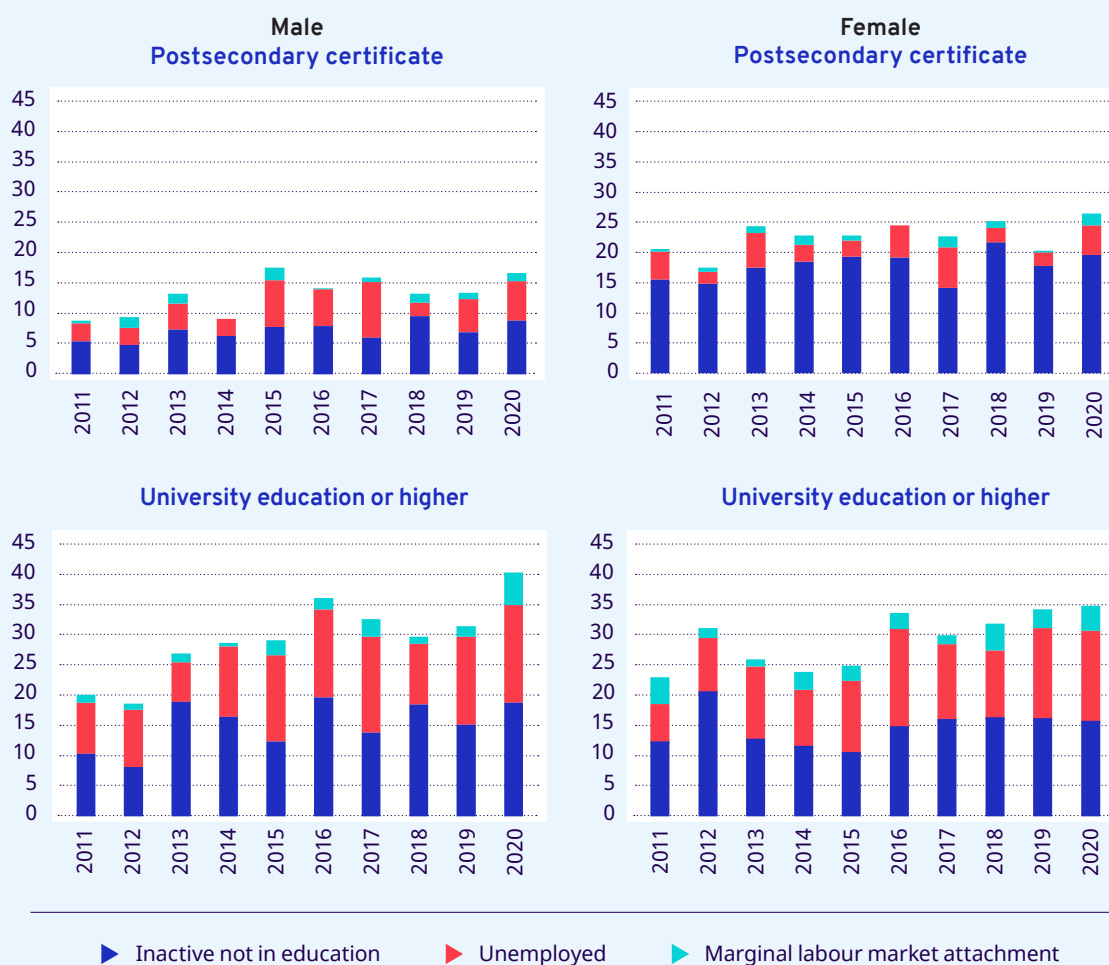
Married young women, on the other hand, have very high NEET rates hovering around 40.0 per cent, primarily driven by the inactive not in education status, which is associated with household care responsibilities. It is important to note that the rates of marginal labour market attachment are very low, which means very few married young women with household care responsibilities are also seeking work. However, further qualitative analysis is needed to determine whether married young women who are inactive and not in education would like to have paid market work in the present or future. This information is important from the point of view of developing appropriate training and reskilling for transition back into the labour market.

► **Figure 3.5 Disaggregated NEET measures as shares of the 15-24-year-old population by completed education and gender, Q3 2011-Q3 2020 (%)**



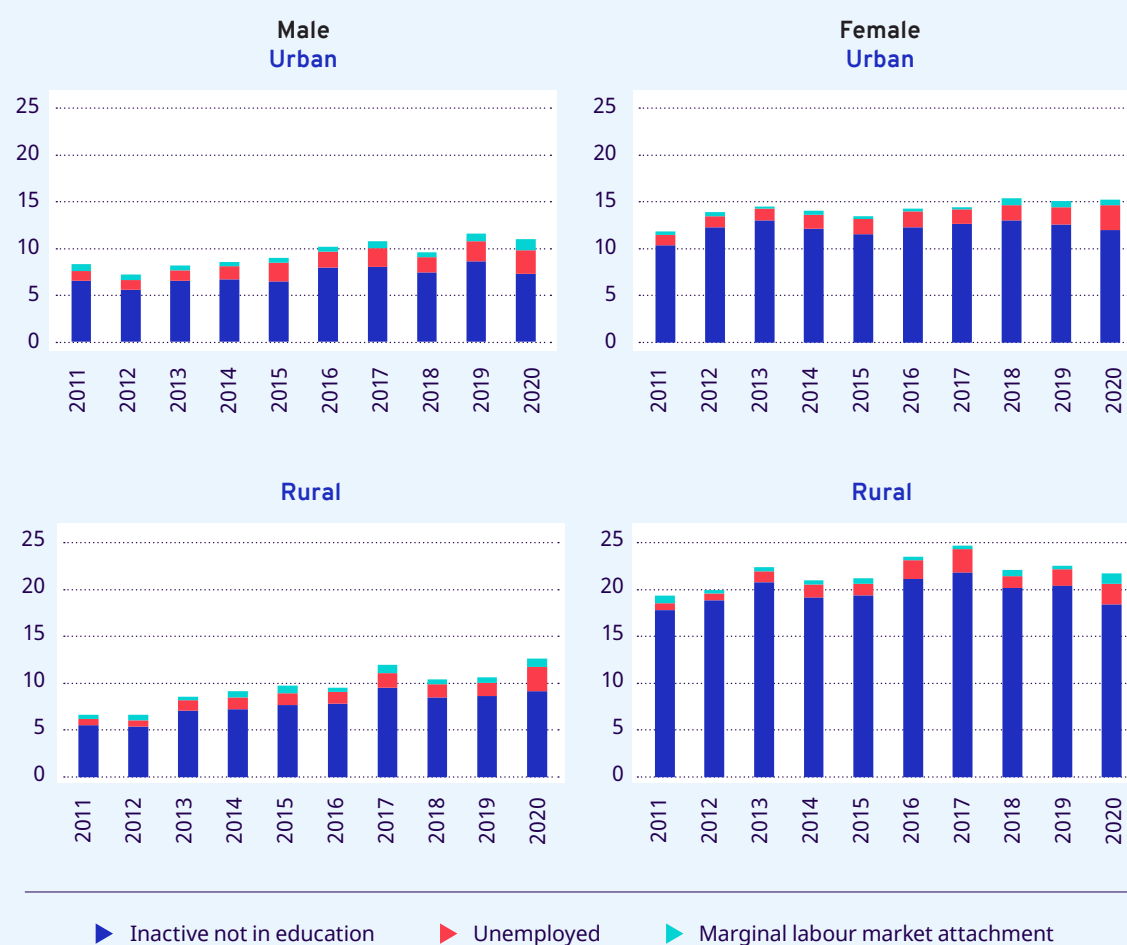
⁷ The category "Unmarried" includes divorced, separated, and widowed individuals. The analysis could not be performed separately for these groups due to a small sample size among this young age group.

► Figure 3.5 (cont.)



Source: Author's calculations from the Q3 2011-Q3 2020 Thai Labor Force Surveys.

Youth with post-secondary education have relatively high incidences of unemployment and marginal labour market attachment relative to youth with secondary education or less. In 2020, out of 169,952 young male university graduates, 26,993 (15.9 per cent) were unemployed and 9,249 (5.4 per cent) were marginally attached to the labour market. For the 370,816 young university educated women, 55,540 (15.0 per cent) were unemployed and 15,064 (4.1 per cent) were marginally attached to the labour market. Figure 3.5 disaggregates NEET by both gender and completed education. The first group, lower secondary or less, captures youth who have completed compulsory education or less. The second group, upper secondary/lower vocational is equivalent to a high school diploma. The third category, postsecondary certificate, is generally a technical degree, while university or higher captures individuals who complete a four-year bachelor's degree or higher. It is immediately clear that individuals with high school credentials or lower are less likely to be NEET (both broad and disaggregated measures) than those with post-secondary education. Youth with university education or higher require further comment. Bachelor's degree holders have the highest NEET rates among all youth. While the previous analysis suggests that young women are the most likely to be inactive and not in education, young women with university degrees are *less* likely to be inactive and not in education than university educated young men in 2020. Furthermore, university educated young men and women have high incidences of unemployment, reaching 15.9 per cent of male youth and 15.0 per cent of female youth in 2020. Marginal labour market attachment, including discouraged workers, is also highest among this group reaching 5.4 per cent among young men and 4.1 per cent young among women in 2020. These findings are consistent with previous research by Vivatsurakit and Vechbanyongratana (2021) which speaks to increasing difficulties among young and highly educated individuals to match with appropriate work in Thailand's largely agriculture-and industry-based economy.

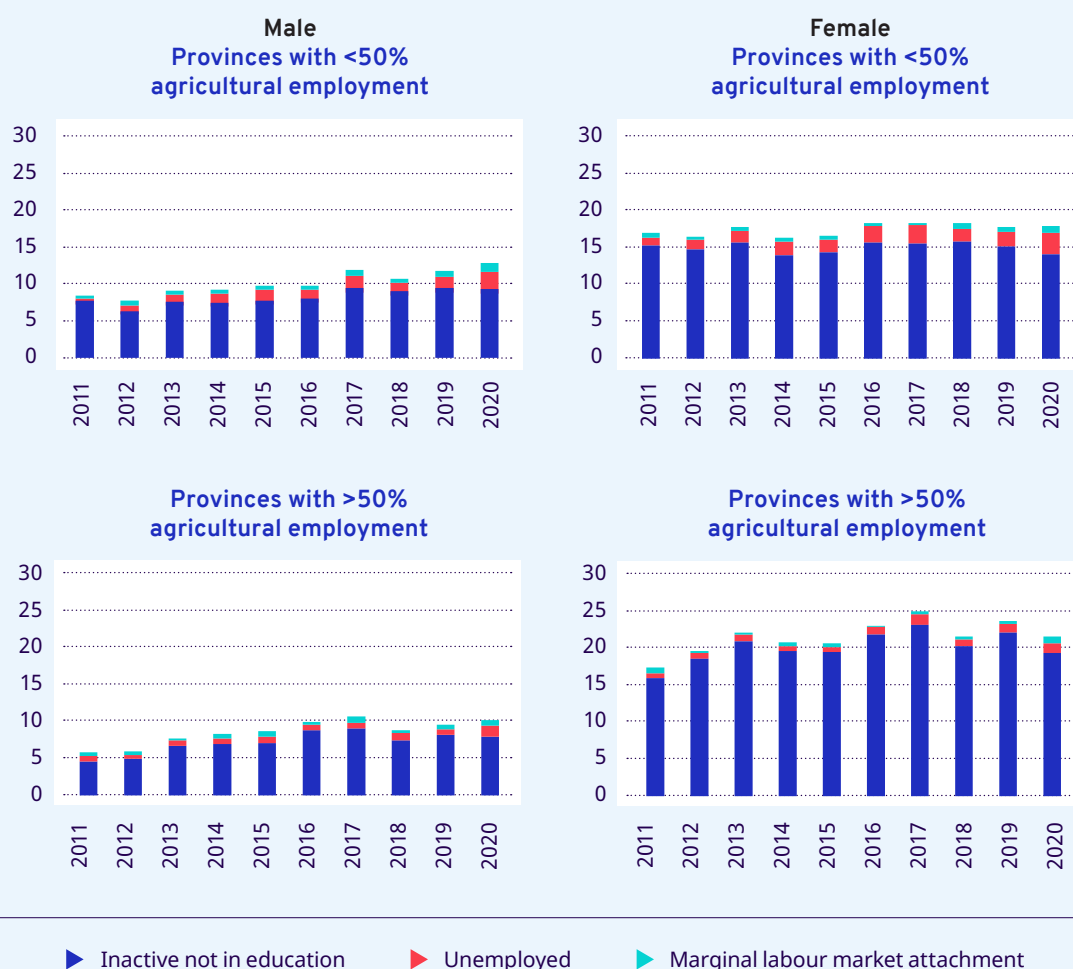
► **Figure 3.6 Disaggregated NEET measures as shares of the 15-24-year-old population by location and gender, 2011-2020 (%)**

Source: Author's calculations from the Q3 2011-Q3 2020 Thai Labor Force Surveys.

In 2020, young women living in urban areas with more diverse labour market opportunities were less likely to be NEET (15.4 per cent) than young women living in rural areas (21.8 per cent). Young men living in urban and rural areas experience similar NEET rates (11.0 and 12.7 per cent, respectively). The next analysis considers urban and rural labour markets. Figure 3.6 shows that NEET rates among urban and rural young men are similar for both broad and disaggregated measures. NEET status among young women is different, however. In urban areas, overall NEET rates are lower than in rural areas.

The difference is driven by differences in the propensity to be inactive and not in education. The annual averages for those who were inactive and not in education were 12.3 per cent for urban female youth and 19.9 per cent for rural female youth over the ten-year period. This may be a reflection of more diverse labour market opportunities for young women living in urban areas.

► **Figure 3.7 Disaggregated NEET measures as shares of the 15-24-year-old population by provincial agricultural labour share and gender, Q3 2011-Q3 2020 (%)**



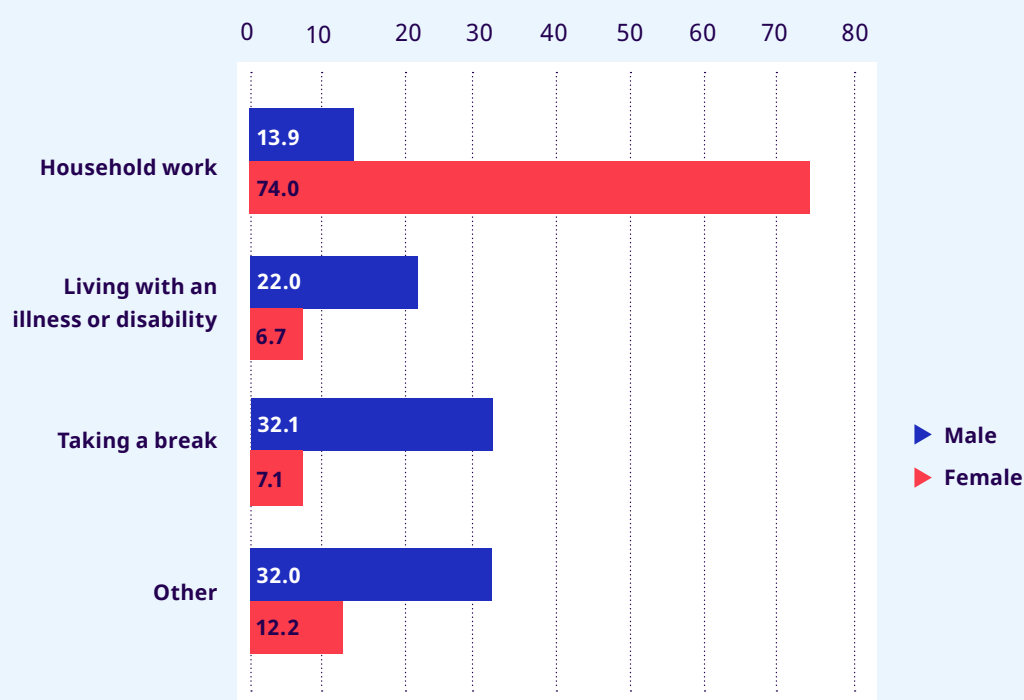
Source: Author's calculations from the Q3 2011-Q3 2020 Thai Labor Force Surveys.

Young women from provinces where more than half of employment is in agriculture were more likely to be NEET (21.5 per cent) than young women from provinces with less than half of workers in agriculture (17.9 per cent) in 2020. However, the incidence of unemployment is higher for young women from provinces with less than half of employment is in agriculture (2.9 per cent compared to 1.3 per cent). Figure 3.7 displays the NEET rates by provinces dominated by agricultural employment. "Agricultural province" refers to provinces where the agricultural share of employment is over 50.0 per cent. Not surprisingly, the results mirror the urban-rural results presented in figure 3.6. Male youth in provinces that are heavily agricultural have similar NEET rates across all measures to men in provinces that have lower rates of agricultural employment. Female youth living in the provinces with high levels of agricultural employment have higher NEET rates, particularly in the disaggregated inactive and not in education measure. On the other hand, the incidence of unemployment is higher among young women living in provinces with lower levels of agricultural employment.

3.3 Reasons why youth are unavailable for work or not seeking work

The previous section alluded to reasons why youth in Thailand are unavailable for work, particularly the high rates of inactivity among young women. This section explores the reasons why youth are unavailable or not seeking work in more detail. Since youth who are inactive and not in education or are marginally attached to the labour market makes up less than 13.0 per cent of all youth, this analysis relies on pooled data over the ten years under observation.

► Figure 3.8 Reasons why unavailable for work (inactive and not in education) (%)



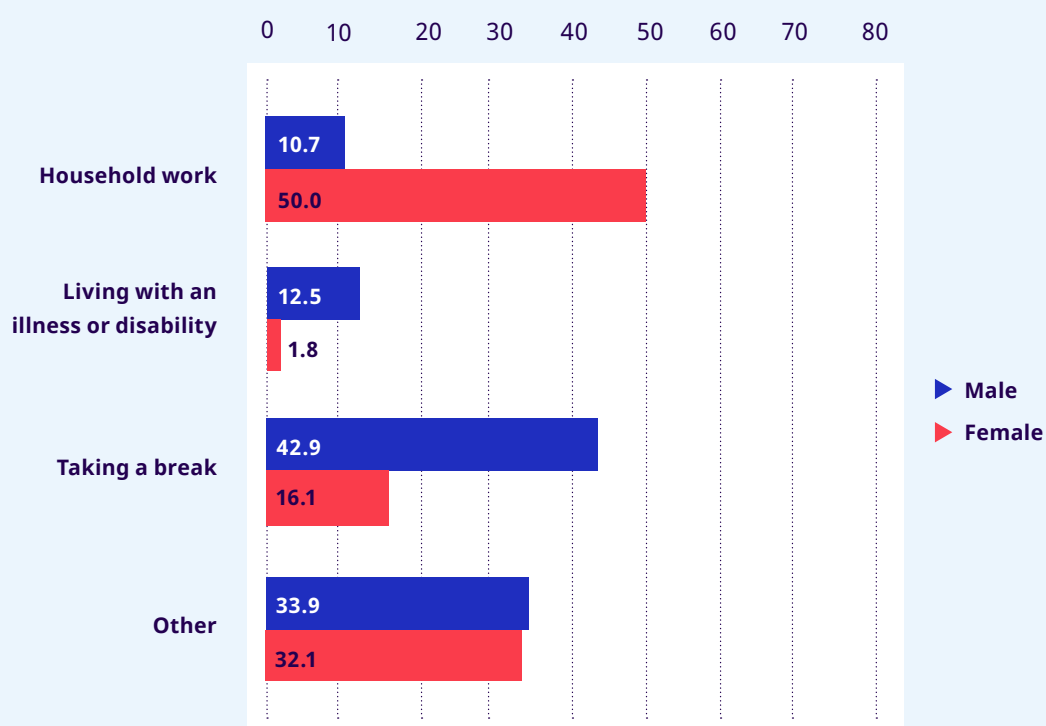
Source: Author's calculations from pooled data from the Q3 2011-Q3 2020 Thai Labor Force Surveys.

Among NEET women who are inactive and not in education, 74.0 per cent are engaged in household care work. In contrast, young men who are inactive and not in education are more likely to be unavailable for work because they are living with an illness or disability (22.0 per cent) or taking a break from education and the labour market (32.1 per cent). Individuals who are inactive in the labour market and not in education make up 12.0 per cent of youth. The Labor Force Survey collects information on why individuals are unavailable for work. Figure 3.8 shows the distribution of reasons why youth who are inactive and not in education are unavailable for work at the time of the survey. Almost three-quarters of young women who are unavailable to work are engaged in caring for households, 6.7 per cent report that they are living with an illness or disability, and 7.1 per cent are taking a break from work. The large share of young women who are inactive and not in education by reason of household work is consistent with the high rates of young married women who are inactive and not in education found in the analysis above. For young men, the pattern is different. Only 13.9 per cent of young men indicate that they are unavailable for work because of household responsibilities, while 22.0 per cent of young men are unavailable due to illness/disability and about one-third are unavailable because they are taking a break.

For almost one-third of young men the reason they are unavailable for work is classified as “other,” which includes reasons such as “feel they are too young for work,” “waiting for the work season” and other reasons otherwise unspecified.

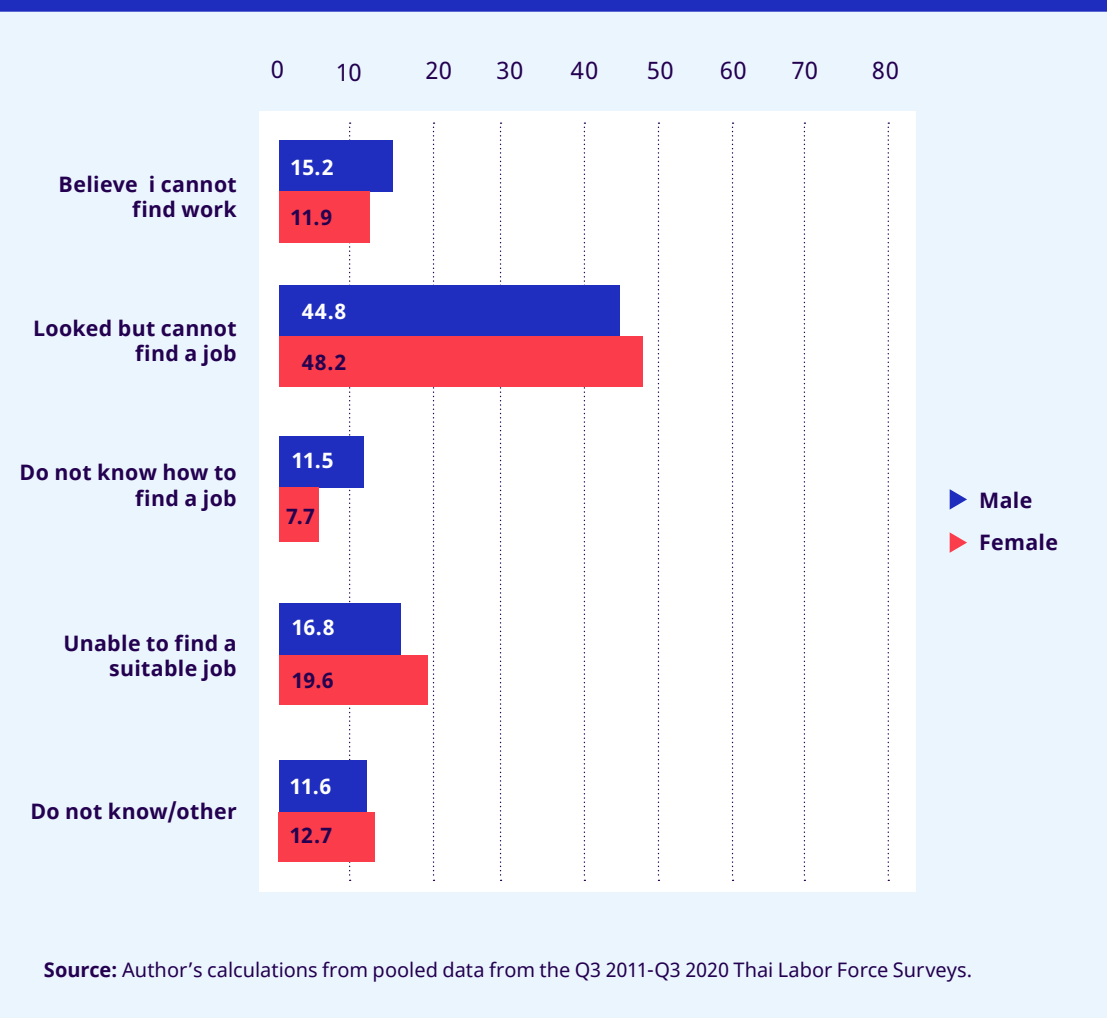
Only 0.6 per cent of all youth are marginally attached to the labour market over the last decade. Within the group of seeking but unavailable for work, the reasons why they are unavailable are similar to the inactive and not in education group. According to figure 3.9, young women are largely engaged in household care work while men are largely taking a break from the labour market. About one-third of both young men and young women are likely to have the reason for being unavailable for work listed as “other.”

► Figure 3.9 Reasons why unavailable for work (unavailable job seekers) (%)



Source: Author's calculations from pooled data from the Q3 2011-Q3 2020 Thai Labor Force Surveys.

► Figure 3.10 Reasons why not seeking work (available potential job seekers) (%)



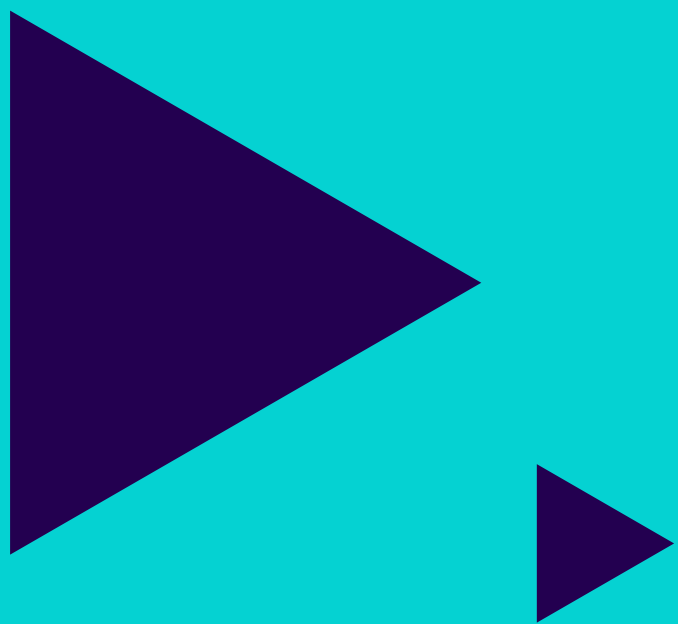
Of the 0.5 per cent of youth who were available potential job seekers over the period, the most common reasons why they were not seeking employment were that they looked but could not find a job or were unable to find a suitable job. For the marginally attached group who are available potential jobseekers, their reasons for not seeking employment are displayed in figure 3.10. Among both young men and young women, approximately half indicate that they have looked but cannot find work. This group is normally called “discouraged workers” and is often of great concern for policymakers. However, in the Thai case, the data indicates that discouraged workers are not a common phenomenon. In fact, this group for both young men and young women make up less than 1.0 per cent of all youth in Thailand. In addition, the analysis shows that 17.0 per cent of young men and 20.0 per cent of young women who are available but not seeking work indicate that they are unable to find suitable work.

Although the overall percentage of youth who are unable to find suitable work is currently low, this statistic needs to be monitored since educational attainment among youth is increasing at a faster rate than the growth of commensurate employment.



▶4

Spatial distribution of NEET youth in Thailand





► 4. Spatial distribution of NEET youth in Thailand

This section provides descriptive provincial-level analysis to illustrate the spatial distribution of NEET youth in Thailand. While the national figures are helpful for understanding the overall NEET picture, the provincial analysis is helpful for understanding variations in the status of youth within Thailand's labour market across different areas of the country. The four NEET indicators described above, as well as the contributing family worker indicator, are calculated at the provincial level for both 2011 and 2020, stratified by gender. The comparison across 2011 and 2020 reveals that there are significant changes in the distribution of NEET youth over time.⁸

The incidence of NEET status for both young men and young women increased across most provinces in Thailand between 2011 and 2020. Figure 4.1 shows the percentage of youth at the provincial level who are in NEET status (broad measure) in 2011 and 2020. For male youth, NEET rates were generally less than 10.0 per cent in most of the country. A cluster of provinces in central Thailand, Ubon Ratchathani in the northeast and a few provinces in the south had NEET rates over 10.0 per cent for young men. In 2020, the picture looks quite different with NEET rates of over 10.0 per cent for most of the country with several provinces in the south with NEET rates over 20.0 per cent.

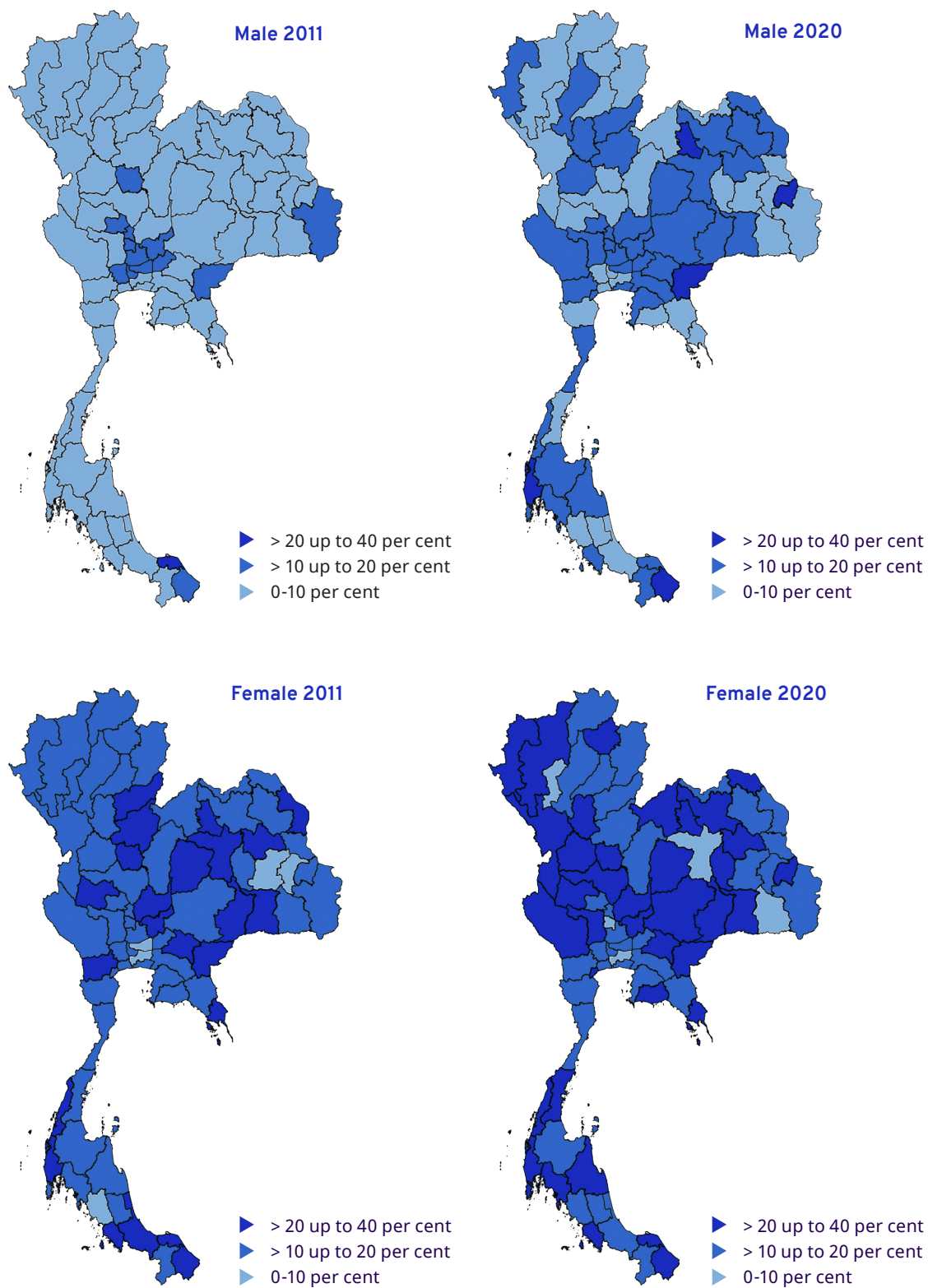
For young women, the NEET rate is significantly higher than the male NEET rate in both benchmark years. In 2011, most provinces saw a NEET rate among young women of over 10.0 per cent. Ten years later in 2020, most provinces had a NEET rate of over 20.0 per cent among young women. Highly urban Bangkok is the only area to maintain a NEET rate for young women under 10.0 per cent over the ten-year period.

Young women are more likely to be inactive and not in education than young men; however, the incidence of being inactive and not in education increased for young men and largely remained stable for young women across the country between 2011 and 2020. As was discussed above, the NEET rate masks the labour market dynamics facing youth in Thailand. The disaggregated NEET measures vary considerably across provinces. Figure 4.2 presents the proportion of youth by province who are inactive and not in education. At first glance young women are more likely than young men to be inactive and not in education across most of the country in both time periods.

The analysis in the previous section revealed that this is largely because young women are more likely to be involved with care for the household. The proportion of young men who are inactive and not in education at the provincial level increased between 2011 and 2020, particularly in the central part of the country and the east. For young women, rates of inactivity remained relatively stable over the period; however, the pattern of areas with high rates of inactivity shifted west between 2011 and 2020. The highest rates of inactivity are currently located in the western and upper north-eastern areas of the country.

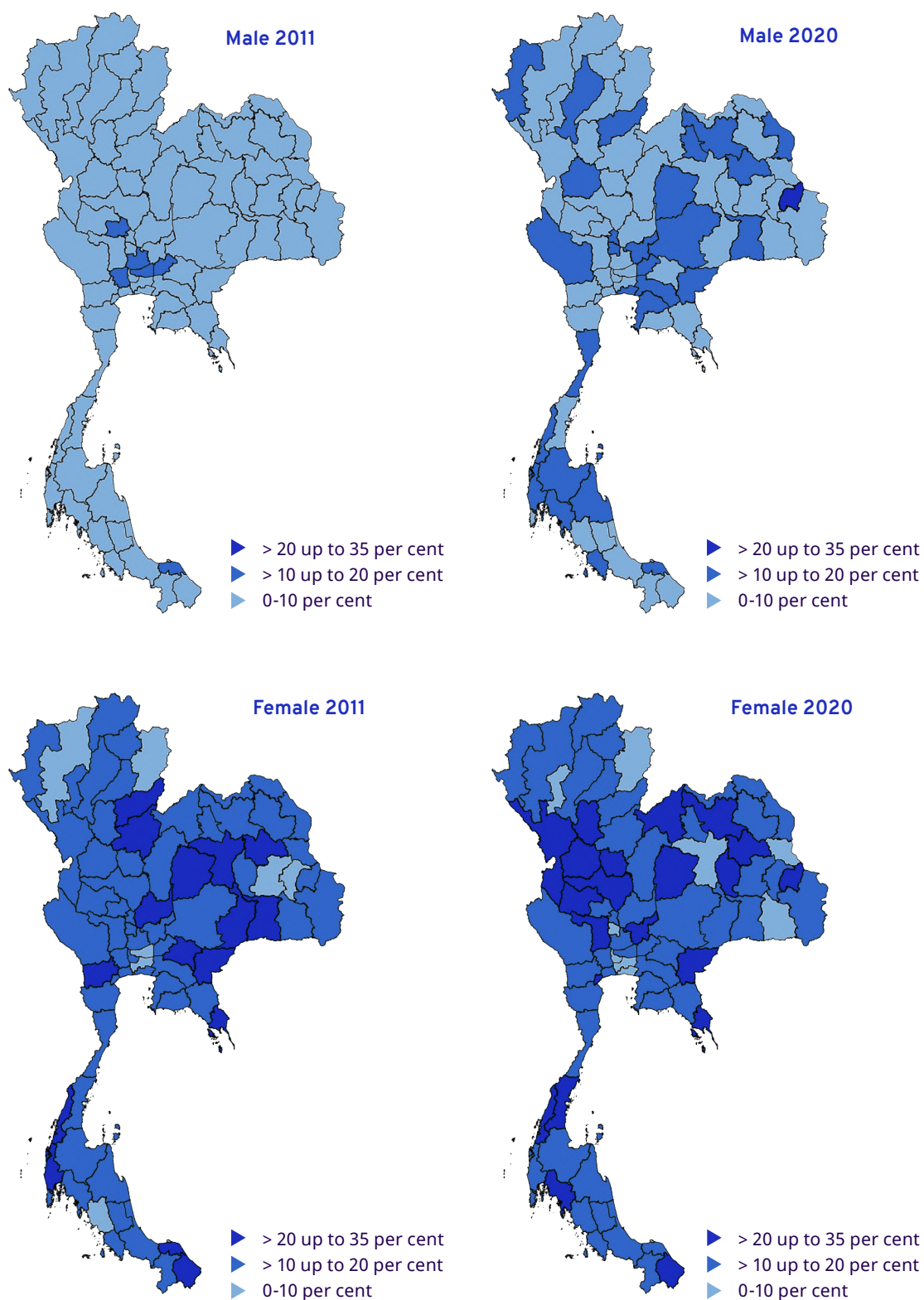
⁸ Some of the provincial level changes in the NEET measures are likely due in part to the COVID-19 situation. The underlying data used to construct the maps are reported in Annex 2.

► **Figure 4.1 NEET status as a share of the provincial 15-24-year-old population, Q3 2011 and Q3 2020 (%)**



Source: Author's calculations from the Q3 2011 and Q3 2020 Thai Labor Force Surveys.

► **Figure 4.2 Inactive not in education status as a share of the provincial 15-24-year-old population, Q3 2011 and Q3 2020 (%)**



Source: Author's calculations from the Q3 2011 and Q3 2020 Thai Labor Force Surveys.

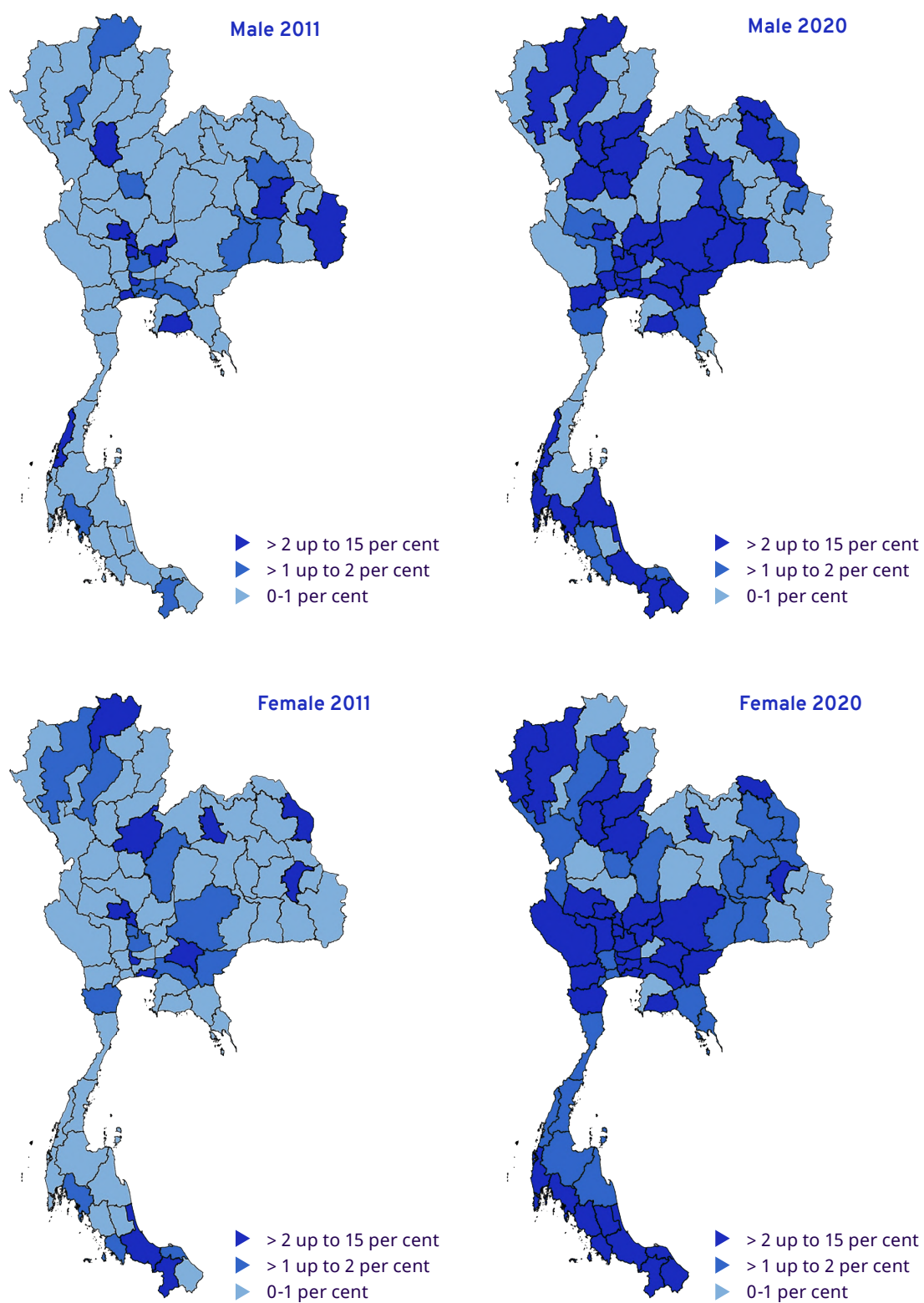
The share of youth who are unemployed increased for both young men and young women across Thailand between 2011 and 2020 in part due to the COVID-19 crisis. Figure 4.3 presents the share of male and female youth who were unemployed in 2011 and 2020. For both young men and young women, the share of unemployed youth was less than 2.0 per cent in 2011 for most provinces. However, the number of provinces with shares of unemployed youth over 2.0 per cent was much larger in 2020 (partially affected by the COVID-19 crisis discussed in section 6). For male youth, the proportion of youth who are unemployed in 2020 is relatively high in provinces in the central area surrounding Bangkok, the northeast, north-central, north, and lower south. The pattern is similar for young women, although women experienced higher levels of unemployment in the western part of the country compared to men. It is worth noting that areas in the central region with higher proportions of unemployed male and female youth overlap with areas that have higher rates of industrial employment.

Marginal labour market attachment increased for both young men and young women between 2011 and 2020, particularly in the upper northeast and the south for young men and in the lower northeast for young women. As for youth who have marginal labour market attachment (including discouraged workers), figure 4.4 illustrates that the overall rates are relatively low. In 2011, most provinces experienced marginal labour market attachment rates of less than 2.0 per cent. For young men, there are increases in marginal labour market attachment in the upper northeast and the south between 2011 and 2020. For young women, increases in marginal labour market attachment between 2011 and 2020 are primarily clustered in the lower northeast. Given the relatively low rates observed of marginal labour market attachment observed across both space and time, the phenomenon of discouraged youth workers is not prevalent in the Thai context.

The share of youth who are contributing family workers who are not in education largely declined between 2011 and 2020; however, the status remains common in agricultural areas, particularly in the lower northeast, west, and northwest areas of the country. The last measure, contributing family workers who are not in education, is not technically NEET since youth with this status are considered employed. Youth who are contributing family workers and who are not in education are of concern since their work may represent employment that is not skill- or career-building and may make limited use of prior human capital investments.

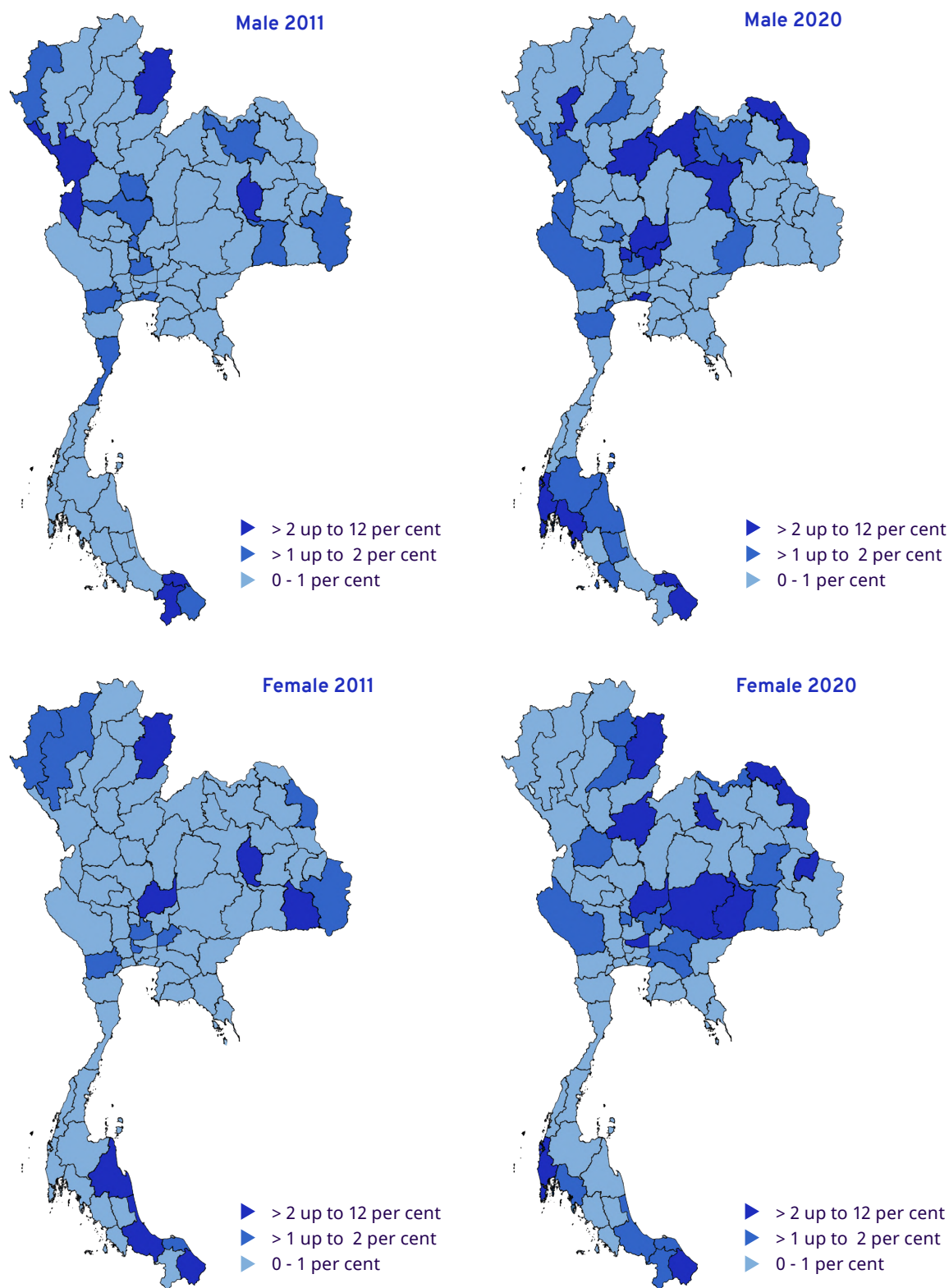
The maps in figure 4.5 mirror the national trend in contributing family work for youth not in education in that there is a general reduction over time over most of the country. Youth contributing family workers who are not in education remain common in agricultural areas, particularly in the lower northeast, west, and northwest areas of the country. In areas with more industry- and service-based economies, among both young men and young women it is relatively uncommon to find youth who are not in education and engaged as contributing family workers.

► **Figure 4.3 Youth unemployment status as a share of the provincial 15-24-year-old population, Q3 2011 and Q3 2020 (%)**



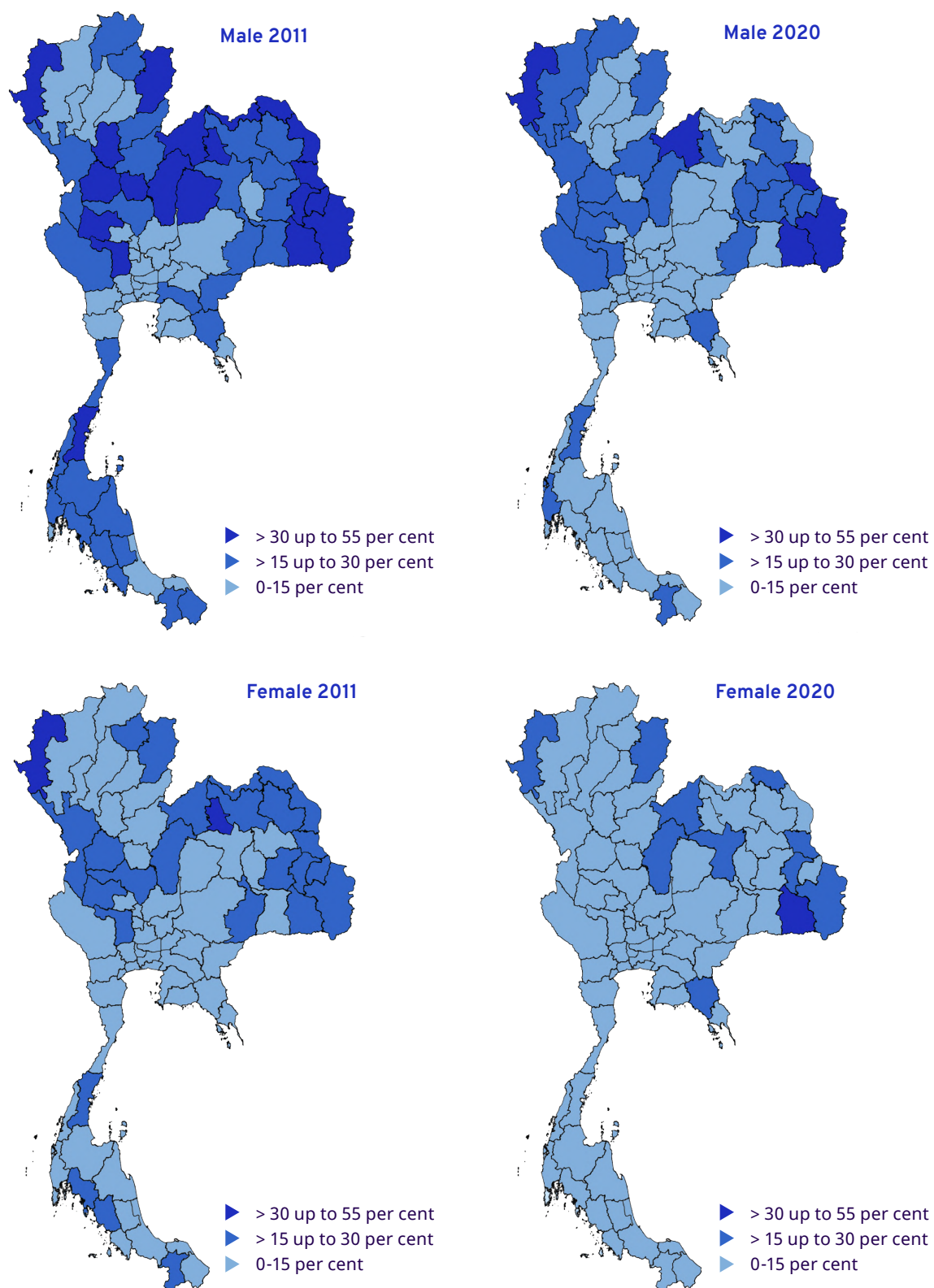
Source: Author's calculations from the Q3 2011 and Q3 2020 Thai Labor Force Surveys.

► **Figure 4.4 Marginal labour market attachment status as a share of the provincial 15-24-year-old population, Q3 2011 and Q3 2020 (%)**



Source: Author's calculations from the Q3 2011 and Q3 2020 Thai Labor Force Surveys.

► **Figure 4.5 Contributing family workers not in education status as a share of the provincial 15-24-year-old population, Q3 2011 and Q3 2020 (%)**



Source: Author's calculations from the Q3 2011 and Q3 2020 Thai Labor Force Surveys.

Focus on NEET status and contributing family work in Bangkok, Nakhon Ratchasima, Rayong and Yala provinces

The provincial-level analysis indicates that there is significant variation in the prevalence of NEET status and contributing family work across provinces. This box focuses on the situations of four provinces – Bangkok, Nakhon Ratchasima, Rayong and Yala – that have divergent economic and labour market characteristics.⁹ The various measures of NEET and contributing family work for youth not in education measured in 2020 are reported in table 4.1.

► **Table 4.1 NEET and contributing family work measures for selected provinces, Q3 2020 (%)**

Indicator	Bangkok		Nakhon Ratchasima	
	Male (%)	Female (%)	Male (%)	Female (%)
NEET	9.0	9.0	18.8	25.4
Inactive not in education	4.8	6.3	16.1	16.9
Unemployed	3.3	2.5	2.6	5.4
Marginal labour market attachment	0.9	0.3	0.2	3.1
Contributing family worker not in education	1.7	2.4	13.2	4.7

Indicator	Rayong		Yala	
	Male (%)	Female (%)	Male (%)	Female (%)
NEET	8.5	22.0	10.1	16.3
Inactive not in education	2.9	19.6	3.9	10.5
Unemployed	5.5	2.4	5.9	4.2
Marginal labour market attachment	0.0	0.0	0.2	1.6
Contributing family worker not in education	5.7	5.5	17.1	10.9

Note: Figures might not add up due to rounding.

Source: Author's calculations from the Q3 2020 Thai Labor Force Survey.

Bangkok is Thailand's most populous provinces and is the centre of both economic and political activities. Bangkok's labour force consists of more than 5.4 million workers in 2020 engaged in a large variety of economic activities primarily in industry and services. The workforce is relatively highly educated with 42.0 per cent holding a university degree or higher and 39.0 per cent with lower secondary schooling or less. The per capita Gross Provincial Product (GPP) in 2019 was THB 637,397 (US\$21,161). Given Bangkok's relatively dynamic labour market, NEET rates are lower than the national average. The low rate of inactive and not in education youth among women in Bangkok is particularly of note. Bangkok is also characterized by low rates of contributing family work, which is common in the most urban areas surrounding Bangkok.

⁹ See Annex 2 for the incidence of NEET and contributing family workers across all provinces.

Nakhon Ratchasima is the largest and most populous province in Thailand's north-eastern region. The labour force is 1,340,769 people strong, with 42.0 per cent and 16.0 per cent engaged in agriculture and industry, respectively. Educational attainment of the working population in Nakhon Ratchasima is similar to other provinces outside the Bangkok metropolitan region with 66.0 per cent with completed education at the lower secondary level or lower and 14.0 per cent with tertiary education credentials. The per capita GPP was THB 121,068 (US\$4,019) in 2019. The NEET rates are significantly higher than the national average in Nakhon Ratchasima. Inactivity among male youth is particularly high, almost matching the rate for young women. The proportions of youth who are unemployed or marginally attached to the labour market are especially pronounced among women. Young men working as contributing family workers is much higher than for Bangkok and close to the national average, which is consistent with the large share of agricultural workers in the province.

Rayong is one of Thailand's highly industrial provinces located in the eastern seaboard. Of the 595,794 workers in Rayong, 18.0 per cent work in agriculture and 31.0 per cent work in industry. Owing to the presence of significant industrial activities, the per capita GPP is the highest in the nation at THB 988,748 (US\$32,826). The educational attainment of the working population is 60.0 per cent with lower secondary education or less and 22.0 per cent with university education or higher. The NEET rate for young men is lower than the national average, while for young women it is higher than the national average. Looking at the disaggregated NEET indicators reveals that rates of inactive and not in education male youth are very low, while the proportion of young men who are unemployed is higher than the national average. For young women, inactive and not in education rates are high. For both young men and young women, marginal labour market attachment – including discouraged workers – is not an issue according to available data. Given the highly industrial nature of the province, it is not surprising that the rates of contributing family work are relatively low.

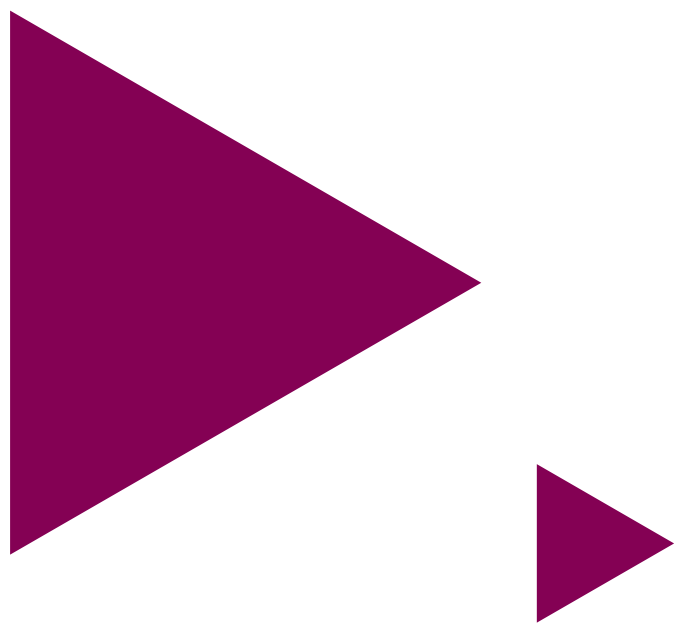
Yala is one of the three southern border provinces that has long been the centre of civil unrest, which has created economic uncertainty. One of the poorer provinces in the country, the per capita GPP is 98,501 (US\$3,270), which is roughly ten times less than in Rayong. The economy is primarily based on agriculture with 65.0 per cent of Yala's 229,160 workforce working in the sector. Only 9.0 per cent of the working population have completed a university degree and 63.0 per cent have lower secondary education or less. Overall, Yala's NEET rates are lower than the national average, but the share of youth who are unemployed is relatively high. Contributing family worker rates are also higher than the national average for both young men and young women.

Source: Labour force statistics from NSO (2020a) and GPP estimates from NESDC (2019).



► 5

**Demographic and
socio-economic correlates
with NEET status**





► 5. Demographic and socio-economic correlates with NEET status

The previous sections detailed the patterns of NEET status at the national level over time and the spatial distribution of NEET status in 2011 and 2020. This section will consider the socio-economic correlates with the disaggregated NEET measures and contributing family workers who are not in education to better understand risk factors.

The analysis takes advantage of the individual-level data in the LFS to perform probit regression analysis to identify correlates with various measures of NEET as binary dependent variables. The use of limited dependent variable regression models to identify correlates with NEET status is standard in the literature (see for example, Kelly and McGuinness (2015), Akinyemi and Mushunje (2017), Salvà-Mut, Tugores-Ques and Quintana-Murci (2018), Zudina (2017), Cabral (2018), Gutiérrez-García, et al. (2018), Wickremeratne and Dunusinghe (2018), Pattinasarany (2019) and Orbeta Jr, Corpus and Araos (2021)), but has not been used in the Thai case.¹⁰

The analysis is stratified by gender and pools together the ten years of data for the analysis.¹¹ The control variables are at the individual, household, and provincial levels. The controls at the individual level are age, education level, marital status, head of household status and location (urban/rural). The number of members of living in the household is the household-level variable. At the provincial level, the share of labour in agricultural work and the provincial unemployment rate are used as controls. The analysis additionally considers the intersection between marital status and education level to provide further understanding of the relationship between gender, education and marriage on NEET and contributing family work status. A summary of the results for men and women are presented in tables 5.1 and 5.2, respectively.¹²

¹⁰ Probit regression – a type of limited dependent variable analysis – was chosen because the outcome variables are binary and take on the values of zero and one. For individuals who are classified as NEET, the outcome variable NEET takes on the value of one, whereas those who are not classified as NEET are assigned a zero. Likewise, each of the disaggregated NEET outcomes are coded as one if the individual falls in that disaggregated NEET category and zero otherwise.

¹¹ To ensure enough observations due to relatively low numbers of some of the disaggregated NEET measures, all ten years of data are pooled together for the analysis with controls for the survey year.

¹² Full tables of results can be found in Annex 3.

► **Table 5.1 Demographic and socio-economic correlates with disaggregated NEET measures and contributing family work for men, 2011-2020**

Characteristics	Inactive not in education	Unemployed	Marginal labour market attachment	Contributing family worker not in education
Age	+	+	+	+
Upper secondary/lower vocational	-	0	-	-
Postsecondary certificate	-	+	+	-
University or higher	+	+	+	-
Married	-	-	-	0
Household head	-	-	-	-
Number of household members	+	0	+	+
Urban indicator	0	0	+	-
Provincial unemployment rate	+	+	+	-
Provincial agricultural share of labour	0	-	+	+

Notes: The symbols (+), (-) and (0) indicate an increase, decrease and no change in the probability of being one of the disaggregated NEET measures given an increase in the listed characteristic, respectively.

Source: Author's calculations from the Q3 2011-Q3 2020 Thai Labor Force Survey.

► **Table 5.2 Demographic and socio-economic correlates with disaggregated NEET measures and contributing family work for women, Q3 2011-Q3 2020**

Characteristics	Inactive not in education	Unemployed	Marginal labour market attachment	Contributing family worker not in education
Age	+	+	+	+
Upper secondary/lower vocational	-	0	-	-
Postsecondary certificate	-	+	+	-
University or higher	0	+	+	0
Married	+	-	-	+
Household head	-	-	-	-
Number of household members	+	0	0	+
Urban indicator	-	-	-	-
Provincial unemployment rate	0	+	+	-
Provincial agricultural share of labour	+	0	+	+

Notes: The symbols (+), (-) and (0) indicate an increase, decrease and no change in the probability of being one of the disaggregated NEET measures given an increase in the listed characteristic, respectively.

Source: Author's calculations from the Q3 2011-Q3 2020 Thai Labor Force Survey.

University education is associated with a higher incidence of unemployment and marginal labour market attachment for both young men and young women. While marriage is associated with a higher likelihood of inactive and not in education status for young women, married women who are university educated have a lower incidence of inactive not in education status.

For both young men and young women, all measures of NEET and contributing family workers increase with age. Level of completed education is also associated with NEET status. For both young men and young women, completing an upper secondary degree is correlated with a lower incidence of NEET and contributing family worker status compared to lower secondary completion or less across all measures, except for unemployment where there is no effect. For young men, university education is associated with higher levels of NEET across all three disaggregated measures. For young women, university education is positively related to unemployment and marginal labour market attachment, but not the inactive not in education status. The connection between tertiary education and the increasing incidence of NEET status for young men and young women needs further investigation. A brief look into the reasons why university graduates are unavailable for work or are not seeking work suggest that they are taking a break from education and the labour market, waiting for the right opportunity, or are having difficulty finding appropriate employment.

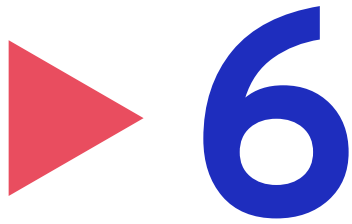
Household characteristics affect young men and young women differently across some measures and the same for others. For both young men and young women, being the household head is associated with a lower incidence of NEET across all measures and contributing family work. This is likely due to the necessity to support one's household financially. Following a similar logic, married men and women are less likely to be unemployed or marginally attached to the labour market. However, as was discussed above, marriage is positively correlated with inactive and not in education status for young women, but negatively correlated with inactive and not in education status for young men. Finally, both young men and young women are more likely to be inactive in the labour market and not in education with more household members.

The labour market indicators also have different associations with NEET for young men and young women. For young women, being located in an urban area is associated with reduced incidence of NEET. However, for young men, urban areas are only associated with marginal labour market attachment (positive) and contributing family work (negative). Young men's NEET status seems to be more sensitive to provincial unemployment rates with positive associations with all three disaggregated NEET measures, whereas only young women's unemployment and marginal labour market attachment are positively associated with provincial unemployment.

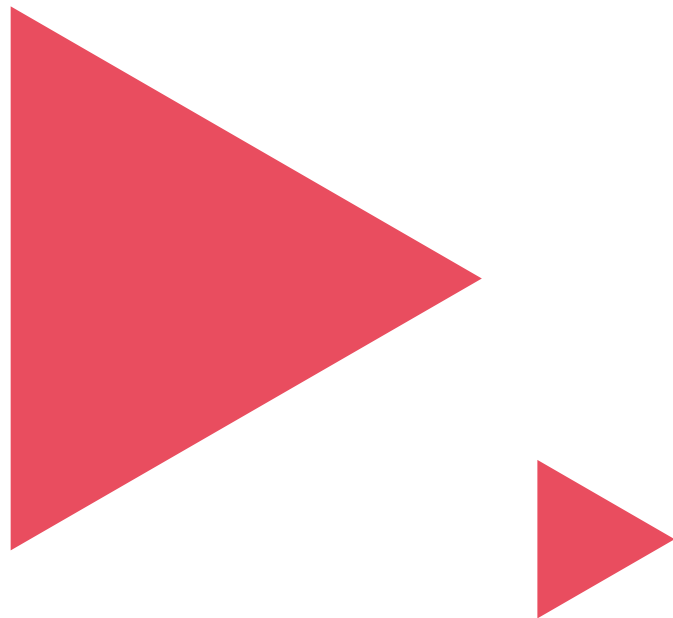
Finally, provincial agricultural employment share is correlated with higher levels of contributing family work and higher marginal labour market attachment for both young men and young women. It is also associated with higher levels of inactive and not in education status for young women and lower unemployment for young men.

The interaction between marital status and education was further examined in additional analysis to better understand the relationship between education, marriage, and gender. The important result from this analysis is that although married women have a very high incidence of being inactive and not in education, the incidence decreases dramatically with postsecondary education at both the certificate and bachelor's degree levels.





Impact of COVID-19 on NEET status and contributing family work





► 6. Impact of COVID-19 on NEET status and contributing family work

How has the COVID-19 crisis affected NEET status among Thailand's youth? Thailand was the first country outside of China to confirm a positive case of COVID-19 in January 2020. With cases rising rapidly, the Thai government attempted to stem the spread of the virus by introducing containment measures in April 2020 that closed many businesses and ground tourism to a halt. The containment measures (referred to as "lockdowns" in Thailand) were gradually lifted between May and July 2020.

The data used in this study come from the third quarter rounds of the LFS. This means that the 2020 LFS round captures the labour market situation just after the first lockdown between July and September 2020. This provides an opportunity to analyse the initial impacts of the COVID-19 crisis on the youth labour market in Thailand. Table 6.1 presents results of simple tests of proportional differences in the NEET measures between the pre-COVID-19 period (2018/2019) and the COVID-19 period (2020).

The incidence of unemployment and marginal labour market attachment increased during the COVID-19 crisis. The tests reveal that for young men, the incidence of NEET (broad measure) went up and this increase was driven by an increase in unemployment and marginal labour market attachment by 0.9 and 0.4 percentage points, respectively. For young women, NEET status did not change in a statistically significant way. However, the results for the three disaggregated measures show why it is important to look beyond the broad NEET measure. The prevalence of inactive and not in education status among young women went down by 1.4 percentage points. This reduction in this NEET measure is counteracted by increases in unemployment (0.7 percentage points) and marginal labour market attachment (0.3 percentage points). Whether or not the changes represent movement from inactive and not in education to unemployed or marginally attached to the labour market is difficult to determine given the structure of the data. However, provincial-level statistics are suggestive that areas that saw significant reductions in the inactive and not in education category saw larger increases in unemployment, potentially suggesting that the downturn in the economy pushed some people who were formerly inactive and not in education into the labour market. For both young men and young women, the prevalence of contributing family worker status statistically did not change.

► Table 6.1 Impact of the COVID-19 crisis on NEET status and contributing family work

Men				
Indicator	Pre-COVID (2018/2019) (%)	COVID (2020) (%)	Difference (%)	Statistically significant
NEET	10.6	12.0	1.4	Yes
Inactive not in education	8.4	8.4	0.1	No
Unemployed	1.6	2.5	0.9	Yes
Marginal labour market attachment	0.6	1.0	0.4	Yes
Unpaid family worker not in education	13.5	13.1	-0.3	No
Women				
Indicator	Pre-COVID (2018/2019) (%)	COVID (2020) (%)	Difference (%)	Statistically significant
NEET	19.3	19.0	-0.3	No
Inactive not in education	17.1	15.7	-1.4	Yes
Unemployed	1.6	2.4	0.7	Yes
Marginal labour market attachment	0.6	0.9	0.3	Yes
Unpaid family worker not in education	7.1	7.7	0.6	No

Note: Figures might not add up due to rounding.

Source: Author's calculations from the Q3 2018-Q3 2020 Thai Labor Force Surveys.

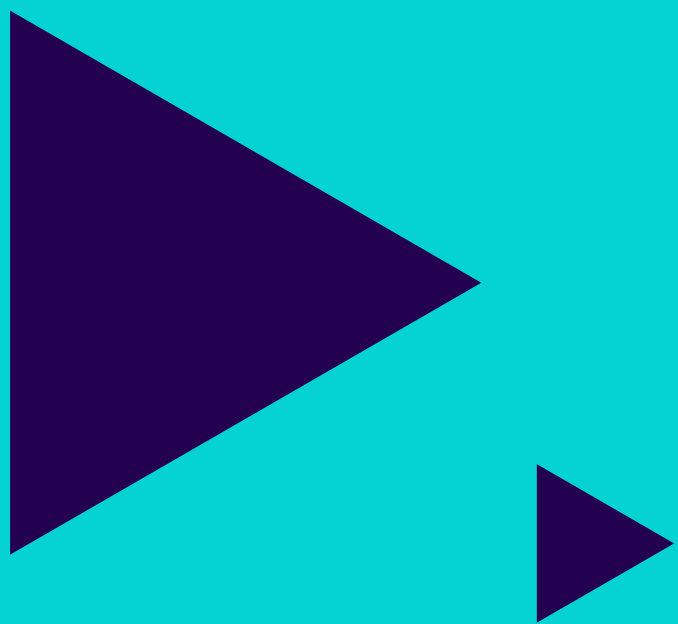
Additional regression analysis shows that, after controlling for demographic and socio-economic factors, the main results in table 6.1 are largely confirmed.¹³ In a specification that interacts the COVID-19 period dummy variable with demographic and socio-economic characteristics, there is little evidence to suggest that youth with different ages, levels of education, marital status, etc. were differently impacted by the COVID-19 crisis in terms of NEET status. In other words, the COVID-19 crisis had similar impacts on NEET status across all youth.

One caveat to the analysis is that the data captures the labour market after the first round of COVID-19 containment measures implemented in April and May 2020 and does not take into consideration the impacts in late-2020, 2021 and 2022. Further analysis with updated data is needed to better understand the longer run impacts of COVID-19 on the disaggregated NEET measures.

¹³ Full regression results are available in Annex 4.



Conclusions





► 7. Conclusions

Against concerns about the ability of youth to transform educational investments into productive labour market experiences in Thailand, this study provides a statistical overview of 15-24-year-old youth who are not in employment, education or training. The national-level analysis considers the incidence and trends of the ILO's broad NEET measure, three disaggregated NEET measures (inactive not in education, unemployed, and marginal labour market attachment) and contributing family workers not in education status for men and women who are 15-24 years of age over the period 2011-20.

NEET measures are then calculated for various groups, including by age, marital status, educational attainment, location and prevalence of agriculture in the area. The study further considers changes in the geographical distribution of NEET status across the disaggregated measures at the provincial level between 2011 and 2020.

The study continues with multivariate analysis to isolate individual characteristics that are associated with various NEET measures and contributing family work. Finally, the study considers the early impact of the COVID-19 crisis on NEET status among youth in Thailand.

Overall, the study finds that the incidence of the broad measure of NEET has increased over the 2011-20 period from 17.1 to 19.0 per cent for young women and 7.2 to 12.0 per cent for young men. To put these numbers into context, the incidence of the broad measure of NEET in Thailand is comparable to the current OECD average.¹⁴ One of the main concerns about high NEET rates is that it may be an indicator of high levels of youth unemployment and "discouraged workers." Analysis of disaggregated NEET measures for Thailand shows that the share of youth who are unemployed or marginally attached to the labour market, which includes "discouraged workers," are very low. The proportion of youth who are unemployed peaks at 2.5 and 2.4 per cent in 2020 for young men and young women, respectively, while the proportion of youth who are marginally attached to the labour market are around 1.0 per cent or less for the entire period under observation. NEET in Thailand is driven almost entirely by individuals who are inactive and not in education, particularly among young women, who are largely engaged in unpaid household care work as shown in section 3.

Although overall national NEET rates in both broad and disaggregated terms are relatively modest, some demographic subgroups and particular geographical regions stand out with high rates of one or more disaggregated NEET measures. For example, high rates of being inactive and not in education are found among female youth who are married, averaging 39.0 per cent over the ten-year period. Married young women are largely inactive and not in education because they are involved with unpaid household care responsibilities, as shown in figure 3.8.

On the other hand, married young men have very low NEET rates and tend to be attached to the labour market, presumably to help support their married households. However, married young men's labour force participation is often in the form of contributing family workers who contribute to household enterprises but do not draw separate income.

The high levels of NEET for married young women and contributing family work among married young men who are not in education could mean that young families lack support to seek career-building labour market opportunities. For example, young parents with young children may lack viable childcare options that would allow them— young women in particular—to pursue labour market opportunities commensurate with their educational investments and career aspirations. Future analysis considering the intersection of family structure, educational attainment, labour market opportunities, and barriers to (re-)entering the labour force or pursuing paid employment would be helpful in elucidating the situation facing married youth and policies that could support married youth to pursue employment opportunities.

¹⁴ <https://data.oecd.org/youthinac/youth-not-in-employment-education-or-training-neet.htm>.

Another group that stands out with relatively high levels of unemployment and marginal labour market attachment is university graduates. As of 2020, 15.9 per cent of young male and 15.0 per cent of young female university graduates were unemployed. Marginal labour market attachment, including discouraged workers, stands at 5.4 per cent for young male and 4.1 per cent for young female university graduates under 25 years old in 2020—higher than for any other group. For the young university graduates who are available but not seeking work, 85.0 per cent said they are not seeking work because: they believe they cannot find work; they looked but could not find a job; or are unable to find suitable work. Although the COVID-19 situation has exacerbated the situation, further analysis is called for to better understand barriers facing young university graduates in the transition from education to career in Thailand.

Geographically, there are three areas of the country that stand out with high or increasing rates of NEET across several measures. Thailand's southern border provinces have relatively high NEET rates across the three disaggregated measures for both young men and young women, which may in part be due to ongoing political unrest that has affected the region's economy. The northeast is another area that may require deeper analysis. Unemployment among young men and marginal labour market attachment for both young men and young women are relatively high in the northeast compared to other areas of the country. Further analysis on labour market characteristics and the educational profiles of youth in the northeast would be helpful to better understand the NEET dynamics in the area. The study also finds that in the central region, where much of the country's manufacturing is located, both male and female youth have a relatively high likelihood of being unemployed compared to other parts of the country. The reasons behind the higher likelihood of being unemployed needs be further explored.

Finally, this study paints a preliminary picture of the impact of the COVID-19 crisis on the incidence of NEET among Thailand's youth. The initial picture that emerges is that both young men and young women saw increases in NEET caused by disruptions to the economy stemming from COVID-19 containment measures and general negative impacts on the economy.

The analysis does not show differential impacts across different demographic groups; however, this picture may change once longer-term trends can be analysed given long-run negative impacts to specific sectors of the economy. Areas that are heavily tourism dependent, such as in the south, are of particular concern and are already seeing relatively high NEET rates in 2020. Severe disruptions to education and increased dropout rates resulting from the COVID-19 crisis may also have long-run impacts on NEET status of youth. The impacts of the COVID-19 crisis on both educational and labour market opportunities for Thailand's youth and the implications for NEET status needs to be monitored as a matter of priority going forward.

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► Annex 1. Defining NEET in the Thai context

The broad NEET measure and its components are coded using the guidelines of the International Conference of Labour Statisticians (ICLS), in particular the resolution concerning statistics of work, employment and labour underutilization, adopted by the 19th ICLS (2013) (ILO 2013). This appendix describes the construction of the variables used in the study. The classification of youth NEET status and contributing family worker not in education status relies on six variables in the Thai Labor Force Survey. First, youth are selected based on the AGE variable for the range of 15 to 24. Next, youth who are not in education are selected using the variable, GRADE_A, which indicates the current status in education individuals coded "001" are not currently studying. Next, employment status is based on the RE_WORK variable (work status) and the SEEKING variable (seeking work). SEEKING codes "1" and "2" indicate individuals who have looked for work in the last seven days and the last eight to 30 days, respectively. Code "3" indicates individuals who are not currently looking for work. The unemployed have RE_WORK code "4" or RE_WORK code "5" in conjunction with the SEEKING variable with values "1" or "2." Marginal labour market attachment is determined by a combination of the RE_WORK, SEEKING and AVAILABLE variables. Individuals with RE_WORK code "5" and SEEKING code "3" are coded as "available potential jobseekers." Individuals with SEEKING codes "1" or "2" and AVAILABLE code "2" (i.e., not available for work), are coded as "unavailable jobseekers." The available potential jobseekers and the unavailable jobseekers are then grouped together to form the "marginal labour market attachment" group. Individuals with RE_WORK codes "6" through "14" are coded as "inactive and not in education." The broad NEET measure is composed of individuals who are unemployed, inactive and not in education and marginally attached to the labour market. Finally, contributing family workers are identified by code "3" of the STATUS variable. Table A1.1 summarises the coding.

► **Table A1.1 Construction of NEET and contributing family worker not in education indicators from the Thai Labor Force Survey**

NEET measure	LFS variables used in construction of NEET indicators
NEET broad measure	All individuals coded as unemployed, inactive not in education or marginal labour market attachment are coded as NEET.
Unemployed	AGE (15-24); GRADE_A (001); RE_WORK(4) or RE_WORK(5) & SEEKING (1 & 2)
Inactive not in education	AGE (15-24); GRADE_A (001); RE_WORK(6-14);
Marginal labour market attachment	Marginal labour market attachment includes individuals coded as unavailable jobseekers or available potential jobseekers.
Unavailable jobseeker	AGE (15-24); GRADE_A (001); SEEKING(1 & 2); AVAILABLE(2)
Available potential jobseeker	AGE (15-24); GRADE_A (001); RE_WORK(5); SEEKING(3)
Contributing family worker not in education	AGE (15-24); GRADE_A (001); STATUS (3)

Source: Author's compilation from the Thai Labor Force Survey data dictionaries.

► Annex 2. Provincial NEET and contributing family worker measures

► Table A2.1 Provincial NEET and contributing family worker measures for men ages 15-24, Q3 2011 and Q3 2020

Province	NEET 2011	NEET 2020	Inactive not in education 2011	Inactive not in education 2020	Unemployed 2011	Unemployed 2020	Marginal labour market attachment 2011	Marginal labour market attachment 2020	Contributing family workers 2020	Contributing family workers 2012
Bangkok	0.093	0.090	0.072	0.048	0.015	0.033	0.006	0.009	0.040	0.017
Samut Prakan	0.091	0.180	0.062	0.116	0.019	0.032	0.011	0.032	0.031	0.021
Nonthaburi	0.122	0.053	0.094	0.031	0.025	0.022	0.004	0.000	0.044	0.005
Pathum Thani	0.136	0.120	0.136	0.049	0.000	0.064	0.000	0.008	0.065	0.045
Phra Nakhon Si Ayutthaya	0.192	0.139	0.158	0.100	0.014	0.028	0.019	0.011	0.084	0.092
Ang Thong	0.138	0.194	0.095	0.127	0.039	0.042	0.003	0.025	0.066	0.057
Lopburi	0.038	0.183	0.032	0.092	0.000	0.036	0.005	0.055	0.084	0.068
Sing Buri	0.125	0.164	0.066	0.150	0.044	0.005	0.015	0.009	0.088	0.082
Chai Nat	0.136	0.137	0.113	0.092	0.022	0.033	0.000	0.013	0.146	0.078
Saraburi	0.118	0.149	0.078	0.102	0.035	0.026	0.005	0.022	0.145	0.093
Chonburi	0.065	0.122	0.062	0.122	0.003	0.000	0.000	0.000	0.044	0.112
Rayong	0.087	0.085	0.065	0.029	0.022	0.055	0.000	0.000	0.063	0.057
Chanthaburi	0.063	0.048	0.060	0.025	0.000	0.016	0.003	0.007	0.177	0.194
Trat	0.077	0.057	0.073	0.050	0.000	0.000	0.004	0.008	0.109	0.121
Chachoengsao	0.090	0.193	0.076	0.153	0.015	0.040	0.000	0.000	0.156	0.070
Prachinburi	0.091	0.144	0.091	0.098	0.000	0.045	0.000	0.002	0.115	0.070

► Table A2.1 (cont.)

Province	NEET 2011	NEET 2020	Inactive not in education 2011	Inactive not in education 2020	Unemployed 2011	Unemployed 2020	Marginal labour market attachment 2011	Marginal labour market attachment 2020	Contributing family workers 2020	Contributing family workers 2012
Nakhon Nayok	0.123	0.141	0.121	0.137	0.002	0.005	0.000	0.000	0.124	0.137
Sa Kaeo	0.107	0.222	0.097	0.183	0.008	0.035	0.002	0.003	0.259	0.076
Nakhon Ratchasima	0.097	0.188	0.092	0.161	0.002	0.026	0.003	0.002	0.135	0.132
Buriram	0.090	0.131	0.072	0.052	0.013	0.067	0.004	0.012	0.233	0.200
Surin	0.082	0.164	0.057	0.133	0.012	0.029	0.013	0.002	0.234	0.106
Sisaket	0.043	0.064	0.043	0.064	0.000	0.000	0.000	0.000	0.320	0.371
Ubon Ratchathani	0.101	0.050	0.053	0.046	0.037	0.000	0.011	0.003	0.302	0.392
Yasothon	0.053	0.036	0.051	0.026	0.002	0.004	0.000	0.006	0.377	0.267
Chaiyaphum	0.065	0.182	0.065	0.182	0.000	0.000	0.000	0.000	0.390	0.132
Amnat Charoen	0.047	0.238	0.033	0.228	0.008	0.010	0.006	0.000	0.350	0.150
Bueng Kan	0.025	0.168	0.019	0.084	0.006	0.055	0.000	0.029	0.310	0.241
Nong Bua Lamphu	0.045	0.227	0.040	0.187	0.000	0.025	0.004	0.016	0.375	0.208
Khon Kaen	0.057	0.133	0.050	0.059	0.000	0.052	0.007	0.022	0.181	0.043
Udon Thani	0.075	0.147	0.057	0.133	0.005	0.000	0.013	0.014	0.190	0.116
Loei	0.041	0.043	0.041	0.014	0.000	0.000	0.000	0.029	0.362	0.387
Nong Khai	0.025	0.084	0.019	0.077	0.006	0.004	0.000	0.003	0.310	0.138
Maha Sarakham	0.062	0.089	0.042	0.070	0.000	0.019	0.020	0.000	0.131	0.160
Roi Et	0.068	0.049	0.040	0.049	0.025	0.000	0.004	0.000	0.213	0.168

► Table A2.1 (cont.)

Province	NEET 2011	NEET 2020	Inactive not in education 2011	Inactive not in education 2020	Unemployed 2011	Unemployed 2020	Marginal labour market attachment 2011	Marginal labour market attachment 2020	Contributing family workers 2020	Contributing family workers 2012
Kalasin	0.080	0.139	0.069	0.120	0.011	0.010	0.000	0.010	0.251	0.190
Sakon Nakhon	0.067	0.121	0.067	0.083	0.000	0.038	0.000	0.000	0.289	0.235
Nakhon Phanom	0.003	0.173	0.000	0.118	0.003	0.020	0.000	0.036	0.390	0.124
Mukdahan	0.012	0.056	0.012	0.032	0.000	0.024	0.000	0.000	0.407	0.343
Chiang Mai	0.027	0.079	0.023	0.054	0.003	0.025	0.000	0.000	0.103	0.192
Lamphun	0.046	0.076	0.033	0.038	0.012	0.008	0.000	0.030	0.108	0.220
Lampang	0.094	0.165	0.094	0.133	0.000	0.032	0.000	0.000	0.123	0.118
Uttaradit	0.087	0.170	0.076	0.134	0.009	0.036	0.003	0.000	0.293	0.082
Phrae	0.014	0.100	0.014	0.075	0.000	0.005	0.000	0.019	0.139	0.071
Nan	0.035	0.036	0.007	0.031	0.000	0.006	0.028	0.000	0.467	0.294
Phayao	0.056	0.068	0.056	0.058	0.000	0.000	0.000	0.009	0.233	0.122
Chiang Rai	0.062	0.099	0.043	0.077	0.017	0.021	0.002	0.000	0.176	0.163
Mae Hong Son	0.031	0.115	0.016	0.115	0.002	0.000	0.012	0.000	0.468	0.505
Nakhon Sawan	0.061	0.071	0.045	0.065	0.000	0.006	0.016	0.000	0.279	0.213
Uthai Thani	0.030	0.090	0.030	0.063	0.000	0.018	0.000	0.009	0.349	0.208
Kamphaeng Phet	0.026	0.162	0.026	0.127	0.000	0.027	0.000	0.007	0.344	0.218
Tak	0.032	0.100	0.006	0.088	0.005	0.000	0.021	0.012	0.217	0.173
Sukhothai	0.059	0.104	0.031	0.028	0.029	0.066	0.000	0.010	0.337	0.098

► Table A2.1 (cont.)

Province	NEET 2011	NEET 2020	Inactive not in education 2011	Inactive not in education 2020	Unemployed 2011	Unemployed 2020	Marginal labour market attachment 2011	Marginal labour market attachment 2020	Contributing family workers 2020	Contributing family workers 2012
Phitsanulok	0.049	0.117	0.047	0.033	0.000	0.036	0.002	0.048	0.227	0.159
Phichit	0.124	0.057	0.098	0.024	0.010	0.033	0.016	0.000	0.370	0.120
Phetchabun	0.038	0.080	0.033	0.073	0.000	0.000	0.005	0.007	0.354	0.208
Ratchaburi	0.074	0.120	0.059	0.069	0.005	0.045	0.010	0.006	0.077	0.088
Kanchanaburi	0.038	0.182	0.034	0.161	0.003	0.005	0.000	0.016	0.209	0.199
Suphan Buri	0.020	0.107	0.020	0.088	0.000	0.019	0.000	0.000	0.334	0.210
Nakhon Pathom	0.113	0.094	0.108	0.063	0.001	0.027	0.004	0.004	0.116	0.067
Samut Sakhon	0.093	0.065	0.059	0.059	0.035	0.000	0.000	0.006	0.053	0.041
Samut Songkhram	0.027	0.131	0.027	0.082	0.000	0.037	0.000	0.012	0.114	0.095
Phetchaburi	0.058	0.097	0.046	0.072	0.007	0.010	0.004	0.015	0.150	0.119
Prachuap Khiri Khan	0.064	0.141	0.050	0.135	0.001	0.000	0.012	0.006	0.173	0.118
Nakhon Si Thammarat	0.038	0.143	0.038	0.110	0.000	0.020	0.000	0.012	0.261	0.149
Krabi	0.080	0.193	0.066	0.107	0.014	0.048	0.000	0.039	0.267	0.091
Phang Nga	0.059	0.281	0.059	0.177	0.000	0.079	0.000	0.026	0.183	0.196
Phuket	0.069	0.148	0.069	0.077	0.000	0.031	0.000	0.039	0.056	0.031
Surat Thani	0.097	0.154	0.095	0.139	0.002	0.000	0.000	0.016	0.270	0.104
Ranong	0.093	0.164	0.054	0.142	0.037	0.021	0.002	0.000	0.277	0.136
Chumphon	0.043	0.063	0.043	0.053	0.000	0.010	0.000	0.000	0.364	0.257

► Table A2.1 (cont.)

Province	NEET 2011	NEET 2020	Inactive not in education 2011	Inactive not in education 2020	Unemployed 2011	Unemployed 2020	Marginal labour market attachment 2011	Marginal labour market attachment 2020	Contributing family workers 2020	Contributing family workers 2012
Songkhla	0.037	0.095	0.031	0.062	0.006	0.033	0.000	0.000	0.137	0.078
Satun	0.093	0.138	0.089	0.103	0.005	0.016	0.000	0.019	0.195	0.103
Trang	0.061	0.063	0.061	0.040	0.000	0.014	0.000	0.008	0.236	0.145
Phatthalung	0.036	0.063	0.035	0.046	0.000	0.000	0.001	0.018	0.169	0.104
Pattani	0.205	0.177	0.160	0.129	0.010	0.014	0.035	0.034	0.116	0.082
Yala	0.041	0.101	0.009	0.039	0.012	0.059	0.021	0.002	0.236	0.171
Narathiwat	0.123	0.226	0.100	0.026	0.009	0.140	0.014	0.060	0.173	0.062

Source: Author's calculations from the Q3 2011 and Q3 2020 Thai Labor Force Surveys.

► Table A2.2 Provincial NEET and contributing family worker measures for women ages 15-24, Q3 2011 and Q3 2020

Province	NEET 2011	NEET 2020	Inactive not in education 2011	Inactive not in education 2020	Unemployed 2011	Unemployed 2020	Marginal labour market attachment 2011	Marginal labour market attachment 2020	Contributing family workers 2020	Contributing family workers 2012
Bangkok	0.063	0.090	0.052	0.063	0.008	0.025	0.004	0.003	0.025	0.024
Samut Prakan	0.155	0.112	0.114	0.071	0.037	0.041	0.004	0.000	0.052	0.041
Nonthaburi	0.186	0.138	0.146	0.070	0.026	0.063	0.015	0.004	0.014	0.009
Pathum Thani	0.054	0.186	0.054	0.143	0.000	0.021	0.000	0.022	0.047	0.029
Phra Nakhon Si Ayutthaya	0.177	0.170	0.156	0.142	0.011	0.027	0.011	0.000	0.050	0.014
Ang Thong	0.167	0.100	0.153	0.066	0.014	0.020	0.000	0.014	0.054	0.006
Lopburi	0.273	0.204	0.213	0.148	0.004	0.021	0.056	0.035	0.034	0.092
Sing Buri	0.188	0.171	0.165	0.123	0.023	0.044	0.000	0.005	0.045	0.019
Chai Nat	0.171	0.158	0.149	0.129	0.022	0.021	0.000	0.008	0.108	0.024
Saraburi	0.201	0.283	0.194	0.214	0.007	0.055	0.000	0.013	0.035	0.047
Chonburi	0.138	0.147	0.133	0.147	0.005	0.000	0.000	0.000	0.081	0.034
Rayong	0.188	0.220	0.185	0.196	0.003	0.024	0.000	0.000	0.067	0.055
Chanthaburi	0.101	0.139	0.101	0.117	0.000	0.014	0.000	0.008	0.089	0.158
Trat	0.273	0.228	0.273	0.208	0.000	0.011	0.000	0.009	0.115	0.073
Chachoengsao	0.182	0.188	0.167	0.109	0.015	0.066	0.000	0.013	0.050	0.029
Prachinburi	0.298	0.258	0.261	0.187	0.038	0.058	0.000	0.013	0.008	0.000
Nakhon Nayok	0.139	0.159	0.121	0.156	0.000	0.003	0.019	0.000	0.099	0.008
Sa Kaeo	0.260	0.323	0.246	0.282	0.014	0.041	0.000	0.000	0.091	0.026

► Table A2.2 (cont.)

Province	NEET 2011	NEET 2020	Inactive not in education 2011	Inactive not in education 2020	Unemployed 2011	Unemployed 2020	Marginal labour market attachment 2011	Marginal labour market attachment 2020	Contributing family workers 2020	Contributing family workers 2012
Nakhon Ratchasima	0.181	0.254	0.163	0.169	0.018	0.054	0.000	0.031	0.055	0.047
Buriram	0.236	0.229	0.236	0.179	0.000	0.012	0.000	0.037	0.201	0.045
Surin	0.233	0.227	0.232	0.200	0.001	0.014	0.000	0.013	0.119	0.038
Sisaket	0.192	0.092	0.161	0.092	0.001	0.000	0.030	0.000	0.222	0.317
Ubon Ratchathani	0.145	0.188	0.133	0.188	0.001	0.000	0.011	0.000	0.153	0.241
Yasothon	0.073	0.153	0.041	0.129	0.032	0.024	0.000	0.000	0.299	0.216
Chaiyaphum	0.208	0.303	0.208	0.295	0.000	0.009	0.000	0.000	0.135	0.045
Amnat Charoen	0.117	0.314	0.115	0.291	0.003	0.000	0.000	0.023	0.265	0.099
Buang Kan	0.189	0.223	0.189	0.159	0.000	0.032	0.000	0.033	0.252	0.188
Nong Bua Lamphu	0.214	0.277	0.163	0.173	0.051	0.066	0.000	0.037	0.305	0.095
Khon Kaen	0.257	0.071	0.255	0.071	0.003	0.000	0.000	0.000	0.087	0.190
Udon Thani	0.194	0.260	0.178	0.260	0.009	0.000	0.006	0.000	0.188	0.080
Loei	0.159	0.223	0.154	0.223	0.000	0.000	0.004	0.000	0.240	0.287
Nong Khai	0.189	0.197	0.189	0.180	0.000	0.004	0.000	0.013	0.252	0.067
Maha Sarakham	0.154	0.290	0.115	0.278	0.001	0.012	0.038	0.000	0.065	0.026
Roi Et	0.068	0.197	0.067	0.167	0.001	0.019	0.000	0.012	0.163	0.079
Kalasin	0.209	0.367	0.209	0.340	0.000	0.018	0.000	0.010	0.079	0.066
Sakon Nakhon	0.127	0.190	0.125	0.177	0.003	0.013	0.000	0.000	0.253	0.115

► Table A2.2 (cont.)

Province	NEET 2011	NEET 2020	Inactive not in education 2011	Inactive not in education 2020	Unemployed 2011	Unemployed 2020	Marginal labour market attachment 2011	Marginal labour market attachment 2020	Contributing family workers 2020	Contributing family workers 2012
Nakhon Phanom	0.242	0.158	0.176	0.115	0.046	0.011	0.020	0.031	0.246	0.136
Mukdahan	0.169	0.109	0.169	0.082	0.000	0.019	0.000	0.008	0.242	0.231
Chiang Mai	0.107	0.228	0.081	0.193	0.014	0.029	0.012	0.007	0.068	0.085
Lamphun	0.114	0.072	0.104	0.063	0.010	0.009	0.000	0.000	0.123	0.084
Lampang	0.121	0.154	0.102	0.139	0.019	0.015	0.000	0.000	0.086	0.026
Uttaradit	0.250	0.162	0.250	0.121	0.000	0.041	0.000	0.000	0.090	0.024
Phrae	0.127	0.178	0.123	0.138	0.005	0.024	0.000	0.015	0.051	0.093
Nan	0.166	0.133	0.062	0.075	0.000	0.000	0.104	0.057	0.175	0.170
Phayao	0.196	0.252	0.196	0.179	0.000	0.059	0.000	0.014	0.153	0.071
Chiang Rai	0.147	0.115	0.114	0.111	0.033	0.004	0.000	0.000	0.107	0.050
Mae Hong Son	0.143	0.210	0.126	0.175	0.001	0.035	0.017	0.000	0.369	0.254
Nakhon Sawan	0.134	0.212	0.133	0.208	0.001	0.004	0.000	0.000	0.152	0.100
Uthai Thani	0.204	0.323	0.200	0.281	0.004	0.032	0.000	0.009	0.233	0.143
Kamphaeng Phet	0.143	0.248	0.143	0.230	0.000	0.004	0.000	0.015	0.257	0.064
Tak	0.199	0.266	0.199	0.250	0.000	0.012	0.000	0.003	0.165	0.110
Sukhothai	0.182	0.233	0.182	0.205	0.000	0.022	0.000	0.006	0.148	0.034
Phitsanulok	0.259	0.180	0.230	0.104	0.027	0.044	0.002	0.031	0.051	0.081
Phichit	0.207	0.239	0.197	0.220	0.007	0.015	0.003	0.004	0.107	0.079

► Table A2.2 (cont.)

Province	NEET 2011	NEET 2020	Inactive not in education 2011	Inactive not in education 2020	Unemployed 2011	Unemployed 2020	Marginal labour market attachment 2011	Marginal labour market attachment 2020	Contributing family workers 2020	Contributing family workers 2012
Phetchabun	0.151	0.183	0.136	0.168	0.016	0.016	0.000	0.000	0.167	0.192
Ratchaburi	0.230	0.195	0.216	0.164	0.000	0.031	0.015	0.000	0.026	0.080
Kanchanaburi	0.199	0.216	0.199	0.174	0.000	0.026	0.000	0.016	0.139	0.042
Suphan Buri	0.166	0.255	0.166	0.232	0.000	0.023	0.000	0.000	0.156	0.097
Nakhon Pathom	0.137	0.184	0.137	0.162	0.000	0.018	0.000	0.004	0.120	0.048
Samut Sakhon	0.125	0.131	0.120	0.117	0.005	0.014	0.000	0.000	0.056	0.047
Samut Songkhram	0.179	0.227	0.176	0.210	0.003	0.017	0.000	0.000	0.118	0.030
Phetchaburi	0.138	0.133	0.128	0.107	0.010	0.026	0.000	0.000	0.072	0.071
Prachuap Khiri Khan	0.194	0.199	0.194	0.180	0.000	0.012	0.000	0.007	0.100	0.073
Nakhon Si Thammarat	0.165	0.202	0.138	0.185	0.004	0.016	0.022	0.000	0.123	0.071
Krabi	0.138	0.367	0.128	0.294	0.010	0.062	0.000	0.011	0.179	0.043
Phang Nga	0.311	0.314	0.311	0.173	0.000	0.091	0.000	0.050	0.077	0.029
Phuket	0.105	0.270	0.105	0.172	0.000	0.062	0.000	0.037	0.045	0.011
Surat Thani	0.179	0.168	0.169	0.156	0.000	0.013	0.010	0.000	0.128	0.083
Ranong	0.235	0.286	0.235	0.258	0.000	0.019	0.000	0.009	0.103	0.050
Chumphon	0.144	0.337	0.137	0.321	0.000	0.012	0.008	0.004	0.278	0.091
Songkhla	0.208	0.166	0.162	0.103	0.025	0.048	0.021	0.015	0.148	0.036
Satun	0.203	0.215	0.193	0.190	0.010	0.021	0.000	0.004	0.125	0.052

► Table A2.2 (cont.)

Province	NEET 2011	NEET 2020	Inactive not in education 2011	Inactive not in education 2020	Unemployed 2011	Unemployed 2020	Marginal labour market attachment 2011	Marginal labour market attachment 2020	Contributing family workers 2020	Contributing family workers 2012
Trang	0.085	0.195	0.085	0.164	0.000	0.029	0.000	0.002	0.152	0.028
Phatthalung	0.170	0.190	0.165	0.151	0.005	0.030	0.000	0.009	0.116	0.095
Pattani	0.282	0.232	0.250	0.161	0.019	0.060	0.013	0.011	0.051	0.048
Yala	0.134	0.163	0.113	0.105	0.021	0.042	0.000	0.016	0.184	0.109
Narathiwat	0.284	0.324	0.254	0.254	0.000	0.024	0.030	0.046	0.029	0.063

Source: Author's calculations from the Q3 2011 and Q3 2020 Thai Labor Force Surveys.

► Annex 3. Full probit regression results

► Table A3.1 Individual and labour market characteristics and inactive not in education status

Variable	Model 1	Model 2	Model 3	Model 4
	Men	Women		
	Dependent variable: Inactive not in education			
16 years old	0.010*** (0.004)	0.010*** (0.004)	0.026*** (0.005)	0.025*** (0.005)
17 years old	0.016*** (0.004)	0.017*** (0.004)	0.045*** (0.005)	0.044*** (0.005)
19 years old	0.068*** (0.006)	0.070*** (0.006)	0.211*** (0.013)	0.208*** (0.012)
20 years old	0.067*** (0.007)	0.069*** (0.007)	0.204*** (0.013)	0.197*** (0.012)
21 years old	0.081*** (0.008)	0.083*** (0.009)	0.200*** (0.013)	0.191*** (0.013)
22 years old	0.075*** (0.009)	0.077*** (0.010)	0.196*** (0.012)	0.185*** (0.011)
23 years old	0.073*** (0.008)	0.074*** (0.008)	0.181*** (0.013)	0.171*** (0.012)
24 years old	0.060*** (0.008)	0.061*** (0.008)	0.156*** (0.012)	0.150*** (0.012)
Upper secondary/lower vocational	-0.033*** (0.003)	-0.036*** (0.003)	-0.049*** (0.004)	-0.052*** (0.006)
Postsecondary certificate	-0.017*** (0.004)	-0.017*** (0.005)	-0.047*** (0.005)	-0.025*** (0.007)
University or higher	0.029*** (0.006)	0.028*** (0.006)	-0.008 (0.008)	0.023*** (0.009)
Married	-0.045*** (0.003)	-0.049*** (0.003)	0.247*** (0.006)	0.256*** (0.007)

► Table A3.1 (cont.)

Variable	Model 1	Model 2	Model 3	Model 4
	Men	Women		
	Dependent variable: Inactive not in education			
Upper secondary/lower vocational*married		0.041*** (0.010)		0.011 (0.008)
Postsecondary certificate*married		-0.003 (0.012)		-0.043*** (0.007)
University or higher*married		0.008 (0.019)		-0.080*** (0.004)
Household head	-0.045*** (0.003)	-0.045*** (0.003)	-0.047*** (0.004)	-0.046*** (0.004)
Number of household members	0.003*** (0.001)	0.003*** (0.001)	0.009*** (0.001)	0.009*** (0.001)
Urban Indicator	-0.000 (0.002)	-0.000 (0.002)	-0.019*** (0.003)	-0.019*** (0.003)
Provincial unemployment rate	0.006*** (0.002)	0.006*** (0.002)	0.005 (0.005)	0.005 (0.005)
Provincial agricultural share of labour	-0.000 (0.000)	-0.000 (0.000)	0.001*** (0.000)	0.001*** (0.000)
Observations	126 367	126 367	123 938	123 938

Notes: *** p<0.01 ** p<0.05 * p<0.1; coefficients reported as marginal effects; robust standard errors clustered at the provincial level in parentheses. Other controls: survey year dummies.

Source: Author's calculations from the Q3 2011-Q3 2020 Thai Labor Force Surveys.

► Table A3.2 Individual and labour market characteristics and unemployment

Variable	Model 1	Model 2	Model 3	Model 4
	Men	Women		
	Dependent variable: Unemployed			
16 years old	0.004** (0.002)	0.004** (0.002)	0.004 (0.003)	0.004 (0.003)
17 years old	0.011*** (0.003)	0.011*** (0.003)	0.006** (0.003)	0.006** (0.003)
19 years old	0.031*** (0.006)	0.031*** (0.006)	0.035*** (0.008)	0.031*** (0.008)
20 years old	0.034*** (0.006)	0.033*** (0.006)	0.033*** (0.008)	0.028*** (0.008)
21 years old	0.040*** (0.007)	0.039*** (0.007)	0.034*** (0.009)	0.029*** (0.008)
22 years old	0.039*** (0.007)	0.038*** (0.007)	0.036*** (0.008)	0.031*** (0.008)
23 years old	0.032*** (0.005)	0.030*** (0.005)	0.032*** (0.008)	0.027*** (0.007)
24 years old	0.025*** (0.005)	0.024*** (0.005)	0.015*** (0.005)	0.012*** (0.005)
Upper secondary/lower vocational	-0.001 (0.001)	-0.001 (0.001)	0.001 (0.001)	0.002 (0.001)
Postsecondary certificate	0.021*** (0.003)	0.025*** (0.003)	0.022*** (0.003)	0.031*** (0.006)
University or higher	0.077*** (0.008)	0.083*** (0.010)	0.076*** (0.009)	0.091*** (0.013)
Married	-0.002** (0.001)	-0.001 (0.001)	-0.003*** (0.000)	-0.001 (0.001)

► Table A3.2 (cont.)

Variable	Model 1	Model 2	Model 3	Model 4
	Men	Women		
	Dependent variable: Unemployed			
Upper secondary/lower vocational*married		0.002 (0.002)		-0.001 (0.001)
Postsecondary certificate*married		-0.005*** (0.001)		-0.004*** (0.001)
University or higher*married		-0.006*** (0.001)		-0.004*** (0.000)
Household head	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)
Number of household members	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Urban Indicator	0.000 (0.001)	0.000 (0.001)	-0.001*** (0.000)	-0.001*** (0.000)
Provincial unemployment rate	0.004*** (0.001)	0.004*** (0.001)	0.002*** (0.000)	0.002*** (0.000)
Provincial agricultural share of labour	-0.000** (0.000)	-0.000** (0.000)	-0.000 (0.000)	-0.000 (0.000)
Observations	126 367	126 367	123 938	123 938

Notes: *** p<0.01 ** p<0.05 * p<0.1; coefficients reported as marginal effects; robust standard errors clustered at the provincial level in parentheses. Other controls: survey year dummies.

Source: Author's calculations from the Q3 2011-Q3 2020 Thai Labor Force Surveys.

► **Table A3.3 Individual and labour market characteristics and marginal labour market attachment**

Variable	Model 1	Model 2	Model 3	Model 4
	Men	Women		
	Dependent variable: Marginal labour market attachment			
16 years old	0.002*	0.002*	-0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
17 years old	0.003**	0.003**	0.001	0.001
	(0.002)	(0.002)	(0.001)	(0.001)
19 years old	0.013***	0.013***	0.009***	0.007***
	(0.003)	(0.003)	(0.002)	(0.003)
20 years old	0.010***	0.010***	0.010***	0.008***
	(0.003)	(0.003)	(0.003)	(0.003)
21 years old	0.012***	0.012***	0.009***	0.007***
	(0.003)	(0.003)	(0.003)	(0.002)
22 years old	0.012***	0.012***	0.008***	0.006***
	(0.003)	(0.003)	(0.002)	(0.002)
23 years old	0.011***	0.011***	0.008***	0.006***
	(0.003)	(0.003)	(0.002)	(0.002)
24 years old	0.010***	0.010***	0.007***	0.006**
	(0.003)	(0.003)	(0.003)	(0.002)
Upper secondary/lower vocational	-0.001*	-0.001*	-0.001*	-0.000
	(0.001)	(0.001)	(0.000)	(0.001)
Postsecondary certificate	0.003*	0.003*	0.003***	0.007***
	(0.002)	(0.002)	(0.001)	(0.002)
University or higher	0.011***	0.012***	0.012***	0.015***
	(0.003)	(0.003)	(0.002)	(0.003)
Married	-0.002***	-0.002**	-0.001***	-0.000
	(0.001)	(0.001)	(0.000)	(0.001)

► Table A3.3 (cont.)

Variable	Model 1	Model 2	Model 3	Model 4
	Men	Women		
	Dependent variable: Marginal labour market attachment			
Upper secondary/lower vocational*married		0.001 (0.002)		-0.000 (0.001)
Postsecondary certificate*married		-0.001 (0.002)		-0.002*** (0.000)
University or higher*married		-0.003** (0.002)		-0.002*** (0.000)
Household head	-0.003*** (0.001)	-0.003*** (0.001)	-0.002*** (0.000)	-0.002*** (0.000)
Number of household members	0.000** (0.000)	0.000** (0.000)	0.000 (0.000)	0.000 (0.000)
Urban Indicator	0.001* (0.000)	0.001* (0.000)	-0.001** (0.000)	-0.001** (0.000)
Provincial unemployment rate	0.003*** (0.000)	0.003*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
Provincial agricultural share of labour	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
Observations	126 367	126 367	123 938	123 938

Notes: *** p<0.01 ** p<0.05 * p<0.1; coefficients reported as marginal effects; robust standard errors clustered at the provincial level in parentheses. Other controls: survey year dummies.

Source: Author's calculations from the Q3 2011-Q3 2020 Thai Labor Force Surveys.

► Table A3.4 Individual and labour market characteristics and contributing family work

Variable	Model 1	Model 2	Model 3	Model 4
	Men	Women		
	Dependent variable: Contributing family worker not in education			
16 years old	0.065*** (0.006)	0.065*** (0.006)	0.027*** (0.005)	0.027*** (0.005)
17 years old	0.106*** (0.006)	0.106*** (0.006)	0.046*** (0.006)	0.044*** (0.006)
19 years old	0.316*** (0.014)	0.319*** (0.014)	0.202*** (0.014)	0.191*** (0.014)
20 years old	0.346*** (0.014)	0.348*** (0.014)	0.230*** (0.015)	0.217*** (0.014)
21 years old	0.381*** (0.015)	0.383*** (0.015)	0.246*** (0.016)	0.232*** (0.015)
22 years old	0.388*** (0.016)	0.389*** (0.016)	0.255*** (0.016)	0.241*** (0.015)
23 years old	0.404*** (0.015)	0.406*** (0.015)	0.275*** (0.016)	0.260*** (0.015)
24 years old	0.413*** (0.016)	0.415*** (0.016)	0.291*** (0.016)	0.278*** (0.015)
Upper secondary/lower vocational	-0.037*** (0.003)	-0.040*** (0.004)	-0.015*** (0.002)	-0.012*** (0.003)
Postsecondary certificate	-0.029*** (0.004)	-0.026*** (0.004)	-0.025*** (0.002)	-0.014*** (0.004)
University or higher	-0.026*** (0.006)	-0.027*** (0.006)	-0.011*** (0.003)	-0.002 (0.004)
Married	0.004 (0.004)	-0.000 (0.004)	0.032*** (0.004)	0.040*** (0.005)

► Table A3.4 (cont.)

Variable	Model 1	Model 2	Model 3	Model 4
	Men	Women		
	Dependent variable: Contributing family worker not in education			
Upper secondary/lower vocational*married		0.024*** (0.007)		-0.006* (0.004)
Postsecondary certificate*married		-0.022*** (0.009)		-0.025*** (0.004)
University or higher*married		-0.003 (0.016)		-0.029*** (0.003)
Household head	-0.110*** (0.003)	-0.110*** (0.003)	-0.049*** (0.002)	-0.048*** (0.002)
Number of household members	0.005*** (0.001)	0.005*** (0.001)	0.001** (0.001)	0.001** (0.001)
Urban Indicator	-0.046*** (0.004)	-0.046*** (0.004)	-0.013*** (0.003)	-0.013*** (0.003)
Provincial unemployment rate	-0.016*** (0.003)	-0.016*** (0.003)	-0.005*** (0.002)	-0.005*** (0.002)
Provincial agricultural share of labour	0.002*** (0.000)	0.002*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
Observations	126 367	126 367	123 938	123 938

Notes: *** p<0.01 ** p<0.05 * p<0.1; coefficients reported as marginal effects; robust standard errors clustered at the provincial level in parentheses. Other controls: survey year dummies.

Source: Author's calculations from the Q3 2011-Q3 2020 Thai Labor Force Surveys.

► Annex 4. Full COVID-19 probit regression tables

► Table A4.1 Relationship between COVID-19 and inactive not in education status

Variables	Model 1	Model 2	Model 3	Model 4
	Men	Women		
	Dependent variable: Inactive not in education			
COVID	-0.001 (0.004)	-0.014 (0.014)	-0.005 (0.004)	-0.017 (0.014)
Age group 18-24	0.049*** (0.004)	0.046*** (0.005)	0.116*** (0.006)	0.113*** (0.007)
Upper secondary/lower vocational	-0.032*** (0.004)	-0.034*** (0.005)	-0.044*** (0.007)	-0.041*** (0.007)
Postsecondary certificate	-0.012 (0.008)	-0.009 (0.008)	-0.041*** (0.011)	-0.044*** (0.012)
University or higher	0.034*** (0.009)	0.032** (0.013)	-0.001 (0.009)	-0.000 (0.011)
Married	-0.052*** (0.005)	-0.051*** (0.006)	0.248*** (0.009)	0.254*** (0.011)
Household head	-0.052*** (0.005)	-0.051*** (0.006)	-0.050*** (0.007)	-0.043*** (0.008)
Number of household members	0.001 (0.001)	0.001 (0.001)	0.009*** (0.001)	0.009*** (0.001)
Urban Indicator	0.001 (0.004)	0.003 (0.004)	-0.020*** (0.004)	-0.020*** (0.005)
Provincial agricultural share of labour	0.000 (0.000)	-0.000 (0.000)	0.001*** (0.000)	0.001*** (0.000)
COVID*18-24 age group		0.010 (0.010)		0.014 (0.010)
COVID*married		-0.004 (0.011)		-0.012 (0.009)

► Table A4.1 (cont.)

Variables	Model 1	Model 2	Model 3	Model 4
	Men	Women		
	Dependent variable: Inactive not in education			
COVID*household head		-0.002 (0.016)		-0.027** (0.014)
COVID*members		0.000 (0.002)		0.000 (0.002)
COVID*upper secondary/lower vocational		0.009 (0.009)		-0.008 (0.008)
COVID*postsecondary certificate		-0.007 (0.014)		0.014 (0.022)
COVID*university or higher		0.005 (0.016)		-0.002 (0.013)
covid_urban		-0.005 (0.005)		-0.001 (0.007)
COVID*agricultural share of labour		0.000 (0.000)		0.000 (0.000)
Observations	33 621	33 621	32 622	32 622

Notes: *** p<0.01 ** p<0.05 * p<0.1; coefficients reported as marginal effects; robust standard errors clustered at the provincial level in parentheses.

Source: Author's calculations from the Q3 2018-Q3 2020 Thai Labor Force Surveys.

► Table A4.2 Relationship between COVID-19 and unemployment

Variables	Model 1	Model 2	Model 3	Model 4
	Men	Women		
	Dependent variable: Unemployed			
COVID	0.006*** (0.002)	0.008 (0.006)	0.004*** (0.001)	0.002 (0.004)
Age group 18-24	0.015*** (0.002)	0.015*** (0.002)	0.012*** (0.001)	0.010*** (0.002)
Upper secondary/lower vocational	-0.001 (0.002)	0.000 (0.002)	0.004** (0.002)	0.006** (0.002)
Postsecondary certificate	0.020*** (0.004)	0.025*** (0.006)	0.026*** (0.006)	0.031*** (0.008)
University or higher	0.088*** (0.009)	0.084*** (0.012)	0.089*** (0.013)	0.104*** (0.019)
Married	-0.002 (0.002)	-0.005** (0.002)	-0.005*** (0.001)	-0.004*** (0.001)
Household head	-0.006*** (0.002)	-0.004** (0.002)	-0.004*** (0.001)	-0.004* (0.002)
Number of household members	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.001 (0.000)
Urban Indicator	-0.000 (0.002)	0.001 (0.002)	-0.001 (0.001)	-0.001 (0.001)
Provincial agricultural share of labour	-0.000** (0.000)	-0.000* (0.000)	-0.000** (0.000)	-0.000*** (0.000)
COVID*18-24 age group		0.001 (0.004)		0.009 (0.006)
COVID*married		0.009 (0.006)		-0.001 (0.002)
COVID*household head		-0.006** (0.003)		-0.002 (0.003)
COVID*members		-0.000 (0.001)		-0.001 (0.000)

► Table A4.2 (cont.)

Variables	Model 1	Model 2	Model 3	Model 4
	Men	Women		
	Dependent variable: Unemployed			
COVID*upper secondary/lower vocational		-0.002 (0.003)		-0.003* (0.002)
COVID*postsecondary certificate		-0.004 (0.003)		-0.002 (0.002)
COVID*university or higher		0.002 (0.004)		-0.003** (0.002)
covid_urban		-0.002 (0.002)		0.001 (0.002)
COVID*agricultural share of labour		-0.000 (0.000)		0.000 (0.000)
Observations	33 621	33 621	32 622	32 622

Notes: *** p<0.01 ** p<0.05 * p<0.1; coefficients reported as marginal effects; robust standard errors clustered at the provincial level in parentheses.

Source: Author's calculations from the Q3 2018-Q3 2020 Thai Labor Force Surveys.

► Table A4.3 Relationship between COVID-19 and marginal labour market attachment

Variables	Model 1	Model 2	Model 3	Model 4
	Men	Women		
	Dependent variable: Marginal labour market attachment			
COVID	0.004*** (0.001)	0.001 (0.003)	0.003*** (0.001)	0.002*** (0.003)
Age group 18-24	0.007*** (0.001)	0.006*** (0.001)	0.004*** (0.001)	0.004*** (0.001)
Upper secondary/lower vocational	-0.000 (0.001)	-0.002* (0.001)	-0.000 (0.001)	-0.000 (0.001)
Postsecondary certificate	0.006** (0.003)	0.007* (0.004)	0.007** (0.003)	0.007** (0.004)
University or higher	0.014*** (0.004)	0.008* (0.004)	0.021*** (0.004)	0.023*** (0.005)
Married	-0.001 (0.001)	-0.001 (0.002)	-0.001* (0.001)	-0.002** (0.001)
Household head	-0.004*** (0.001)	-0.004*** (0.002)	-0.002** (0.001)	-0.002 (0.001)
Number of household members	0.001** (0.000)	0.001** (0.000)	0.000 (0.000)	0.000 (0.000)
Urban Indicator	0.002* (0.001)	0.002 (0.002)	-0.001 (0.001)	-0.001 (0.001)
Provincial agricultural share of labour	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)
COVID*18-24 age group		0.004 (0.003)		0.001 (0.002)
COVID*married		0.001 (0.003)		0.004 (0.003)
COVID*household head		0.002 (0.005)		-0.001 (0.002)
COVID*members		-0.000 (0.000)		-0.000 (0.000)

► Table A4.3 (cont.)

Variables	Model 1	Model 2	Model 3	Model 4
	Men	Women		
	Dependent variable: Marginal labour market attachment			
COVID*upper secondary/lower vocational		0.004 (0.003)		-0.001 (0.001)
COVID*postsecondary certificate		-0.001 (0.002)		0.001 (0.003)
COVID*university or higher		0.008 (0.006)		-0.001 (0.001)
covid_urban		0.001 (0.003)		0.000 (0.001)
COVID*agricultural share of labour		-0.000 (0.000)		0.000 (0.000)
Observations	33 621	33 621	32 622	32 622

Notes: *** p<0.01 ** p<0.05 * p<0.1; coefficients reported as marginal effects; robust standard errors clustered at the provincial level in parentheses.

Source: Author's calculations from the Q3 2018-Q3 2020 Thai Labor Force Surveys.

► Table A4.4 Relationship between COVID-19 and contributing family work

Variables	Model 1	Model 2	Model 3	Model 4
	Men	Women		
	Dependent variable: Contributing family worker not in education			
COVID	-0.003 (0.003)	0.001 (0.013)	0.001 (0.002)	-0.009 (0.011)
Age group 18-24	0.112*** (0.005)	0.111*** (0.005)	0.064*** (0.004)	0.062*** (0.004)
Upper secondary/lower vocational	-0.015*** (0.006)	-0.017** (0.007)	0.002 (0.002)	-0.001 (0.003)
Postsecondary certificate	0.010 (0.008)	0.007 (0.010)	-0.009** (0.005)	-0.009* (0.005)
University or higher	0.020* (0.010)	0.031** (0.014)	0.024*** (0.006)	0.026*** (0.006)
Married	0.024*** (0.006)	0.026*** (0.008)	0.035*** (0.004)	0.035*** (0.005)
Household head	-0.095*** (0.004)	-0.096*** (0.004)	-0.039*** (0.002)	-0.038*** (0.002)
Number of household members	0.003*** (0.001)	0.004*** (0.001)	0.002*** (0.001)	0.003*** (0.001)
Urban Indicator	-0.042*** (0.006)	-0.043*** (0.006)	-0.009*** (0.003)	-0.009*** (0.003)
Provincial agricultural share of labour	0.002*** (0.000)	0.002*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
COVID*18-24 age group		0.002 (0.008)		0.007 (0.007)
COVID*married		-0.006 (0.009)		0.000 (0.004)
COVID*household head		0.030 (0.039)		-0.002 (0.014)
COVID*members		-0.002 (0.002)		-0.002 (0.001)

► Table A4.4 (cont.)

Variables	Model 1	Model 2	Model 3	Model 4
	Men	Women		
	Dependent variable: Contributing family worker not in education			
COVID*upper secondary/lower vocational		0.004 (0.010)		0.008 (0.005)
COVID*postsecondary certificate		0.008 (0.016)		-0.001 (0.011)
COVID*university or higher		-0.022 (0.014)		-0.003 (0.006)
covid_urban		0.003 (0.007)		0.001 (0.004)
COVID*agricultural share of labour		0.000 (0.000)		0.000 (0.000)
Observations	33 621	33 621	32 622	32 622

Notes: *** p<0.01 ** p<0.05 * p<0.1; coefficients reported as marginal effects; robust standard errors clustered at the provincial level in parentheses.

Source: Author's calculations from the Q3 2018-Q3 2020 Thai Labor Force Surveys.

Trends, characteristics and COVID-19 impact on youth not in employment, education or training (NEET) in Thailand

As the future of the Thai economy depends on its young people, a situation where a significant number of young women and men are not in employment, education or training (NEET) represents a lost opportunity for economic development and growth. This study analyses the trends and characteristics associated with NEET youth (aged 15-24) in Thailand and also focuses on the early impact of the COVID-19 crisis on NEET status. Key findings at the national and provincial levels provide interesting insights into NEET youth and encourage the development of policies and initiatives to support NEET youth return to the labour market and into productive employment and decent work.

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