From Access to Mastery
A Conceptual Framework and Assessment of Digital Skills in Indonesia

Asian Think Thank Forum

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Outline

- Why Digital Skills?
- Digital Skills – What do we know?
- Indonesia: Potential & the mismatch
- Framework and assessment of digital skills
- Findings and reflection

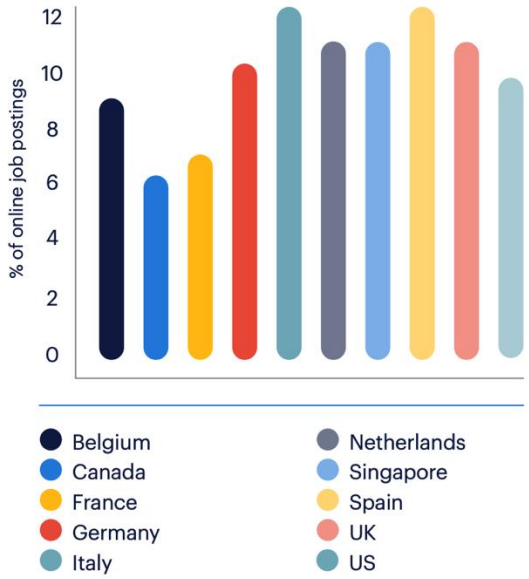
1. Why digital skills?

1. Why digital skills?

Digital transformation– technological change rapidly shape the way business and services delivered

- Disruptive technological advancement – transforms the economy and society
- Digital economy accounts for 25% of the global economy (PwC, World Bank); the pace only accelerates after pandemic
- Whether DT will be a bane or boon would depend on skills set of current and future labor force (ILO 2024)

The rise of digital jobs– massive growth in jobs involving digital skills (WEF 2024)

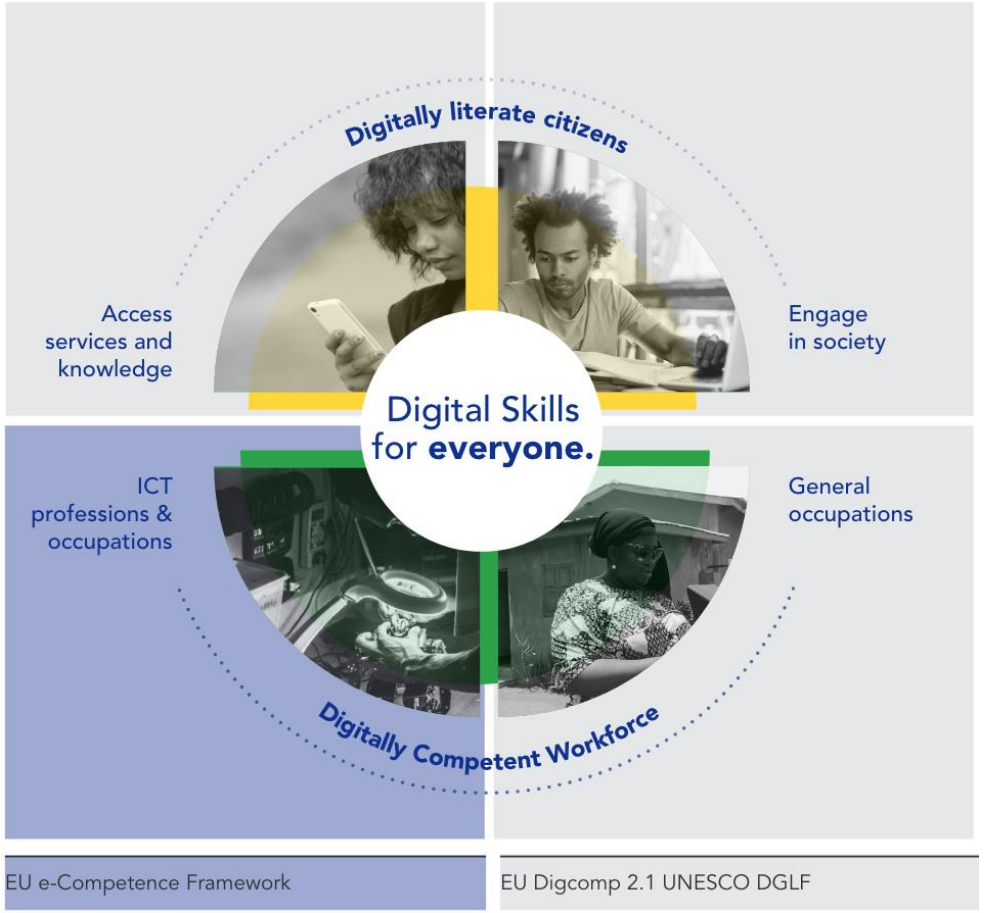


Future (digital) skills in demand

World Economic Forum (2024)

2. What do we know about digital skills?

Digital skill is a contested concept



Source: World Bank

Technical-operational focus

- Skill to physically operate DT, unidimensional

Social-functioning

- Emphasis on digital skills for social inclusion and functionings in society; multidimensional
- E.g., UNESCO Digital Literacy Framework (2018), EU DigiComp (2022); World Bank (2020)

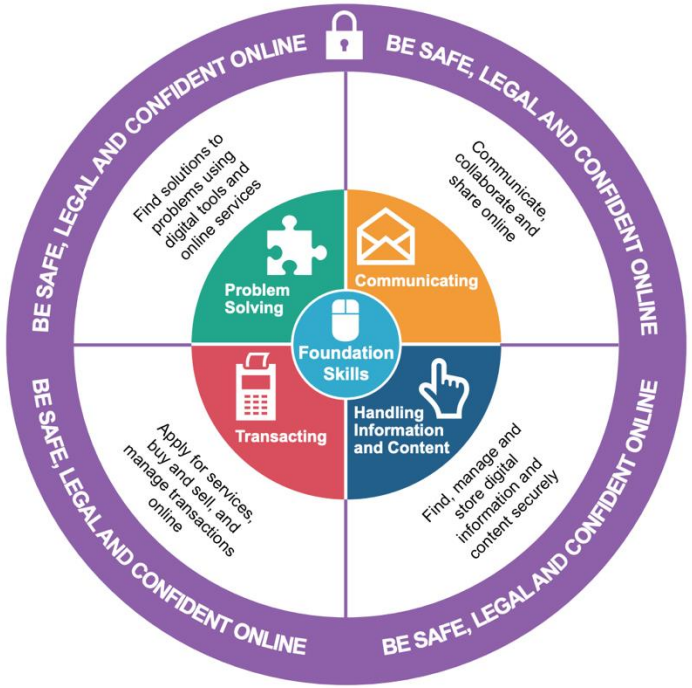
Labor & growth orientation

- Skills for productive use in a digital economy
- Gradient skills based on tasks and level of difficulties
- Emphasis on skills at the work place (OECD 2024; ADB 2022)

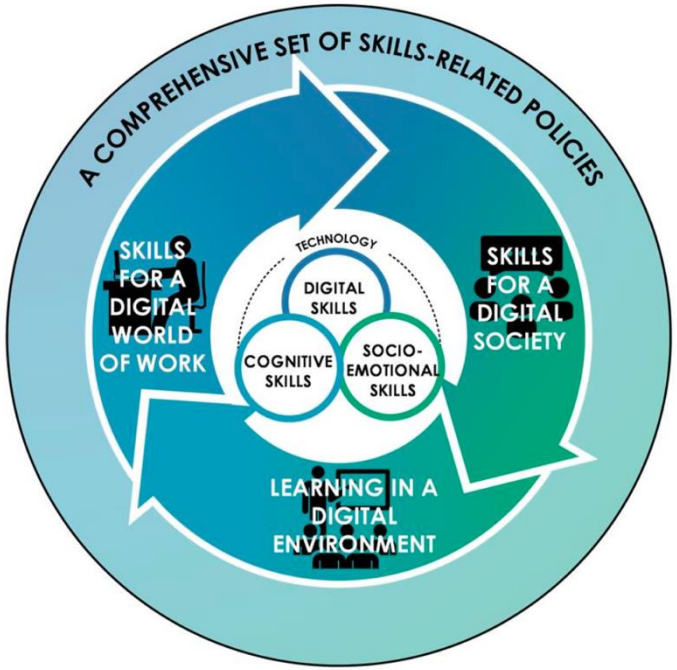
..with less consensus on the measurements and data sources

EU Digicomp 2.0
6 dimensions, 21 competencies, 8 level of difficulties

UK Essential Digital skills – 5 dimensions, targeted for businesses customers (and still under development)



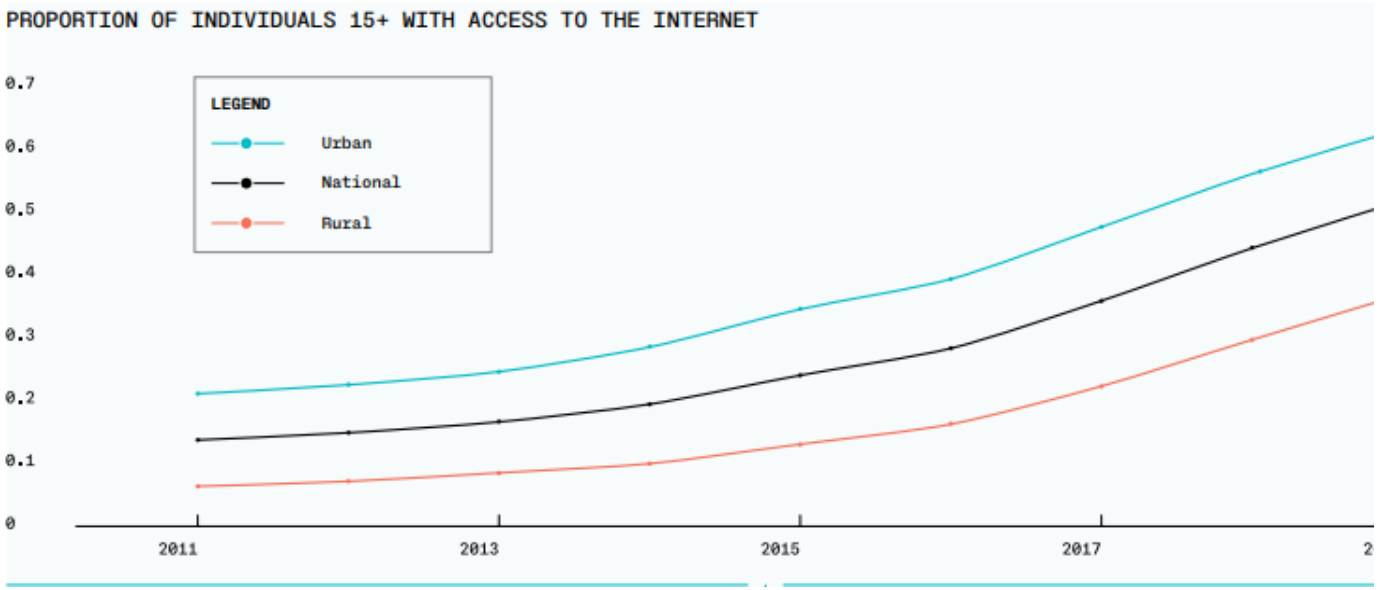
OECD Skill for the digital world (2021) – directed toward public sector



3. A Mismatch
Indonesia's digital economy potential and gaps in digital skills (?)

Indonesia is on its way to become the leading player of digital economy in the region, but…

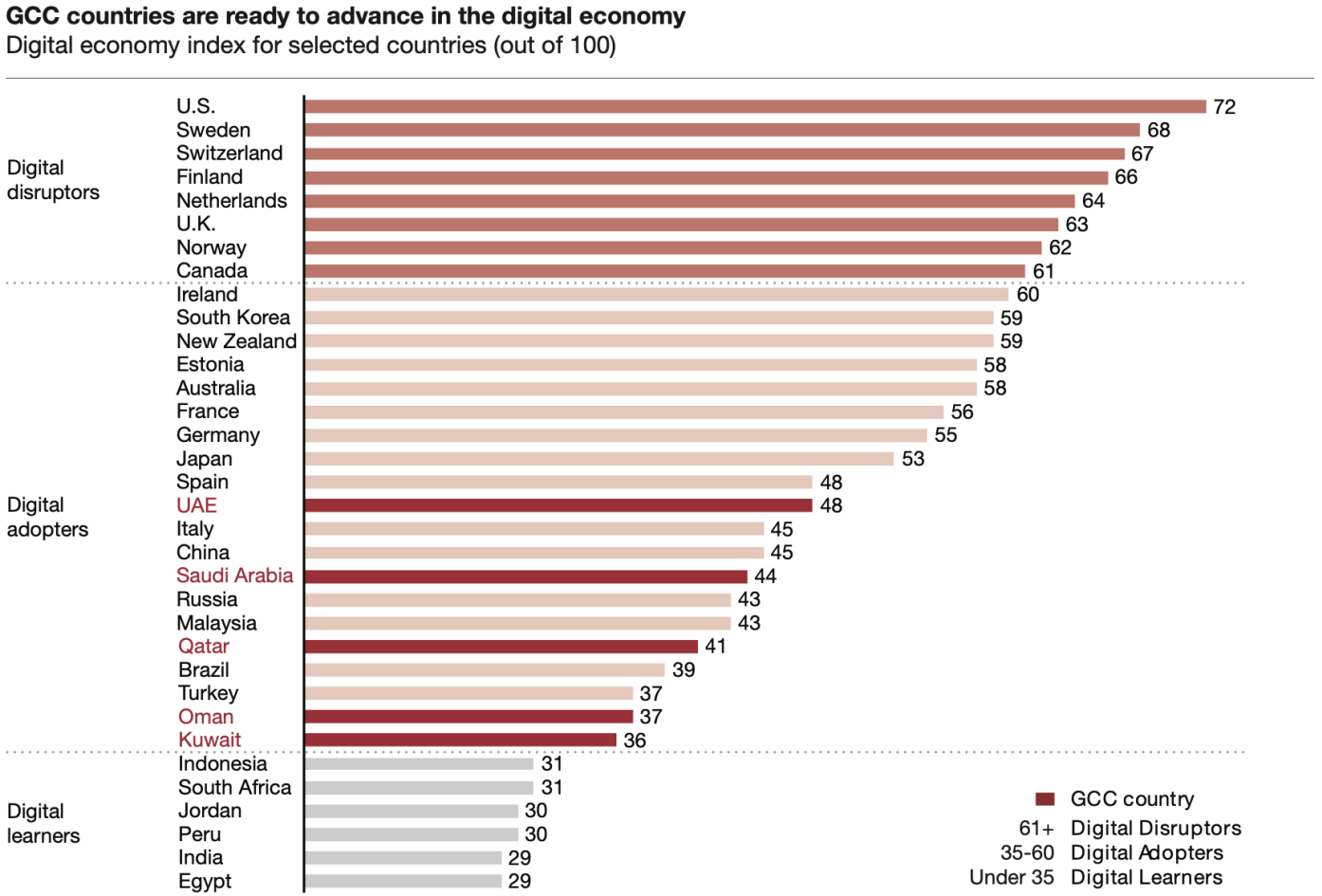
- Indonesia is a key player in digital economy within the region
  - Massive growth of 414% observed between 2017-2021 and positive forecast (ERIA 2023)
  - Growing online economic activities
- Improved connectivity and strong base of internet user
  - Adult internet access grew threefold between 2011 (13%) to 2019 (51%) (World Bank 2021)



Source: World Bank (2021)

…gaps in connectivity and digital skills for the digital economy and the unequal distribution of these might limit Indonesia's potential

- Indonesia's readiness to advance in digital economy is relatively lower compared to neighboring countries
- Digital divide
  - Some parts of the country still lagging (residents in rural & remote areas within lower socioeconomic groups) (World Bank 2021)
- Signals of lagging digital skills, with less consensus on baseline level
  - Varied approaches and data sources
  - SMERU landscape study – highlighting no primary data on digital skills
  - CSIS (2022) – Digital skill average score of 3-3.59 across 6 dimensions, survey-based biased toward Greater Jakarta



4. Assessment of Digital Skills in Indonesia

Measuring adults' digital skills in Indonesia

Skills components

Operation of ICT devices and internet

- Operation of ICT device
- Connecting to internet
- Using internet browser or application
- Installing applications

Information and data

- Information search
- Comparing information from different sources
- Saving information from online search

Communicatio & collaboration

- *Communication through instant messaging*
- *Online discussion*
- *Use of email*
- *Working together using sharing platform*

Data (DEHS)

Production of digital contents

- Composing or uploading media online
- Copy and forwarding information
- Developing own website and set copy right

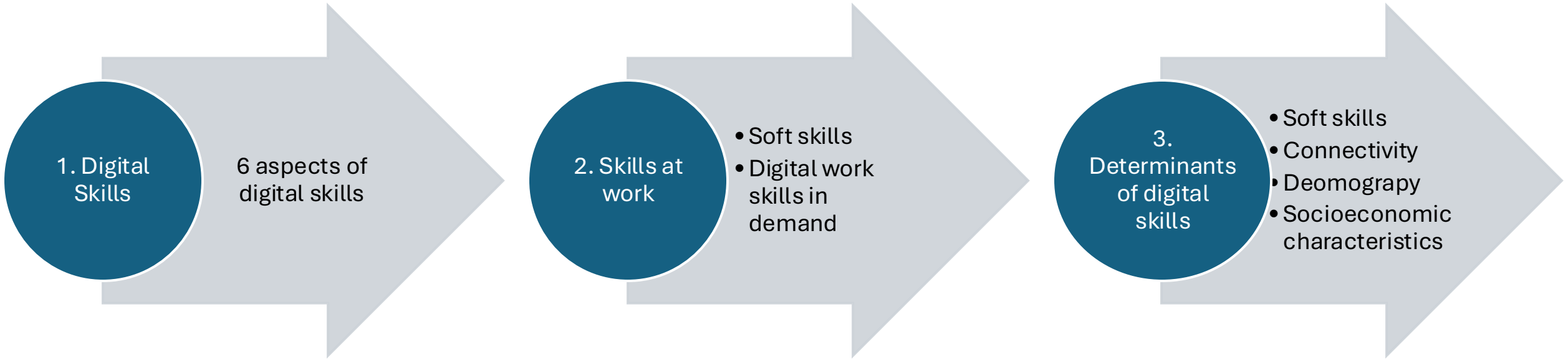
Digital Security

- Limiting access to personal information
- Identifying phising information
- Read data privacy policy
- Setting strong password on device

Problem Solving

- Search products/services online
- Software updates
- Online transaction
- Online banking use

Analysis


1. Digital Skills
6 aspects of digital skills
2. Skills at work
• Soft skills
• Digital work skills in demand
3. Determinants of digital skills
• Soft skills
• Connectivity
• Deomograpy
• Socioeconomic characteristics

Digital Economy Household Survey (DEHS)

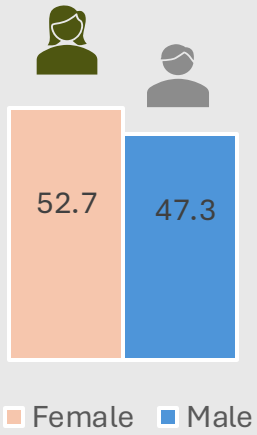
5,523 individuals (>15 years old)

90 districts in Indonesia

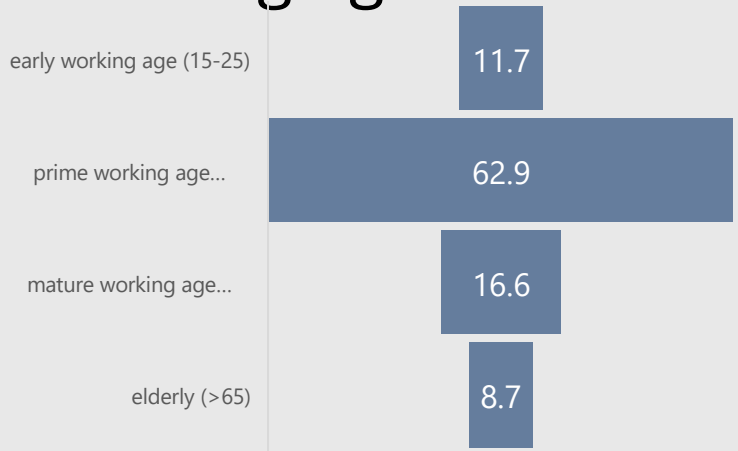
51.4%

have used ICT devices and internet

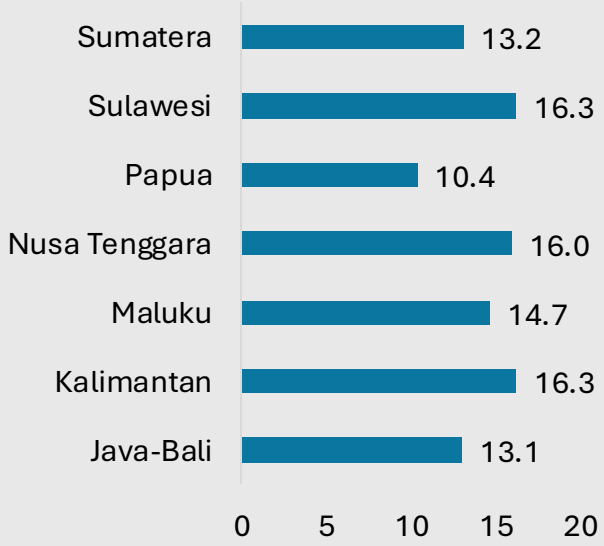
•53% female



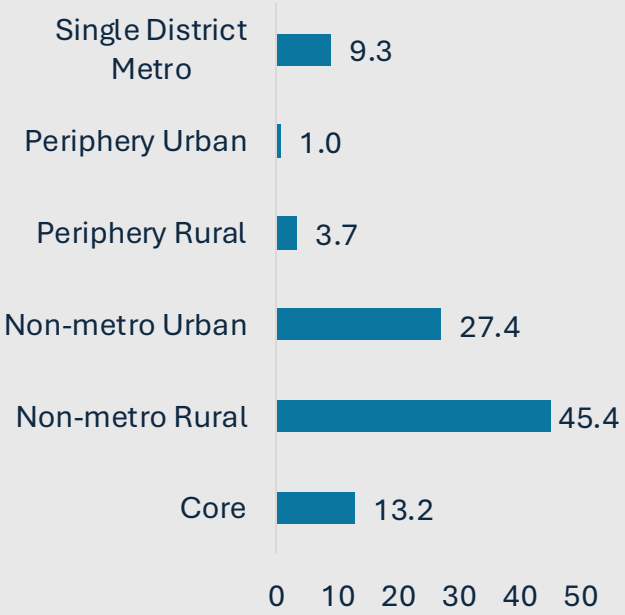
63% prime working age



Island-regions



Urban-metro classification



5. What do we know more or know less about digital skills in Indonesia

Source: Authors' calculation based on DEHS (2020).

Finding (1)

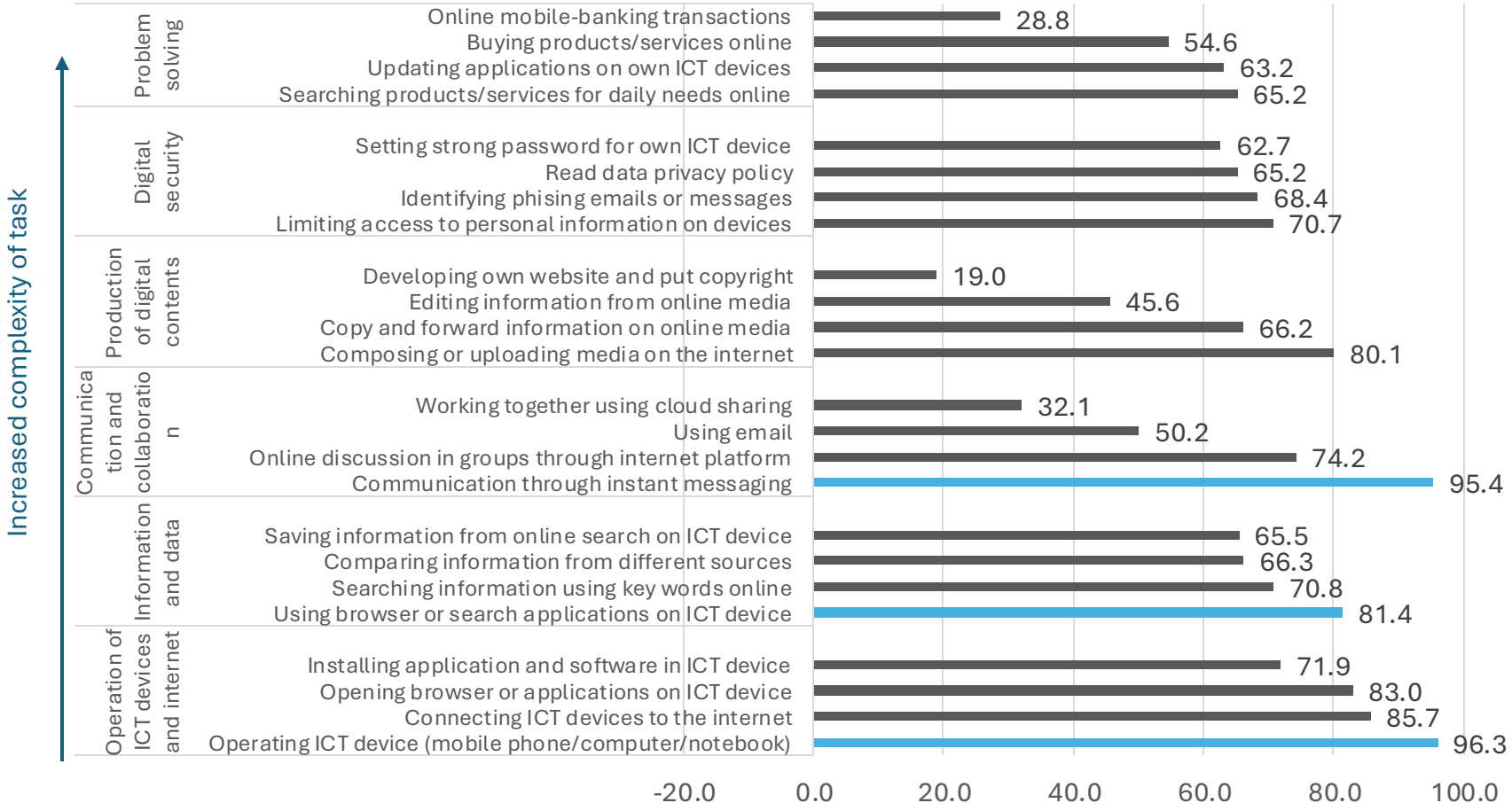
Indonesian internet users have strong foundational digital skills, but most lack access to advanced ones

Majority of internet-using adults in Indonesia are confident with their ability to operate and use DT for communication, *however*...

96.3% Confident to operating phones and computers

81.4% Comfortable to use internet for information search

95.4% Online communication



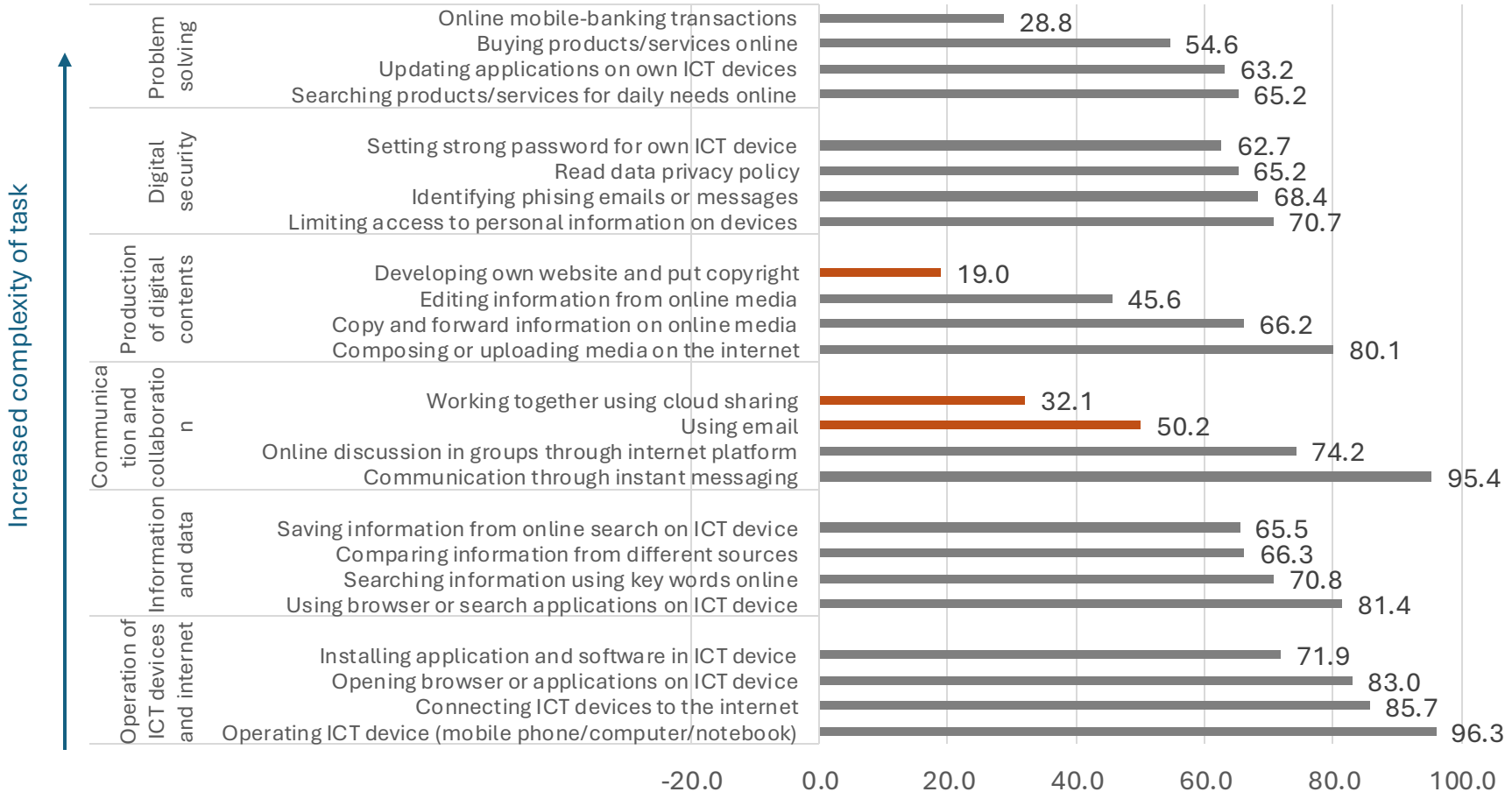
Source: Authors' calculation based on DEHS (2020).

Fewer are proficient in more advanced skills to boost productivity

50% Using email

32% Collaborating using digital sharing platform

19% Developing own web content and copyright awareness



Source: Authors' calculation based on DEHS (2020).

Finding (2)

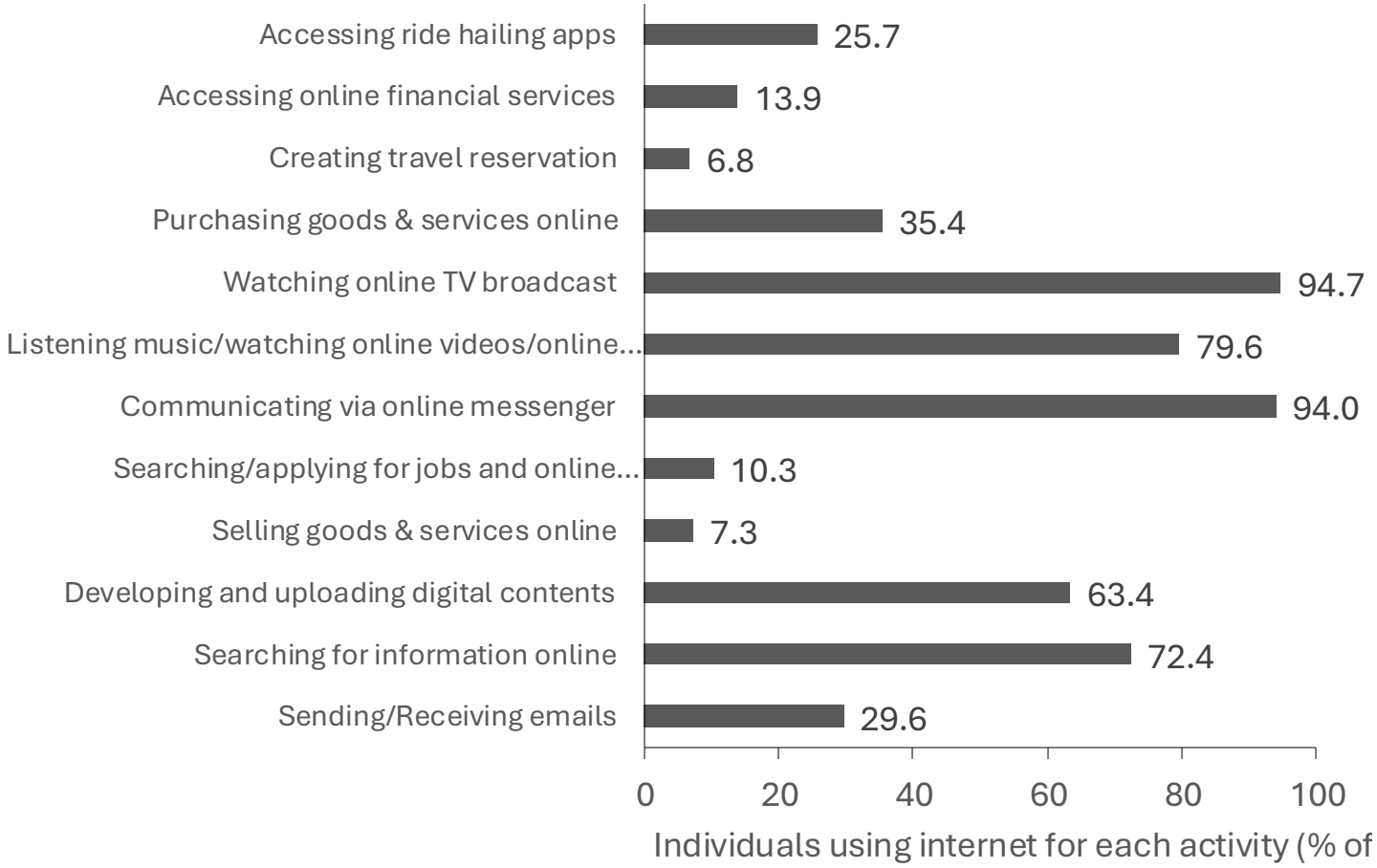
Indonesian internet users would need to catch up with in-demand skills to fully benefit from the digital economy

There has been a limited use of digital technology for productivity-enhancing activities

95 percent of respondents use online messaging, internet music and video streaming, and online gaming

DT are infrequently used for activities that could potentially boost productivity, e.g.:

- 14 percent financial service
- 10 percent use them for job searches and applications
- 7 percent for selling goods and services.



Source: Authors' calculation based on DEHS (2020).

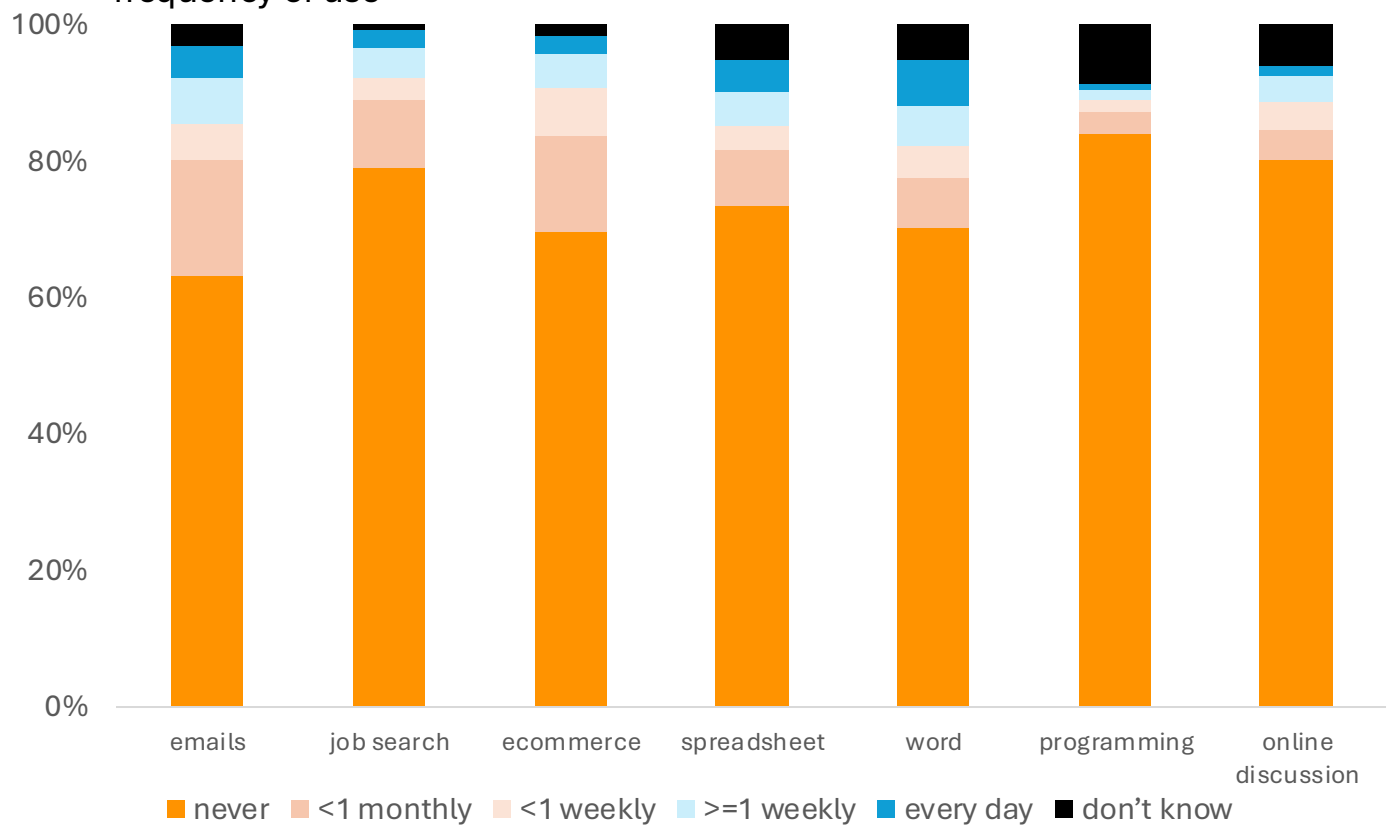
There has been limited use of digital skills in work settings

OECD (2016) identified a set of **skills fundamental for the digital economy**, such as the use of internet and DT for e.g., emails, Job search, e-commerce, productivity software.

Capacities in digital skills in demand for work remain limited

- Less than 25% used for productivity software
- Less than 1 in 5 use email for work
- Less than 7% ever used programming language

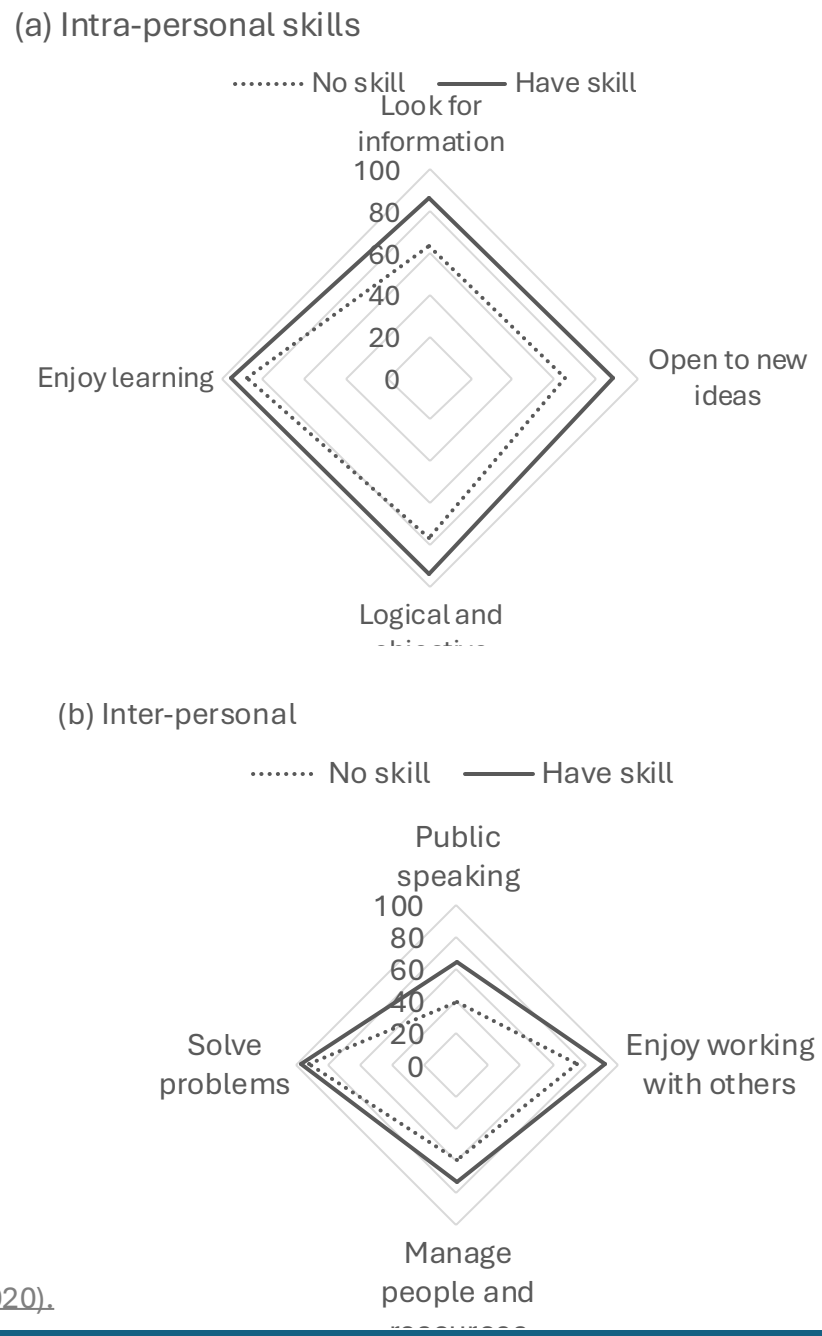
The proportion of individuals using DT & internet by type of activity and frequency of use



Source: Authors' calculation based on DEHS (2020).

Digital skills increases with socioemotional skills

- Literature have well identified the complementary skills to succeed in digital economy (e.g., OECD 2022)
- We examine two types of soft-skills: inter-personal and intra-personal skills
- There are observed level of variations in socioemotional skills across respondent, but those with higher level of digital skills show better socioemotional skills
  - 95% of those with digital skills posses a growth mindset (compared to only 70% among those who didn't



Source: Authors' calculation based on DEHS (2020).

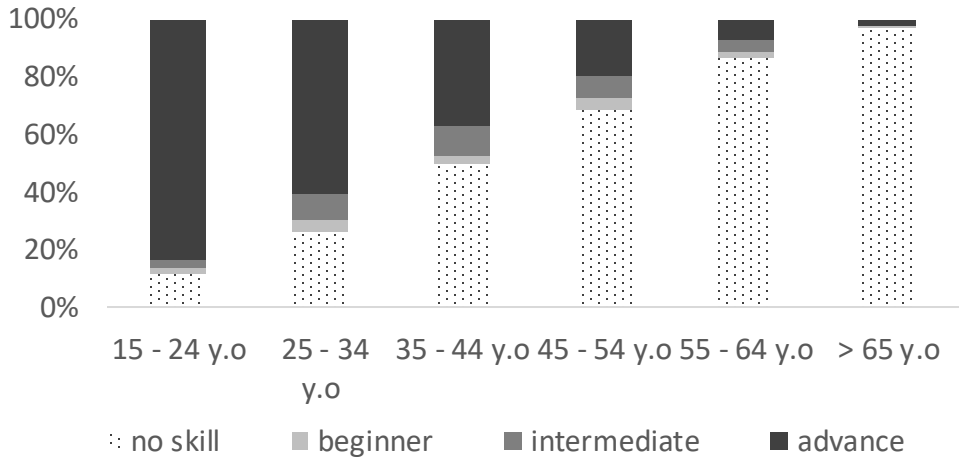
Finding (3)

Gaps

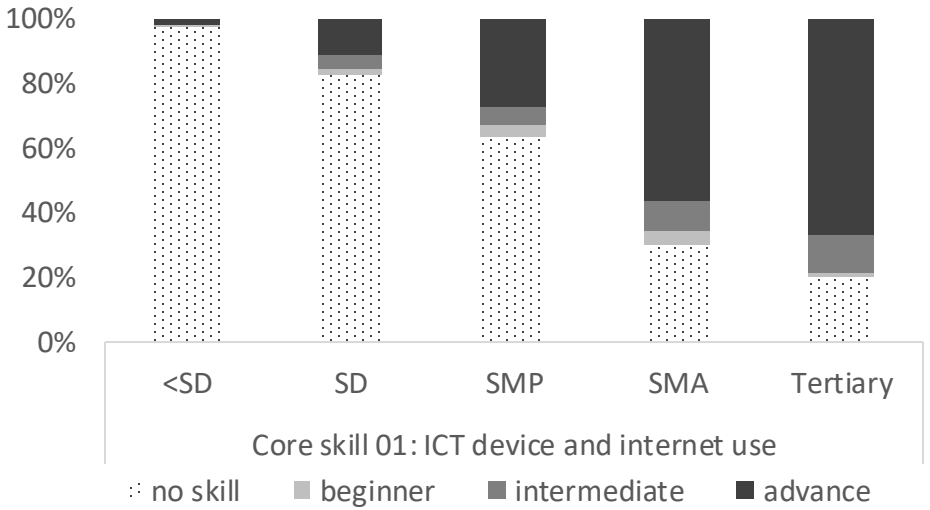
Digital skills varied across demographic groups

- Level of digital skills increases with education-level and increases with education level
- The gap in digital skills is less prominent across island-regions but persists across urban-rural divides
  - Between 60-70 percent of respondents in peripheral and non-metro rural areas had no digital skills
- Gender gap also characterizes the disparity in digital skills among respondents
  - 60-65 percent of females respondents had no digital skills (10-15 p.p. higher than the males counterpart)

(a) ICT device and internet use



(b) ICT device and internet use



Source: Authors' calculation based on DEHS (2020).

Determinants of digital skills

Connectivity – both quantity and quality of connectivity matters for digital skills

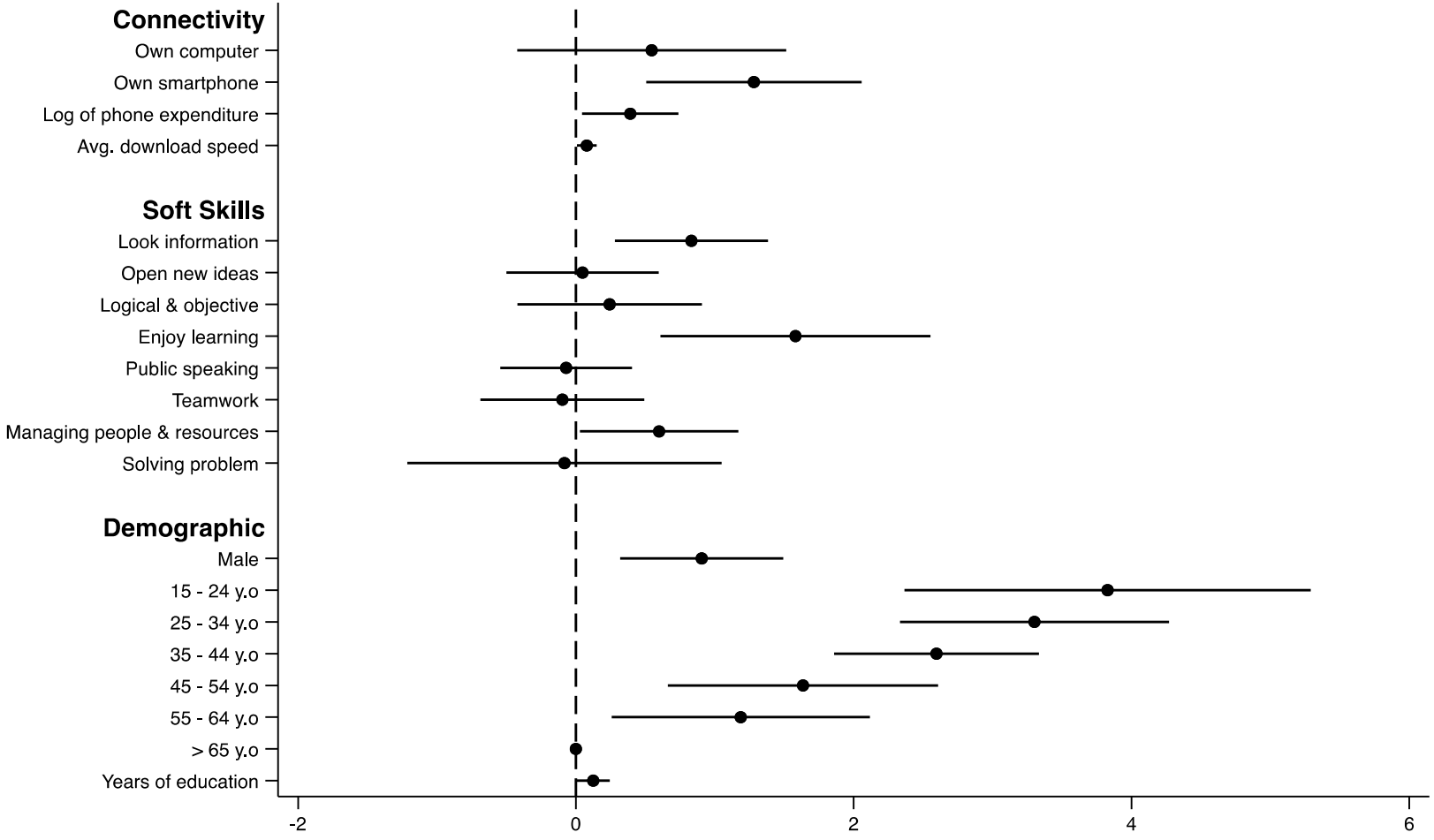
- Those who have mobile phone is more likely have the ability to operate ICT devices
- Better quality of internet access would increase likelihood of higher ICT skill by between 4.7 to 7.8 percentage points

Soft skills – growth mindset and leadership skills would increase digital skills

- Aligned finding with OECD 2016 Skills for the Future

Demographic characteristics

- Males, younger, and better educated groups are more likely to have higher level of digital skills
- Urban residents, with better access and quality to internet and DT also have greater digital skills



Source: Authors' calculation based on DEHS (2020).

Key take aways

- Indonesia has massive potentials as leader of digital economy
- Improvement on digital connectivity (access), but gaps in limited understanding of the baseline skills of the population may hinder future strategy
- The good news – many Indonesian internet and DT users have the foundational skills to starting benefiting from digital transformation and economy
- The not so good news – better quality of jobs and meaningful participation in digital economy would require more than this!

Thank you!

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