

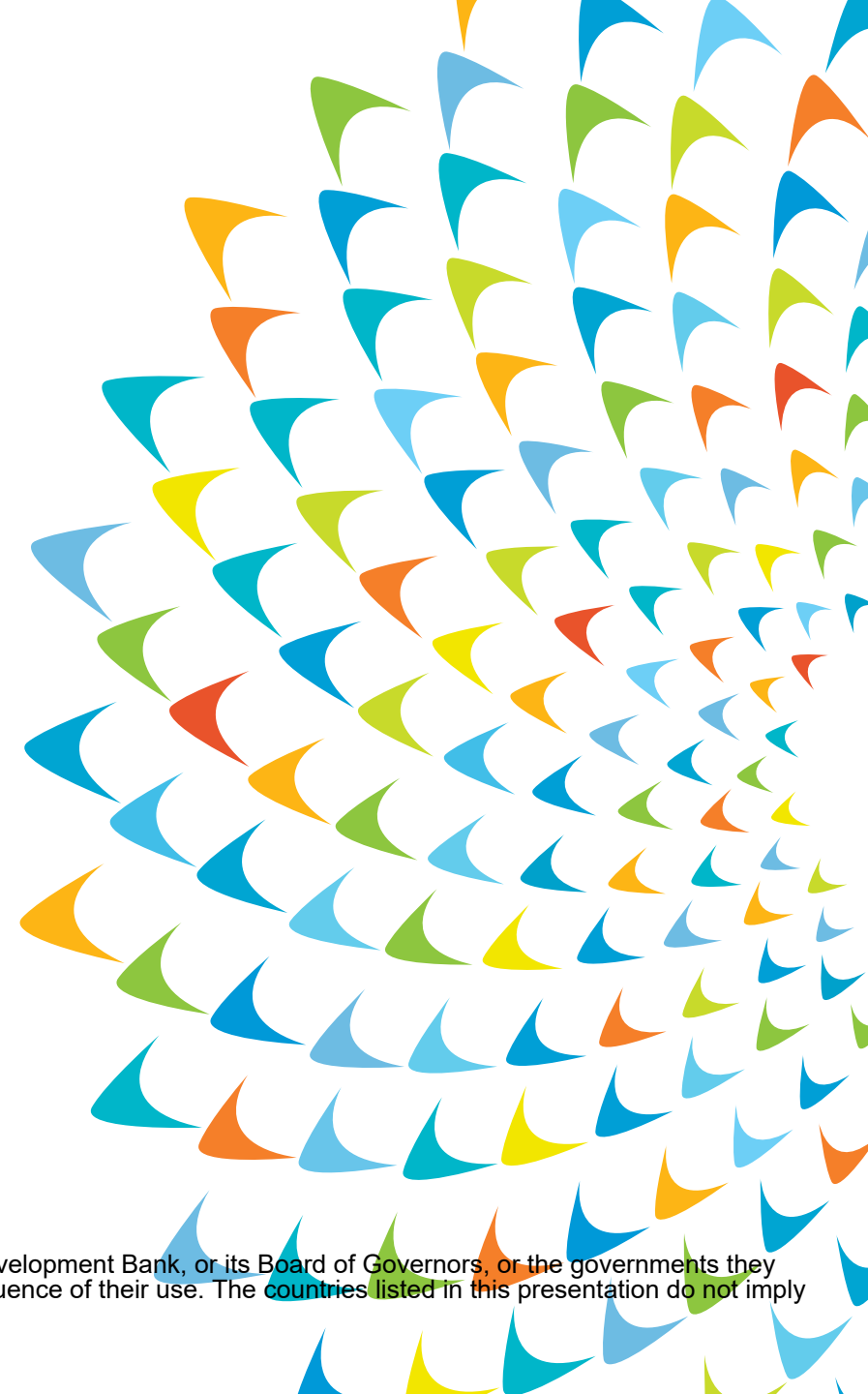


# Future of Skills Development in the time of COVID-19

14<sup>th</sup> PACER Dialogue

Sameer Khatiwada | 10 June 2021

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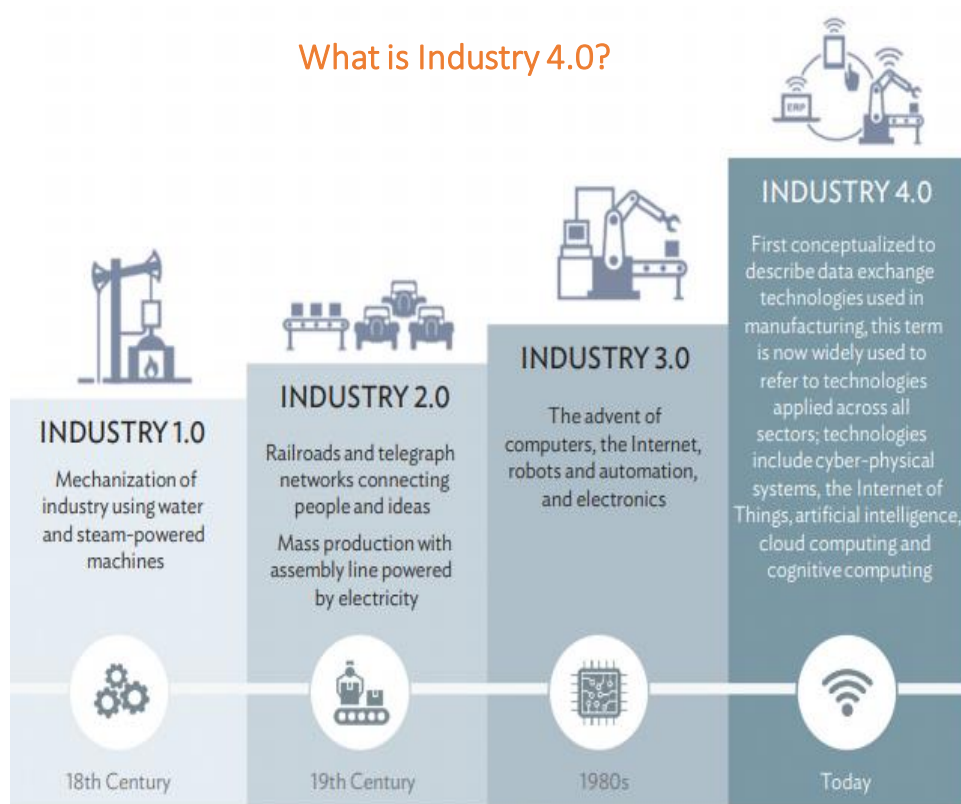


# Outline

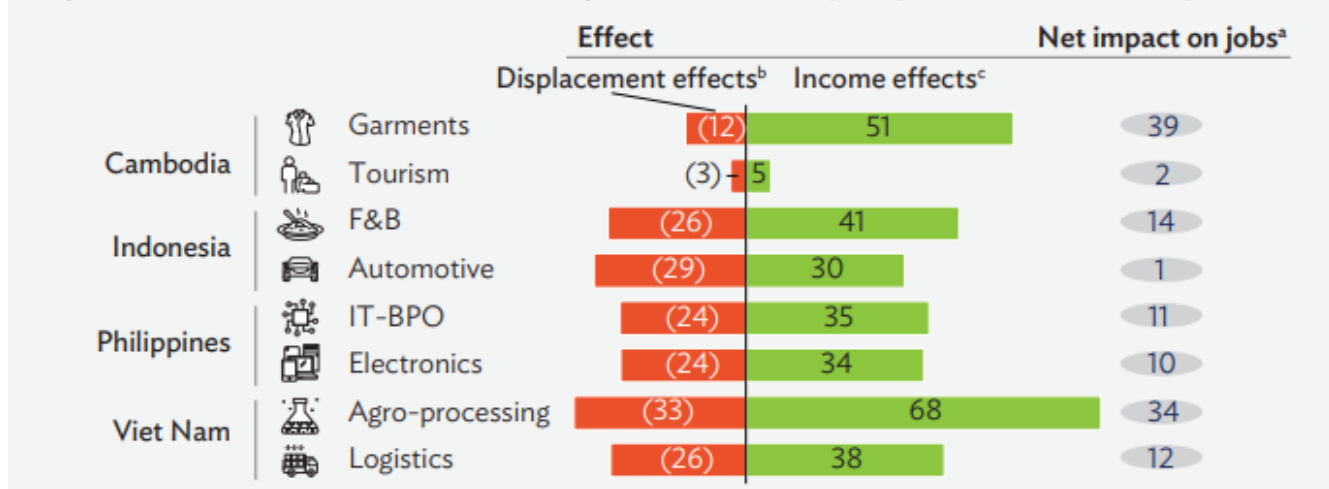
- I. Context: Changing labor demand in the age of 4IR
- II. Economic and labor market impacts of COVID-19 on Southeast Asia
- III. COVID-19, technology, and the future of work
- IV. Skills development in the post-pandemic world

# Technological advances drive productivity and economic growth but can also lead to *job displacement, and impact skills demand and skills returns*

## Modeled Impact of 4IR on Job Number Change from 2018 to 2030



Displacement and income effects of 4IR on jobs, 2018–2030 (% of jobs affected in 2030)



<sup>a</sup> Combination of displacement and income effects.

<sup>b</sup> Job reductions owing to labor substitution effects of 4IR.

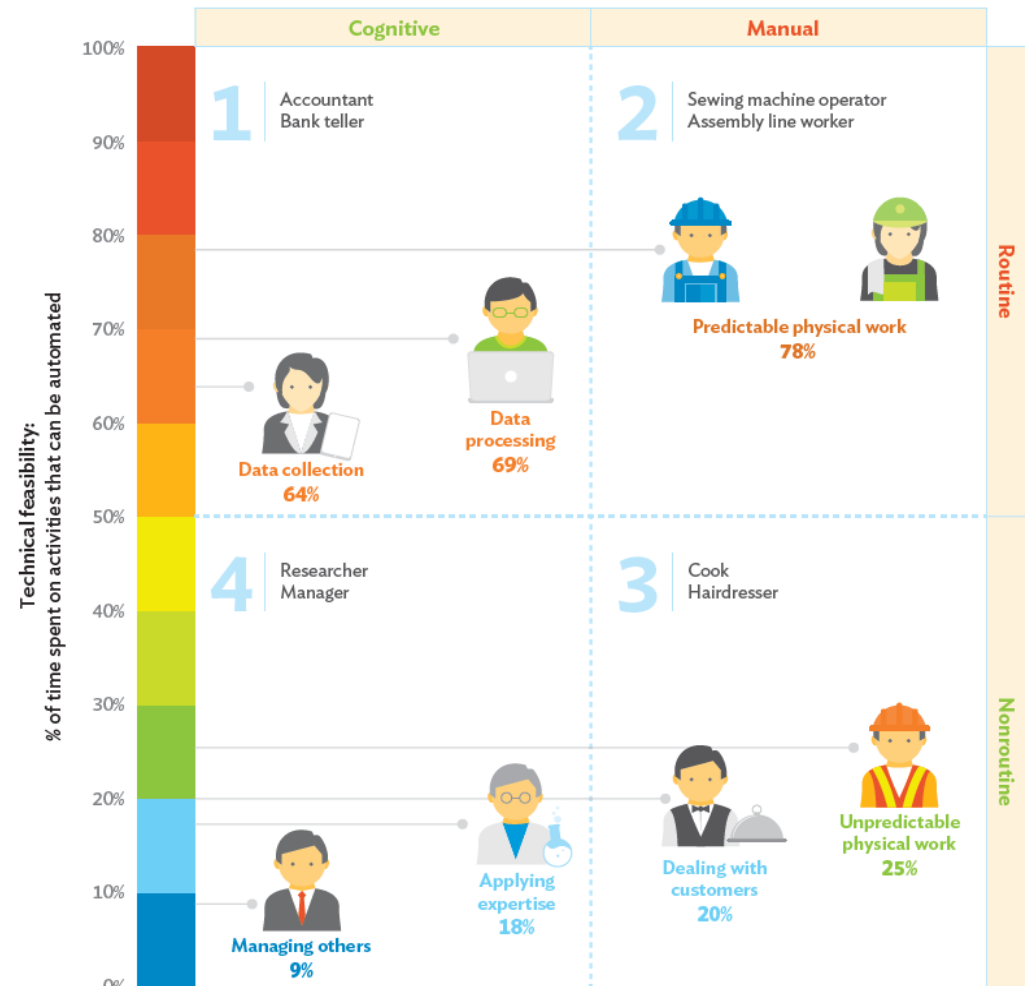
<sup>c</sup> Additional labor demand simulated by revenue increases brought about by 4IR-enabled productivity gains.

Source: Source: ADB. 2021. *Reaping Benefits of Industry 4.0 through Skills Development in High-Growth Industries in Southeast Asia: Insights from Cambodia, Indonesia, the Philippines, and Viet Nam*. Manila.

**Estimates show that net employment may rise with 4IR — positive income effects offset negative displacement effects**

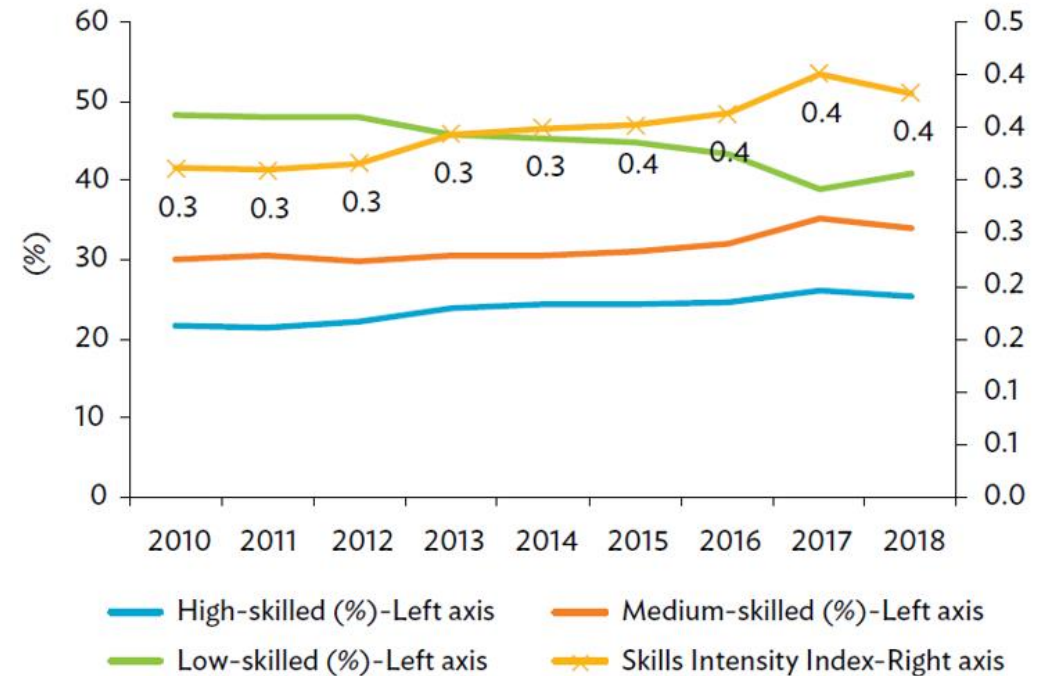
# Regardless of aggregate effects, 4IR is likely to have *differential effects* across groups of workers, with skills demand as a key channel of impact

## Impact of automation on jobs



Note: Percentages refer to Frey and Osborne (2017) estimates on probability of automation. Framework is based on Acemoglu and Autor (2011).

## PHI: Employment Distribution by Skill Level and Skills Intensity at the Aggregate Level, 2010–2018

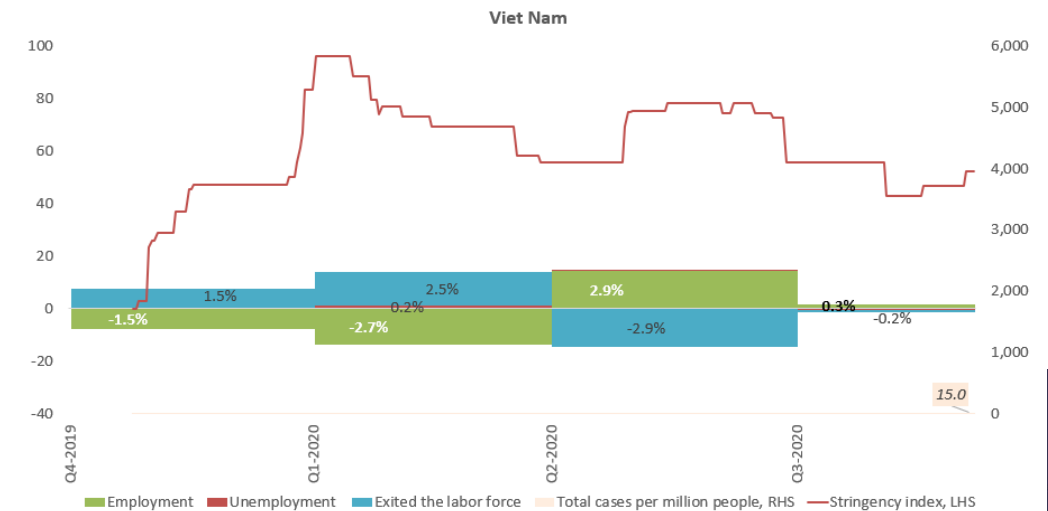
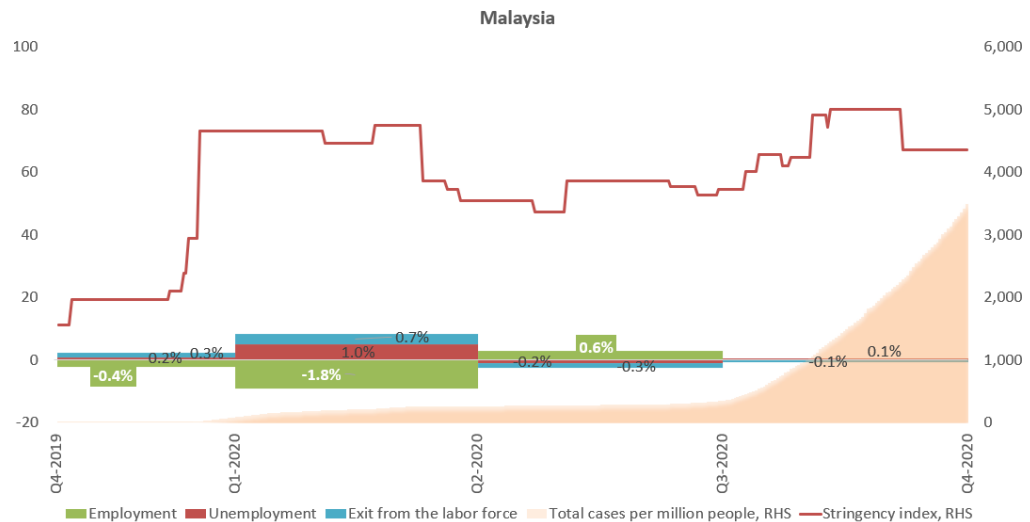
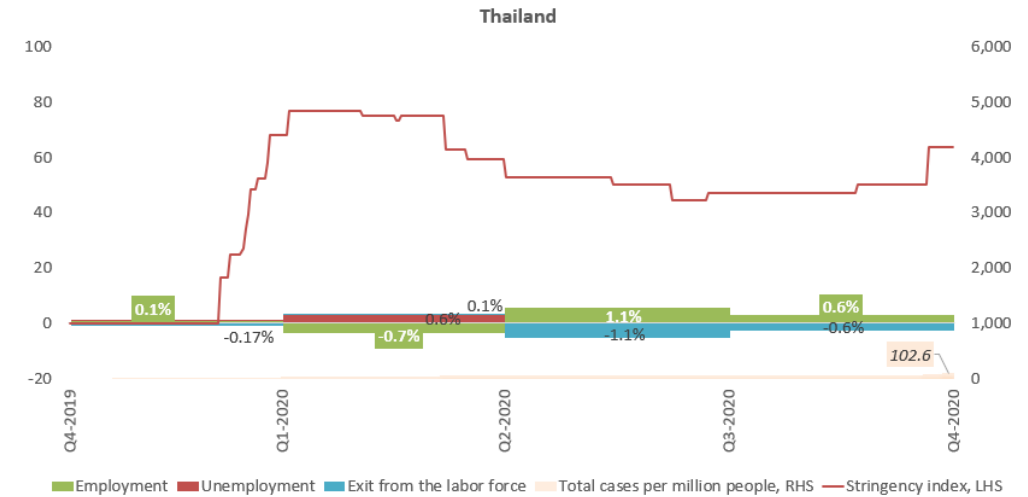
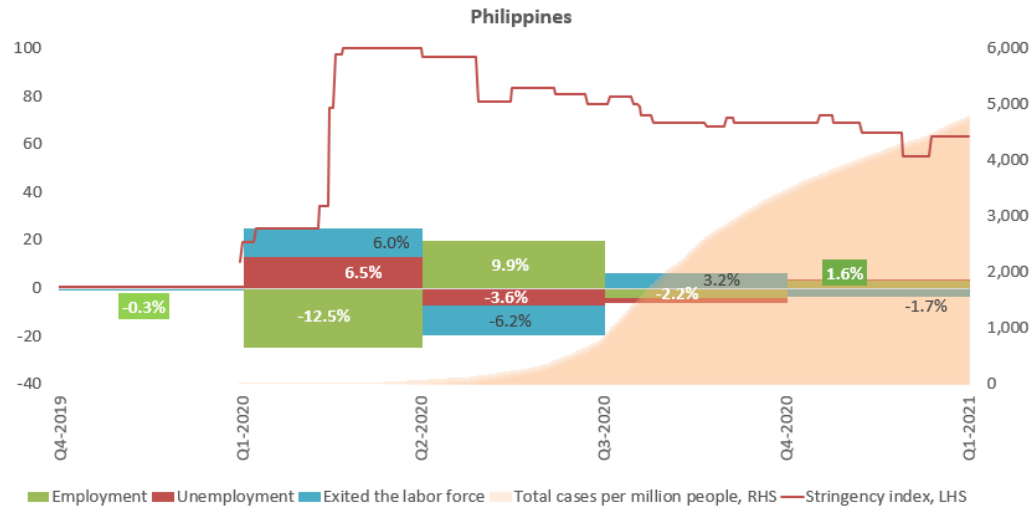


$$\text{Skills intensity index} = \left[ \frac{\text{high-skilled \%}}{\text{high-skilled \%} + \text{low-skilled \%}} \right]$$

Source: ADB. 2021. *Technical and Vocational Education and Training in the Philippines in the age of Industry 4.0*. Manila.

# COVID-19 impacts have differed across countries in terms of scale and shape — *driven by contextual and institutional factors*

Net transitions across labor force statuses (Q4-2019 through Q4-2020), selected Southeast Asian countries



Note: Quarterly data for the Philippines ending "Jan, Apr, Jul, Oct". For THA, MAL, and VIE, quarterly data ending "Mar, June, Sep, Dec".



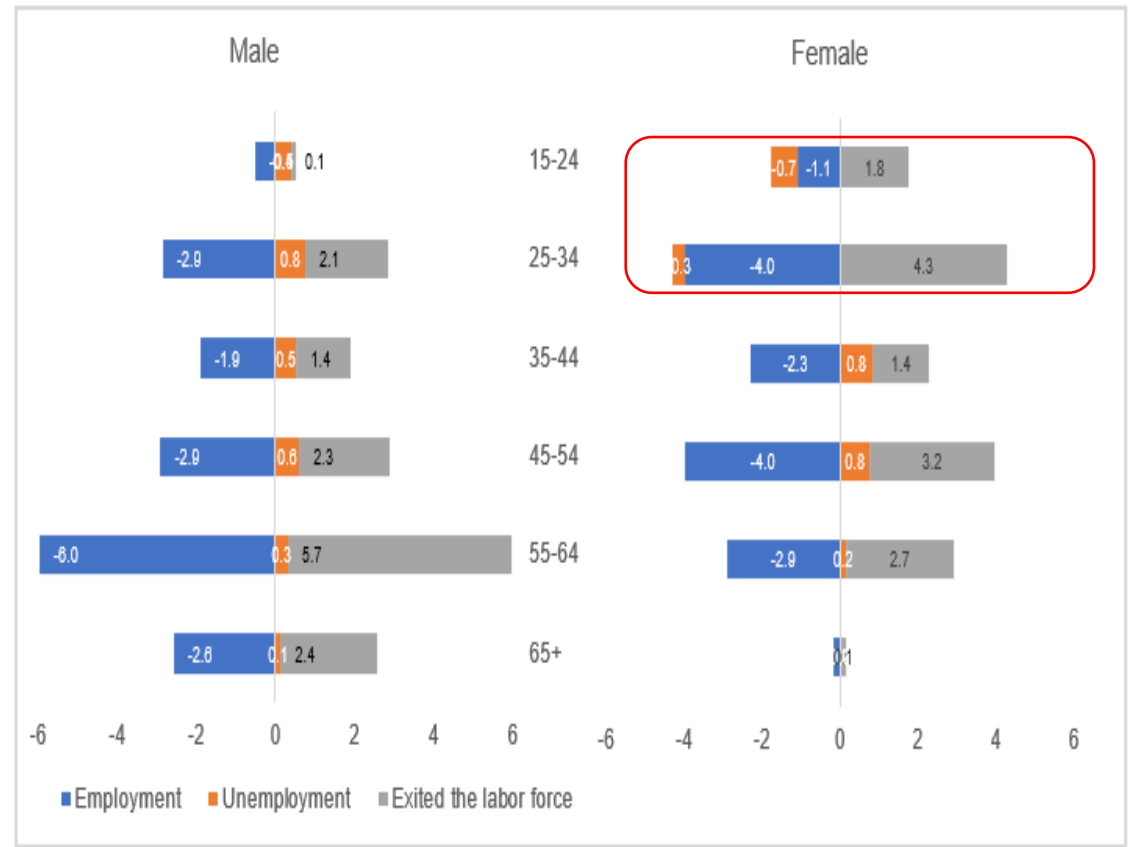
Job losses peaked in Q2-2020, with significant declines for all age and sex cohorts... *more exits from labor force following job loss among women, raising risks of lasting disruptions to their working lives*

Net transition across labor force statuses, Q2-2020

Philippines

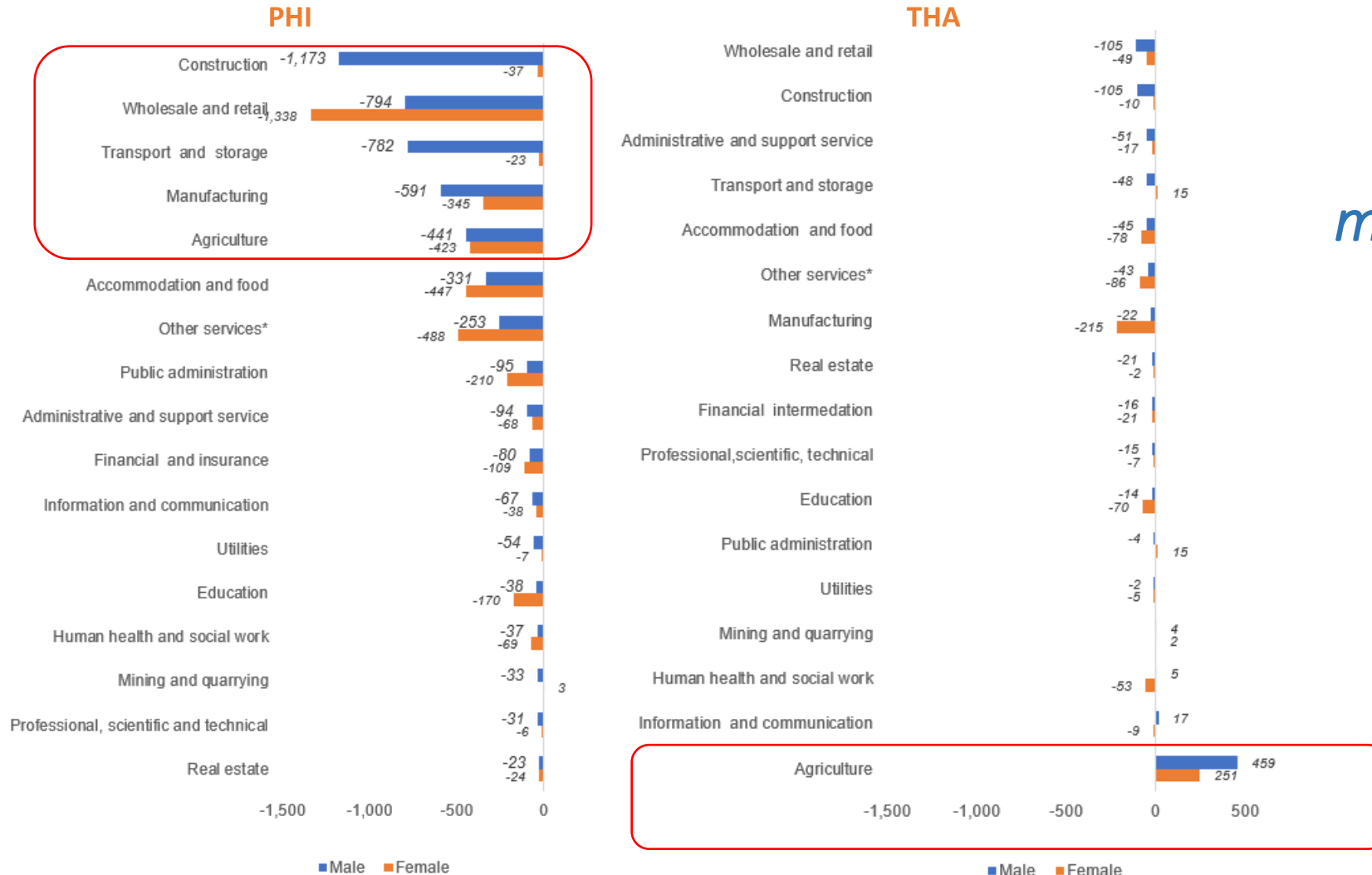


Viet Nam



# Hard-hit sectors include those affected by: supply chain disruptions, decline in demand, mobility and travel restrictions, and where the possibility of remote work is limited

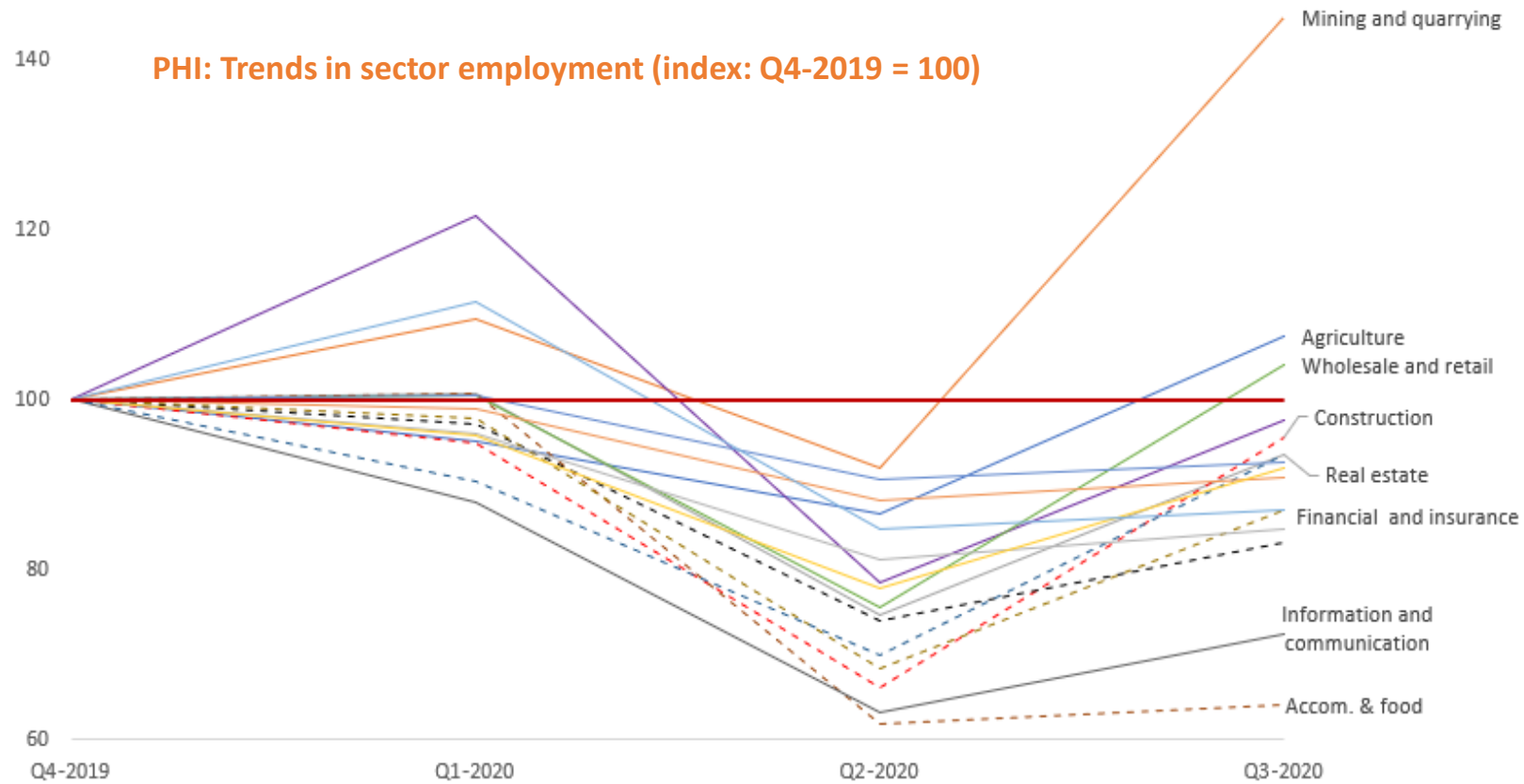
Net job losses by sector ('000s), Q2-2020



*In some countries,  
mobility restrictions and  
other containment  
measures limited  
sectoral labor  
reallocation....*

\* Other services sector includes employment in: arts, entertainment and recreation; other service activities; and activities of households as employers.

# Rebound in Q3-2020, but employment remained below the pre-pandemic levels.....



- Agriculture
- Utilities
- - - Transport and storage
- - - Financial and insurance
- Public administration
- Other services\*
- Mining and quarrying
- - - Construction
- - - Accommodation and food service
- - - Real estate
- Education
- 2019 Q4 = 100
- Manufacturing
- Wholesale and retail
- Information and communication
- Administrative and support ser
- Human health and social work



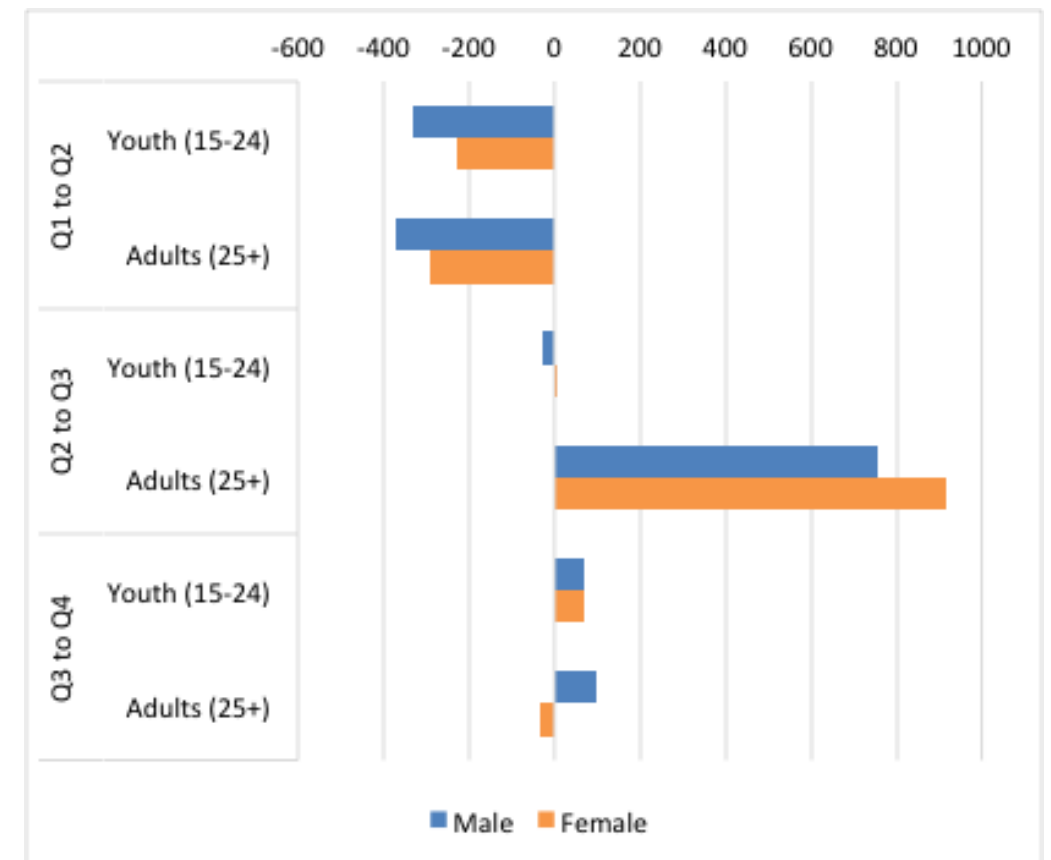
# Employment recovery consisting mainly of low-quality job: *movements into, self-employment and unpaid family work as formal sector employment lags the recovery of informal sector jobs....*

Net change in employment by status ('000s)

<b>Philippines</b>	<b>Q1-2020</b>	<b>Q2-2020</b>	<b>Q3-2020</b>	<b>Q4-2020</b>
Wage employees	63	-6,391	3,599	-54
Self-employed	-519	-1,411	2,369	-435
Employers	-266	-387	451	230
Unpaid family workers	122	-523	1,051	-1,206
<b>Total</b>	<b>-601</b>	<b>-8,712</b>	<b>7,470</b>	<b>-1,465</b>

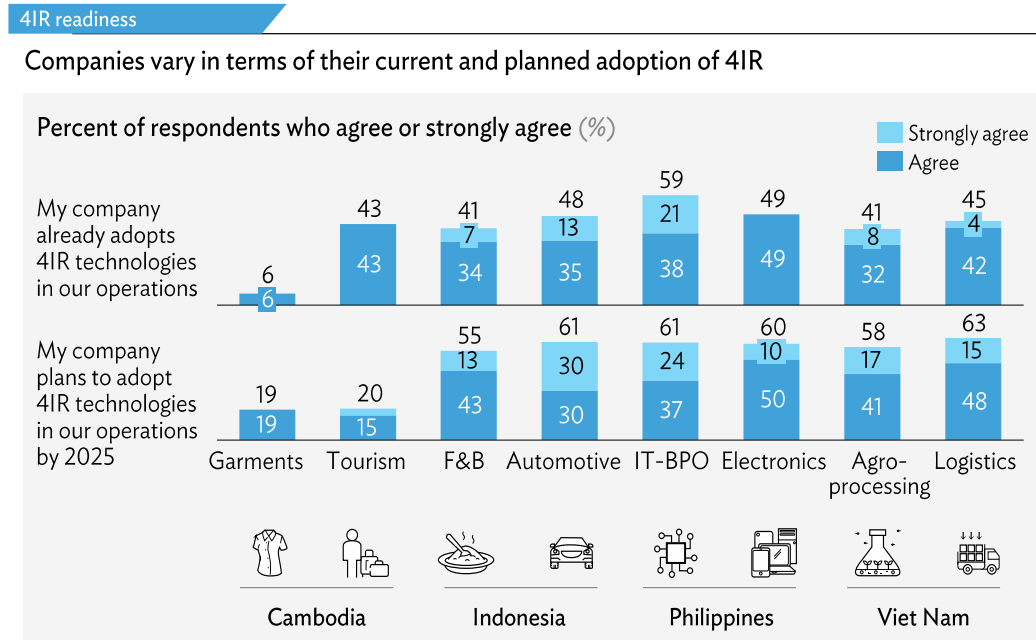
<b>Thailand</b>	<b>Q1-2020</b>	<b>Q2-2020</b>	<b>Q3-2020</b>	<b>Q4-2020</b>
Wage employees	1,106	-1,017	-349	459
Self-employed	-327	394	354	112
Employers	55	-70	9	37
Unpaid family workers	-893	349	831	-246
<b>Total</b>	<b>-59</b>	<b>-343</b>	<b>846</b>	<b>362</b>

Net transitions to informal employment ('000s) – Viet Nam



# COVID-19 has triggered a lasting demand for digital adoption — boosting growth in certain sectors and increasing demand for technical and ICT skills

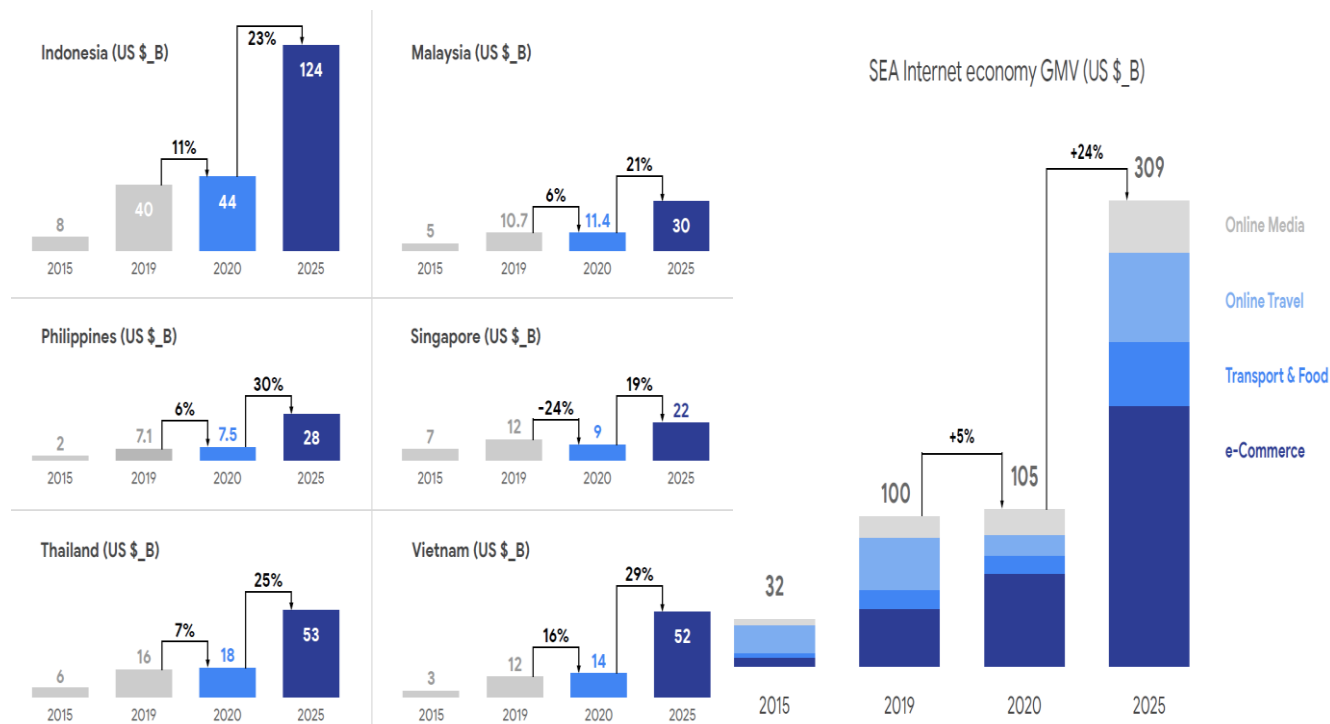
## Adoption of 4IR technologies across industries in SEA (pre-pandemic)



4IR = Industry 4.0 or Fourth Industrial Revolution, F&B = food and beverage, IT-BPO = information technology and business process outsourcing.

Source: Employer surveys conducted in Cambodia, Indonesia, the Philippines, and Viet Nam. n=393. The surveys were conducted in 2019.

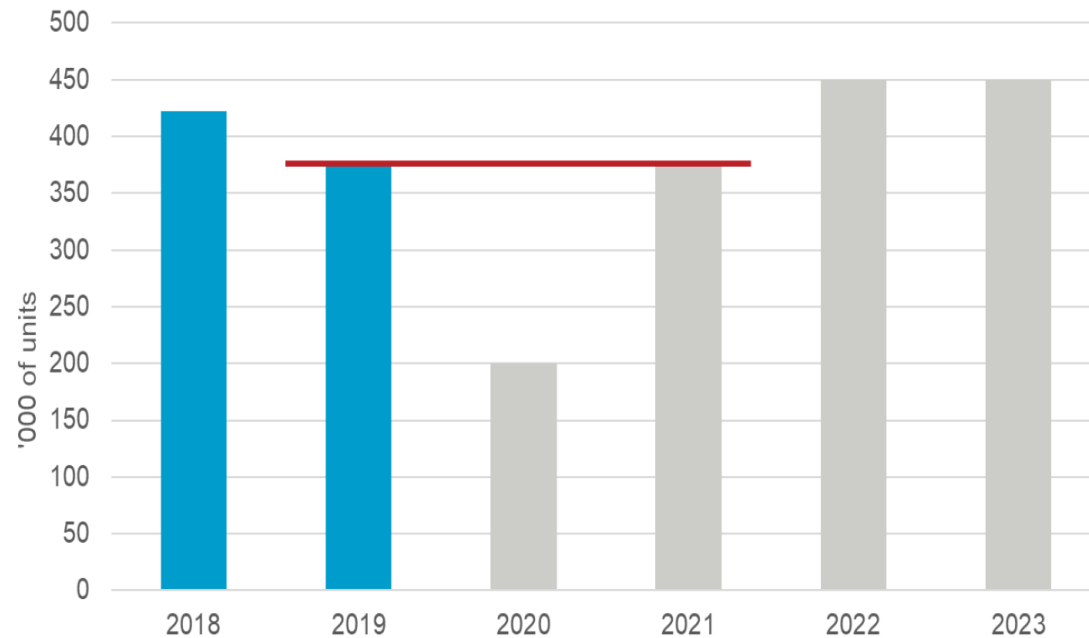
## Internet Economy GMV (US\$ \_B) of selected SEA countries overall (left) and by sector (right), CAGR



Source: Google-Temasek (2020). e-Economy SEA 2020: Resilient and racing ahead: Southeast Asia at full velocity.

# While the demand for industrial robots declined in 2020 due to the halt in economic activity, COVID-19 increased the demand for service robots

Global Installations of Industrial Robots, 2018 and 2019, potential development 2020-2023 (V-shaped recovery path)



Service robots for professional use. Top 3 applications. Unit sales 2018 and 2019, potential development 2020-2023

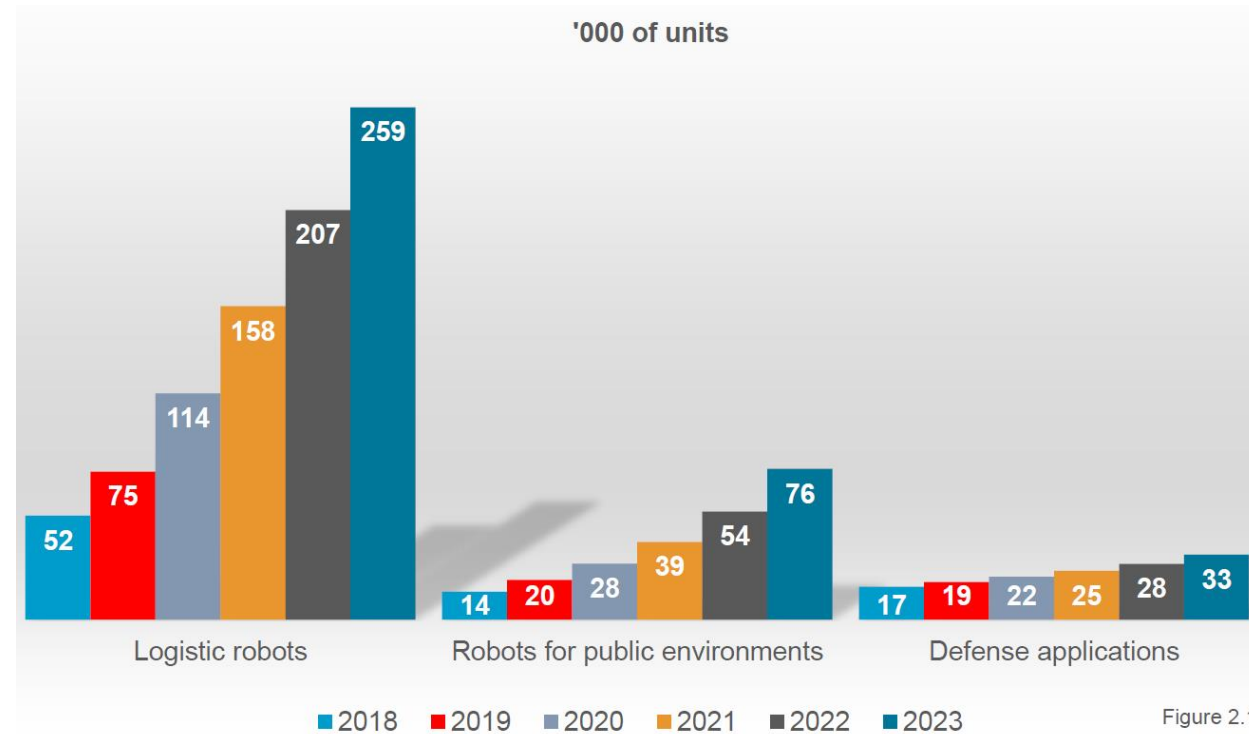


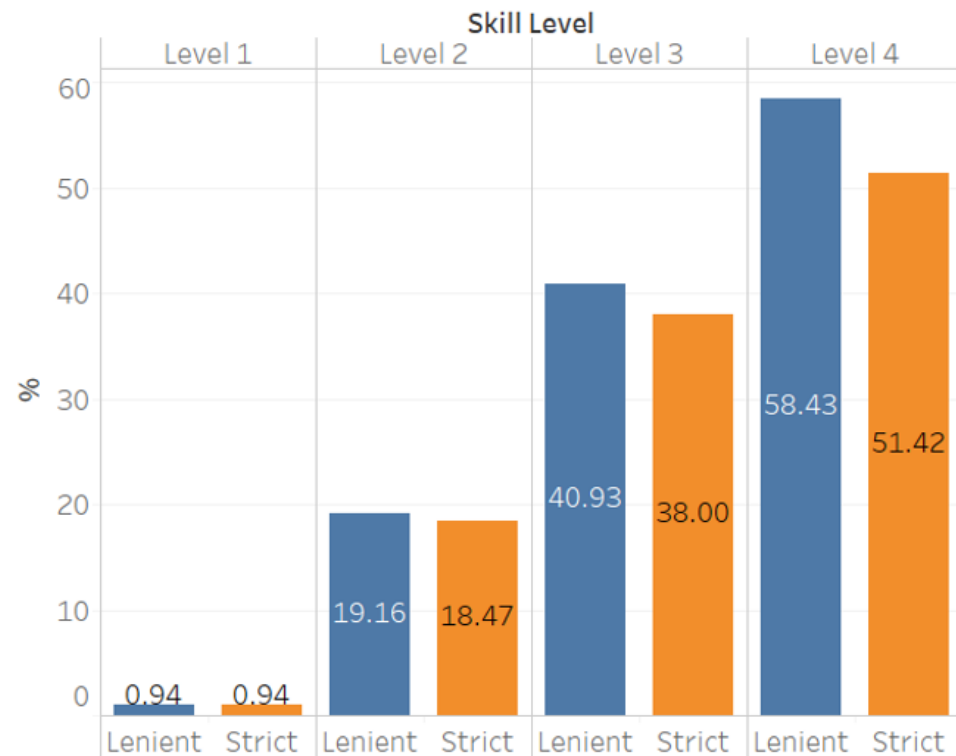
Figure 2.1

Source: Müller, Christopher; Graf, Birgit; Pfeiffer, Kai; Bieller, Susanne; Kutzbach, Nina; Röhricht, Karin: World Robotics 2020 – Service Robots, IFR Statistical Department, VDMA Services GmbH, Frankfurt am Main, Germany, 2020.



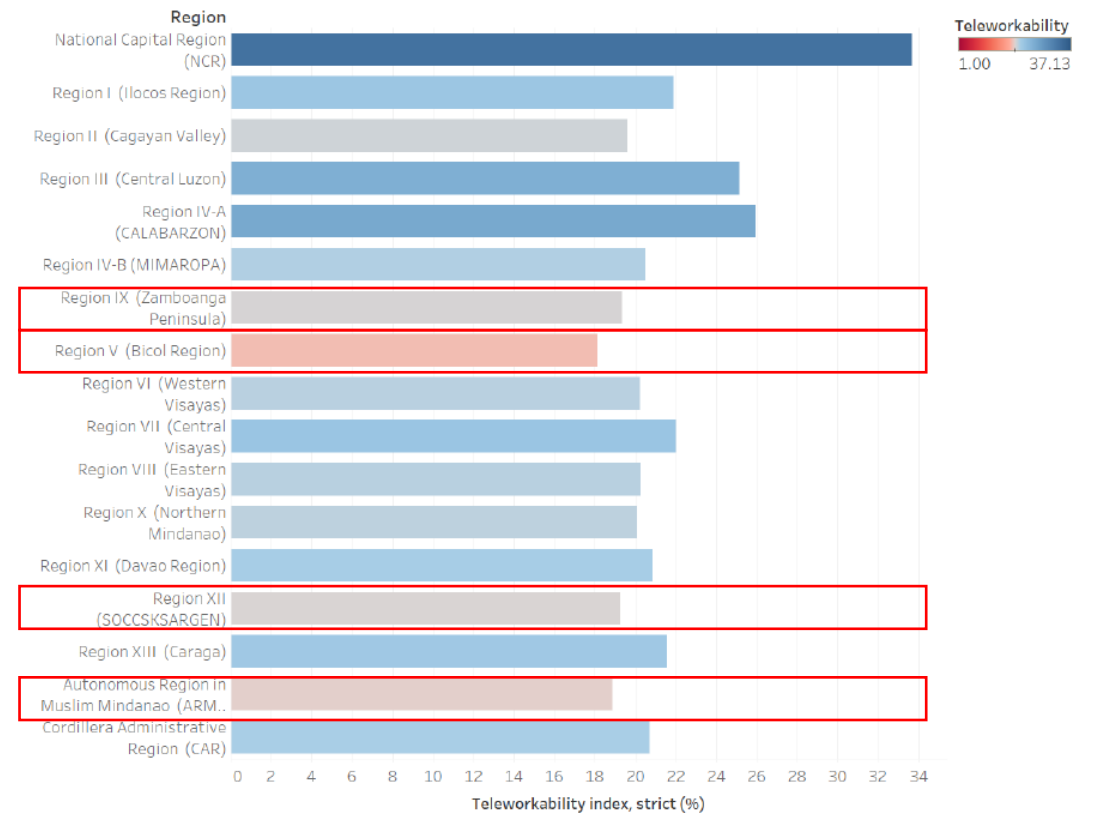
# COVID-19 – interacting with technology – may exacerbate pre-existing inequalities along several dimensions including skills, gender, locality

Average teleworkability by skill level, ISCO-08



The means of the teleworkability indices are calculated within skill levels. Color shows details about the teleworkability index adopted.

PHI: Weighted average 'teleworkability' of occupations by region, 2018

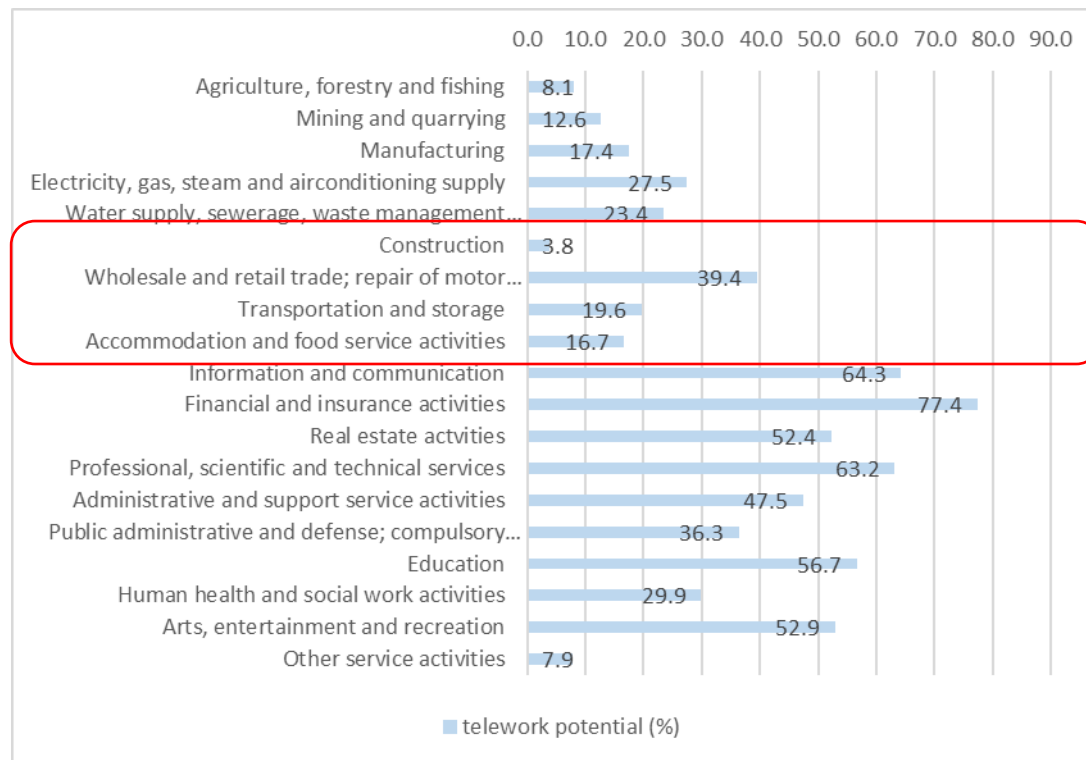


Using the 2018 labor force survey (LFS), the weighted means of the teleworkability indices are calculated within regions among employed workers. The weights used are the sampling weights. Color shows details about the teleworkability index adopted.

Source: Generalao, I.N.A. (forthcoming). Measuring the telework potential of jobs: Evidence from the International Standard Classification of Occupations. *Philippine Review of Economics*.

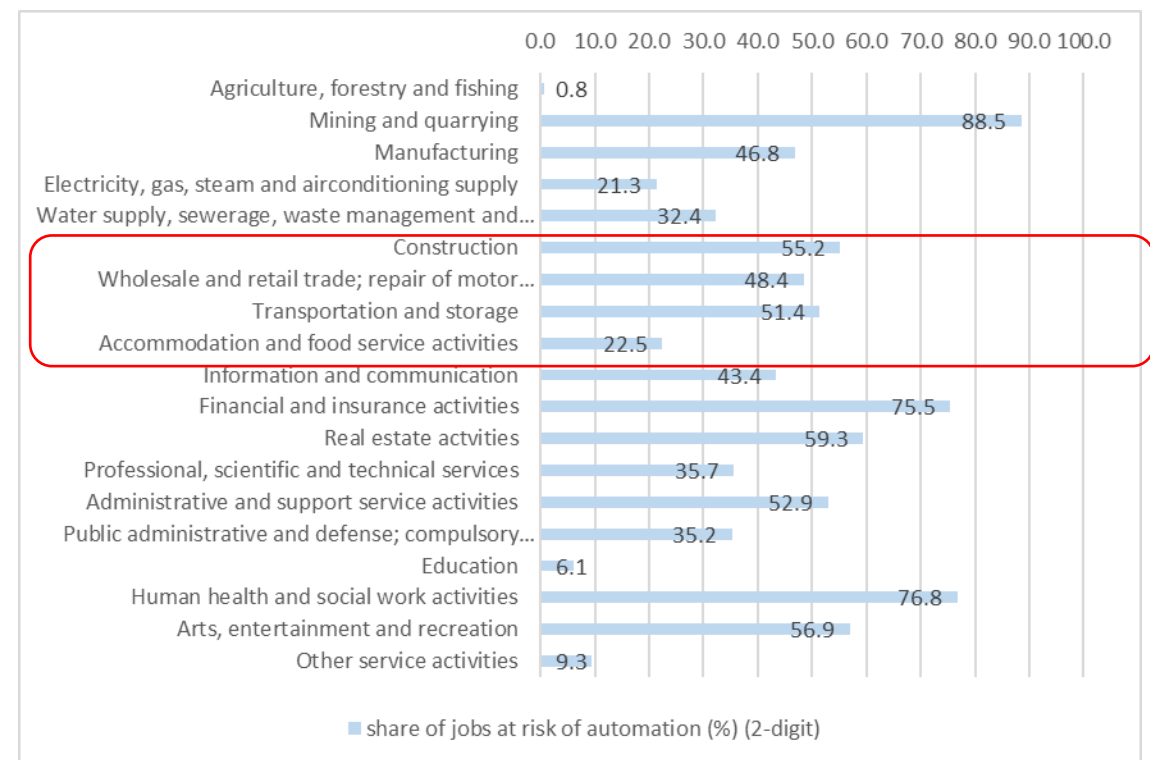
# Key growth sectors across Southeast Asian economies are dominated by occupations which have low telework potential and face high risks of automation

PHI: Weighted average 'teleworkability' of occupations by major industry group, 2018



Source: Generalao, I.N.A. (forthcoming)

PHI: Share of jobs at risk of automation by industry, 2018

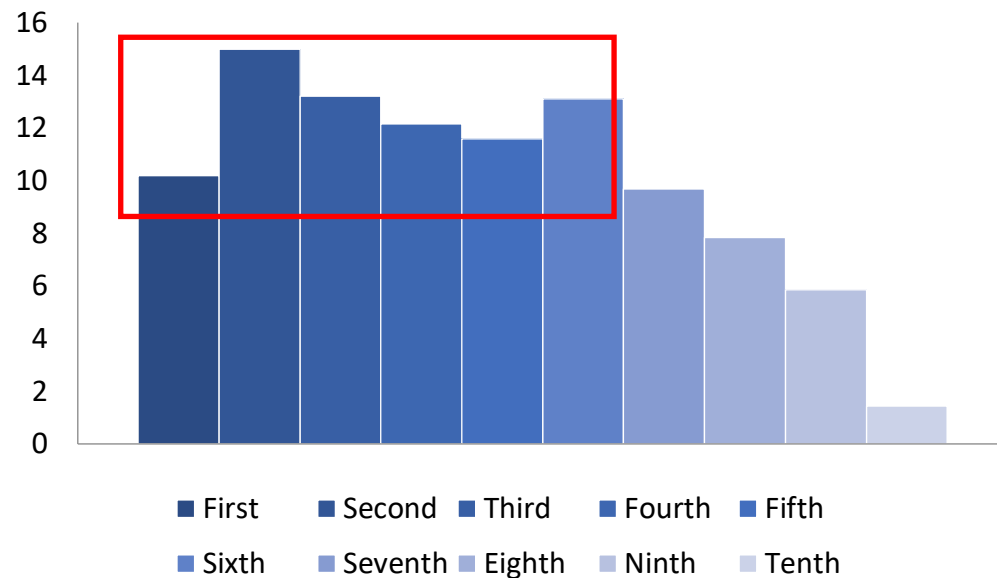


Source: ADB estimates using Generalao (2019)

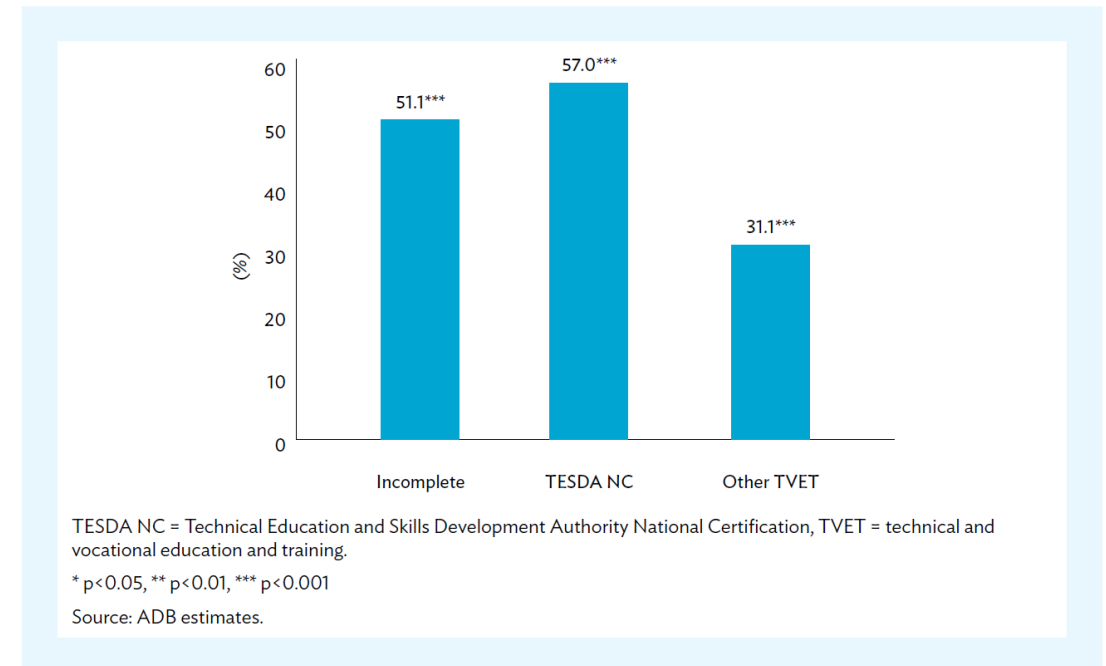
# In this context, skills development is more relevant than ever to tackle increasing inequality, and promote workforce inclusion

*TVET programs target poor households, and represent a viable alternative to tertiary education, with comparable returns*

Enrollment in Post-Secondary Courses and Senior High School in the Philippines (2017)  
(TVET enrollees in public institutions by income deciles)



Returns to Post-Secondary Non-Tertiary Education in the Philippines  
(Lower Secondary Graduates As Reference)

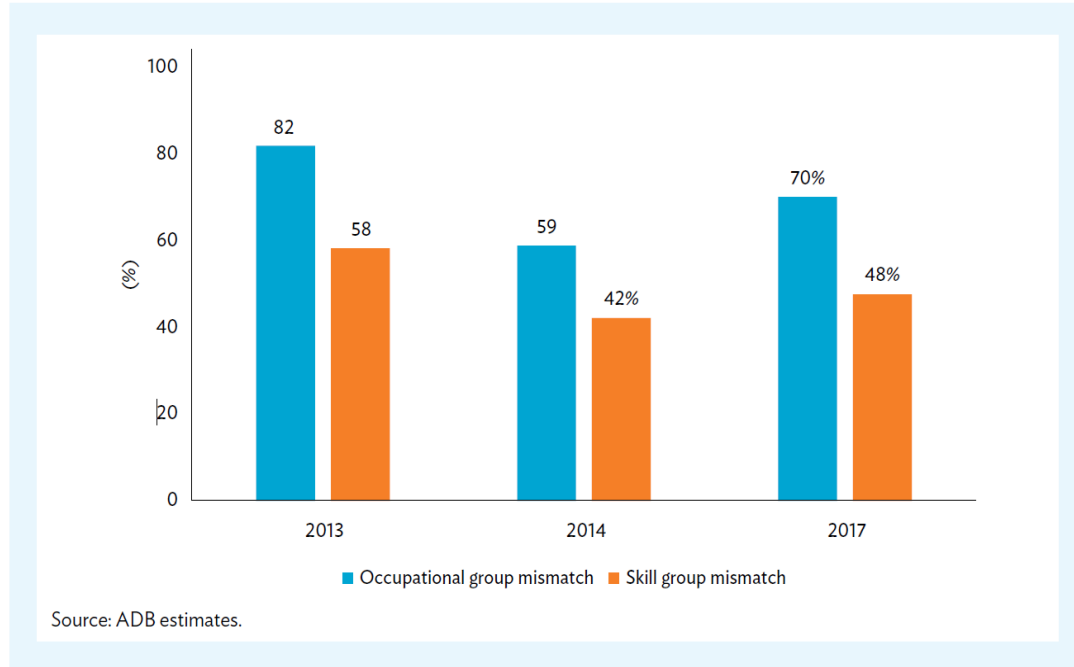


Source: ADB. 2021. *Technical and Vocational Education and Training in the Philippines in the age of Industry 4.0*. Manila.

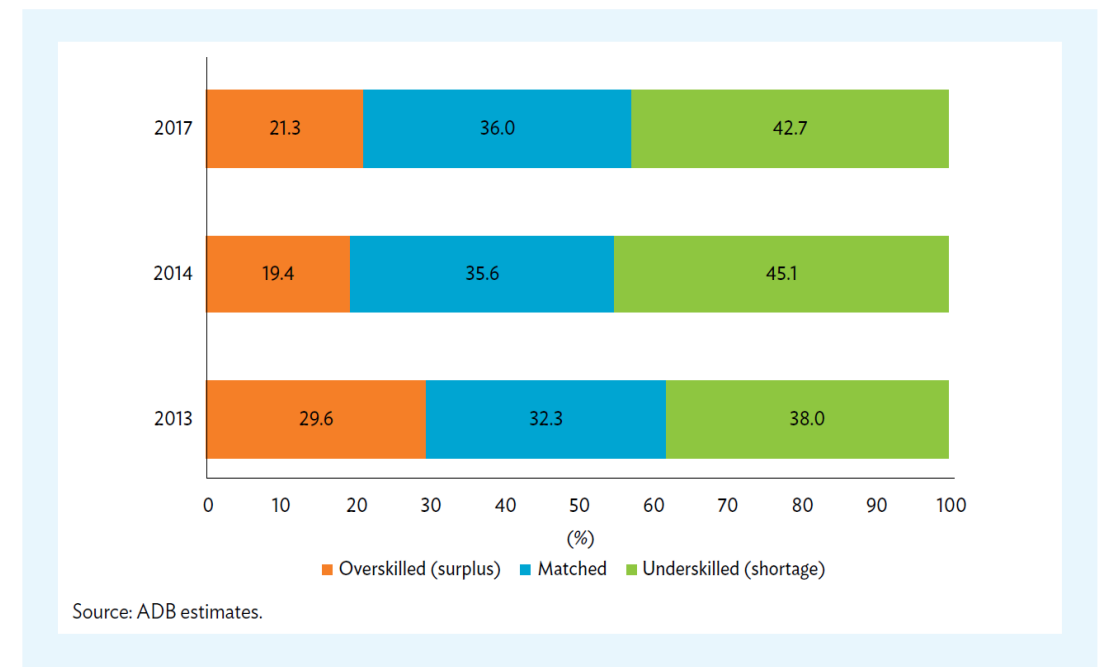
# But important challenges remain...

**...Over the years, TVET graduates have been recording very high mismatch rates**

PHI - Mismatch Rates Using Simple Matching Technique, 2013, 2014, and 2017 Graduates



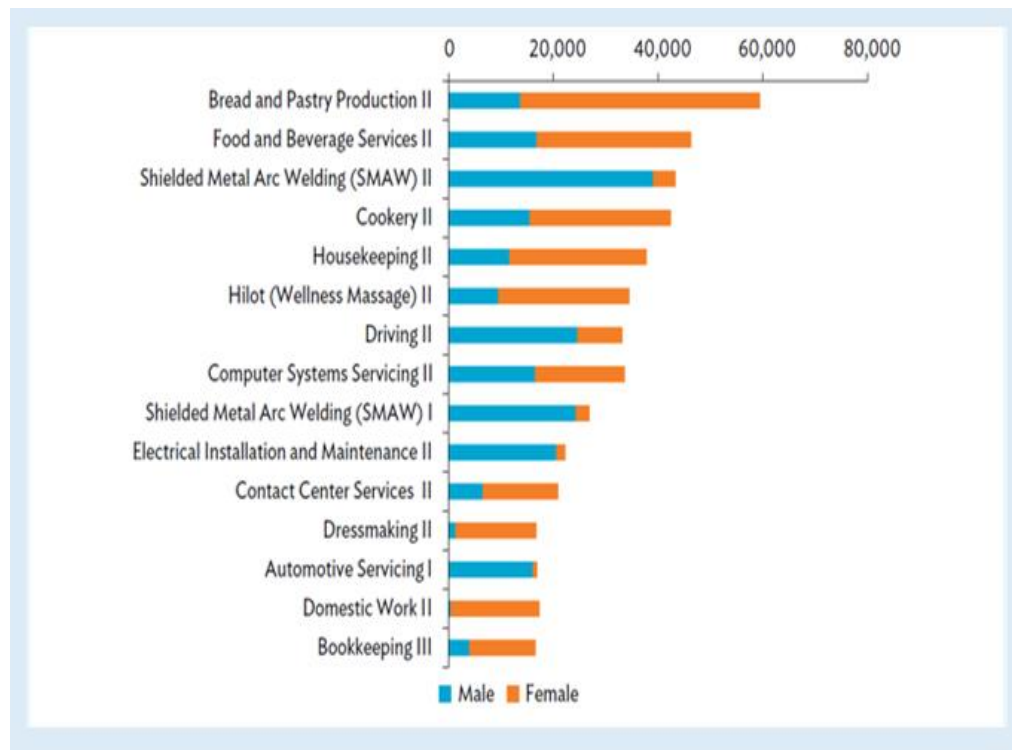
PHI - Share of Trainees Matched, Underqualified, or Overqualified, 2013, 2014, and 2017



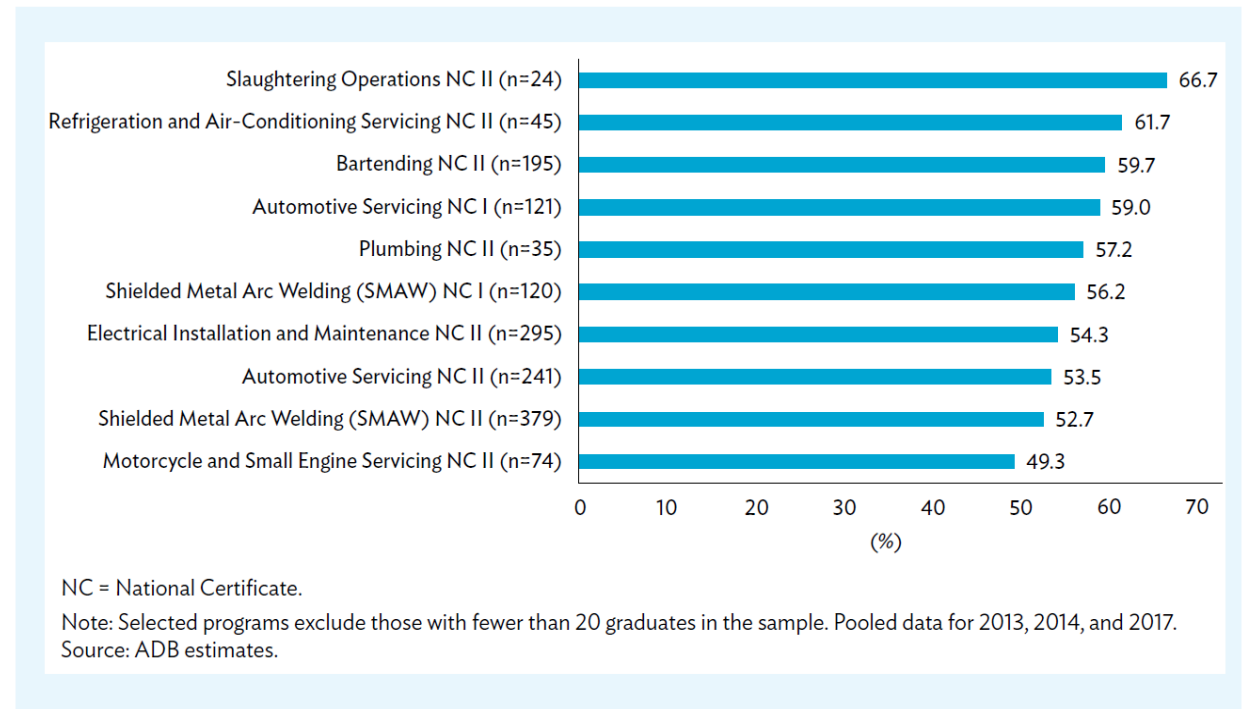
Source: ADB. 2021. *Technical and Vocational Education and Training in the Philippines in the age of Industry 4.0*. Manila.

# Top courses in terms of TVET enrollment reflect growth sectors of the economy... but the most effective programs in terms of training-job matching often lead to low-wage, low productivity, non-routine manual jobs

PHI - Top 15 courses (with training regulations) in terms of enrollment, 2018



PHI - Share of Trainees Matched with Expected Occupation, Top 10 Programs



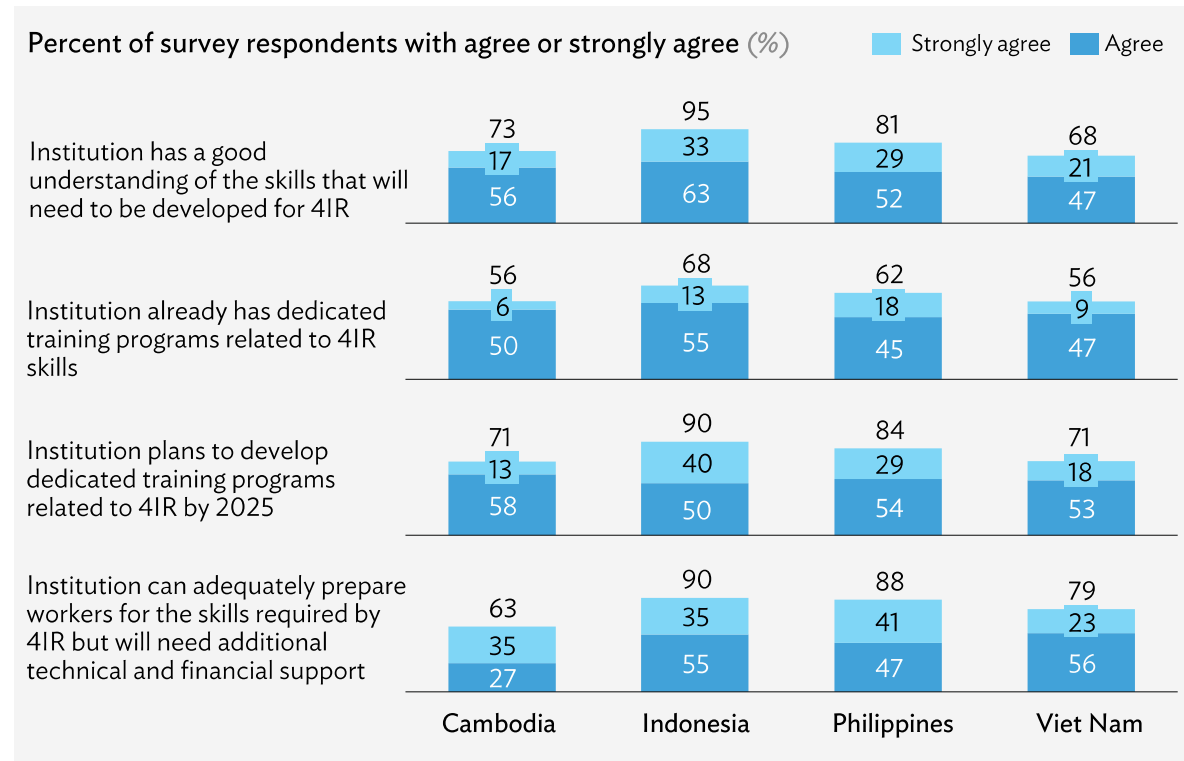
Source: ADB. 2021. *Technical and Vocational Education and Training in the Philippines in the age of Industry 4.0*. Manila.



# Pre-pandemic, TVET 4IR Preparedness varied across countries and institutions

## Training Sector: 4IR readiness

The majority of training institutions generally feel well equipped for 4IR, but most will require some additional support

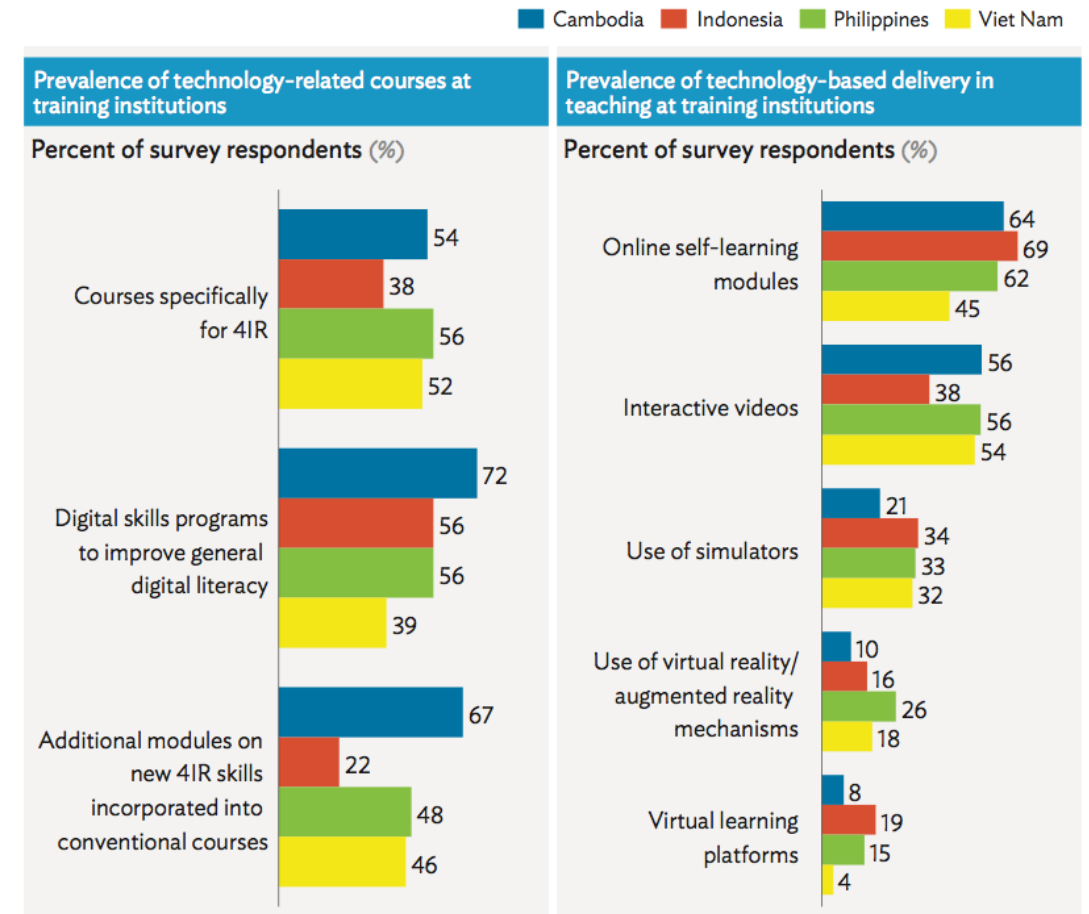


4IR = Industry 4.0 or Fourth Industrial Revolution.

Source: Training institution surveys in Cambodia, Indonesia, the Philippines, and Viet Nam. n=239. The surveys were conducted in 2019.

## Training Sector: Curriculum

Training institutions provide courses to teach 4IR relevant skills and technologies but the use of 4IR technologies in training delivery is limited



4IR = Industry 4.0 or Fourth Industrial Revolution.

Source: Training institution surveys in Cambodia, Indonesia, the Philippines, and Viet Nam. n=239. The surveys were conducted in 2019.

# COVID-19 disrupted education and skills provision, and exposed structural weaknesses in TVET systems

*TVET systems were inadequately prepared for shift to remote learning:*

- Limited technological infrastructure (electricity, internet, connectivity, equipment, devices)
- Limited digital skills/capacity among teachers and learners
- Limited access to/ knowledge of effective distance learning platforms and to digital resources
- Financial resource constraints
- Major disruptions to assessment and certification

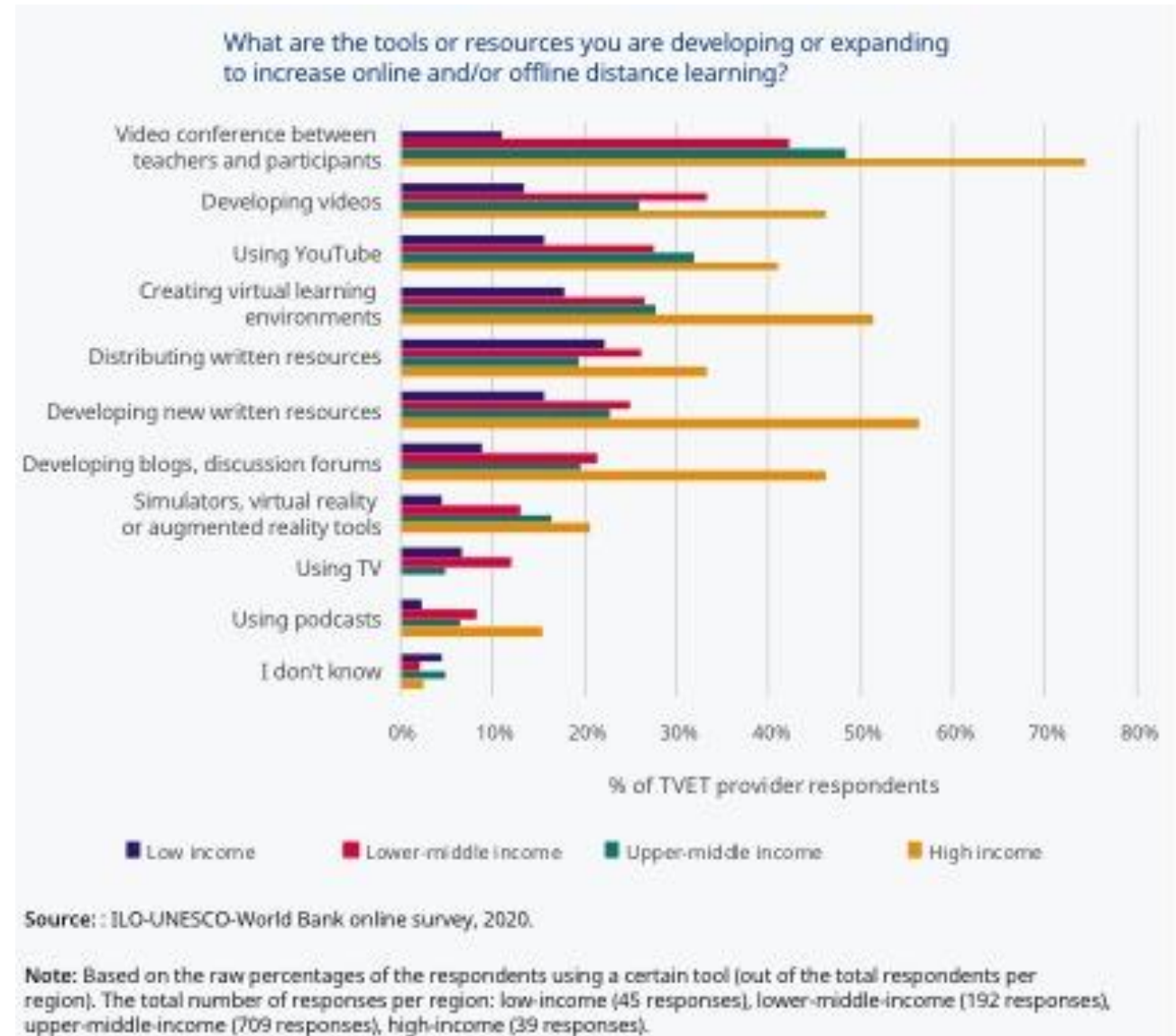
*Pandemic highlighted and exacerbated unequal access to quality TVET:*

- Digital divide (rural/urban, social and geographical inequalities)
- Disproportionate impact on most disadvantaged groups

## but also provided opportunities...

- Increased **uptake** of distance learning approaches (including offline tools)
- **Investment** in new tools and resources (e.g., platforms to train teachers and trainers to use digital tools in Indonesia and Philippines, locally developed platforms with distance learning solutions in Malaysia)
- Increased **cooperation** between public, private and civil society organizations for improving access to, and developing capacity for, distance and digital learning

## Use of new tools and resources, by income groups



# What is the future of skills development?

*In a post-pandemic world, skills policy and systems in Southeast Asia must strive to:*

## (1) Improve the resilience of workers and economies

- Develop workers who can navigate across multiple transitions throughout their working lives, including displacement due to economic shocks (e.g., COVID-19) as well as long term trends (e.g., related to Industry 4.0)
- Build a skilled and competitive workforce to support economic diversification and reduce reliance on only a few economic sectors or on external demand

## (2) Ensure workforce inclusion and contribute towards a more equitable growth trajectory for the region

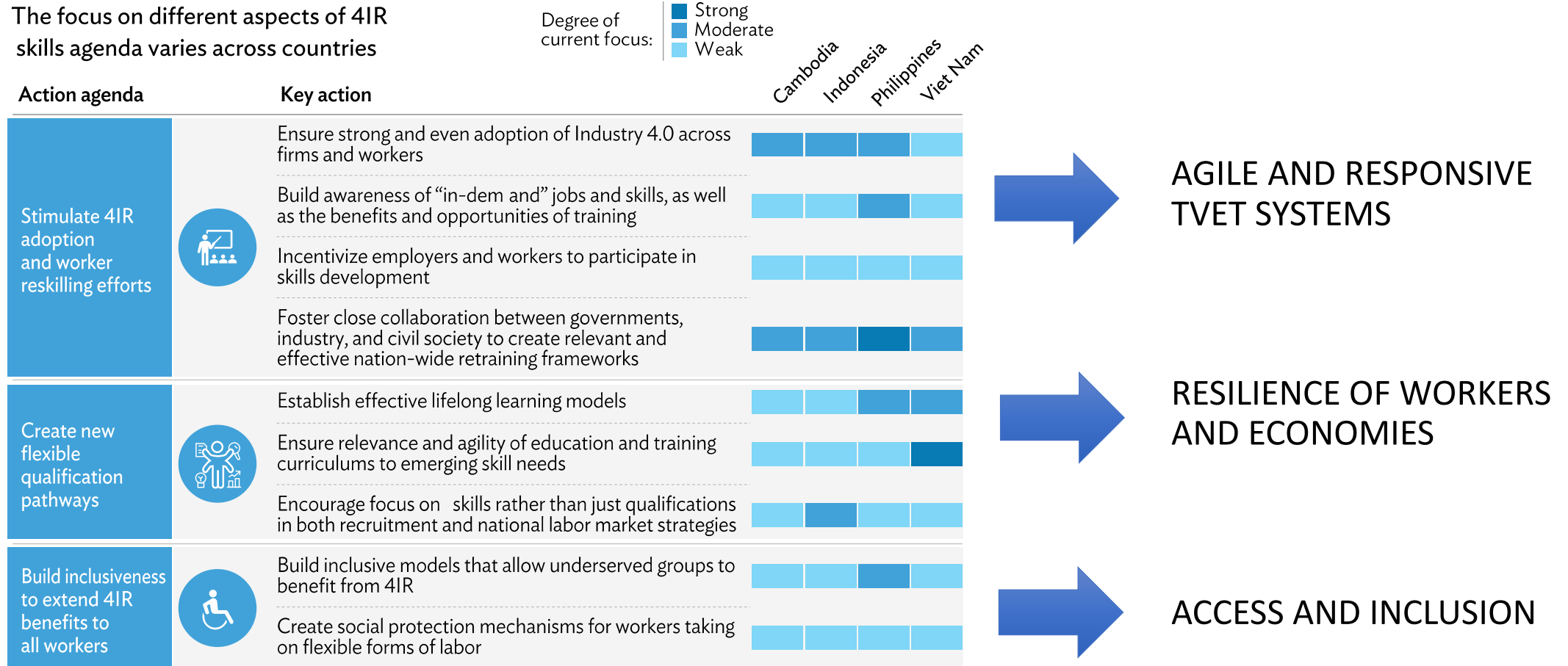
- Widening access to quality TVET and opportunities for reskilling and up-skilling, including for women, informal workers, and marginalized groups
- TVET as crucial component of active labor market policies throughout the recovery and beyond.
- Enhanced online training, while keeping in mind equity considerations in terms of access and infrastructure.

# Skills development agendas in a post-pandemic world

The focus on different aspects of 4IR skills agenda varies across countries

Degree of current focus:

- Strong
- Moderate
- Weak



4IR = Industry 4.0 or Fourth Industrial Revolution.

Note: Degree of focus was assessed based on the following criteria: “Strong” = few or no gaps between the country’s coverage of policy actions and international best practice; “Moderate” = medium level of gaps; and “Weak” = significant gaps.

Source: Literature review; AlphaBeta analysis.

# Thank you!

