



GENDER IMPACTS:

A Study of Thailand's Economic Policy from a Gender Perspective


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Abstract

The objective of this study is to analyze the source of vulnerability of low-income women under current labor and economic policies in Thailand. This study focused on two economic policy focuses in Thailand; (1) the changes in the manufacturing sector with a specific focus on automation and digitalization, typically seen in S-curve industries, and (2) the focus on the circular green economy, promoted under the BCG (Bio, Circular and Green) model, which places emphasis on science and technology to turn Thailand's biological and cultural diversity into competitive advantage. The review of the literature and stakeholder meeting inputs showed that both automation and digitalization, as well as the green and circular economy, have the potential to benefit both women and men and create new employment for them. However, these will not happen automatically, and without any focused intervention, they can widen the disparity. Digitalization and automation might not benefit women with lower education levels and older women, and this group of women would, therefore, be more vulnerable to losing jobs. They would have fewer upskilling/reskilling opportunities. Similarly, under the BCG model, there is a possibility that women would be involved more as unpaid volunteer labor and benefit less from the initiatives because their businesses are smaller in size. Without deliberate and conscious interventions, these policies might increase gender disparity, especially making poorer and older women more vulnerable.

About this study

This publication presents findings primarily from a review of the literature and available statistics and offers recommendations to ensure that Thailand's economic and labor policy does not inadvertently exclude women and other vulnerable groups. As Thailand steers towards economic and industrial transformation to escape the middle-income trap, this publication sheds light on the often-overlooked gendered impact of these policies. The publication's objective is to anticipate the potential negative impacts that low-income women and other vulnerable groups might face under these policies, and to propose recommendations to avert such adverse effects.

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1 | INTRODUCTION

Thailand has a high labor force participation rate for women and has one of the highest ratios of women CEOs in the world. However, gender equality in the economy and especially in the labor market remains a concern, making women's employment more vulnerable and unsecured than men. This can be evidenced by the higher level of women in the informal sector, a persistent gender wage gap, limited career upward mobility for poorer women, a lack of investment in the care sector, persistent sexual harassment, and other forms of gender-based discrimination. At the same time, with technological development and climate change concerns, the future of work is at a crossroads. Critical changes including changes in the type of skills and occupations which are needed in the labor market. The Thai government, in its 13th National Economic and Social Development Plan (NESDP), has stated its intention to gear its economy to meet these global challenges. Will the government efforts to meet these global challenges widen the existing gender disparity or provide an opportunity to diminish gender inequality? Similarly, who will benefit from these changes and who will be left behind? This paper is a preliminary assessment of how the current and future economic policy will/might impact women and men differently.

The objective of this study is to analyze the source of vulnerability of low-income women under current labor and economic policies. Key questions include:

- Who are the vulnerable groups in the labor market in Thailand?
- How do labor-related policies in Thailand support/affect vulnerable women and men? Selected policies will be discussed.
- What are the factors that increase the vulnerability of women in the labor market?
- What are the possible interventions/adjustments in policy implementation that the government can introduce to mitigate women's vulnerability?

Thailand 4.0 is a strategic tool designed by the Thai government to help the country escape the middle-income trap. This study focuses on two large areas in Thailand 4.0, that have the largest possibility of changing the Thai economy and labor market, namely, (1) the changes in the manufacturing sector with specific focus on automation and digitalization, typically seen in S-curve industries, and (2) the focus on the circular green economy, promoted under the BCG (Bio, Circular and Green) model, which places emphasis on science and technology to turn Thailand's biological and cultural diversity into a competitive advantage. This policy analysis begins with an overview of women's situation in the Thai labor market and Thailand's economic development policy and then provides a more detailed analysis of the above two areas of focus and its potential gender impact. Since these are still new initiatives, there are few statistics and studies; hence, many of the arguments rely on global literature or draw inferences from other areas of study.

This study collected information from secondary sources online. A stakeholder meeting was organized, and insights were shared from the meeting as well. The study aims to explore the gender impact of labor/economic policies, but the focus is mainly on the differential impacts the policies have on female workers compared to male workers and does not focus on the LGBTQ+ community. This is mainly because almost all the statistics only distinguish between women and men, if at all.

2 | OVERVIEW OF WOMEN'S SITUATION IN THE THAI LABOR MARKET

Thailand's labor force participation rate was 76.47 percent for men and 60.17 percent for women in 2022 (Ministry of Labor, 2022). The female-to-male labor force participation rate in 2022 was 78.48 percent for Thailand; higher than that in the Philippines (65.16 percent) but lower than that in Vietnam (88.59 percent) and ranking around the middle for Southeast Asia as a whole (World Bank Genderdata, 2023). There is still a strong gender norm in Thailand: the expectation that women will take up care work. This hampers their labor force participation (ESCAP, 2022). Aside from the gender gap in the labor force participation rate, there is also a large gender-based segregation in the labor market (Chart 1). Among the approximately 37.6 million workers in Thailand, there were 17.2 million female workers in 2021 (National Statistical Office [NSO], 2021). Women are largely concentrated in a limited range of occupations: self-employed domestic work (undifferentiated goods and services producing activities of households for their own use), health and social work, education, and hospitality and food services. They are also dominant in real estate activities, finance and insurance, but not in construction, electricity and gas, waste management and transportation. Such an existing gender segregation in the labor market is an important factor when we examine the gendered effect of economic policies.

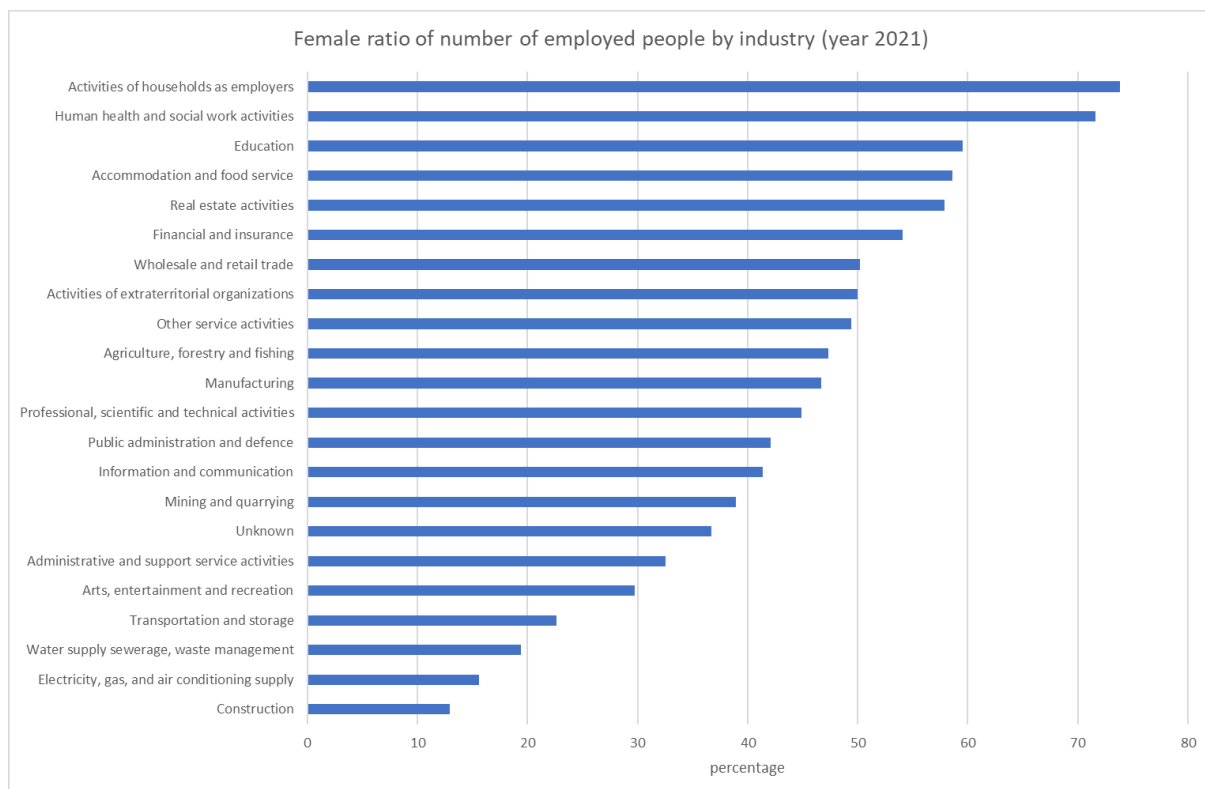


Chart 1: Female ratio of the number of employed people by industry (year 2021)

Source: Calculated based on Quarterly Survey of Labor Situation 2021, National Statistical Office (NSO), Ministry of Digital Economy, and Society

Many of the service sector enterprises are in the small- and micro-sized category,¹ especially hospitality and food services. It is noted that the service sector is a sector where women are concentrated. Among small enterprises, 45.81 percent of total employment is in services. Among micro-sized enterprises, 58.27 percent are in services (Office of Small and Medium Enterprise Promotion [OSMEP], 2023, p. 32-33).

According to Thailand's Social Security statistics report, of the 37.6 million workers, only 11.1 million workers are covered by the social security scheme under section 33, half of whom were women in 2021.² The government also offers voluntary insurance where workers can be covered by social security by paying their own contribution. Voluntarily insured persons (section 39) are, for example, those who used to be employees covered by Social Security and wish to remain covered after not being employed anymore. There were a total of 1.9 million people in this category in 2021 (0.7 million for men and 1.2 million for women). Another category of voluntarily insured persons (section 40) is self-employed persons. There were a total of 10.7 million insured people (5 million men, 5.7 million women) under this scheme, and the number has increased rapidly over the past five years. Under this new social insurance scheme, there are now more female workers covered by insurance than male workers (Social Security Office [SSO], 2021, p. 2-3).

As seen in Chart 2, the National Statistical Office reported that the ratio of workers in informal employment has decreased over the last 10 years (2012 to 2022). The decreasing trend is higher for women than for men. For both women and men, informal employment is particularly high for youth (before age 25) and elderly citizens (after age 40) (NSO, 2021).

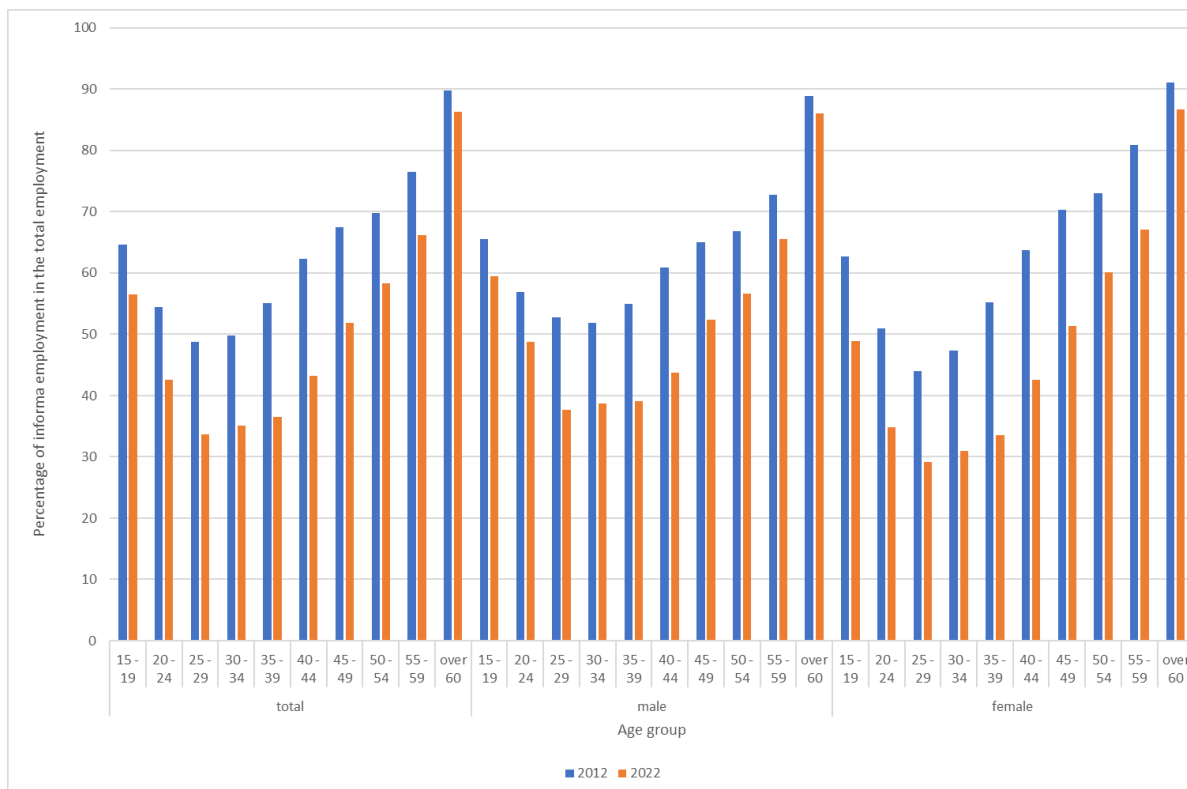


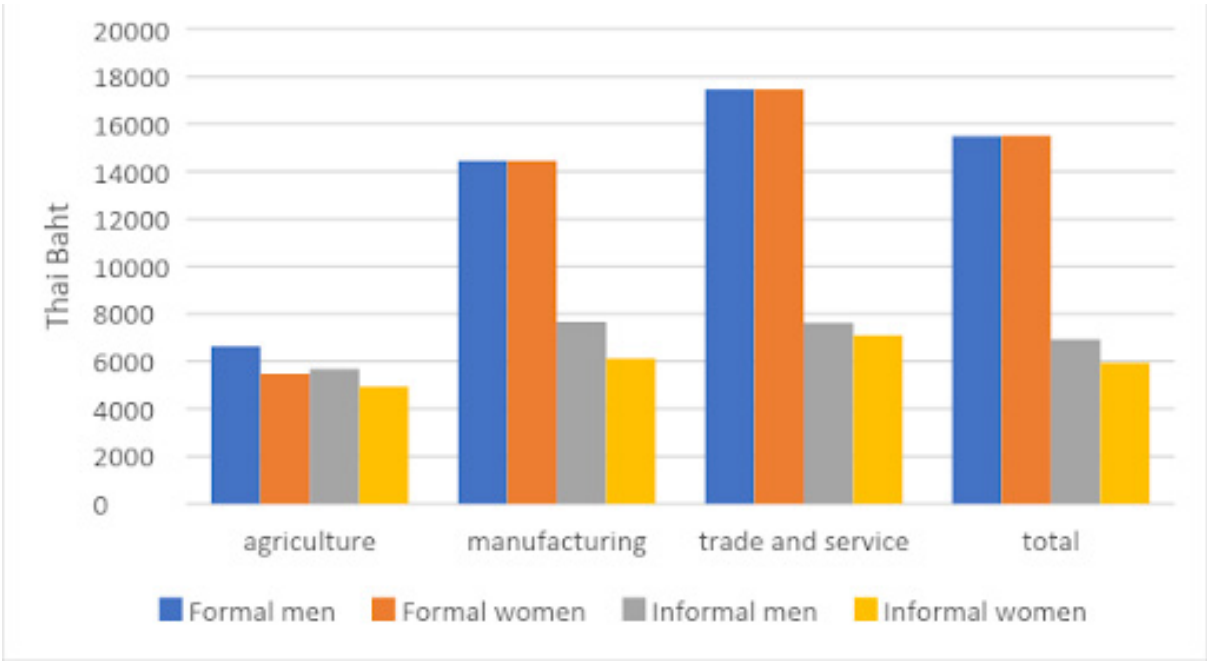
Chart 2: Percentage of informal employment in total employment by age group and sex

Source: National Statistical Office website, Thailand (2022)

¹ Micro enterprises are those with not more than 5 employees and an annual revenue not more than 1.8 million baht. Small enterprises are those more than 5 employees but not more than 50 employees for manufacturing and 30 employees for trade and service sectors, and an annual revenue of more than 1.8 million baht but not more than 100 million baht for manufacturing and 50 million baht for trade and service sectors. (OSMEP, 2023 [https://www.sme.go.th/en/page.php?modulekey=363#:~:text=2\)%20Small%20Enterprises&text=Employment%3A%20more%20than%205,more%20than%2050%20million%20baht.](https://www.sme.go.th/en/page.php?modulekey=363#:~:text=2)%20Small%20Enterprises&text=Employment%3A%20more%20than%205,more%20than%2050%20million%20baht.))

² Section 33 are workers covered by Social Security through their formal employment, with contributions from their employers.

It is also encouraging to note that the gender wage gap in Thailand is decreasing and is less of a problem compared with other countries (World Bank, 2023), although when qualifications and characteristics are comparable, women’s wages still tend to be lower than that of men. As seen in Chart 3, the wage gap is not as large in the formal sector as in the informal sector. It is also noted that the difference between the formal and informal employment is the largest in the service sector, where women are concentrated (United Nations Development Programme [UNDP], Thailand, 2022, p. 21). As seen in Chart 2, the youth and the older generations are more heavily represented in the informal sector; hence, the age-based wage disparity is high.



Source: UNDP Thailand (2022)

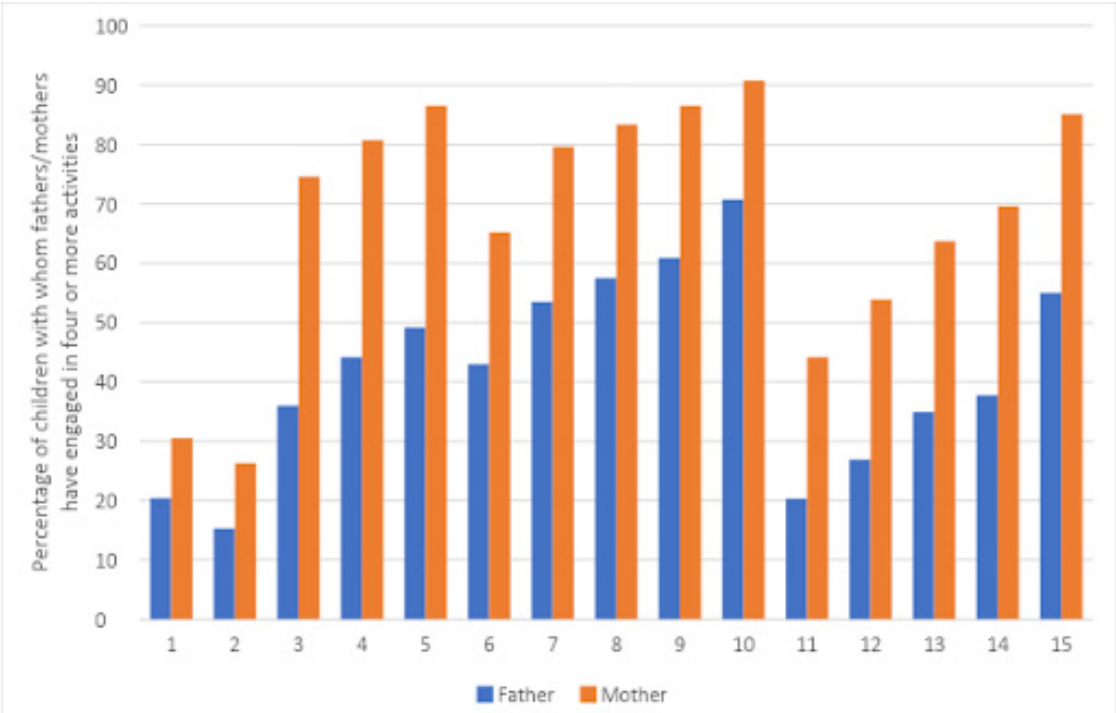


Chart 4: Percentage of children aged 2-4 with whom fathers/mothers have engaged in early learning activities (reading or playing), 2019

Source: UNDP Thailand (2022)

While these disparities exist, in Thailand, workers’ negotiation power remains low, as seen in the low trade union density (the share of employees who are union members), which is only 3.3 percent (in 2019). In Asia, the highest trade union density rate is seen in Vietnam at 49.6 percent (in 2018), while Iceland (in 2019) is the highest globally at 91.4 percent (International Labor Statistics [ILOSTAT], 2021). As of May 2023, there are 1,423 labor unions registered in Thailand, among which 564 are House Unions (labor unions representing the workers of only a single employer) and 859 are Industrial Unions (labor unions representing the workers in the same type of business) (Labor Relations Bureau, 2023). There were a total of 551,833 members in both private and public sector unions in 2023. This number is a drop from 617,157 members in May 2022 (ibid). When workers are organized, gender/women issues in the workplace get highlighted. For example, the women’s network of TEAM, affiliated with the Thai Labor Solidarity Committee, has campaigned and won better maternity protection (IUFAP, 2023).

Women are disadvantaged in the labor market because of their responsibilities as care workers. As a World Bank report (2023) noted, the responsibility for care work is the main reason why the gender wage gap exists and it also restricts the kinds of employment women can access. Chart 4 shows that although both women and men tend to engage in more educational activities with their children, even women of higher wealth and educational level are still more engaged in their children’s education than men. In total, 33.9 percent of the children considered in the chart have fathers who engaged in early education activities (four or more), while 62.2 percent of children have mothers who do so. It is also noted that poorer women and men often suffer from a lack of time and are likely to have less time to engage in early education activities with their children (UNDP, 2023).

Not only childcare but also elderly care has been put on the shoulders of women. With an aging society, the workload of elderly care will also prevent women from earning money outside their homes. As seen in Chart 5, elderly men receive care support from their spouses more often than elderly women. Both among elderly men and women, there are far more cases where they receive care support from either a single daughter or married daughters than from their sons. In particular, married daughters will either stay with their parents or come back from urban areas to look after their parents when they are older, which restricts their employment (ibid).

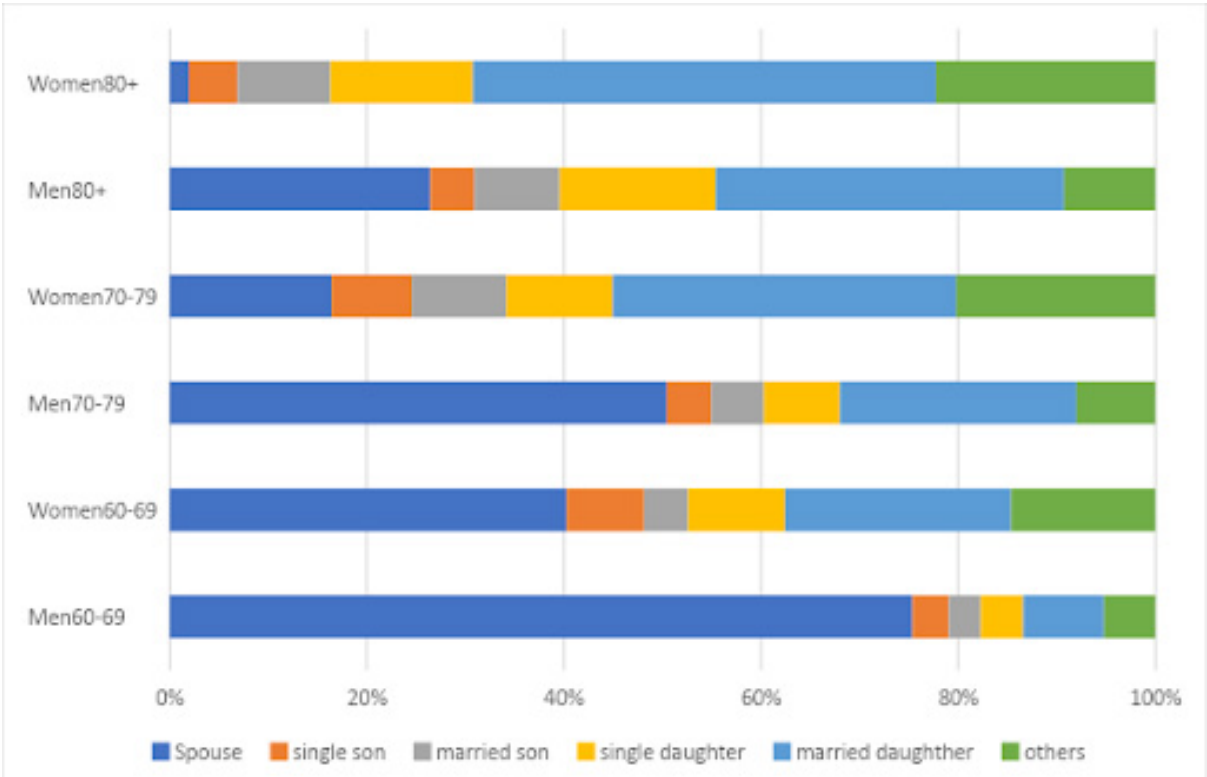


Chart 5: Primary caregiver for men and women over age 60+ who have indicated they need help with daily activities, by age group, 2017.

Source: UNDP (2022)

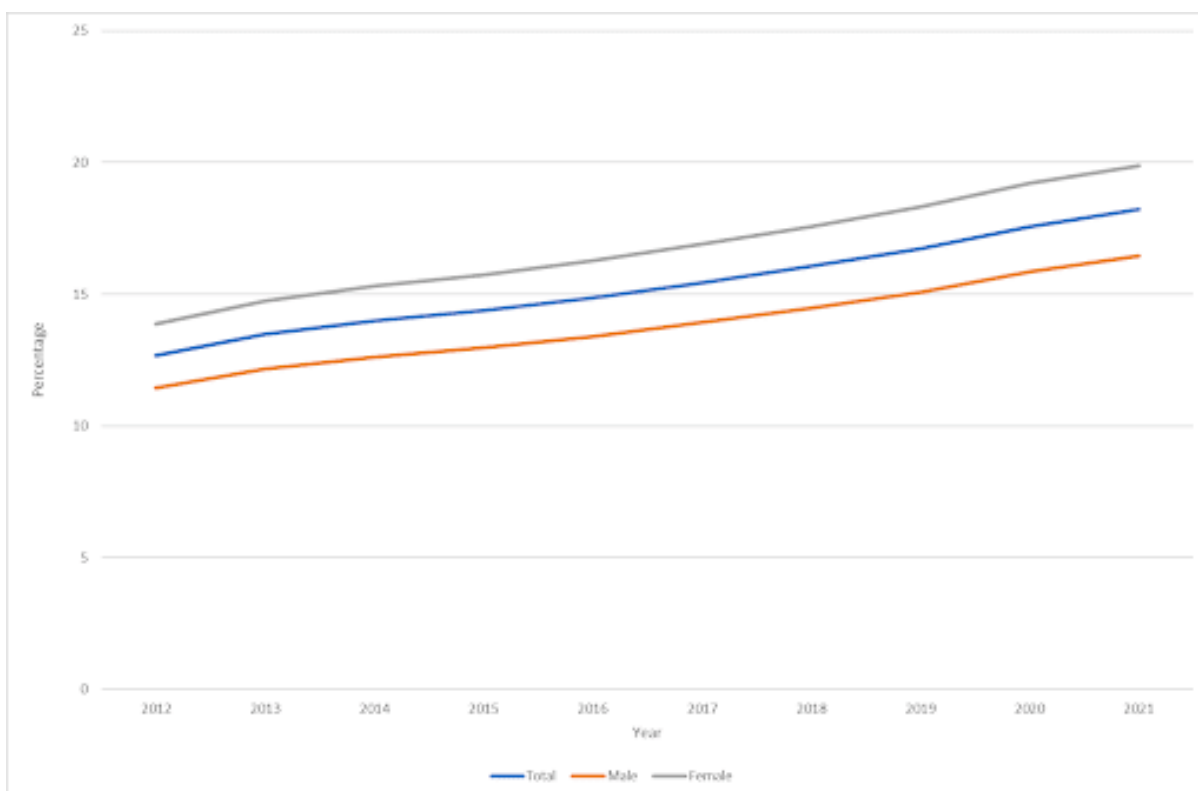


Chart 6: Percentage of population aged 60 and over by year

Source: Department of Provincial Administration, Ministry of Interior (National Statistical Office Website)

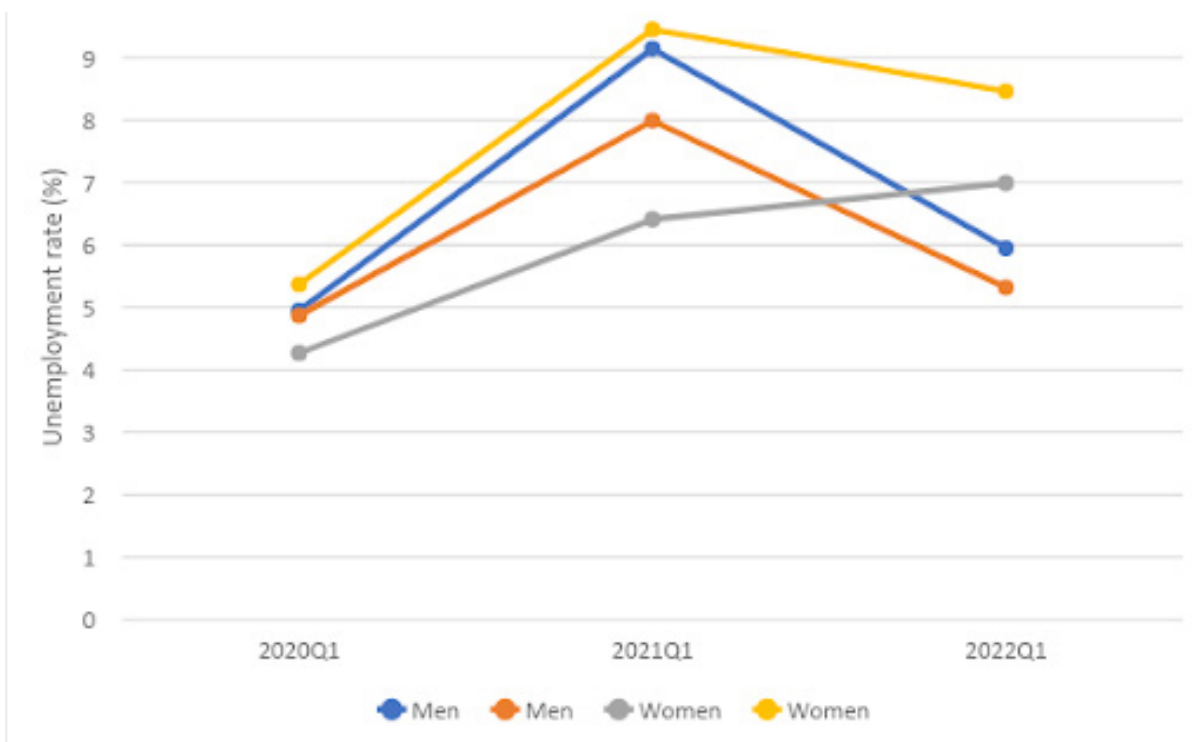


Chart 7: Youth unemployment rate by sex, age, and year

Source NSO, 2023

Care work responsibilities will increase in the future as Thailand becomes an aging society (Chart 6). Not only is the society aging, but youth are also having trouble finding jobs. The ILO (2021) suggested that nearly 1.4 million or 15 percent of youth aged 15-24 are not employed, educated or trained (NEET) in Thailand. Chart 7 shows that youth unemployment for both young women and young men has increased during COVID-19. However, young women's unemployment in the 20-24 age group is consistently higher than other groups, and it is also noted that while young men's unemployment went down to almost equal to the pre-COVID-19 situation, young women's unemployment remained high.

UNICEF (2023) noted that the higher unemployment rate of women as well as the higher rate of NEET (young women are twice as likely to be NEET as young men) is because women are expected to do household work and are less encouraged to pursue employment and education, as well as because of early pregnancy. Early motherhood deprives women of education and training opportunities. Women are also expected to take care of the sick and elderly. This is even more so in rural areas, where those who are not employed have few opportunities to leave the NEET status, the majority of whom are women.

Furthermore, during COVID-19, many workers returned to their hometown and have since not returned to their original workplace, so there is a shortage of labor in urban areas. The high inflation has made it difficult for young people to come back and live in urban areas, and they chose to reside in their hometowns (MSME outlook Q1/2023, p.36). The sector that has been hardest hit by COVID-19 by the second quarter of 2021 was hospitality and food services (ibid), where women are concentrated (see Chart 1). Note that informal employment is higher among youth and that such trends of youth being marginalized in the traditional labor market can have long-term consequences.

3 | THAILAND'S ECONOMIC DEVELOPMENT POLICY

According to the Office of the National Economic and Social Development Board (NESDB), Thailand has a three-level planning framework endorsed by the cabinet on December 4, 2560, B.E. (2017), namely, the 20-year National Strategy, National Economic and Social Development Plan, and Ministerial 5-year/1-year action plan/issue-based action plans.

The first level 20-Year National Strategy Plan shows the long-term national development goals and serves as a framework to ensure alignment and integration. The second level consists of four main plans, namely, the Master Plan under the national strategy, the National Reform Plan, the National Economic and Social Development Plan (NESDP), and the National Security Plan. Currently, Thailand is implementing its 13th National Economic and Social Development Plan, which has been effective since October 2022 and covers the fiscal years 2023-2027. The third level is a set of operational plans and action plans for either the five-year period or annual periods.

These plans are developed to ensure that the activities of government agencies are coherent and directed towards a common goal aimed at achieving the vision set in the 20-year National Strategy Plan to make Thailand "a developed country with security, prosperity and sustainability in accordance with the Sufficiency Economy Philosophy" by the year 2580 B.E. (2036). The six key focus areas of this National Strategy are (1) national security; (2) national competitiveness enhancement; (3) human capital development and strengthening; (4) social cohesion and a just society; (5) eco-friendly development and growth; and (6) public sector rebalancing and development (National Strategy Secretariat Office, 2017). Therefore, all plans created by government agencies fall under level 3 plans, and any changes or revisions require a review by the cabinet of the NESDB (ibid).

Out of these six focus areas of Thailand's national strategy, this report will analyze two that are of great relevance to the Thai economy and labor policy, viz., national competitiveness enhancement, and eco-friendly development and growth.

Simultaneously, Thailand 4.0 is another framework initiated by the Chan-o-cha government, which has also been used as a strategic tool intended to move Thailand from being a middle-income country to being a high-income country with the new growth engines of technology and innovation (Ministry of Industry, 2016 cited in Banmairuoy et al., 2022, p.200). This policy has also been included in Thailand's 20-year national strategy (2017-2036).

Under the focus area of national competitiveness enhancement, one of the five key development guidelines is "developing future industries and services" which can be key growth engines. The aim is to focus on advanced innovation and technologies of focused industries. One of the drivers of implementing this strategy is to identify S-curve industries that the government has identified as industries of focus.³ Targeted manufacturing and service sectors are embodied in sectors identified as S-Curve sectors. The first S-Curve targeted sectors aimed at enhancing production, including (1) next-generation automotive transportation, (2) smart electronics, (3) medical and wellness tourism for the affluent, and medical and wellness tourism, (4) agriculture and biotechnology, and (5) food for the future. In addition, a set of new S-curve sectors were identified under the "Thailand 4.0 model", aimed at developing or transforming product and technological landscapes. These include (1) robotics, (2) aviation and logistics, (3) biofuels and biochemicals, (4) digital products, (5) and the medical sphere. Defense and education development sectors have also been added taking the number of targeted S-curve industries to 12; however, special treatment, such as exemption of corporate income tax, is targeted at the 10 target industries (Bangkok Post 23 June 2020).

One of the national strategies for eco-friendly development and growth is to promote green growth and sustainable development, which supports the BCG (Bioeconomy, Circular economy, Green economy) model of development. The BCG model is also reflected in the 13th National Economic and Social Development Plan (NESDP 13) (2023-2027), which has four principles and ideas: the Sufficiency Economy Philosophy, Resiliency, the Sustainable Development Goals (SDGs) of the United Nations, and the Bio-Circular-Green Economy Model (BCG Model). The BCG (Bioeconomy, Circular economy, and Green economy) model is meant to interlink these three economies. The bioeconomy focuses on using biological resources to create added value. The circular economy takes into account the reuse of various materials as much as possible. The green economy aims to develop the economy hand in hand with social development and environmental preservation to achieve stability and sustainability. The focus on the BCG model is important, especially to keep up with the requirements of the trading partners, especially the European Union. A higher standard of environmental measures, responsive supply chains, as well as reduction of greenhouse gas emissions, will be increasingly important to maintain global competitiveness (Office of the National Economic and Social Development Council [NESDC], 2022). Additionally, the focus on the BCG model is essential to reach the Sustainable Development Goals.

It is also important to note that the 20-year national strategy also focuses on social cohesion and a just society, which aims to mitigate inequality and enhance social empowerment, in addition to the empowerment of local communities. This sets the foundation for this report, in which the social and gender impacts of the national strategy are assessed. In the following section, we will focus on the S-curve sectors and the BCG economic model-focused sectors and discuss the possible gender impacts of these sectors.

³ The S-curve refers to the sigmoidal curve that shows the cycle of growth and stagnation of companies. The companies with strong growth potential are those that can provide innovation that can reach a critical mass – a level where it is not only consumed by trend setters but is accepted as part of the everyday life, as in the case of smartphones.

4 | POSSIBLE GENDER IMPACTS: FOCUS ON MANUFACTURING AND DIGITAL ECONOMY

To identify the possible gender impacts through the promotion of S-curve industries (cars; smart electronics; affluent medical and wellness tourism; agriculture and biotechnology; food; robotics for industry; logistics and aviation; biofuels and biochemicals; digital services; medical services; defense; and education development), this report unpacks how the focus in this direction will affect the employment of women and men. Therefore, it will look at changes in manufacturing through automation, as well as digitalization.

Automation and digitalization in Thailand are progressing. The annual growth rate of industrial robots installed in Thailand between 2020 and 2021 was 36 percent (highest in Canada 66 percent). Globally, the advancement of automation may result in the disappearance of up to two-thirds of all current jobs in developing countries (UNESCO, OECD, IDB, 2022); hence, it is important to predict which group of people will be especially vulnerable to unemployment and need systemic support to be prepared for such structural change.

Thailand is in good condition to embark on a gender-sensitive digital economy, with women and men having almost equal access to basic digital technology such as internet access. A total of 88.7 percent of women and 86.6 percent of men in Thailand use the internet (NSO, 2023). However, gender disparities in employment in the growing digital sectors could become exacerbated because of an already existing gender segregation in employment. There is also the danger that women would lose their jobs more frequently than men in the wake of automation and digitalization processes, since female-dominated industries tend to be affected more than others.

Women might lose jobs more frequently than men in the wake of automation processes

Globally, women face an 11 percent risk of losing their jobs due to automation processes, compared with 9 percent for men (Banmairuoy et al., 2018). This is because female-dominated work tends to be routine administrative work that will be affected by automation processes as well as the introduction of AI. For example, women are more concentrated in clerical work and as line workers in garment factories. These jobs can be more vulnerable to the automation and digitalization processes. Automation risks are also imminent for one million shop assistants (Chang and Huynh 2019, p.15), who are predominantly female. On the other hand, manager jobs and professional jobs, which tend to be male-dominated, can be less threatened by the introduction of AI. Automation and mechanization can even lead to a defeminization of work. For example, by introducing automation in a garment factory, female tailors might lose their jobs, while male mechanics are needed to operate the machines. Human and care-related work, such as elderly care and childcare, is more difficult to replace by automation, and this is mostly female-dominated work. However, it should be noted that these sectors also tend to be the least paid sectors.⁴

Female-dominated industries are not included in the new S-curve industries.

Currently female-dominated industries are not included in the S-curve.⁵ As seen in Chart 1, women work in the social sector, education, and hospitality and food services. The types of food industries that the S-curve focuses on are technologically advanced food production and not of the food services that women are concentrated in, such as small-scale eateries. Women are represented in the tourism sector through hospitality and food services, but these are less lucrative areas of the sector. Wellness tourism, which is a combination of tourism and health, can also be an area where women can enter, but currently, women still work more often as nurses and nurse assistants as

⁴ In Thailand, the gender wage gap among government employees and state enterprises employees is small or almost nil. However, it is larger in the private sector and even larger for casual workers (who work for various employers). In 2020, women in casual work earned 83.68 percent of the wages that men did (NSO, 2023).

⁵ Although education development is now included as part of the 12th S-curve target industry, they do not get as much state support as other industries.

well as hotel workers. Therefore, there are some possibilities for the new S-curve focus to create employment for women since it includes some areas that could be female-dominated industries. However, there is also the risk of marginalizing them in the industry and leaving them behind because the type of industries that the S-curve policy focuses on is still more technologically focused and capital intensive.

It is also noted that finance and insurance are both female-dominated sectors, and these sectors are said to be most affected by AI and automation (Chang and Huynh 2019). At the same time, construction and transportation that are said to be less affected by AI and automation are male-dominated, and electricity that can benefit much from the S-curve policy is also male-dominated.

There are fewer women in STEM education

Therefore, it is evident that both women and men need reskilling and upskilling to utilize the opportunities arising during the S-curve industry development. However, since many of these jobs require technical knowledge, the current gender gap in educational backgrounds might disadvantage women in this process. In Thailand, more women (160,447) than men (91,802) obtained an undergraduate degree in 2020, but more men (30,730 or 33.5 percent) than women (25,683 or 16 percent) graduated from engineering, information and communication technologies (ICTs), mathematics and natural sciences, according to the Ministry of Education [MoE], Thailand. Thailand's tertiary STEM (science, technology, engineering and mathematics) graduates' female ratio is low compared with that of other ASEAN countries (see Chart 8). Although more women graduated from undergraduate degrees in Thailand, there remain significantly fewer female graduates in engineering and ICTs. This represents a missed opportunity for women to take advantage of the new policy and a loss for the government, as it cannot build on the ability of highly educated women in the technological field (World Bank Gender Data Portal, n.d.).

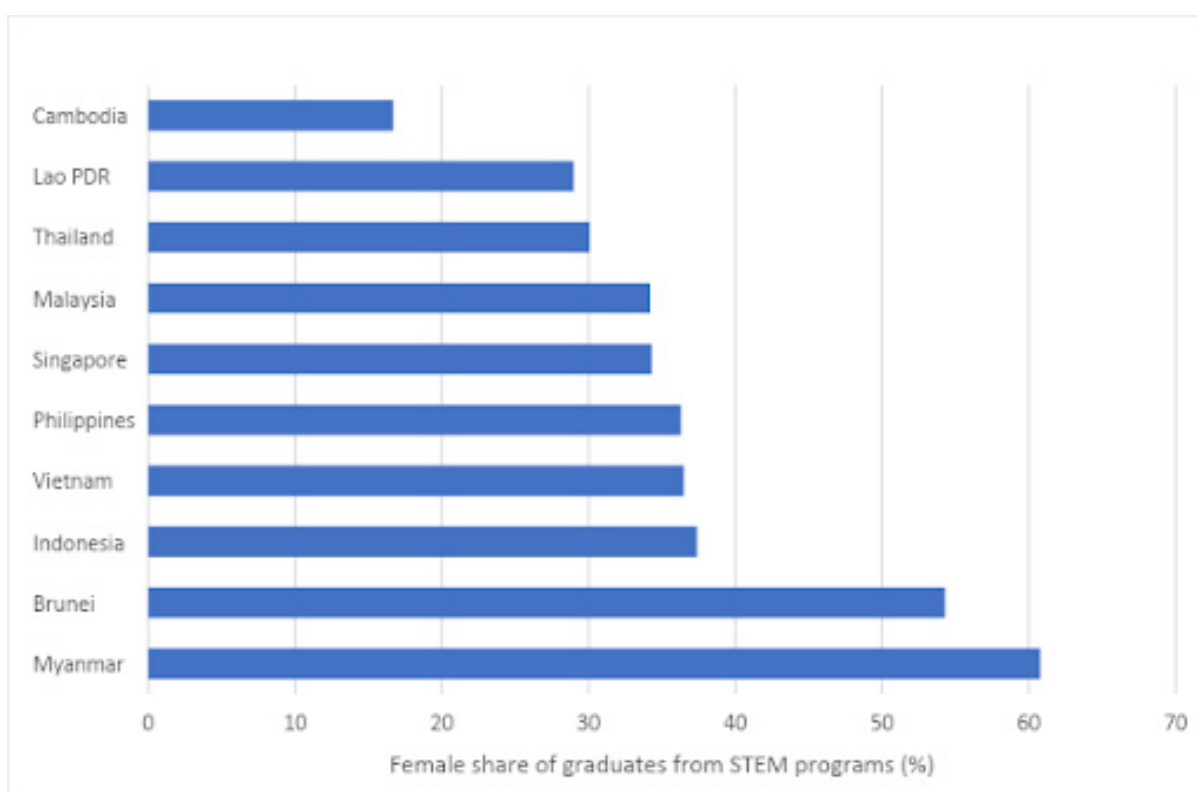


Chart 8: Share of female graduates from science, technology, engineering and mathematics (STEM) programmes, tertiary (percent)

Source: World Bank Gender Data

Note: Years in the figures are Cambodia (2015); Thailand and Vietnam (2016); Philippines and Singapore (2017); Myanmar, Brunei, Indonesia, Malaysia and Lao PDR (2018)

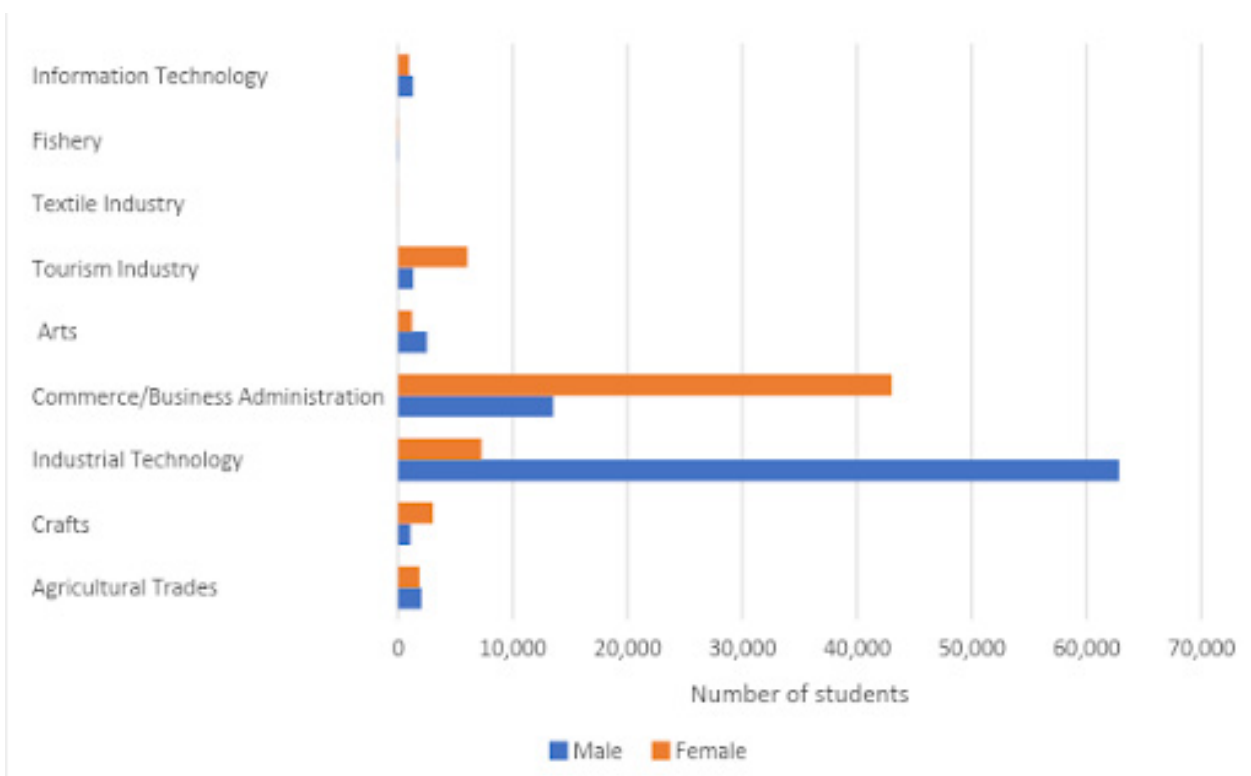


Chart 9: Certificate in vocational education by program and sex, year 2020

Source: 2021 Educational Statistics, Bureau of Information and Communication Technology, Office of the Permanent Secretary (OPS), Ministry of Education (MoE), Thailand

Remark: Public and private schools.

Number of graduates in Vocational Education and Diploma Programs in Ministry of Education and External Organization (Excluding Department of Ministry of Defense, Office of Sports and Recreation Development, Bunditpatanasilpa Institute and The Bureau of National Buddhism data.)

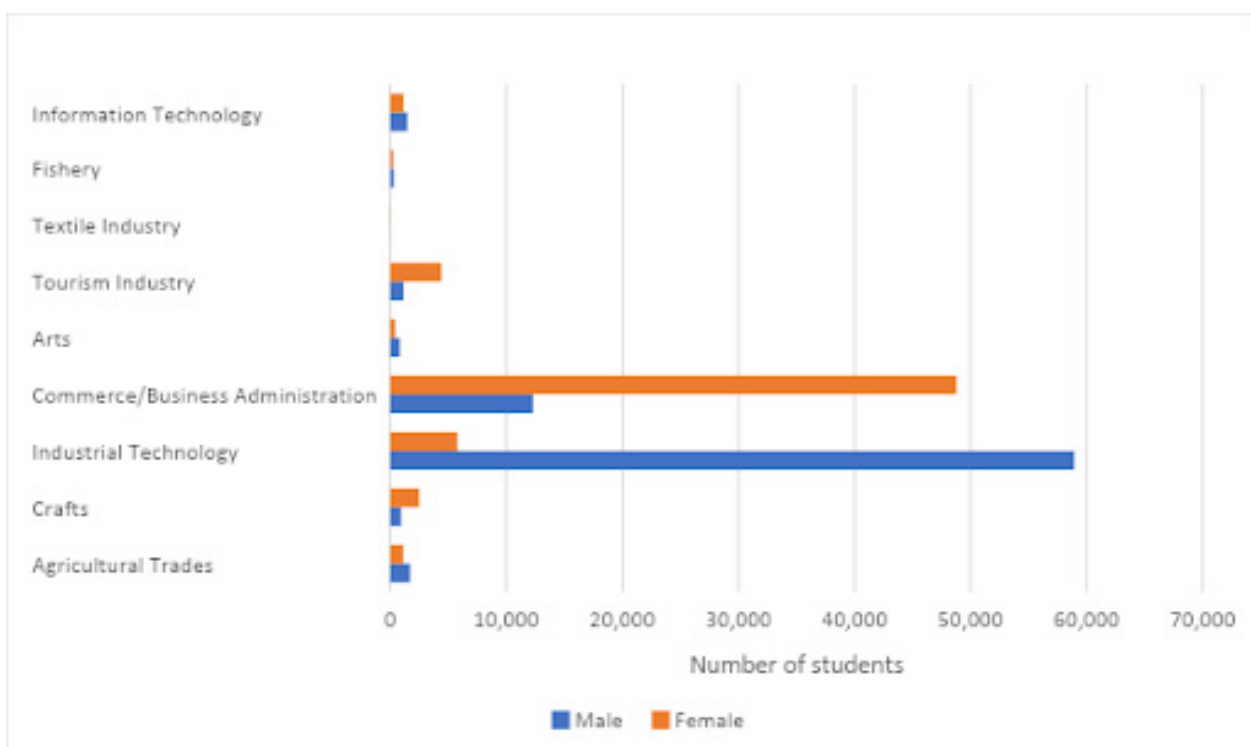


Chart 10: Diploma in vocational education by program and sex of students, year 2020

Source: 2021 Educational Statistics, Bureau of Information and Communication Technology, Office of the Permanent Secretary (OPS), Ministry of Education (MOE), Thailand

Remark: Public and private schools.

Number of graduates in Vocational Education and Diploma Programs in Ministry of Education and External Organization (Excluding Department of Ministry of Defense, Office of Sports and Recreation Development, Bunditpatanasilpa Institute and The Bureau of National Buddhism data.)

A similar trend is seen in vocational education (certificate and diploma) (Chart 9 and 10). Gender differences in programs for certificates and diplomas are even more pronounced than in tertiary education. Female students tend to be in business administration, while male students tend to be in industrial technology (MoE, 2023). It is important to note that for lower education, gender differences in STEM education are larger. Thus, if we are to reskill women affected by automation, vocational training is one of the areas with great opportunities for reskilling. If these vocational schools have a strong sex segregation in training programs, the atmosphere will not be encouraging for women workers to get reskilled into STEM and subsequently experience a smoother transition into occupational changes.

The training under the Department of Labor Skill Development (2023) has a total of 13 projects that targeted a total of 3,514,690 individuals (not gender disaggregated). The employment rate upon completion was 90.93 percent, with an average income of 14,477 baht/person/month. Among these sets of training sessions, project 3 targets enhancing productivity and developing human resources to create competitiveness in the industrial sector in the S-curve industries (the integrated industrial and service development plan for the future). It covers training on electric vehicles and new automotive innovation, automation technologies and robotics, automation and mechatronics technology, and the digital industry. The primary target groups were students, undergraduates, new workers, and workers in industrial and service establishments, with a total of 5,200 individuals (not gender disaggregated). It was found that 1,551 individuals participated in the training program, with employment upon completion being 89.31 percent, with an average income of 22,337 baht/person/month.

The only project that seems to consciously include women trainees is Project 11. This targeted workforce training is set to increase vocational opportunities. The project aims to train 11,000 individuals, with 5,032 participants undergoing training and an employment rate of 76.85 percent. The average income per person per month is estimated at 13,124 baht. Note that the training that consciously includes women trainees has a lower employment rate upon completion and lower average income than the other trainings offered under the department (ibid). Not only is more training offered in male dominated areas, but the trainees are also gender segregated. As seen in Chart 11, there are clear gender differences between the types of training that women and men attend, especial by the type of occupation.

Such male-dominated and female-dominated sectors are also strengthened through training in women and family development learning centers under the Department of Women's Affairs and Family Development (DWF, n.d.). These centers include training for beauticians (28.78 percent of the courses), handicrafts (24.97 percent), cooking (18.56 percent), business and management (13.84 percent) and Thai massage (11.05 percent). It can safely be said that training that is available for women is concentrated in female-dominated sectors that are not included in the S-curve industries but are more concentrated in lower-earning occupations. One exception is the training in collaboration with the ILO, which focuses on the readiness for women to enter the STEM workforce (ILO, 2017).

Other questions under automation and digitalization

When the workplace is more male dominated, it has been reported that sexual harassment and gender discrimination are more rampant (Parker, K., 2018; ILO, 2018, p.8). Artificial intelligence can also **promote gender stereotypes**. If AI is used to assess the suitability of trainees for training programs, it can impact **women's reskilling and upskilling opportunities** and strengthen gender segregation in the labor market.

Automation in labor-intensive industries such as garment factories can cause the **wages to further decrease** in the sector of female-dominated positions. This is because factories that pay decent wages to tailors will be moving to "sewbots" to save on labor and other related costs. Those who will not go for sewbots are only those who would still be able to hire women workers with a low enough wage. Women workers will thus be **competing with sewbots**, which can lead to a race to the bottom for wages (Fenigsohn, G. 2016).

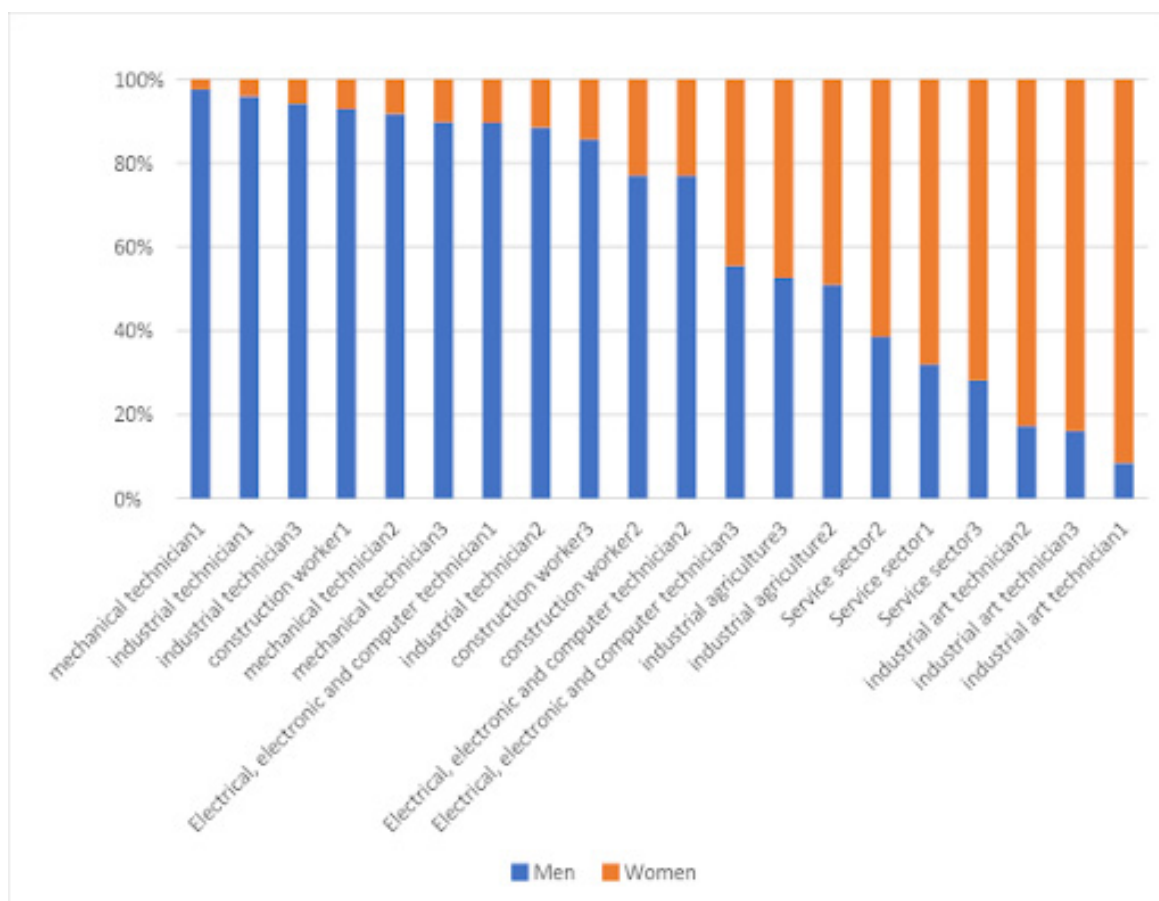


Chart 11: Gender ratio of trainees by type of skill development

Source: NSO Skill Development Survey, 2022

Note: Number at the end of the training name suggests the types of training: 1 = preparing for work training; 2 = skill upgrading training; 3 = additional vocational training.

There have been some expectations that digitalization can allow more **flexible work** in terms of time and location, making it easier to achieve work-life balance. Women experience a bad work-life balance more often than men because of their care responsibilities. Some women opted for home-based work to balance these two responsibilities. Earlier, such home-based work tended to be much lower paid and at the bottom of the informal employment hierarchy. However, digitalization has allowed professionals to choose their own place of work, creating an opportunity for reorganizing work. However, the experience during COVID-19, when remote work increased dramatically, showed that **women's household work burden increased** and strengthened the gender division of labor, which has been seen not only in Thailand but also globally. Both women and men were at home, but it did not lead to an **equal sharing of household work** and, on the contrary, increased women's workload (Eurofound, 2022)

There are some expectations that digitalization can **create new jobs** that can promote employment opportunities for women. Working on online media and online marketing has created new employment opportunities, but it might not be in a large enough quantity to compensate for the expected loss of jobs through digitalization and automation. There is an urgent need for reskilling and upskilling to allow women workers to make use of emerging opportunities.

Summary of this section

There is a higher possibility for women (especially youth and older women in the informal sector) to be marginalized due to the current policy on digitalization and automation. Women workers, especially poorer, less educated and older women, would be vulnerable to losing their jobs and subject to a decrease in income, while receiving few opportunities for upskilling/reskilling. Hence, they have fewer opportunities to access and benefit from the newly created employment opportunities under this policy. There is a need to create focused support for this group of women workers.

5 | POSSIBLE GENDER IMPACTS: FOCUS ON THE CIRCULAR ECONOMY AND GREEN ECONOMY

The green economy can create more job opportunities. The ILO estimates that 24 million jobs worldwide could be created by the green economy by 2030 (ILO, 2018: p.37). LinkedIn's survey showed that postings for green jobs grew at 8 percent per year since 2015 compared with other job postings which grew at only 6 percent.⁶ However, it also identified that fewer women have green talent – in 2021, only 62 women for every 100 men were considered to have green talent (LinkedIn, 2022). Over the last six years, 66 percent of transitions into green jobs have been by men. Globally, women seem to benefit less from the green economy than men.

It is also noted that most companies offering green jobs are male dominated (World Bank, 2022). Globally, only 15 percent of board positions and 4 percent of CEO positions in green jobs companies are occupied by women, and women make up only 32 percent of the renewable energy workforce. In the field of green jobs, women are concentrated in the agriculture and fish processing sectors (World Bank, 2022), which are the lowest paying green jobs.

Thailand's biocircular-green economy (BCG) model is introduced below (National Science and Technology Development Agency [NSTDA], 2021):

"The BCG model places emphasis on applying science, technology and innovation to turn Thailand's comparative advantage in biological and cultural diversity into competitive advantage, focusing on four strategic sectors, namely, 1) agriculture and food, 2) wellness and medicine, 3) energy, materials and biochemicals, and 4) tourism and the creative economy.... The BCG model has been introduced to enable sustainable and inclusive growth, in line with the UN Sustainable Development Goals (SDGs) and the Sufficiency Economy Philosophy (SEP) (Ministry of Higher Education, Science, Research and Innovation [MHESI], 2021). The model aims at applying the concepts of bioeconomy, circular economy and green economy to develop high value products and services that are eco-friendly and require less resource input, while conserving natural and biological resources."⁷

⁶ It based the definition on the U.S. Bureau of Labor Statistics that states that green jobs are either (a) jobs in business that produce goods or provide services that benefit the environment or conserve natural resources, or (b) jobs in which workers' duties involve making their establishment's production processes more environmentally friendly or use fewer natural resources. The goods and services under category (a) includes energy from renewable sources; energy efficiency; pollution reduction and removal, greenhouse gas reduction, and recycling and reuse; natural resources conservation; environmental compliance, education and training and public awareness. According to this definition, in the year 2009 in the U.S., the top three sectors that offered green jobs were in construction (38.1 percent), professional and business services (36.2 percent), other services including repair and maintenance services, and professional organizations (8.4 percent). (Bureau of Labor Statistics, <https://www.bls.gov/green/home.htm#:~:text=Green%20jobs%20are%20either%3A,or%20use%20fewer%20natural%20resources.>)

⁷ From National Science and Technology Development Agency (NSTDA)'s BCG website (<https://www.bcg.in.th/eng/background/>) accessed on 19 July 2023.

In Thailand, the BCG model sectors account for 21 percent of GDP and create more than 16.5 million jobs in the country (Office of National Higher Education Science Research and Innovation Policy Council [NXPO], n.d.). At the heart of the BCG model is a parallel development. One area of focus is high-level scientific advances for producing high-value goods and services, such as health food ingredients, biomaterials, and medicinal active ingredients.

The other is enhancing the grassroots economy to create value for the masses with environmentally friendly development as well as strengthening social capital. This approach follows the philosophy of the sufficiency economy advocated by the late King of Thailand and is expected to lead to the United Nations Sustainable Development Goals. The BCG Model integrates the value chains of five major S-curves industries: agriculture and biotechnology; food processing and biofuels; biochemistry; medicine; and tourism.

Although the BCG model is a broad philosophical approach that encompasses a large area of national development, below, we focus on the green and circular economy which is at the heart of the BCG model.

The World Bank (2022) showed an increase in real income for all income quintiles by moving to a circular economy, especially through advanced manufacturing, but also through agriculture and services. Basic manufacturing, extraction and energy sectors will experience negative outputs from moving to a circular economy.

“Women’s leadership is central for the promotion of a circular economy”, since they can contribute as sustainable producers as well as consumers (ILO, 2022:2). Women are more likely to recycle, minimize waste, buy locally, buy eco-labeled products, and engage in water and energy saving initiatives at the household level (ibid). Thus, it is a lost opportunity to not promote women in the green economy. Women employees and leaders are more willing to act on climate than men (World Bank, 2022). Companies with more gender diversity reduced their CO2 emissions by 5 percent more than those with more men in management. It is also observed that women employees can reach out to women customers better, who are the key decision makers for household energy choices.

Many so-called green economy enterprises are run by social enterprises. It is noted that women tend to lead social enterprises more than other kinds of enterprises (British Council, 2020). Of the 213 social enterprises registered in Thailand in 2022 (NXPO, 2022), 59.6 percent are run by men, while 34.9 percent are run by women. This is higher than the national ratio of 24.0 percent of women in business leadership in general. Half of the social enterprise leaders are under the age of 44. In terms of employment, 58 percent of full-time workers and 68 percent of part-time workers in social enterprises are women (Rojpongkasem, S., 2021). As seen in Chart 12, women’s social enterprises tend to be smaller than men’s.

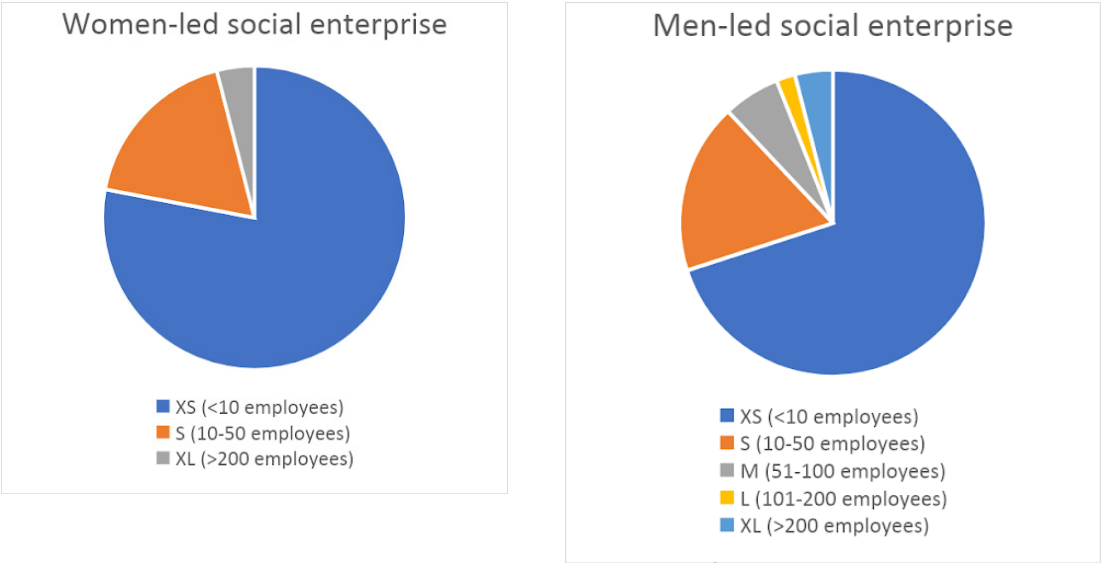


Chart 12: Social enterprises led by women and men by number of employees.

Source: British Council (2020)

Although women’s social enterprises are smaller, supporting and promoting women in social enterprises can still be an effective way to promote a green economy. Chart 13 shows the number of social enterprises by gender in Thailand. This is based on a sample survey and does not reflect the overall picture of social enterprises in Thailand, but it is noteworthy that women take a leading role in the rather unconventional sectors of energy, clean technology and environment as their social enterprises. This shows the opportunities for promoting women in social enterprises to enhance the green economy in Thailand.

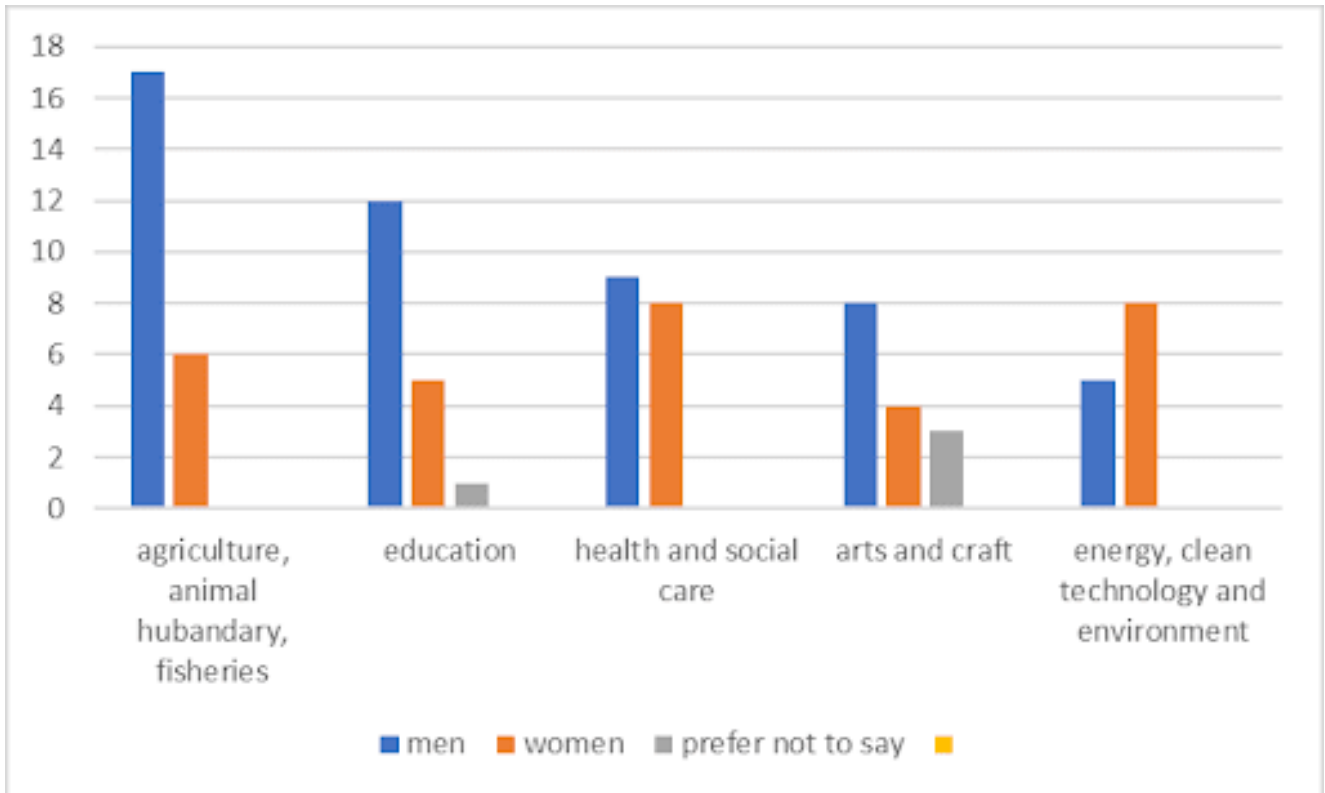


Chart 13: Top five sectors of social enterprises by gender in Thailand

Source: British Council (2020)

There are various women-led social enterprises in Thailand that are working on a green/circular economy. One good example is the grand prize winner of the 2022 APEC BEST (Business Efficiency and Success Target) award, Varangtip Satchatippavarn, the owner of the Ira Concept. This Thai company sells organic, biodegradable feminine hygiene products. She also empowers women through her awareness raising messages in social media on menstruation (Asia-Pacific Economic Cooperation [APEC], 2022). Similarly, in the case studies of women entrepreneurs⁸ in the garment sector compiled by ILO (2022), women showed their dedication to the circular economy business models.⁸

There are other social enterprises that are led by men but include women as important players in the enterprise, especially those that are community-based. An example in Thailand is Jasberry Co. Ltd., which is a social enterprise on organic agriculture. Although the head is a man, half of the board members are women. They work with over 2,500 farming households on high-quality organic seeds, improving yield and quality, as well as processing, packaging and marketing.

The move toward a circular economy and green economy has the potential to improve women’s employment but at the same time entails the danger of using women as volunteers without creating any employment. Many

⁸ The cases studies are based in Bangladesh, India, Indonesia, and the Philippines.

community-based recycling and waste management activities are carried out by women as community volunteer activities and as extensions of household work. On the other hand, professional recycling businesses are largely run by men. In promoting the circular economy, we need to review what is valued and what is not. We need to create an alternative value system where community work and care work that is largely done by women are appreciated and not taken for granted to be done for free. In the true sense of BCG, which promotes alternative values for wellbeing, we need to reconsider the existing value system that does not reward the essential work that is necessary for a circular economy to function and is largely done by women.

Summary of the section

The green economy and circular economy can create job opportunities for women if support is given to them, specifically for employment and entrepreneurship. The current green economy is male-dominated, and therefore, targeted support is required. Not having women in the green/circular economy is not only a lost opportunity for women but also a lost opportunity for the green/circular economy itself, since studies have shown that women can be effective leaders for sustainable and environmentally friendly activities. It is also noted that women tend to own smaller businesses and that women engage more often in community-based voluntary work that is unpaid. Thus, green/circular economy development can create gender/class-based disparities. As a consequence, larger green investment is dominated by men, while small informal community circular economy work is dominated by women.

6 | CONCLUSION AND RECOMMENDATIONS

This review of selected portions of Thailand's economic and development strategies has shown that both automation and digitalization as well as the green and circular economy have the potential to benefit both women and men and create new employment for them. However, these will not happen automatically and without any focused intervention. Digitalization and automation might not benefit women with lower education levels and older women, and this group of women would therefore be more vulnerable to losing jobs.⁹ They would have less opportunity for upskilling/reskilling opportunities. Similarly, under the BCG model, there is a possibility that women would be involved more as unpaid volunteer labor and benefit less from the initiatives because their businesses are smaller in size.¹⁰ Without deliberate and conscious interventions, these policies might increase gender disparity, in particular making poorer and older women more vulnerable. To maximize the opportunity and minimize the negative impacts, the following recommendations are suggested:

Promote women in STEM education and training

The support of women is necessary not only in tertiary education but also, especially, at the vocational training level. Women who will be affected by automation are usually not highly educated and might need more practical hands-on training to reskill themselves for alternative jobs. As seen in section 4, currently, gender segregation in training is wider for vocational and short-term training levels than for the university level. It is especially important to target the group of women who might be threatened by automation and digitalization, especially those who are in labor-intensive industries or in routine clerical jobs for upskilling and reskilling. Since these women tend to be not only cash-poor but also time-poor, incentives for employers to free these women to attend reskilling/upskilling training are necessary. It is also important, as was identified during the stakeholder workshop, that these women

⁹ The vulnerability of older women was also confirmed during the stakeholder meeting. Older women feel left behind by the introduction of new technologies. It has also been pointed out that women above the age of 35 are more vulnerable to unemployment. Although aggregated data does not support this, it might be because women need to work since they need to earn money. As in section 2, older women tend to be concentrated in informal employment.

¹⁰ During the stakeholder meeting, it has been pointed out that women are good in working on circular economic activities, such as waste sorting, but government policies tend to see women only in their wifely roles.

are able to imagine their future careers. With the rapid changes in technology and employment, it is often difficult for them to imagine their future work and hence they cannot appreciate the importance of training. Career training is thus as important as technical training.

During the stakeholder meeting, it was also identified that such human resource development tends to suffer from a time lag – that is, employers need certain skilled workers now, while it takes time to train such workers. There is a need to plan for both short-term and long-term education and training for a smooth transition in technological and economic changes.

Women in leadership training

As UNESCO (2022) noted, it is not only technical skills that are important and require reskilling. Additionally, soft skills such as communication and teamwork training are needed for the future of work under automation and digitalization. As discussed in section 5, women leaders are effective in advancing the circular and green economy. Promoting and supporting women leaders in all sectors will benefit the transformation of the economy under the current policy.

Promoting women's entrepreneurship through mentoring and incubating

Women's businesses tend to be smaller than men's and because of their small size (as seen in section 5), and because of the types of businesses that they are in (e.g., small food or service industries), it is more difficult for them to obtain larger financial loans. Women often lack role models since the business sectors are gender disaggregated, and female role models in male-dominated sectors are rare. At the same time, women-led businesses are important for the growth of the green and circular economy sector. Thus, there is a need to have targeted support for women entrepreneurs to embark on S-curve sectors and in green/circular economy sectors, not only through access to finance but also through mentoring and incubating. The stakeholder meeting also emphasized the importance of supporting the identification of economic opportunities since it is often difficult for small businesses to understand and strategize on the basis of larger technological and economic changes.

Gender equality initiatives in male-dominated sectors

Women working in male-dominated sectors face greater discrimination, harassment, gender-based violence, harsher working conditions (less work-family balance), stronger gender stereotypes and more difficulty in getting promoted. S-curve industries as well as green economy sectors are mostly male-dominated, and there is a need to transform the organizational culture of these sectors so that more women can join and benefit from the growth of these rising sectors.

Anti-sexual harassment training and the establishment of a system to deal with sexual harassment in the workplace, awareness raising and correcting discriminatory practices, reviewing working conditions to allow both women and men to work comfortably, reviewing promotion schemes for gender discriminatory factors and biases and promoting work-life balance are some of the initiatives that need to be promoted, supported and guided.

Providing targeted support to the most vulnerable groups: Focus on women aged below 19 and women aged above 40, especially in the informal sector.

Women who are aged below 19 and aged above 40, who are poor and less educated, especially working in the informal sector, are the most vulnerable, and it is easier for them to be left behind in the transformation of the economy under the current policy (see section 2). They are more likely to lose their jobs, and the generation aged 40 and older is also required to provide elderly care for their parents. Both the younger and older groups of women need to be targeted for support in upskilling/reskilling as well as in entrepreneurship and leadership.

Childcare and elderly care support

Some of the difficulties that women face in reskilling and upskilling are that they need to take care of their family members. The number of childcare centers has increased and is said to cover approximately 70 percent of children. However, most only allow children from age 3 upwards, so there is no assistance for childcare below the age of 3.¹¹ Few employers provide childcare facilities, and parents depend on publicly or privately arranged childcare. Similarly, there are very few facilities that provide elderly and disability care. Most of the care is provided by the family. There are 200,000-450,000 individuals per region in Thailand who need care to meet their daily living needs (UNDP, 2023). There is also a lack of trained caretakers for elderly individuals, putting the whole responsibility of elderly care on to the family members, especially women in the family, or being filled by migrant workers, as pointed out during the stakeholder meeting.

There is also little awareness raising or incentive for the sharing of household work between women and men. More awareness raising is needed so that the societal norm changes; and household work is done by both women and men equally.

Organizing women workers (and other vulnerable workers)

Automation and digitalization can create unemployment for certain workers. During the labor transition through automation and digitalization, many workers can be laid off. As seen in the previous sections, women, especially young and elderly women, are vulnerable to unemployment. Targeted support for them, as suggested in point 5, is important, but there is also a need to organize these women to give them voices. Currently, the unionization rate in Thailand is very low, and many of these vulnerable workers are not in a formal employment where they can join unions. Informal women workers' networks, such as Homenet, are important vehicles to unite workers and give them voices so that they will not be left behind in the process of transformation of the economy.

Involve women as entrepreneurs and not only as volunteers

As discussed in the green/circular economy section, women can play a large role in the green/circular economy but can be involved as volunteers rather than entrepreneurs or employees. This is the case especially for community-based circular economy involving waste management or small-scale water/energy management. This is because such community-based work is considered an extension of household work and it is taken for granted that women will do such work for the wellbeing of the community. Although such community support is important, we need to be aware that the current practice further raises the unpaid workload of women in a disproportionate manner.¹² We need to create a model where women do not need to be mobilized as free labor but will be a viable and decent addition to the work force. Improving working conditions can lead to men also being more involved in these activities.

Collect gender disaggregated data

This study has uncovered a severe lack of gender disaggregated data on labor, training and business statistics. There is the need to have better gender-disaggregated data so that gendered impacts can be monitored and evaluated better.

Under the volatile changes in the world economy, rapid advances in technology, and increased threats of climate change, and in order to move out of the middle-income trap, Thailand has embarked on various economic policies. Many are treading in new areas where outcomes are not yet known. However, by reviewing the current labor structure/practices as well as the gender/social norms and behavior in Thai society, it is possible to predict both potentially positive and negative effects. It is important to carefully monitor the changes and continue to advocate for gender equality and justice in Thailand's labor market.

11 This lack of childcare support especially for children below 3 were emphasized by several people during the stakeholder meeting. TDRI said that their study on mothers showed that 40 percent of respondents left their jobs either voluntarily or by force.

12 This point was also emphasized during the stakeholder meeting.

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