BRIDGING THE DIGITAL DIVIDE

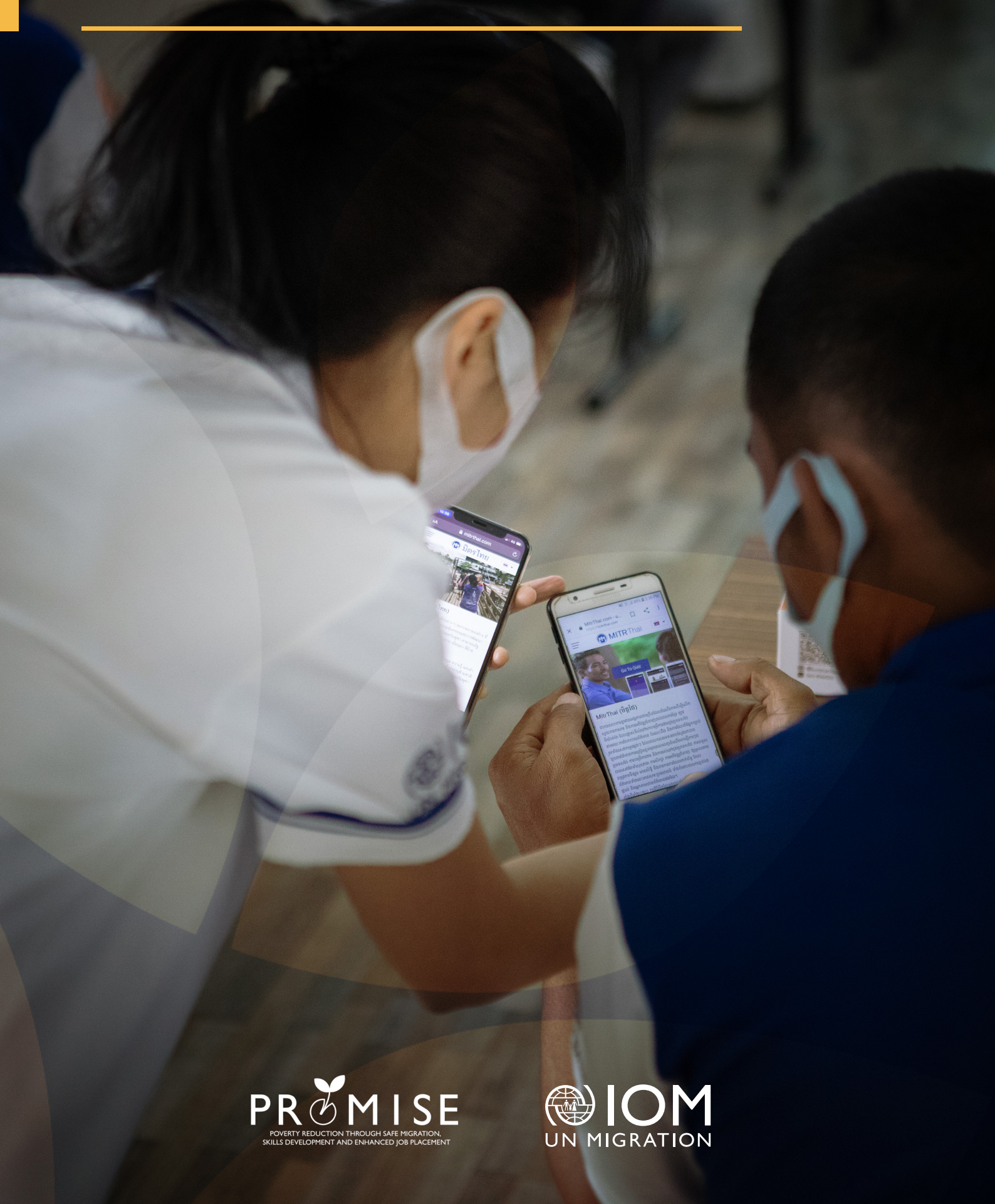## ASSESSMENT OF THE DIGITAL SKILLS OF MIGRANT WORKERS AND THE PERSPECTIVE OF EMPLOYERS IN THAILAND

BRIDGING THE DIGITAL DIVIDE

ASSESSMENT OF THE DIGITAL SKILLS OF MIGRANT WORKERS AND THE PERSPECTIVE OF EMPLOYERS IN THAILAND

International Organization for Migration

JULY 2023

PROMISE
POVERTY REDUCTION THROUGH SAFE MIGRATION,
SKILLS DEVELOPMENT AND ENHANCED JOB PLACEMENT

IOM
UN MIGRATION

FOREWORD

Migrant communities play a significant role in supporting the socioeconomic development of many nations worldwide. In Thailand, these communities, primarily comprising individuals from neighboring countries, constitute a significant portion of the workforce. Nationals from Myanmar, Cambodia and Lao People's Democratic Republic representing approximately 3.9 million migrant workers participating actively in the country's workforce. Despite their substantial contributions, these valuable members of society often encounter considerable challenges, such as restricted opportunities for skills development, harsh working conditions, and low wages.

The International Organization for Migration (IOM) leads the global effort to protect and support migrant workers. In 2016, IOM launched the Poverty Reduction through Safe Migration, Skills Development, and Enhanced Job Placement in Cambodia, Lao People's Democratic Republic, Myanmar and Thailand (PROMISE) programme. Funded by the Swiss Agency for Development and Cooperation, PROMISE aims to promote poverty reduction through ethical recruitment and skills development, safe migration schemes and enhanced return and reintegration mechanisms.

Building upon this mission, the International Telecommunication Union (ITU) – the United Nations' specialized ICT agency – is collaborating with IOM to produce this report. This initiative highlights the digital skills challenges faced by Thailand's migrant communities and underpins our joint effort to bridge the digital divide. ITU is committed to improving access to ICTs for underserved communities worldwide, strongly advocating for the empowering potential of digital skills for all individuals, irrespective of their origins or socioeconomic status.

Digital technology is rapidly evolving communities into digital society. However, unequal access to these technologies can result in a "digital divide", often leaving migrant communities at a disadvantage. In response to this challenge, this joint initiative with ITU aims to provide targeted digital skills training, enhancing migrant workers' access to online information, services, and fostering their meaningful participation in the digital economy.

An essential part of our strategy involves conducting a comprehensive digital skills assessment, as outlined in ITU's Digital Skills Assessment Guidebook. This assessment aims to tailor interventions to migrant workers, thereby contributing to digital inclusion. The guidebook offers a practical, step-by-step tool to conduct digital skills assessments, providing invaluable insights into the current level of digital proficiency among migrant communities in Thailand and aligning these skills with employers' demands.

Through our concerted efforts, we are committed to fostering a world where digital skills training and assessment are prioritized, ensuring that all individuals, regardless of their origin or status, can access and benefit from the opportunities the digital era presents. We anticipate that our collaborative work with ITU will have a significant positive impact on the lives of migrant communities in Thailand, recognizing their indispensable role in our global society.

ACKNOWLEDGEMENTS

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LIST OF ACRONYMS

ANOVA	Analysis of variance
CSO	Civil society organization
GDP	Gross domestic product
ICT	Information and communications technology
ITU	International Telecommunication Union
IOM	International Organization for Migration
MoU	Memorandum of Understanding
OECD	Organisation for Economic Co-operation and Development
PROMISE	Poverty Reduction through Safe Migration, Skills Development, and Enhanced Job Placement in Cambodia, Lao People's Democratic Republic, Myanmar, and Thailand
SDG	Sustainable development goal
THB	Thai baht
USD	United States dollars

EXECUTIVE SUMMARY

Thailand has an estimated 3.9 million migrant workers from Cambodia, Lao People's Democratic Republic and Myanmar. Myanmar migrant workers constitute over 70 per cent of Thailand's total migrant workforce whereas workers from Cambodia and Lao People's Democratic Republic represent roughly 18 per cent and 8 per cent of the total workforce, respectively. Migrant workers make significant contributions to the Thai economy, where there is a structural reliance on migrant workers to fill labour market gaps, particularly in low-skilled occupations.

Despite their significant socioeconomic contributions, migrant workers continue to be subject to poor wages and working conditions, social exclusion and a lack of skills development opportunities. The COVID-19 pandemic further exacerbated some of these vulnerabilities and underscored the consequences of excluding already marginalized groups. As the world grappled with the pandemic, it became clear that digital technologies can help to facilitate social inclusion and access to information and services. At the same time, it brought to the forefront that the benefits of digital innovation are not being equally distributed. Migrants who lacked access to digital devices and possessed limited digital literacy and skills risked further social exclusion and marginalization. Hence, interventions to address "digital poverty" and bridge the digital divide have become increasingly significant in a world that continues to experience rapid digital transformation that affects the way we live and work.

Bridging the digital divide encompasses efforts to ensure everyone has access to digital technology and digital skills to navigate the changing landscape of communication, information sharing and employment. Although digital transformation can provide many benefits, its unequal distribution, often rooted in socioeconomic status, can broaden social disparities. Policies and interventions that take adequate measures to address this digital divide can lead to greater social and digital inclusion, and increased employability, productivity and earning potential for all members of society, including migrant workers (OECD, 2015). Providing digital skills training opportunities can also enhance the protection of migrant workers by increasing their access to online information and services and enabling their meaningful participation in the digital economy.

Migrants during an IOM-supported skills training in Bangkok, Thailand. © IOM 2021/Javier Vidal
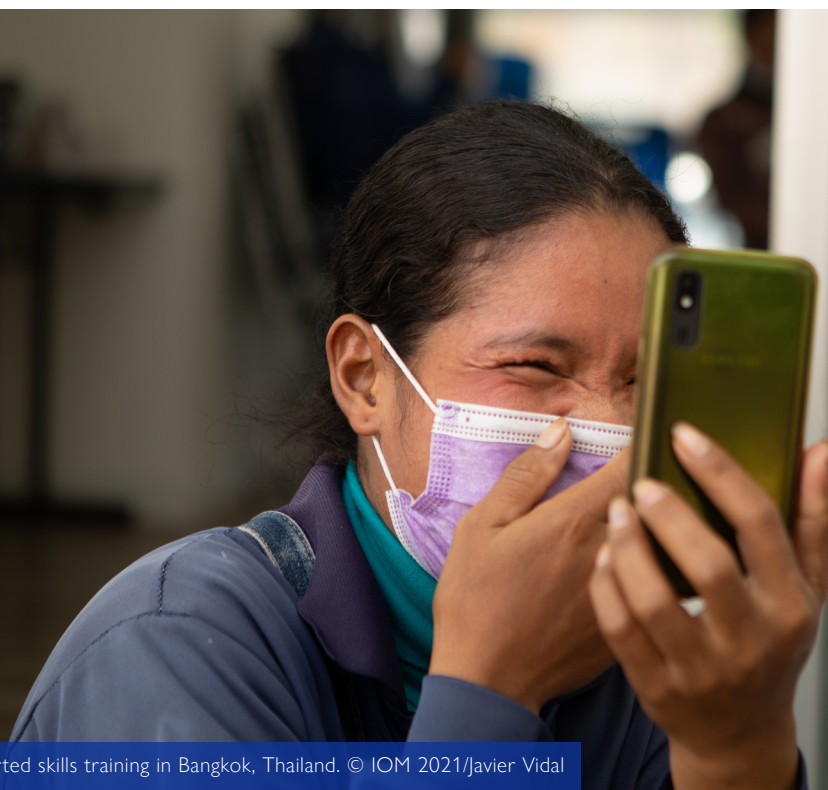
RESEARCH OBJECTIVES AND METHODOLOGY

This report assesses the current usage of digital technology among migrant workers, as well as their skill level and needs across different digital competence areas. The report also examines the perception of employers regarding digital skills among migrant workers and the type of skills, if any, that are required for migrants to live and work in Thailand. Study findings will be used to design needs-based digital skills training programmes and curriculum as well as to identify entry points to promote digital inclusion among migrant workers and employers in Thailand.

The study adopts the European Digital Competence Framework for Citizens, also known as DigComp 2.0, which has been used on a global scale, as the conceptual reference model for identifying and measuring digital skills across various competence areas. The five competence areas are:

01
Information and Data Literacy – competencies in browsing data, evaluating its credibility and managing them for storage or processing;

02
Communication and Collaboration – ability to interact and collaborate on-line appropriately and safely;

03
Digital Content Creation – competencies ranging from creating and editing digital content in different formats to computer programming;

04
Online Safety – ability to protect digital devices, personal data and privacy, and health and well-being;

05
Problem-Solving – ability to troubleshoot and solve technical problems while operating information and communication technology (ICT) devices.

A mixed-methods approach involving both quantitative and qualitative methods was applied to gain a comprehensive understanding of the supply and demand of digital skills. Field surveys were deployed in Bangkok, Chantaburi, and Tak (Mae Sot district) provinces; target respondents were migrant workers from Cambodia, Lao People's Democratic Republic and Myanmar employed in three economic sectors: construction, manufacturing and services. The survey (Appendix C) included questions on demographic profile, current usage of digital technology, self-assessed digital skills and gaps in digital skills development. A total of 465 migrant workers were surveyed (290 men; 170 women and 5 people with diverse gender identity and expression) using the snowball sampling method, exceeding the target sample size of 400. Figures A to C represent a breakdown of the survey respondents by gender, age and nationality.

Semi-structured interviews were also conducted with 16 employers in Bangkok across the three sectors. The employers interviewed include managing directors, senior executives, department heads, general foremen, safety managers and first-line supervisors.

FIGURE 1. DEMOGRAPHIC BREAKDOWN OF RESPONDENTS

GENDER

290 — MEN
170 — WOMEN
5 — NON-BINARY/OTHERS

NATIONALITY

252 — MYANMAR
179 — CAMBODIA
34 — LAO PEOPLE'S DEMOCRATIC REPUBLIC

AGE

40 — 18–20 YEARS OLD
255 — 21–30 YEARS OLD
138 — 31–40 YEARS OLD
24 — 41–50 YEARS OLD
6 — 51 YEARS OLD AND ABOVE
2 — PREFER NOT TO SAY
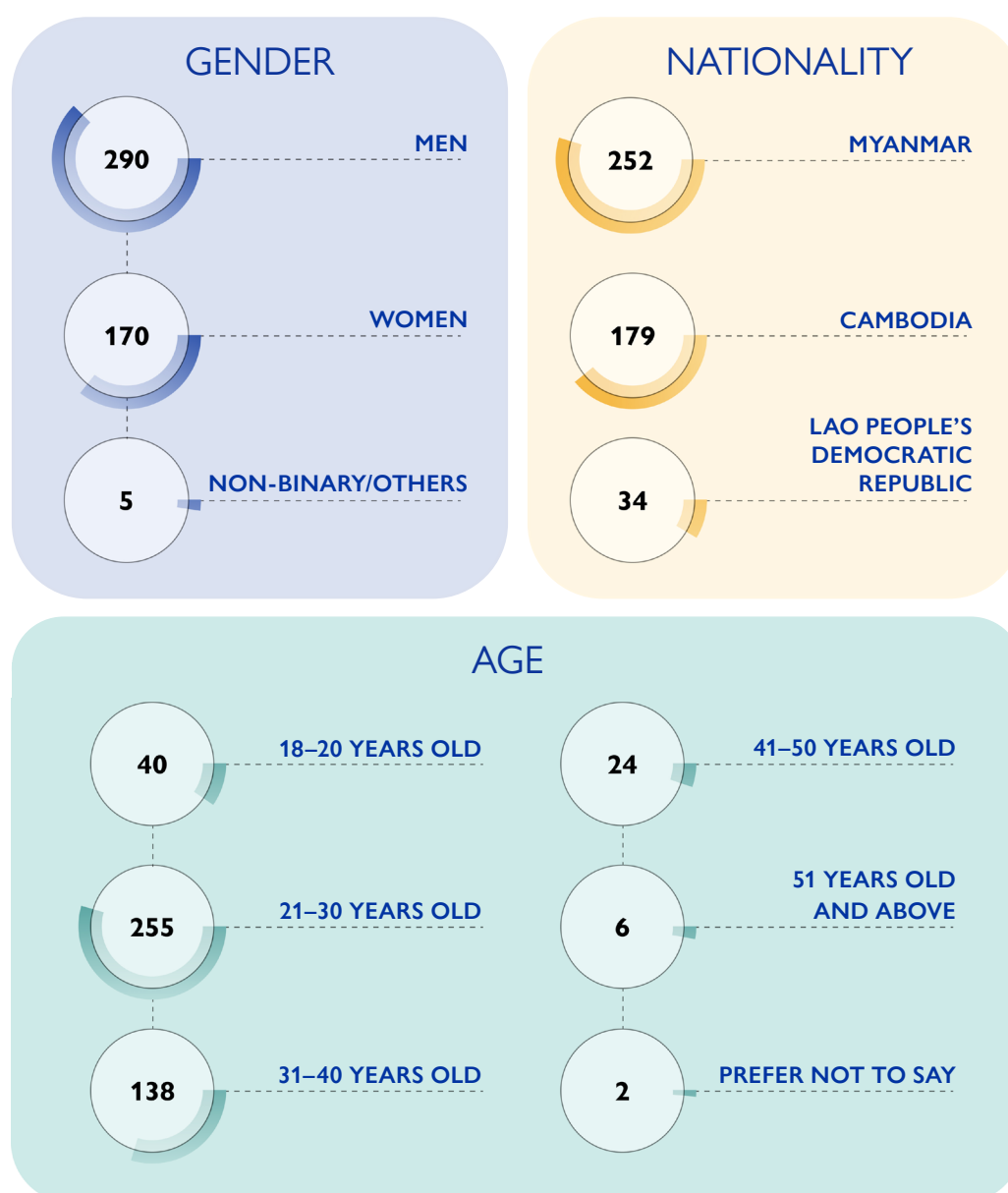
KEY FINDINGS

1. Usage of digital technology among migrant workers

1.1 Almost all migrants (95%) used smartphones on a daily basis.
Migrant workers reported primarily using their smartphones for communication and social connection, as represented by the usage of voice calls (99%), video calls (83%) and social media (72%), with the secondary usage being entertainment purposes, as represented by the consumption of online videos (68%) and music (49%). Only 1 per cent of migrant workers reported not knowing how to use a smartphone.

1.2 Almost all of the respondents (98%) did not own laptops or tablets.
Most migrants reported not knowing how to use laptops or tablets, indicating that it was not necessary since they were more comfortable using smartphones and almost all the functionalities they relied on were already accessible through smartphones.

1.3 A majority of migrants (74%) indicated that they used their own Wi-Fi or data plan.
Others used friends' Wi-Fi/hotspot, public Wi-Fi, company Wi-Fi or fixed broadband.

1.4 In terms of the purposes for using digital technology, almost all migrant workers (99%) reported using digital tools to communicate with family and friends.
This was followed by entertainment purposes (62%) and making friends in the host community (50%). Notably, 79 per cent of respondents reported never having used any banking and/or remittance applications.

1.5 Facebook was reported as the most widely used social media platform among migrant workers (87%).
In terms of messaging applications, migrants commonly reported using LINE (52%) and Facebook Messenger (46%) for both personal and work-related communication.

2. Assessment of digital skills among migrant workers

2.1 On average, respondents rated their current digital skills at 2 ("Not very true of me") across all five competence areas.
This result was derived through the DigComp 2.0 framework, suggesting considerable room for the enhancement of digital skills.

2.2 The survey found that communication and collaboration was the highest rated competence area, yet certain digital skills under this competence area remain less established.
Although most migrants demonstrated capabilities in using social media and messaging applications, 28 per cent of the migrants surveyed reported not knowing how to manage and transfer money online and even more reported not knowing how to digitally access public services such as immigration, hospitals and government agencies (39%). Both of these skills, or lack thereof, can have a notable impact on the social inclusion of migrant workers in Thailand.

2.3 Regarding competence on information and data literacy, most migrants reported knowing how to use search engines (such as Google) to find information online; however, one fourth (21%) admitted to not knowing that online information and content may be unreliable.
Moreover, over 30 per cent of migrants reported not knowing how to use language translator applications (such as Google Translate), which can be a particularly beneficial skill for those not proficient in the local language.

2.4 Online safety was the lowest rated competence area, with more than half of the respondents (54%) reporting that they were not aware that viruses can damage their devices and that anti-virus software can be used to prevent such threats.
Although this lack of knowledge can be attributed to anti-virus software being more widely used in laptops, which most migrants do not own (as opposed to smartphones), being informed on virus threats remains a crucial component of digital safety.

3. Factors contributing to digital skills

3.1 There were no significant differences in the digital skill levels among migrant workers in terms of gender, age or nationality, with only some exceptions.
For instance, men reported higher levels of information and data literacy, whereas women reported stronger problem-solving skills. Notably, migrant workers aged 41 years or older reported the lowest levels of digital skills across all five competence areas.

3.2 Education, income, and Thai language proficiency levels were most strongly correlated with digital skill levels.
The level of educational attainment among migrants was positively correlated with digital skill levels, with the most significant increase among those who completed tertiary schooling. Similarly, respondents earning a monthly income below 10,000 Thai baht (THB) reported noticeably lower scores across all five competence areas, with even lower scores among those who earn less than THB 5,000.

3.3 Migrant workers employed in the service sector reported the highest levels of skills in most digital competence areas followed by those employed in the construction sector.
Migrants working in the manufacturing sector reported the lowest levels of skills across all competence areas and were also found to have lower levels of income and Thai language proficiency.

4. Gaps in digital skills development among migrant workers

4.1 A majority of migrants (82%) indicated lack of time as the main obstacle in learning new digital skills.

This reason was followed by a lack of knowledge/skills (37%), lack of training (30%), lack of interest/motivation (28%), lack of budget (24%), and lack of learning materials (16%).

4.2 Online banking/transaction and communication and collaboration were the skills migrants were most interested in learning (65%).

This area was followed by operational skills (45%) and technical problem-solving skills (43%).[1] On the other hand, migrant workers ranked online safety as the skill they were least interested in learning, although it received the lowest self-assessment scores compared to other competence areas.

5. Employers' perceptions of digital skills among migrant workers

5.1 Employers in the construction and manufacturing sectors primarily reported requiring the use of smartphone messaging applications such as LINE or Facebook Messenger among migrant workers to facilitate work-related communication.

They also encouraged migrant workers to learn how to remit money through digital, formal channels to avoid fraud.

5.2 Migrant workers were reportedly eligible for promotions in the service sector if they acquired digital skills and Thai language proficiency.

Digital skills (Microsoft Office, Hotel reservation programmes) were required only of employees working in the hotel's office, which are currently primarily composed of Thai workers, whereas migrant workers conduct labour-intensive tasks.

5.3 Employers from small companies were more likely to consider work-related digital skills beneficial for improving the lives migrant workers and to offer support in work-related digital skills training, compared to employers from larger companies.

A few employers in smaller companies expressed willingness to increase wages for migrant workers who obtained work-related digital skills.

5.4 Although only some employers recognized the benefits of work-related digital skills, most employers acknowledged the value of digital life skills.

Digital life skills related to messaging applications, to facilitate personal and work-related communication, and to online banking applications, to encourage safe remittance channels. Such capabilities were associated with increased protection, social inclusion and reduced inequalities for migrant workers in Thailand.

5.5 Some employers are hesitant to invest in work-related digital skills, as they primarily employed migrants in low-skilled and labour-intensive roles, noting that positions requiring digital skills were already fulfilled by Thai workers.

A few employers further expressed the belief that migrant workers with improved digital skills could potentially 'steal' jobs from Thai workers and demand higher wages. Such viewpoints reveal the presence of xenophobia and discrimination in the workplace.

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[1] Refer to Table 4.8 for more details on the description of these skills.

Migrant workers during an IOM-supported skills training in Thailland. © IOM 2021/Javier Vidal

RECOMMENDATIONS

Despite hesitancy among some employers in investing in work-related digital skills for migrant workers, the value of digital life skills was unanimously recognized among both employers and migrant workers themselves. Migrant workers particularly welcomed the opportunity to improve their digital skills, particularly in relation to online banking applications and communication platforms. Development partners and civil society organizations (CSOs) should increase efforts in promoting digital skills training and its benefits among migrant workers whilst boosting advocacy efforts with employers, government authorities and migrant communities to recognize the importance and benefits of digital inclusion for migrant workers. Considering the basic needs and existing challenges faced by migrants in Thailand as well as the rapid development of digital technology, it is recommended that government authorities, development partners and CSOs, as well as employers and employer associations take steps to bridge the digital divide amongst migrant workers through a coordinated and holistic approach.

Government Authorities

Raise awareness of digital public services through post-arrival orientation sessions and ensure service platforms are accessible through smartphone platforms and in migrant's languages.

The Royal Thai Government has begun to increasingly leverage digital technology to promote access to key services such as referral mechanisms for filing grievances, disseminating information to the public and facilitating access to health services. Yet, based on survey findings, nearly half of migrant workers reported not knowing how to access digital public services. It is critical that the Royal Thai Government takes steps to promote the digital inclusion of migrant workers. Such efforts should include incorporating information on digital public services in the mandatory post-arrival orientation sessions. The orientation can be conducted by the Migrant Worker Assistance Centre, combining basic and onboarding training on how to navigate, register and use these services. Authorities must also ensure online information and services are accessible using mobile phones and in migrants' languages to enable equitable access among migrant workers.

IOM conducts an information session on labour rights and entitlements for migrant workers in Thailand. © IOM 2023/Kasidit Chaikaew
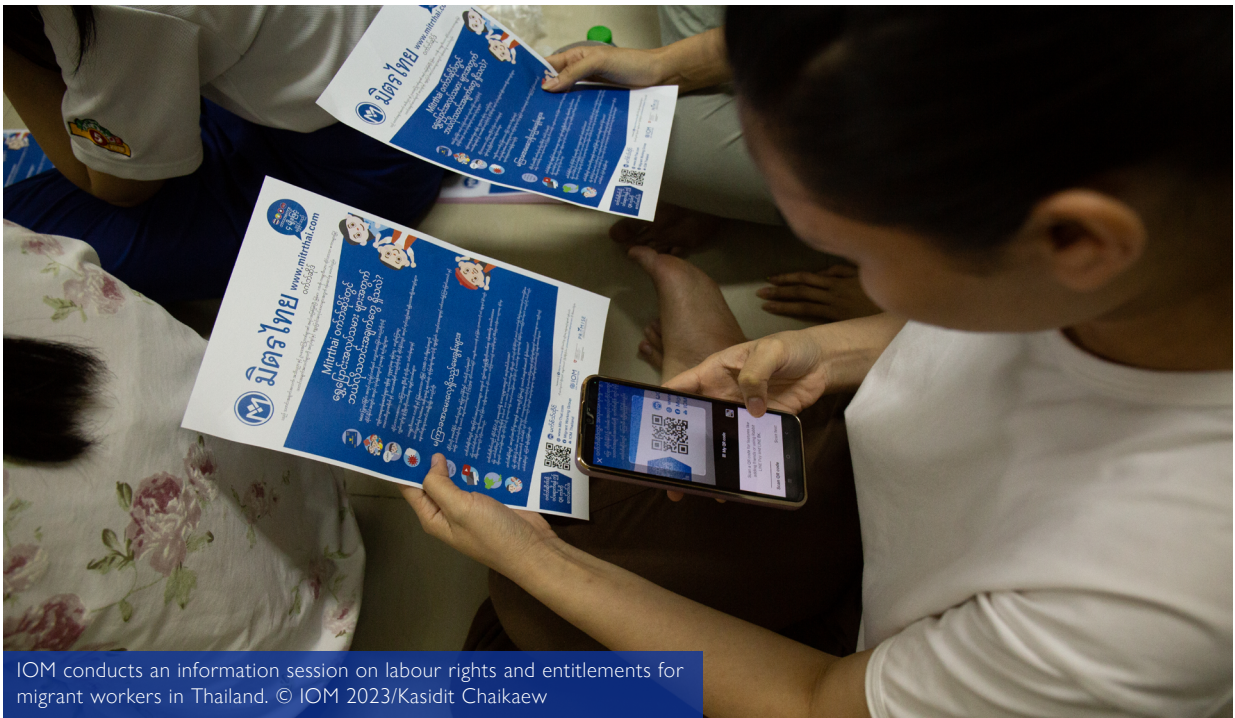
Leverage social media platforms to disseminate important information to migrant communities

Social media platforms is the most popular tool amongst migrant workers to communicate. Based on the study findings, Facebook is the most widely used social media platform among migrants. Government agencies should develop their social media presence to tap into migrants' heavy social media usage and consider using the most popular platform as part of digital outreach and information-sharing initiatives. Doing so will help ensure that migrants have access to credible sources of information on social media platforms, thus reducing the risk of misinformation and disinformation.

Expand the scope of employment and digital skills development opportunities for migrant workers as a means of advancing the Thailand 4.0 initiative.

Thailand 4.0 signifies the digital transformation of Thailand into a knowledge-based economy driven by innovation, technology and creativity. Of the four objectives of Thailand 4.0, two are centred on promoting the realization of the full potential of all members of society and raising "human values". The Royal Thai Government should identify opportunities, and leverage on and build the capacity of the migrant workforce to advance the objectives of Thailand 4.0 and to ensure migrant workers can support the transition to digital innovation across various sectors as well as contribute towards the economy through use of digital services. Such measures should include removing policy limitations that confine migrants to manual work and prioritizing their upskilling, which may also contribute to widening employers' interests in promoting digital skills development for migrant workers.

Addressing xenophobia among Thai employers and employees through evidence-based information and digital campaigns.

Xenophobia remains an obstacle in the upskilling of migrant workers, as shown in interviews with employers. Public attitudes rooted in such beliefs may inhibit equal treatment of migrant workers and lead to further social and digital exclusion. Government authorities should promote digital campaigns that addresses the root of negative attitudes towards migrant workers and coordinate an evidence-based information campaign on the socioeconomic contribution of migrant workers.

Development partners and civil society organizations

Customize a digital skills training curriculum designed to meet the specific needs of migrant workers. Training modules introduced in the curriculum should include:

Online banking applications and remittance channels – This skill was unanimously seen as important among both migrant workers and employers. The findings indicate that most migrant workers have never used online banking applications, yet it was cited as the skill migrants were most interested in learning. Equipping migrants with the skills to navigate online banking applications not only promotes digital inclusion but also supports their financial inclusion, thus having a compounded effect on the integration and protection of migrant workers in Thailand. Trainings should be provided on how to manage bank accounts via mobile applications and make online payments and cash transfers. Training modules should also incorporate information on authorized money transfer agents, such as WING[2] and Western Union, to ensure the inclusion of unbanked migrant workers.

Instant messaging applications and social media platforms – Although most migrants already use smartphones to communicate with family and friends, communication and collaboration was still reported as the skill migrants were most interested in developing. Similarly, almost all interviewed employers recognized the benefit of using instant messaging applications to facilitate work-related communication. Training modules should include an overview of different instant messaging applications and their overall functions (including group chat, file transfer/sharing etc), such as LINE, Facebook Messenger, WhatsApp, Telegram, Signal and Viber. Focus should be placed on LINE and Facebook Messenger given their widespread use among employers, with tips on installing and navigating the different functions in these applications.

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[2] WING is a mobile banking service provider that enables customers to transfer, store and withdraw their money using a mobile phone. It was launched in Cambodia in 2009 by the Australia and New Zealand Banking Group (ANZ), with the aim of promoting financial inclusion of unbanked Cambodians.

Digital safety – Although it was the lowest self-assessed skill across all competence areas, migrants expressed the least interest in digital safety skills. However, raising awareness and learning how to navigate the internet safely is a critical component of digital literacy and can protect migrants from online threats, including fraudulent activities. Elements of digital safety should be incorporated across all training modules. For example, training modules on instant messaging applications and social media platforms must include information on privacy settings, creating strong passwords, scam accounts, phishing attacks and securely sharing personal information. Likewise, modules on internet browsing must include ways to identify virus threats and malware, which more than half of migrants reported not being aware of. To generate more interest in this subject area, case studies showing the consequences of cyberattack and hacks should be provided to migrant workers.

Access to information and data literacy – The proliferation of misinformation and disinformation on the internet continues to be a concern for both policymakers and users. Although most migrants use social media and internet browsing platforms, almost one quarter reported not knowing that information on the internet can be false. With the increasing reliance on internet search tools and social media platforms to access information, training modules should incorporate guidelines to help migrants differentiate between official sources of information and potential "false news". Modules should also include a list of websites and resources migrants can access to receive relevant information and support, such as government services, job searching platforms and information hub such as MitrThai.[3]

Language translation applications – Although widespread efforts should be made to disseminate information in migrants' native languages, migrants will likely continue to face a certain level of exclusion if they are not proficient in Thai. Translation applications have become increasingly sophisticated, with applications like Google Translate enabling live text and voice translations. This can be a particularly beneficial tool to help migrants navigate existing language barriers by allowing them to translate texts that are only available in Thai as well as to better communicate with the local population.

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[3] MitrThai is Thailand's first online migrant worker information hub which provides migrant workers with up-to-date information and referral services in relation to safely migrating, working and living in Thailand. It is accessible in four languages - Thai, Khmer, Myanmar and Laotian.

Training modules should be short, time-flexible, digitalized and easily accessible through smartphones as well as available in the migrants' native languages.

Given that almost all migrant workers use smartphones daily and most have Wi-Fi/data connectivity plans, introducing digital skills training via smartphones can provide the flexibility migrants need to commit to acquiring digital skills. Digital learning platforms such as online lessons and interactive self-learning applications allow for more efficient dissemination and customization of digital skills pedagogy. Digital learning also has a greater reach due to its accessibility features, scalability, sustainability and affordability. Trainings should be developed, organized and presented according to modules, to enable the selection of subject areas based on the migrant's individual needs and skill level. The availability of lessons in Khmer, Myanmar and Laotian is also crucial to address any language barriers that might hinder access for migrant workers. Additionally, to ensure the needs of migrants are met, development partners and CSOs should pilot the training modules in migrant communities and collect feedback for further modifications.

Pilot a tailored in-person training programme on using computers/laptops for all interested migrant workers, especially in the service sector.

Survey findings revealed a significant gap in migrants' access to and knowledge of using laptops and tablets. Although migrants indicated that most of the functionalities they relied on were already accessible through smartphones, equipping interested migrants with computer/laptop skills may promote overall digital literacy and expand their job opportunities. Development partners and CSOs should pilot a specialized training programme aimed at developing migrants' basic skills, such as keyboard typing, Microsoft Office and use of email. Although these programmes should target all migrant workers, special consideration should be given to those employed in the service sector based on indications that such skills can make migrants eligible for promotions. Last, considering most migrants do not own laptops or computers, development partners/CSOs should provide devices during trainings.

Employers and employer associations

Coordinate with development partners and CSOs to disseminate digital skills training programmes.

Employer associations should closely coordinate with development partners and CSOs to promote available digital skills training programmes to ensure migrant workers have access to digital skills training. This includes advocating digital inclusion activities for migrant workers among employers. Considering that migrant workers reported lack of time as the main obstacle in acquiring digital skills, employers should take steps to actively support and encourage their participation in trainings without imposing any reduction in wages.

Incorporate a digital life skills component into existing pre-employment orientation programmes and training initiatives for migrant workers.

As almost all employers reportedly recognized the value of digital life skills to facilitate both personal and work-related communication as well as to promote safe remittance channels, existing orientation programmes and training initiatives currently led by employers should aim to incorporate a digital life skills component. This is particularly relevant for employers who require the use of instant messaging applications such as LINE or Facebook Messenger for work-related communication.

Ensure the inclusion of migrant workers in all internal efforts to digitize work processes and procedures within the enterprise.

An increasing number of businesses are ramping up efforts to digitize work processes with the aim of improving the efficiency of their operations and cutting costs. Any efforts to digitize work processes, ranging from using messaging applications to facilitate work-related communication to requesting leave of absences through online channels, should be equally applied to migrant workers. Employers should include migrant workers in the implementation of new digital procedures through organizing trainings for migrant workers to familiarize themselves with new digital procedures.

Migrant youth at an IOM supported computer class in Bangkok, Thailand. © IOM 2022/Rachaphon Riansiri

STRUCTURE OF THE REPORT

Chapter 1

The first chapter presents the introductory overview and framework for the research study.

Chapter 2

Chapter two provides an overview of labour migration governance in Thailand, the importance of digital skills for migrant workers, and a review of existing initiatives on digital inclusion and digital skills assessments.

Chapter 3

The third chapter includes details on data collection, research approaches and methodology as well as a discussion of the challenges and limitations faced.

Chapter 4

Chapter four provides key findings from data collection detailing participants' demographic, frequency and purpose of digital technology usage, self-assessed digital skill levels to identify the current level of digital skills among migrant communities in Thailand as well as areas of interest for digital skills development.

Chapter 5

Chapter five presents key findings from interviews with employers to assess their perception of digital skills for migrant workers and better understand what, if any, digital skills are required for migrants to live and work in Thailand.

Chapter 6

The sixth and last chapter synthesizes the findings from previous chapters to provide evidence-based input for the development of digital skills training programmes and recommendations for the promotion of digital inclusion among migrant workers in Thailand.

1

INTRODUCTION

Understanding the role of migrants in the economy and society, and challenges faced

The 2030 Agenda for Sustainable Development recognizes that migration is a powerful driver of sustainable development for migrants and their communities. Migration brings significant benefits in the form of employment opportunities, strengthening the labour force and cultural diversity, and contributes to improving the lives of communities in their countries of origin through the transfer of skills and financial resources (IOM, n.d.). In countries of destination, safe and orderly migration can ease labour shortages and contribute to overall socioeconomic development.

Thailand has an estimated 3.9 million migrant workers primarily from Cambodia, Lao People's Democratic Republic and Myanmar. Myanmar migrant workers constitute over 70 per cent of Thailand's total migrant workforce whereas workers from Cambodia and Lao People's Democratic Republic represent roughly 18 per cent and 8 per cent of the total workforce, respectively (Foreign Workers Administration Office, 2022). The Thai economy has a structural reliance on contributions from migrant workers to fill labour market gaps, particularly in low-skilled occupations.

According to the Thailand Migration Report 2019, migrant workers made up over 10 per cent of the workforce in the country and contributed up to 6.6 per cent of Thailand's gross domestic product (GDP) (United Nations Thematic Working Group on Migration in Thailand, 2019). Countries of origin also benefit from the inflow of remittances. Prior to the COVID-19 pandemic, migrant workers in Thailand collectively contributed 2.8 billion United States dollars (USD) in formal or authorized remittances to their countries of origin each year (ibid.).

Despite their significant socioeconomic contributions, migrant workers continue to be subject to poor wages and working conditions, social exclusion and a lack of skills development opportunities (ibid.). The COVID-19 pandemic further exacerbated

some of these vulnerabilities and underscored the consequences of excluding already marginalized groups. As the world grappled with the COVID-19 pandemic, it witnessed first-hand how digital technologies can help facilitate social inclusion and access to information and services. At the same time, it shed light on the fact that the benefits of digital innovation are not being equally distributed. Migrants who lacked access to digital devices and possessed limited digital literacy risked further social exclusion and marginalization. The United Nations (2021) describes the digital divide as the gap between those who have access to and use information and communication technologies (ICTs) including internet connectivity, internet-enabled devices and digital literacy skills, and those who do not. Interventions to bridge the digital divide and address digital poverty have thus become increasingly important as the world continues to experience rapid digital transformation that impacts the way we live and work.

Technological advancements and digitalization have affected various aspects of work, ranging from manual work to automation, robotics and artificial intelligence, resulting in the creation of numerous new job opportunities for the global economy (Arroyo and Valenduc, 2016; Frey and Osborne, 2017; Bughin et al., 2018; Lyons et al., 2019). These advancements, which influence almost all sectors of work, necessitate the upskilling and reskilling of workers. The lack of digital skills and digital skills mismatch is further exacerbating unequal access to job opportunities across high-income and low- and middle-income countries. The United Nations (2018a) predicts that, in the future, 9 out of 10 employees will be required to possess digital skills. However, despite the importance of upskilling and reskilling to accommodate for digitalization, less than half of adult workers possess such skills (OECD, 2016). Furthermore, in terms of internet access, merely 50 per cent of the global population has access to the internet (ITU, 2018). The lack of digital skills is particularly

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pronounced among migrant workers in Thailand who are primarily employed in low-skilled, labour-intensive occupations. Migrants from Cambodia, Lao People's Democratic Republic and Myanmar may have had limited access to formal education and training programmes and thus fewer opportunities to use ICT tools (ibid.). As a result, they may face digital exclusion and be trapped in a cycle of low-wage, low-skilled work.

In response to the challenges migrant workers face in Thailand, the International Organization of Migration (IOM) launched the Poverty Reduction through Safe Migration, Skills Development, and Enhanced Job Placement in Cambodia, Lao People's Democratic Republic, Myanmar, and Thailand (PROMISE) programme in 2017. Funded by the Swiss Agency for Development and Cooperation, PROMISE aims to promote better employment opportunities and decent working conditions for migrant workers from Cambodia, Lao People's Democratic Republic and Myanmar in Thailand through enhanced skills and protection, including digital literacy.

The International Telecommunication Union (ITU) is the United Nations' specialized agency for ICTs, which was founded "to facilitate international connectivity in communications networks and strive to improve access to ICTs to underserved communities worldwide" (ITU, n.d.). IOM under PROMISE collaborated with ITU on this report, to assess the current digital skills level and needs of migrant workers and examine the perception of employers to distinguish the type of skills, if any, that are required for migrants to live and work in Thailand. The main objective of the study is to provide evidence-based input for the development of digital skills training programmes and to identify entry points for the promotion of digital inclusion among migrant workers in Thailand, ultimately bridging any existing digital divides.

Bridging the digital divide involves ensuring that everyone has access to digital technology and digital skills to navigate the changing landscape of communication, information sharing and employment. Although digital transformation can provide a myriad of benefits, its unequal distribution can result in the broadening of socioeconomic disparities within society. Policies and interventions that take adequate measures to address this digital divide can lead to greater social and digital inclusion, increased employability, productivity and earning potential for all members of society, including migrant workers (OECD, 2015). Providing digital skills training opportunities can also enhance the protection of migrant workers by increasing their access to online information and services and enabling their meaningful participation in the digital economy.

Digital transformation is advancing fast; we are already witnessing the potential of ICTs in improving lives, businesses and even economies. Thailand 4.0 strategy is the country's ambitious economic development plan to transform the country from a resource-based economy to a knowledge-based economy driven by innovation, technology and creativity with the aim of reaching a high-income status. To achieve this goal, Thailand will require a large pool of skilled workers and investments in human capital to drive digital innovation and develop a more productive workforce. One of the key objectives of Thailand 4.0 is to promote an inclusive society through the realization of the full potential of all members of society. The contributions of migrant workers, therefore, can play a significant role in achieving the objectives of Thailand 4.0, given that suitable conditions are put in place.

This report aligns with several of the United Nations' sustainable development goals (SDGs), particularly SDG 4 target 4 on increasing the number of individuals who have relevant skills, including technical and vocational skills, for decent employment, SDG 8 target 8 on protecting labour rights and promoting safe working conditions for all workers including migrant workers, and SDG 10 target 7 on facilitating orderly, safe and responsible migration through well-managed migration policies.

2

MIGRANT WORKERS IN THAILAND: BACKGROUND AND LITERATURE REVIEW

2.1 BACKGROUND

Labour migration to Thailand

Migrant workers make a significant contribution to the economy in Thailand, where there is a structural reliance on migrant workers to fill labour market gaps, particularly in the sectors of construction, manufacturing, domestic work, hospitality and services, agriculture and fishing (United Nations Thematic Working Group on Migration in Thailand, 2019). Migrant workers have two pathways to enter Thailand:

(1) Bilateral Memoranda of Understanding (MoUs) between Thailand and countries of origin were originally signed in 2003–2005 for the purpose of developing formal migration channels for temporary employment of migrant workers from Cambodia, Lao People's Democratic Republic and Myanmar. The development of the MoUs was managed by the Ministry of Labour in consultation with the Ministry of Foreign Affairs and in response to the Thai market's demand for lower-skilled labour. In

March 2020, the MoU process was halted, and borders closed as a response to the COVID-19 outbreak. The MoU process and was officially resumed in December 2021 following a Cabinet Resolution. Since then, and as of December 2022, 564,357 migrants have been granted work permits (Foreign Workers Administration Office, 2022).

(2) The border pass employment scheme, also commonly referred to as seasonal worker permits, was introduced by the Thai Government to supply a labour force for the expanding economic activities in the border provinces and Special Economic Zones, particularly along Thailand's borders with Myanmar and Cambodia. In 2022, around 22,000 migrants were registered under cross-border seasonal work permits with the majority of these workers employed in the agricultural and livestock, garment and services sectors (ibid.).

Migrant worker on their way to work on an agricultural farm in Mae Sot, Thailand. © IOM 2021/Javier Vidal

A group of migrant workers at a skills development programme in Thailand. © IOM 2021/Javier Vidal

The Thai Government has also introduced in-country registration and nationality verification measures with the aim of regularizing all irregular migrants already living and working in Thailand. These work permits, also known as "pink cards," are issued during the ad hoc registration processes instituted by the Thai Government, offering a temporary amnesty for the violation of immigration laws as part of an effort to promote a regular workforce and to ease labour shortages. Amid border closures during the COVID-19 pandemic, the Royal Thai Government passed multiple Cabinet resolutions introducing registration windows to maximize the ability of businesses to maintain a regular migrant workforce.

Migrant workers in Thailand are generally covered under the Thai Labour Protection Act 1998, which guarantees equal employment conditions and protections to all workers. The Act regulates a minimum wage, maximum working hours and paid sick leave, and prohibits discrimination and workplace harassment. However, certain restrictions remain for migrant workers, such as limitations on freedom of association and flexibility to change employers. Additionally, certain sectors of employment such as domestic work and seasonal work receive only limited coverage by the Act and are instead governed by separate Ministerial Regulations (IOM, 2021).

Regular migrant workers also have access to social protection benefits, as stipulated under the Social Security Act 1990 and the Workmen Compensation Act 1994 (ILO, 2020). However, even for regular migrant workers, and especially within the sectors of domestic work, agriculture and sea fisheries, substantial gaps in protections exist, and the work performed by migrant workers continues to be characterized by high levels of informality, poor living and working conditions, unethical recruitment practices, low wages, withheld wages and other forms of exploitation (ILO, 2022a). A persistent gender wage gap also remains, with female migrant workers paid on average 14 per cent less than their male counterparts (Harkins et al., 2017).

Importance of migrants' skills development for sustainable growth

The 2030 Agenda for Sustainable Development recognizes the value of migration as a powerful driver of sustainable development. One of the United Nations' SDGs is to "promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all." Skills development is a crucial component of promoting economic growth through the fostering of a competent and productive workforce. In recognition of this link, SDG 8, target 6 focuses on the promotion of employment, education and training among youth populations and SDG 4, target 4 calls for the increase of the number of youth and adults who have "relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship."

The Global Compact for Safe, Orderly and Regular Migration's eighteenth objective emphasizes the importance of skills development and qualification recognition in empowering migrant workers (United Nations, 2018).

Nevertheless, prior to the initiation of the PROMISE programme, the skills development programmes in Thailand mainly targeted Thai workers – because the country's legal framework mostly only allowed the employment of migrant workers from neighbouring countries in manual work to address labour shortages within the labour-intensive industries. PROMISE, since 2016, has been actively mainstreaming skills development in labour migration governance, through implementation of skills trainings for migrant workers in Thailand in collaboration with relevant government agencies, employers and employer associations, CSOs and skills development providers. Hence, no official mechanism had been established with the governments of Cambodia, Lao People's Democratic Republic and Myanmar under the bilateral labour cooperation agreements to provide training for aspiring migrant workers apart from the pre-departure and post-arrival orientation sessions.

2.2 LITERATURE AND DESK REVIEW

This section reviews the current literature on digital skills to help the researchers better understand the roles of digital skills in migrant workers' lives, develop appropriate methodologies and identify key digital competence areas to be assessed.

Roles of digital skills

As ICTs continue to transform many segments of labour markets, digital skills have become increasingly crucial for workers to participate in these markets. Digital skills play an important role for migrant workers throughout different stages of migration. ICTs can facilitate access to crucial information about potential destination countries and job opportunities, significantly informing decision-making of aspiring migrant workers (ILO, 2021).

Digital skills enable individuals, especially vulnerable groups, to access information about their rights and responsibilities, therefore reducing the risk of abusive practices from

employers, recruiters, landlords or service providers (Bouffet, 2020; Maitland, 2020).

Digital skills also facilitate migrants' integration into destination communities through several mechanisms. First, digital skills can play a vital role in communicating in foreign languages since migrants can benefit from language learning tools, translation apps and the ability to communicate digitally (Potocky, 2021). Second, digital skills also enable migrants to access online communities and maintain connections to both their native and host cultures (Orrnert, 2020; Patil, 2019).

Third, digital skills allow migrants to access essential resources and services, such as housing-matching services, education and health care. Fourth, the lack of digital skills, such as cyber safety, could threaten their online and personal safety, and make them vulnerable to misinformation and disinformation disseminated digitally. Finally, the ability to use technology for entertainment and leisure can be essential to individuals' well-being (Potocky, 2021).

When efforts are made to promote digital inclusion and identify target vulnerable populations, and when the necessary actions are taken to ensure migrants receive equal opportunities to develop digital skills, socioeconomic gaps can be narrowed and more inclusive societies built (ITU, 2018).

IOM has provided numerous initiatives and resources to facilitate the digital inclusion of migrant workers. For instance, the MigApp is a one-stop-shop platform where migrants can access reliable information and IOM services. A financial literacy component was also planned to be included in the application. Another example is the Resilience Innovation Facility, which is established by IOM Gaziantep in cooperation with the University of Gaziantep, Türkiye. This Facility aims to empower youth and young adults "by providing a safe and open educational space where both refugees and local community members can come together and to improve their digital and design-thinking skills" (IOM, 2022). Additionally, IOM Viet Nam, in partnership with the Directorate of Vocational Education and Training and Microsoft Corporation, provided trainings on digital and other life skills to youth and migrant workers through an online learning platform, issuing over 16,000 certificates that were expected to improve participants' employability (IOM Viet Nam, 2022). These initiatives demonstrate the benefits of digital inclusion in supporting migrants, and the importance of digital skills in facilitating access to services that complement their social integration and improve their employability.

Assessing digital skills

Digital skills assessment provides a helpful foundation in developing digital skills. At the individual level, digital skills assessment can vary significantly in scope and granularity. Morandini et al. (2020) assessment of Europeans' digital skills only included crude indicators for basic and advanced level digital skills. The usage frequencies of email, simple internet, and Microsoft Word were the proxies for basic digital skills, while the usage frequencies of Microsoft Excel, online transactions, and programming language were used to represent advanced digital skills.

Assessing digital skills, though, is not a straightforward process. Brunello and Wruuck's (2019) literature review on skill shortages and mismatches in Europe revealed that self-reported measurements of individuals' skills were predominantly overestimated, while the realized matches approach, which relies on the individual measurement of cognitive skills, tended to be more accurate. Employer surveys can also provide valuable insights into skill mismatches since they are likely to have more accurate information about skill requirements for jobs compared to employees.

Therefore, identifying the current digital skills levels of migrant workers and anticipating future requirements of employers is an important component of designing future labour migration management and information systems as well as enhancing migrant protection and support services.

DigComp 2.0 – Measuring and improving digital competence

The European Digital Competence Framework for Citizens (Vuorikari et al., 2016), also known as DigComp, offers a tool to measure and improve citizens' digital competence. Its conceptual reference model divides digital skills into five competence areas:

1. Information and data literacy

2. Communication and collaboration

3. Digital content creation

4. Safety

5. Problem solving

Information and data literacy involve competencies in browsing data, evaluating its credibility, and managing them for storage or processing. Communication and collaboration refer to ability to interact and collaborate online appropriately and safely. Digital content creation ranges from creating and editing digital content in different formats to programming. It also includes understanding how copyright and licenses apply to data, information and digital content. Safety includes ability to protect own devices, personal data and privacy, health and well-being and environment. Finally, problem solving comprises the ability to solve technical problems when operating devices,

customize digital environments to personal needs, use digital technologies creatively and identify digital competence gaps in oneself (see Appendix A). Despite the abundance of literature on the digital skills of refugees in major resettlement regions such as North America, Western Europe and Oceania or the workforce in Europe, no literature exists on the digital skills of migrant workers from Cambodia, Lao People's Democratic Republic and Myanmar in Thailand However, ITU Digital Skills Toolkit (p. 51) has highlighted strategies in developing relevant curriculum for marginalized populations, including migrants, to design digital skills programmes that meet the specific needs of the target group, including introducing training materials that are culturally appropriate, teach relevant skills and competencies and address specific barriers faced by under-represented groups.

This study aims to fill this gap by examining the digital behaviours, skill gaps and learning constraints of these migrant workers. The study has used the five core competence areas along with the usage frequency of various types of applications, barriers to digital technology learning and employer demand for digital skills, all of which provide a comprehensive understanding of the digital skills of migrant workers in Thailand.

2.3 OBJECTIVES OF THE STUDY

The main objective of this study is to assess the current usage of digital technology among migrant workers and their skill levels across different digital competence areas, while examining the perception of employers regarding digital skills among migrant workers and the type of skills, if any, that are required for migrants to live and work in Thailand.

Under the guidance of the ITU Regional Office for Asia and the IOM, this research aims to support the PROMISE programme through four main objectives:

1. To understand migrant workers' current usage of digital technology and assess their digital skills both in the context of digital life skills and work-related digital skills;

2. To understand the perception of employers regarding digital skills among migrant workers and whether any digital skills are in demand;

3. To provide evidence-based input for the development of digital skills training curriculum and programme interventions;

4. To identify entry points for the overall promotion of digital inclusion among migrant workers in Thailand.

3

PREPARING THE STUDY: DATA COLLECTION, METHODOLOGY AND APPROACH

This study adopted a mixed-method approach in which quantitative methods (through field surveys) were used to measure migrant workers' digital skill levels, and qualitative methods through semi-structured interviews were used to assess employers' perspectives on digital skills for migrant workers. Figure 3.1 maps the research objectives to relevant methodologies and research tools.

FIGURE 3.1: RESEARCH OBJECTIVES, QUESTIONS, METHODS AND WORKFLOW

DESK REVIEW

1 Identify current digital skills levels of migrant workers in Thailand (Digital skills supply)

Quantitative methods (i.e. field survey and descriptive analyses)

- Individual survey: To which ICT devices and digital technologies do migrant workers own and have access?; and to which levels of digital skills and what digital competence areas do migrant workers acquire?

- Descriptive analyses: basic descriptive analysis, cross-tabulation techniques, correlations, and analysis of variance (ANOVA)

2 Evaluate requirements of employers towards migrants in Thailand (Digital skills demand)

Qualitative methods (i.e. semi-structured interviews)

- Employer interviews: To understand digital skills requirements and demands from employers

DIGITAL SKILLS GAPS ASSESSMENT

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Field Surveys

A field survey was developed to assess the digital skill levels of migrant workers to better understand how they use digital technology in their personal and professional lives. The data collected were analysed using basic descriptive analysis and cross-tabulation techniques to identify the migrant workers' general demographic information and their self-assessed digital skills. Confirmatory factor analysis was subsequently employed to test for reliability and how well the model fitted the data. Additionally, an analysis of variance was performed to identify differences between migrant workers belonging to different demographic subgroups such as gender, level of education and business sector.

The survey consisted of four main sections: demographic information, digital skills measurement, current use of digital technology and digital technology learning. The digital skills measurement construct has five validated digital competence areas, which constitute 26 items from DigComp 2.0 (ITU, 2018). The survey was available in English, Myanmar, Lao and Khmer languages, both online[4] and paper-based. The survey instrument was piloted with nine migrant workers from Cambodia, Myanmar, and Lao People's Democratic Republic for further modifications (see Appendix C for the survey used in this study).

To achieve a confidence interval of 95 per cent, a target was set to survey at least 400 migrant workers as determined by the sample size calculation.[5] The inclusion criteria for the survey were as follows:

• Migrant worker from Myanmar, Lao People's Democratic Republic or Cambodia, aged 18 years or older who is employed in Thailand.

• Migrant workers in three business sectors including construction, manufacturing and hospitality. These sectors were chosen based on several criteria, including their contribution to GDP, the number of migrant workers employed, and the proportion of migrant workers in the total workforce. The selection process aimed to provide a representative sample of the migrant worker population in the study area.

• The study was conducted across three provinces in Thailand: Bangkok, Chanthaburi and Tak. These provinces were selected based on IOM's active presence in the region and the number of surveys were split across the provinces based on the Foreign Worker Administration Office's estimated population size of migrant workers in each province. Bangkok has the largest concentration of migrant workers, accounting for over 20 per cent of all migrant workers in Thailand. Chanthaburi and Tak, located near the borders with Cambodia and Myanmar, respectively, also has significant populations of migrant workers (Foreign Workers Administration Office, 2022).

Survey respondents were selected using snowball sampling and the number of respondents for each targeted location was determined in a non-probability sampling. This method was applied as the actual migrant population parameters are unknown and cannot be identified individually. Therefore, when participants were interviewed, they were also asked to introduce or nominate their colleagues and friends.

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[4] Online version of survey was conducted using KOBO programme.
[5] To calculate the sample size for the field survey, we adopted Yamane (1967) sample calculation formula. In addition, the population size used in this calculation accounted for only those migrant workers who are officially registered, whereas some migrant workers residing in Thailand are undocumented or unregistered.

In total, 478 questionnaires were obtained from the field surveys. After excluding cases with missing data or incomplete responses, 465 surveys were retained for data analysis. Table 3.1 shows the distribution of respondents in each target location and business sector. Data collection took place over a one-month period between September and October 2022. During this period, the researchers and enumerators travelled to various locations as well as migrants' workplaces to administer the surveys.

TABLE 3.1: DISTRIBUTION OF RESPONDENTS BY PROVINCES

TARGET
PROVINCES :

TAK
(MAE SOT DISTRICT)

TARGET SIZE : **100**
NUMBER OF RESPONDENTS : **101**
+/- PERCENT : **+1.0%**

TARGET SIZE : **200**
NUMBER OF RESPONDENTS : **260**
+/- PERCENT : **+30.0%**

BANGKOK

CHANTHABURI

TARGET SIZE : **100**
NUMBER OF RESPONDENTS : **104**
+/- PERCENT : **+4.0%**

Source: Pixel Map Generator

Note: This map is for illustration purposes only.
The boundaries and names shown and the designations
used on this map do not imply official endorsement or
acceptance by the International Organization for Migration.

Enumerator training and ethical considerations

An enumerator training session[6] was organized to provide technical support and advice on the preparation and organization of the field surveys. The training included sensitivity on data collection techniques in line with IOM's Data Protection Principles (IOM, 2015).

Before administering the survey, enumerators were required to explain the research objectives and provide informants with the researchers' contact information in case they would like to restate or revoke the data and information they provided. Moreover, prior to every survey, enumerators asked for the respondent's consent. Enumerators were required to either speak Myanmar, Lao, or Khmer languages proficiently or to be assisted by professional translators during the interviews.

Data limitations

This study has several limitations. Migrant workers' current digital skills level was examined in the context of only one destination country where data may be predisposed towards one specific culture and background. Therefore, generalizing this study's findings to other countries or regions should be avoided. Further research may consider conducting a comparative study across multiple countries to expand the understanding of digital skills among migrant workers.

Moreover, digital skills were measured based on self-assessments and perceptions of respondents, leading to possible subjectivity and bias as respondents may over- or under-evaluate their capacity. Therefore, future research may consider combining self-assessment with other methods of digital skills assessment such as knowledge-based or performance-based evaluation to provide more objective and comparable results.

Another major limitation is related to the snowball sampling method in selecting respondents for this study, which led to the under-sampling of some sample groups. For example, the entire sample of Lao migrant workers was 34 individuals. These sample sizes are relatively small to be indicative of any general trends, thereby limiting the survey results when disaggregated by nationality. Additionally, since the study was explored specifically only in targeted locations, namely Bangkok, Tak (Mae Sot district) and Chanthaburi, the findings are to be treated as indicative of only these provinces.

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[6] During the training session, enumerator guidelines were used as a manual for enumerators. Please see Appendix D for the enumerator guidelines.

Employer interviews

Data from the employer interviews is important to understand the perceptions and needs of employers regarding migrants workers' digital skills. Primary data collection through semi-structured interviews was conducted with 16 key informants from 12 different companies. Employers were selected using referral and snowballing methods, together with a convenience quota sampling technique. Employer interviews were conducted only in the capital city of Thailand (Bangkok).

Employers who were selected to participate in interviews needed to meet the following criteria:

━━━● Employers who are managing

directors (chief executives), senior executives, department heads, general foreman or first-line supervisors of migrant workers.

━━━● Employers in three business sectors (construction, manufacturing or hospitality sector)

Semi-structured interviews were conducted based on Employer Interview Guidelines.[7] Each interview spanned 30–60 minutes and audio or video recordings were made, upon permission from respondents, for accurate transcription. Thematic analysis was adopted to analyse the qualitative data, whereby interview transcripts were compiled and categorized into identified topics to interpret trends and obtain findings. The interviewees'

IOM conducts a survey to understand the needs and profiles of migrant workers in Ranong, Thailand. © IOM 2021/Javier Vidal

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[7]   See Appendix D for the Employer Interview Guidelines.

SEX

		NUMBER OF INTERVIEWEES	PERCENTAGE
MALE		11	68.8
FEMALE		5	31.3

BUSINESS SECTORS

		NUMBER OF INTERVIEWEES	PERCENTAGE
CONSTRUCTION		10	62.5
MANUFACTURING		3	18.8
SERVICE		3	18.8

NUMBER OF EMPLOYED MIGRANT WORKERS

	NUMBER OF INTERVIEWEES	PERCENTAGE
0–10	2	12.5
11–50	3	18.8
51–100	2	12.5
>100	9	56.3

4

UNDERSTANDING THE DIGITAL SKILLS DIVIDE: MEASURING THE DIGITAL SKILLS LEVEL OF MIGRANT WORKERS

4.1 SAMPLE STATISTICS

The sample consisted of 290 men, 170 women, and 5 people with diverse gender expression and/or identity,[8] and approximately 55 per cent of participants were between 21 and 30 years old. More than 50 per cent of respondents were migrant workers from Myanmar, 39 per cent were from Cambodia and 7 per cent from Lao People's Democratic Republic. Nearly half of surveyed migrant workers (42%) worked in the service sector,[9] followed by the construction (38%) and manufacturing (17%) sectors. Forty-one per cent of migrant workers had a secondary education degree, while approximately 10 per cent had no educational background. Regarding proficiency levels in Thai, about 44 per cent reported having little knowledge, whereas around 6 per cent rated themselves as highly proficient. Approximately 45 per cent of the respondents earned a monthly income between THB 10,000 and THB 15,000 (or USD 300 to USD 500), which is considered to be in the upper low-income bracket in Thailand. More than half of the respondents lived with their family or relatives. Almost half of the respondents had 1 to 5 years of working experience in their current jobs.
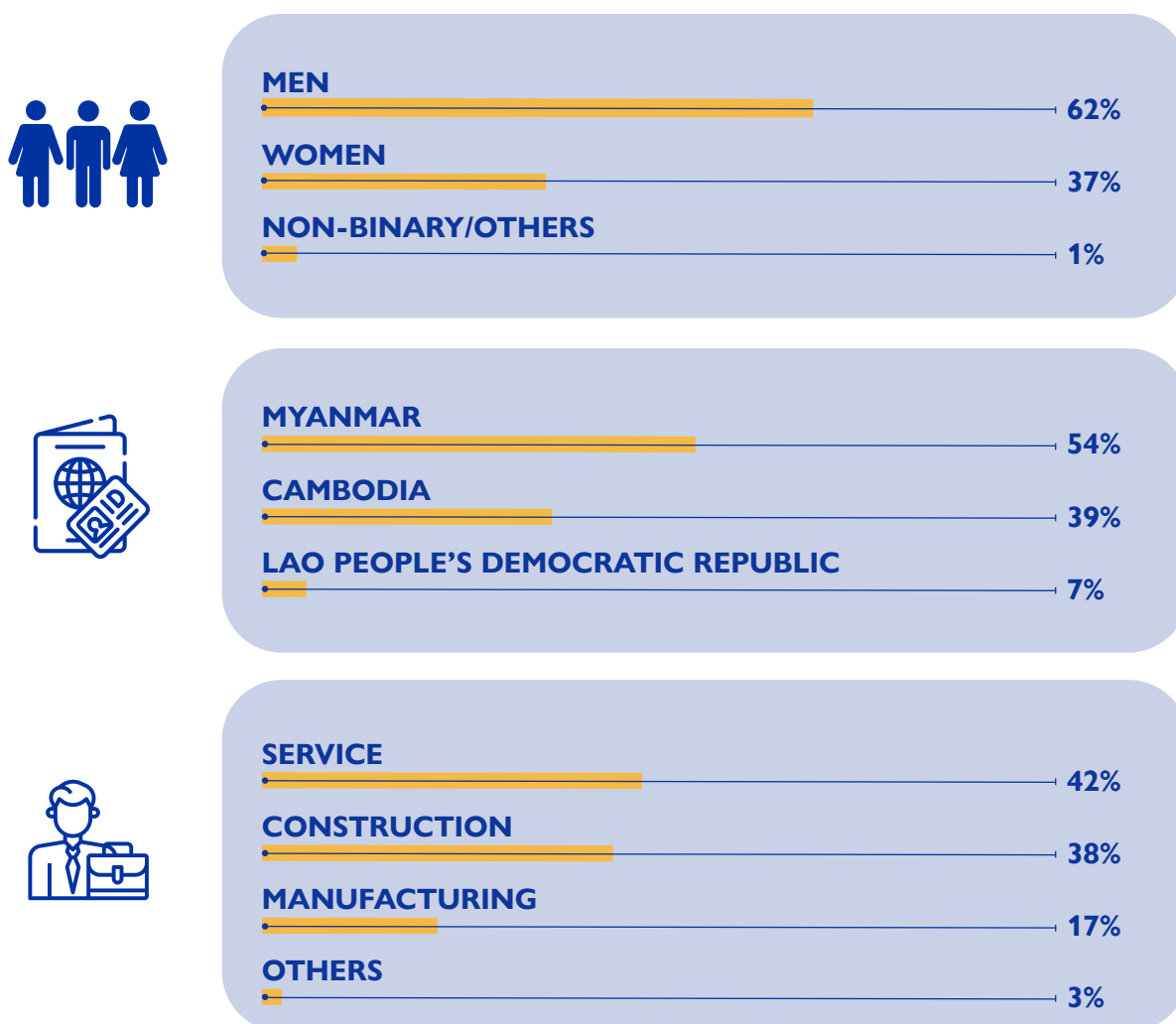
FIGURE 4.1: KEY SAMPLE STATISTICS AT A GLANCE

MEN	62%
WOMEN	37%
NON-BINARY/OTHERS	1%

MYANMAR	54%
CAMBODIA	39%
LAO PEOPLE'S DEMOCRATIC REPUBLIC	7%

SERVICE	42%
CONSTRUCTION	38%
MANUFACTURING	17%
OTHERS	3%

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[8] Five respondents reported that they are non-binary/others.
[9] Respondents worked in the service sector reported that they work as retail salespersons, janitors, gardeners, housekeepers and servers in hotels and restaurants.

TABLE 4.1: DESCRIPTIVE STATISTICS OF RESPONDENTS

GENDER

	NUMBER OF INTERVIEWEES	PERCENTAGE
MEN	290	62.4
WOMEN	170	36.6
NON-BINARY /OTHER	5	1.1

AGE

	NUMBER OF INTERVIEWEES	PERCENTAGE
18–20 YEARS OLD	40	8.6
21–30 YEARS OLD	255	54.8
31–40 YEARS OLD	138	29.7
41–50 YEARS OLD	24	5.2
51 YEARS OLD AND ABOVE	6	1.3
PREFER NOT TO SAY	2	0.4

COUNTRY OF ORIGIN

	NUMBER OF INTERVIEWEES	PERCENTAGE
CAMBODIA	179	38.5
MYANMAR	252	54.2
LAO PEOPLE'S DEMOCRATIC REPUBLIC	34	7.3

FIELD OF CURRENT JOB

	NUMBER OF INTERVIEWEES	PERCENTAGE
CONSTRUCTION	178	38.3
MANUFACTURING	80	17.2
SERVICE	195	41.9
DOMESTIC WORKER	3	0.65
OTHER	9	1.94

CURRENT WORKING EXPERIENCE

	NUMBER OF INTERVIEWEES	PERCENTAGE
LESS THAN 1 YEAR	117	25.2
1–5 YEARS	228	49
6–10 YEARS	97	20.9
11–15 YEARS	19	4.1
16 YEARS AND ABOVE	4	0.9

HIGHEST LEVEL OF EDUCATION

	NUMBER OF INTERVIEWEES	PERCENTAGE
NONE	48	10.3
PRIMARY OR ELEMENTARY SCHOOL	168	36.1
SECONDARY OR HIGH SCHOOL	190	40.9
UNDERGRADUATE OR ABOVE	12	2.6
PREFER NOT TO SAY	47	10.1

PROFICIENCY LEVEL IN THAI

	NUMBER OF INTERVIEWEES	PERCENTAGE
VERY WELL	26	5.6
QUITE WELL	98	21.1
A LITTLE	206	44.3
NO	135	29

LIVING CONDITION

	NUMBER OF INTERVIEWEES	PERCENTAGE
DO NOT LIVE WITH FAMILY OR RELATIVES	225	48.4
LIVE WITH FAMILY OR RELATIVES	240	51.6

MONTHLY SALARY [10]

	NUMBER OF INTERVIEWEES	PERCENTAGE
LESS THAN THB 5,000	21	4.5
THB 5,001–10,000	147	31.6
THB 10,001–15,000	207	44.5
THB 15,001 AND ABOVE	86	18.5

4.2 FACTS ABOUT DIGITAL TECHNOLOGY USAGE

In terms of digital technology usage, smartphones are the most regularly used devices, with almost all migrant workers having access to a smartphone. As shown in Figure 4.2, 4.3 respondents indicated that they use smartphones daily (95% of all respondents), while only 5 per cent indicated that they do not use smartphones every day. However, it is worth noting that four respondents reported having never used smartphones.

For respondents (46%) who had access to but did not own a smartphone, they were asked to indicate their reasons for not owning one.

Around a quarter (27.3%) of the respondents indicated that they had one, but they gave it to their family members/relatives who also live in Thailand. About 16 per cent of the total sample indicated that they could not afford a smartphone. Only 0.6 per cent of respondents reported that they did not know how to use smartphones.

As shown in Figure 4.3, 74.2 per cent of respondents indicated that they used their own Wi-Fi or data plan, while others used friends' Wi-Fi/hotspot, public Wi-Fi, company Wi-Fi or fixed broadband at home.

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[10] The daily minimum wages in Thailand range between THB 328–354 as of 1 October 2022.

FIGURE 4.2: FREQUENCY OF SMARTPHONE USAGE

95%

5%

● EVERYDAY   ● NOT EVERYDAY
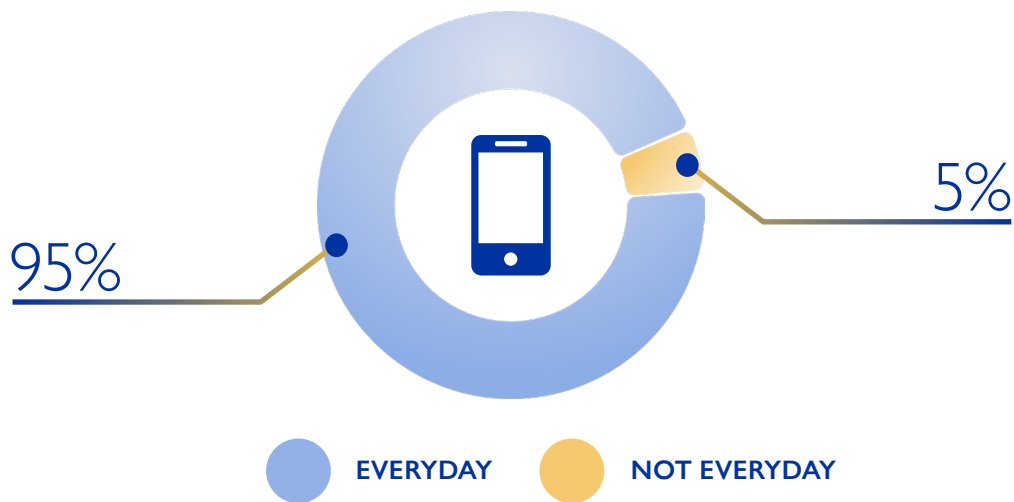
FIGURE 4.3: TYPE OF INTERNET OR WIRELESS ACCESS

26%

74%

● OWN WIFI/DATA PLAN   ● OTHERS
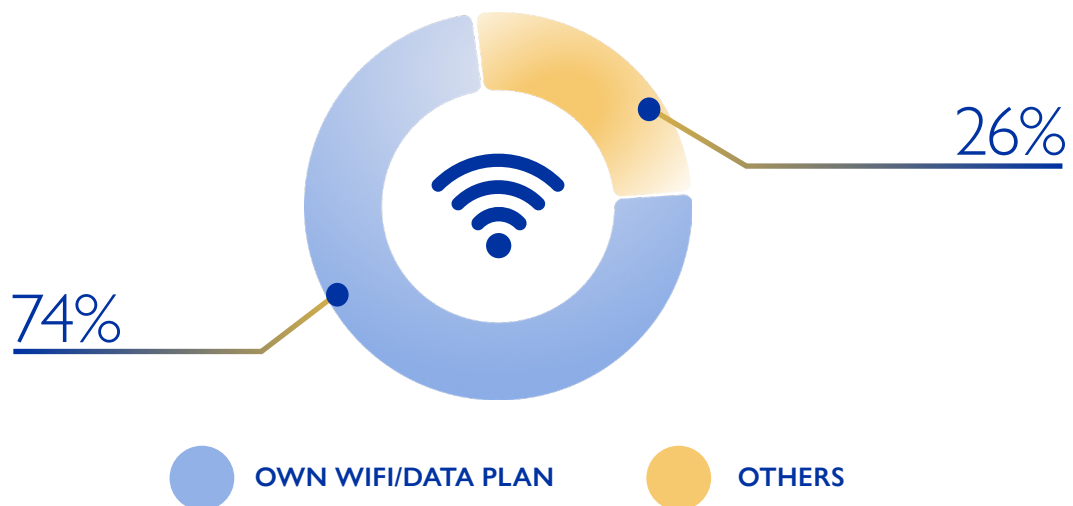
Almost all respondents (98%) did not have tablets and laptops. They indicated that it was unnecessary to have tablets or laptops because they were more comfortable using smartphones to carry out their daily activities and almost all functionalities of tablets were already accessible on their smartphones. Due to limited sample sizes for tablet and laptop users, the focus of this study's analysis is based on the usage of smartphones.

Respondents were asked which functions they used on their smartphones. The 10 most used functions reported by all respondents are as follows: making voice calls (99.6%), receiving voice calls (98.1%), making video calls (83.2%), receiving video calls (82.6%), using social media (72.3%), taking photos/

videos (71.4%), watching videos (67.7%), internet browsing (51.2%), listening to music (48.6%) and sending text messages/SMS (37.2%). Overall, the respondents primarily used their smartphones for communication and connection, as represented by the usage of voice calls, video calls and social media, with the secondary usage being entertainment. Furthermore, exploring how digital skills development and information have been disseminated is interesting, as it seems that migrant workers are proficient in necessary skills using smartphones. Figure 4.4 shows the channels used to learn how to use new digital technologies. Most of them reported that they learn how to use new digital technologies from their friends, followed by self-teaching, family members and social networks.

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FIGURE 4.4 CHANNELS FOR LEARNING NEW DIGITAL TECHNOLOGIES

- ● FRIENDS
- ● YOURSELF
- ● FAMILY MEMBERS
- ● SOCIAL NETWORKS
- ● TEACHER/TRAINER
- ● WEBSITES
- ● OTHERS
- ● BOOKS/MAGAZINES
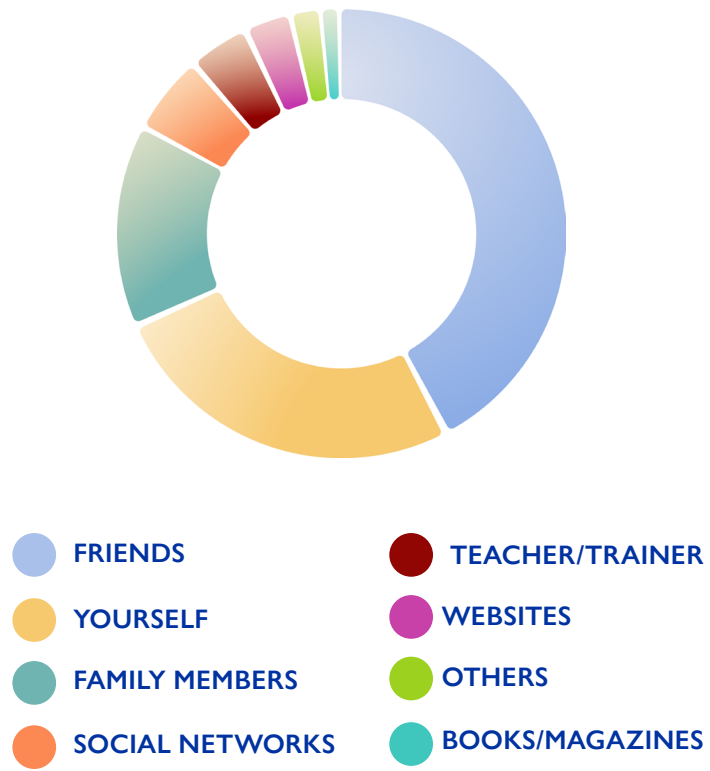
For origin-specific patterns (Table 4.2), a lower percentage of migrant workers from Myanmar reported using social media on their smartphones, while a larger percentage reported browsing the internet when compared with migrants from other countries.

Moreover, Cambodian migrant workers reported lower usage of the internet browsing function. Finally, migrant workers from Lao People's Democratic Republic reported using their smartphones to look up jobs in the top 10 usages.

TABLE 4.2: FUNCTIONS ON SMARTPHONES USED BY RESPONDENTS

CAMBODIA	MYANMAR	LAO PEOPLE'S DEMOCRATIC REPUBLIC	TOTAL
Make voice calls 100%	Make voice calls 99.2%	Make voice calls 100%	Make voice calls 99.6%
Receive voice calls 100%	Receive voice calls 96.4%	Receive voice calls 100%	Receive voice calls 98.1%
Using social media 82.7%	Browse Internet 84.1%	Make video calls 100%	Make voice calls 83.2%
Make video calls 81%	Make video calls 82.5%	Receive video calls 100%	Receive video calls 82.6%
Receive video calls 80.4%	Receive video calls 81.7%	Using social media 91.2%	Using social media 72.3%
Watch videos 76%	Taking photos/videos 77.4%	Watch videos 88.2%	Taking photos/videos 71.4%
Taking photos/videos 71.4%	Listen to music 66.7%	Taking photos/videos 85.3%	Watch videos 67.7%
Listen to music 24%	Send text messages/SMS 64.7%	Listen to music 44.1%	Browse Internet 51.2%
Play games 22.9%	Using social media 62.3%	Browse Internet 41.2%	Listen to music 48.6%
Browse Internet 6.7%	Watch videos 59.1%	Look up for job 38.2%	Send text messages/SMS 37.2%

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In terms of online services usage, about 75 per cent and 71 per cent of the respondents indicated that they use social networking apps (such as Facebook, Twitter, Instagram) and messaging apps (such as Line, Messenger, Viber) every day, respectively. Figure 4.5 shows that more than 85 per cent reported that they never use work-related programmes such as Microsoft Office and Email, while 79 per cent of the respondents never use banking/remittance applications.

The rare usage of work-related tools can be explained by the nature of the jobs that the migrant workers are hired for. As discussed in the project background and literature review, migrant workers from Cambodia, Lao People's Democratic Republic and Myanmar in Thailand predominantly work in low-skill, usually labour-intensive jobs with no requirement for digital tools or skills. In addition, interviews with some migrant workers revealed that they usually remitted their income to their families via their trusted returning friends or agents. This is thus in line with several studies (Sander and Maimbo, 2005; Kosse and Vermeulen, 2014; Ahmed et al., 2021) suggesting that the prevalent use of informal remittance channels is due to two factors: the availability of other appropriate options, particularly when the recipients living in rural areas do not have a bank account, and the high costs of remittance fees when using formal channels.

FIGURE 4.5: FREQUENCY OF DIGITAL TECHNOLOGY USAGE ACCORDING TO ONLINE SERVICES

LANGUAGE AND NAVIGATION APPS

BANKING/REMITTANCE APPS

WORK-RELATED TOOLS

ENTERTAINMENT APPS

MESSAGING APPS

SOCIAL NETWORKING APPS

0%   20%   40%   60%   80%   100%

- EVERYDAY
- AT LEAST ONCE A WEEK
- AT LEAST ONCE A MONTH
- JUST ONCE OR SOMETIMES
- NEVER
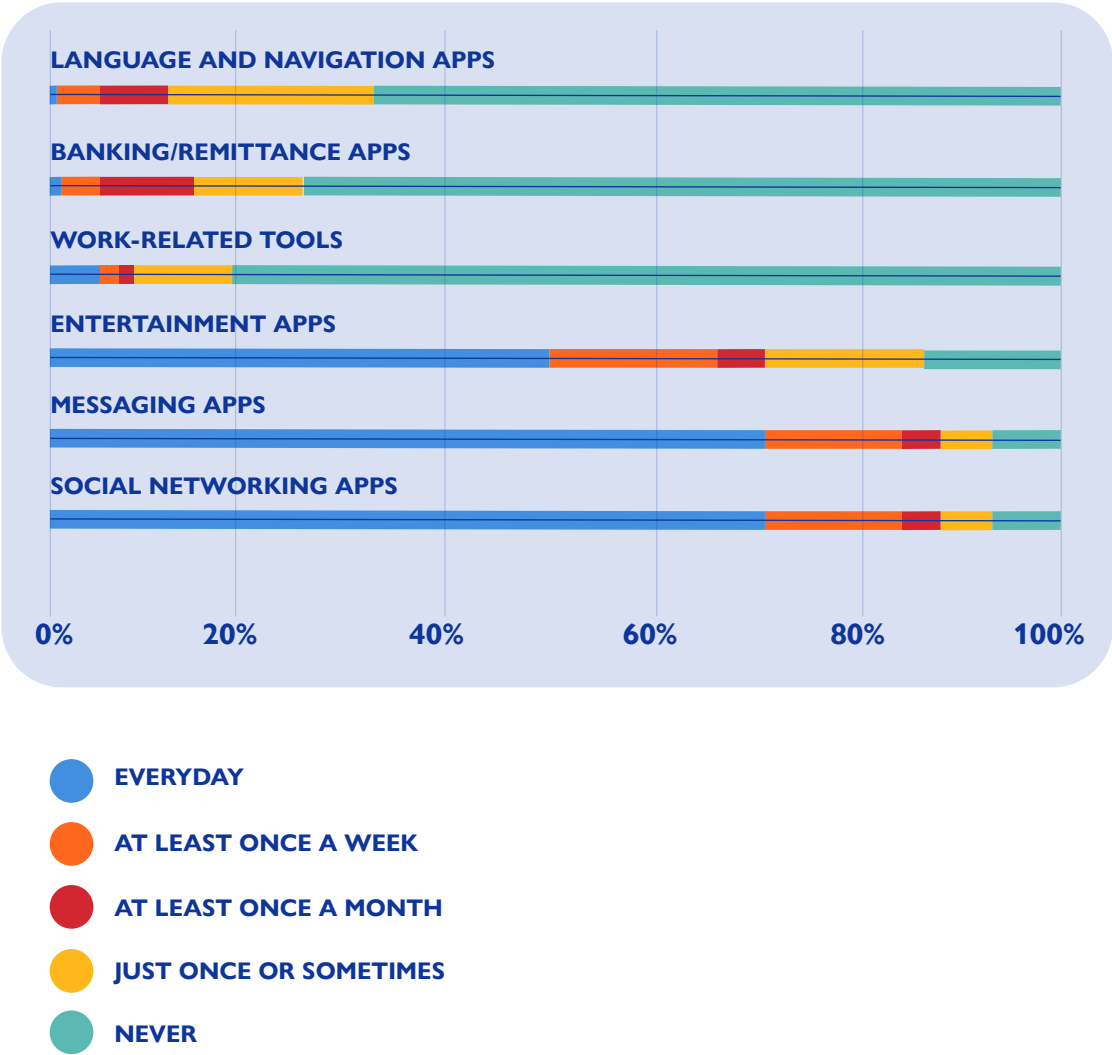
In terms of the purpose of using digital technology, most of the respondents (98.5%) highlighted the current use of digital technology to connect with family and friends at home, followed by the use of digital technology for entertainment (62.4%), for making local friends in the host community (49.5%), and for work-related communication through several instant messaging platforms (17.2%) as some of the top reasons for using digital technology.

4.3 MEASURING EXISTING DIGITAL SKILLS

While access to technology is crucial, self-efficacy or the perception of one's own ability to use technology is also important. Perceived self-efficacy refers to how well an individual believes they can use a device or a digital skill level and is often used as a proxy for their willingness to try unfamiliar digital technology.

Survey respondents were asked to rate their proficiency in different ICT devices (smartphones, tablets, and laptops/PC) usage on the following scales: "I don't know how to use this", "I often struggle and need help in using this", "I sometimes struggle to use this",

"I can use this well", and "I can teach someone how to use this".

Figure 4.6 shows that only 1 per cent of the respondents indicated not knowing how to use a smartphone. Over 60 per cent of the respondents indicate that they can use smartphones well but only 4.5 per cent feel confident enough to teach others how to use them. Most survey respondents do not know how or often struggle to use tablets as well as laptops/computers, given that they do not own or have access to tablets and laptops.

FIGURE 4.6: PROFICIENCY LEVEL IN USING DIFFERENT DIGITAL DEVICES

- 🟡 I DON'T KNOW HOW TO USE THIS
- 🟢 I OFTEN STRUGGLE AND NEED HELP
- 🟠 I SOMETIMES STRUGGLE TO USE THIS
- 🔴 I CAN USE THIS WELL
- 🔵 I CAN TEACH SOMEONE HOW TO USE THIS
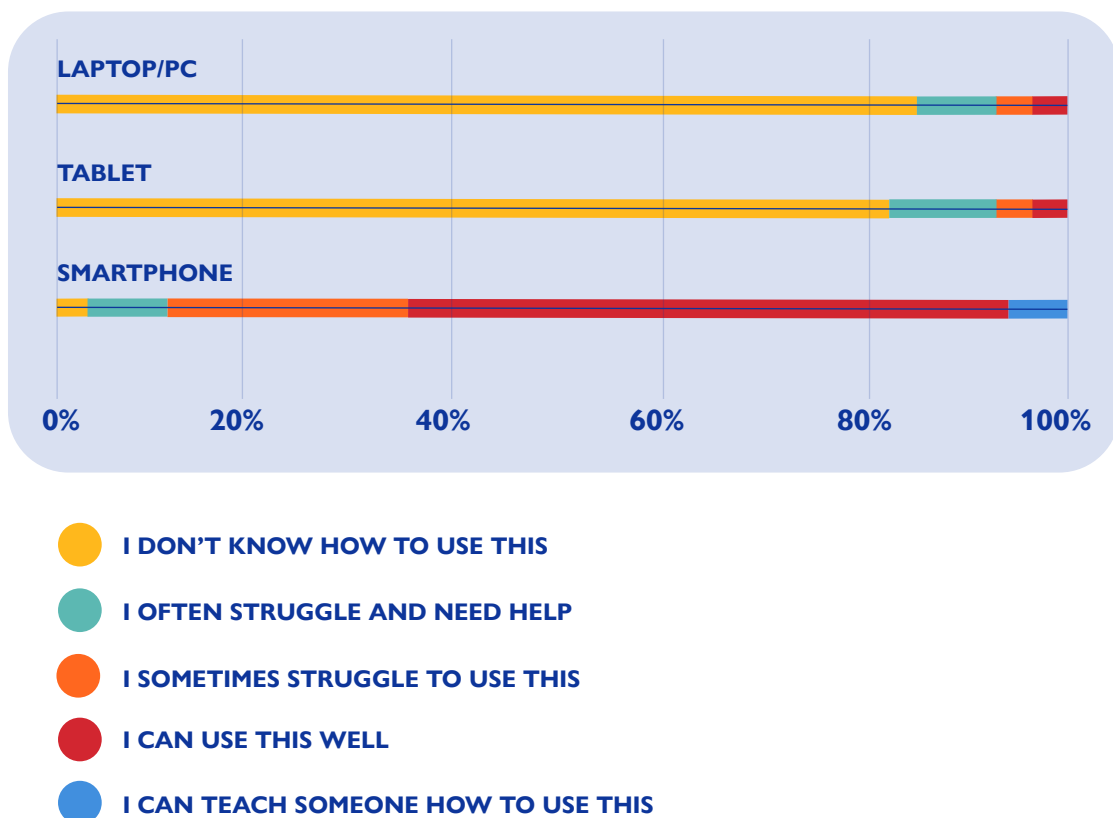
In terms of the measurement of the digital skills levels of respondents, 26 items in the five competence areas derived from ITU's (2018) DigComp 2.0 framework were constructed.[11] Respondents were asked to rate their current digital skill levels using truth claims on the following 5-Likert scales: 1 = "Not at all true of me", 2 = "Not very true of me", 3 = "Neither true nor untrue of me", 4 = "Mostly true of me", and 5 = "Very true of me".

Table 4.3 below shows the descriptive statistics of digital skills in different competence areas reported by respondents. Overall, the respondents rated their digital skills in most competence areas around 2 or "Not very true of me". As for the information and data literacy area, approximately 30 per cent of the respondents reported that they do not know how to use either navigation apps or language translator apps. In terms of communication and collaboration skills, only 12 per cent reported that they do not know how to communicate with others using a mobile phone, or other messaging apps, while many of them (39%) do not know how to access public services (immigration offices, hospitals and government agencies) digitally. Also, more than half of the total respondents (54%) were not aware that viruses can damage their devices and that anti-virus software can be used to prevent this from happening. As to problem-solving skills, approximately 35 per cent of the respondents revealed that they do not know how to use digital tools such as online tutorials and FAQs to solve technological and non-technological problems.

IOM conducts skills training for migrant workers in Thailand. © IOM 2021/Javier Vidal

[11] The reliability analysis was performed in this study to measure the internal consistency of our digital competence scales (26 items). As suggested by Lance et al. (2006), the scales are considered reliable if they are above 0.70. Cronbach's alpha is reported as a value of 0.948, suggesting that the scales have acceptable internal reliability.

TABLE 4.3: DESCRIPTIVE STATISTICS OF DIGITAL SKILLS COMPETENCE

DIGITAL COMPETENCE AREAS		NOT AT ALL TRUE OF ME (PERCENTAGE)	MEAN	S.D.
1. Information and data literacy				
1.1	I know how to use search engines (e.g. Google) to find information online.	17.2%	2.60	1.04
1.2	I know how to use navigation apps (e.g. Google Maps, Apple Maps) to find way to my destination and share my location online.	29.0%	2.21	1.07
1.3	I know how to use language translator apps (e.g. Google Translate) to digitally translate foreign languages.	32.3%	2.08	1.00
1.4	I know not all information online and content I see is reliable.	21.1%	2.38	1.02
1.5	I know how to download/save files or content (e.g. pictures, text, videos, blogs, webpages) I found online and retrieve them once saved.	27.7%	2.26	1.09
2. Communication and collaboration				
2.1	I know how to share files and content with others digitally using email or other simple tools.	22.2%	2.45	1.08
2.2	I know how to create an online account (e.g. Facebook, Google, etc), including filling in online forms (e.g. Google online form)	13.1%	2.83	1.03
2.3	I know how to digitally access public services (e.g. immigration, hospitals, government agencies).	39.1%	1.96	1.03
2.4	I know how to manage and transfer my money online, including making online payments for products and services.	27.7%	2.13	1.05
2.5	I know how to communicate with others using email, mobile phone, or other messaging apps.	12.3%	2.94	1.10
2.6	I know how to digitally access any social communities, using appropriate apps or websites.	20.0%	2.50	1.03
2.7	I know which information I should and shouldn't share online and I am careful to make online comments.	13.5%	2.56	1.01
2.8	I understand the importance of communicating securely.	17.2%	2.44	0.98

DIGITAL COMPETENCE AREAS		NOT AT ALL TRUE OF ME (PERCENTAGE)	MEAN	S.D.
3. Digital content creation				
3.1	I know how to create digital content (e.g. text, tables, images, audio or video files).	23.7%	2.13	0.99
3.2	I know how to make basic editing to the content created by others.	45.8%	1.74	0.82
3.3	I know that online content can be subjected to copyright and licenses.	31.0%	2.12	1.02
3.4	I know how to apply simple functions and modify setting of the applications or software that I use.	24.9%	2.28	0.94
4. Online safety				
4.1	I am aware that viruses can damage my device and anti-virus' software should be used to prevent this.	54.4%	1.78	1.06
4.2	I know how to protect my private information using different and secure passwords for online accounts.	22.6%	2.38	1.01
4.3	I am aware that using digital technology too extensively can affect my health and well-being.	12.7%	2.73	0.97
4.4	I know that using digital technology has consequences for the environment, and constantly buying new technology can lead to a lot of electronic waste.	18.9%	2.51	0.96
4.5	I know how to how and where to seek help if I experience any form of online/physical threats/fraud/bullying/abuse.	40.6%	1.80	0.87
5. Problem solving				
5.1	I know how to solve some technical problems (e.g. update/re-install/close programme, restart computer, re-connect Wi-Fi network, check internet connection).	16.3%	2.76	1.14
5.2	I know how to find technical support and assistance when confronted with a technological problem or when using a new device, software or application.	33.3%	2.15	1.01
5.3	I know how to use digital tools (e.g. online tutorials, FAQs and advice forums) to solve technological and non-technological problems and improve my skills.	35.3%	2.07	0.94
5.4	I understand that although digital tools can help me in problem solving, they have their limitations.	24.1%	2.24	0.94

Descriptive statistics for different subcategories

In this section, the five different digital skills competence areas have been measured in relation to the characteristics of the respondents. Figure 4.7 shows that the average digital skills competence scores show minimal differences between male and female respondents.[12] Male respondents have a slightly higher average score in the information competence area, while female respondents have a higher average score in problem solving.

FIGURE 4.7: SKILLS AVERAGES COMPARISON FOR GENDER

	WOMEN	MEN
INFORMATION	2.21	2.38
COMMUNICATION	2.46	2.50
CONTENT CREATION	2.08	2.09
ONLINE SAFETY	2.28	2.25
PROBLEM SOLVING	2.43	2.26
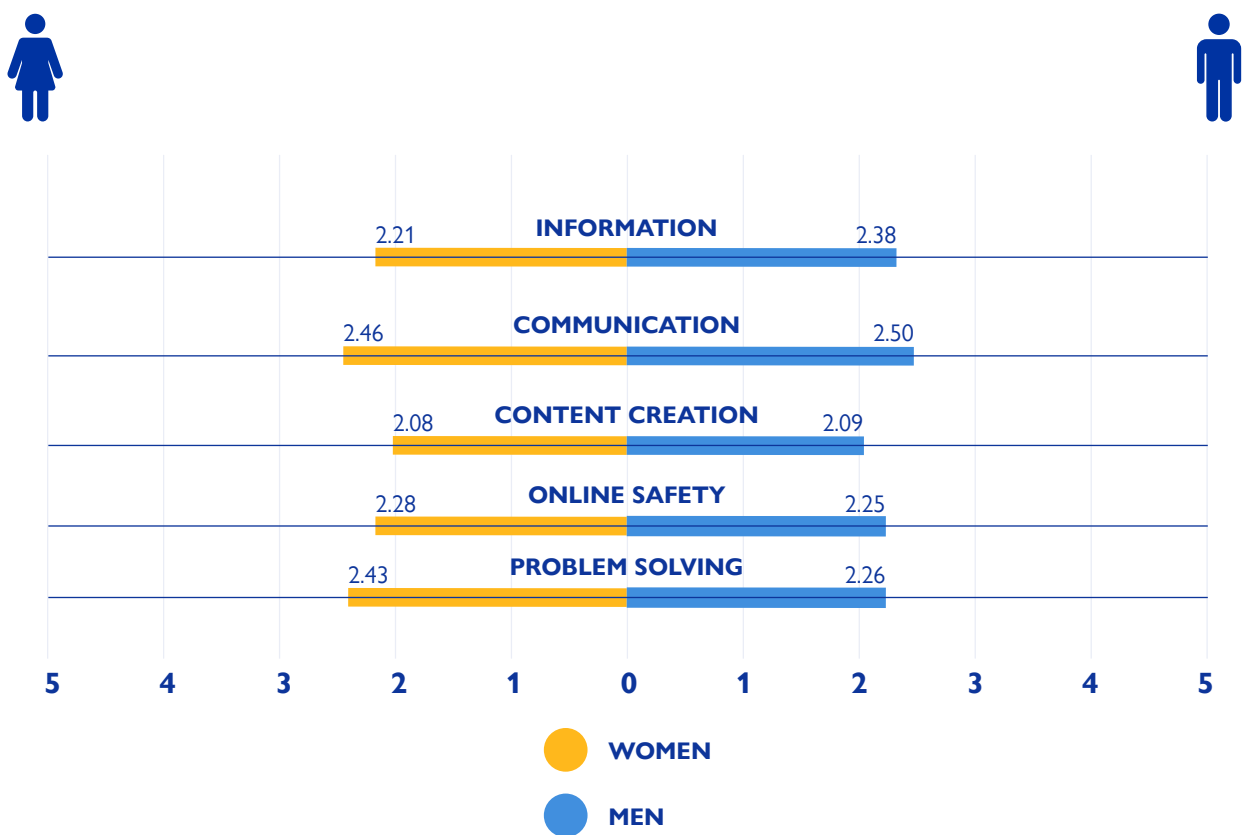
Figure 4.8 shows that, on average, the respondents aged 41 years or older reported lower levels of digital skills than other age groups. However, respondents aged between 31 and 40 years do slightly better than the ones aged between 18 and 30 years in most competence areas. This could be due to the fact that migrant workers who are in this age group tend to be heads of other migrant workers in their employed businesses, thus acquiring the highest skills in most areas.

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[12] Because of the small number of respondents with diverse gender and/or identity (5), they were not included in this figure for comparison.

FIGURE 4.8: SKILLS AVERAGES COMPARISON FOR DIFFERENT AGE GROUPS

INFORMATION

18–30 years old — 2.32
31–40 years old — 2.42
41 years old or above — 1.80

COMMUNICATION

18–30 years old — 2.50
31–40 years old — 2.54
41 years old or above — 2.12

CONTENT CREATION

18–30 years old — 2.10
31–40 years old — 2.10
41 years old or above — 1.84

ONLINE SAFETY

18–30 years old — 2.24
31–40 years old — 2.36
41 years old or above — 2.00

PROBLEM SOLVING

18–30 years old — 2.34
31–40 years old — 2.35
41 years old or above — 2.10
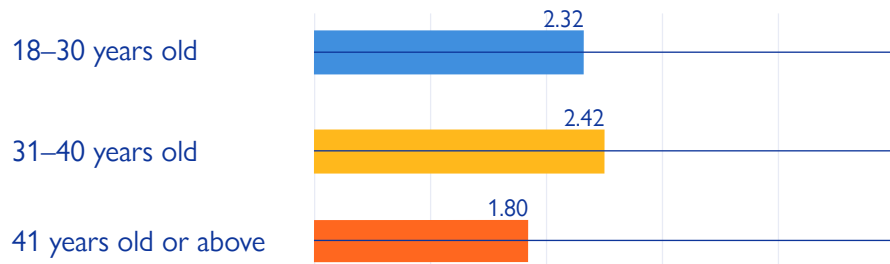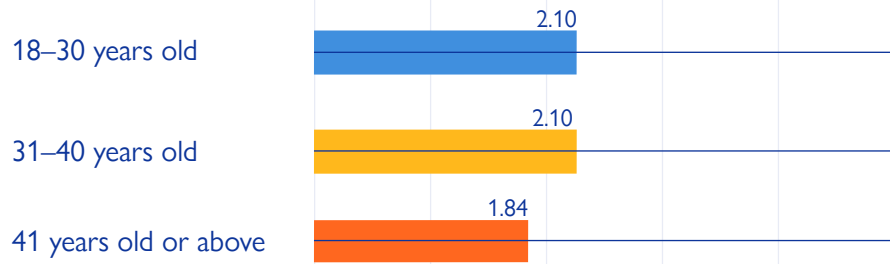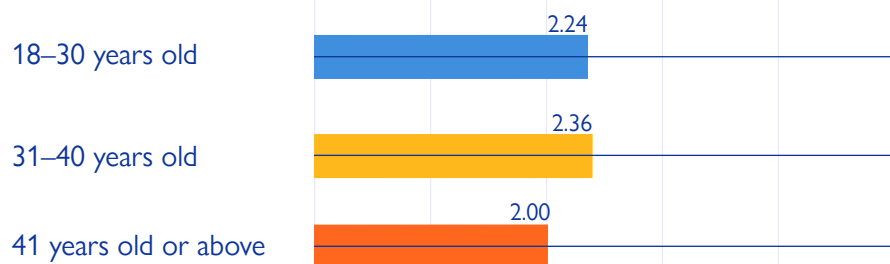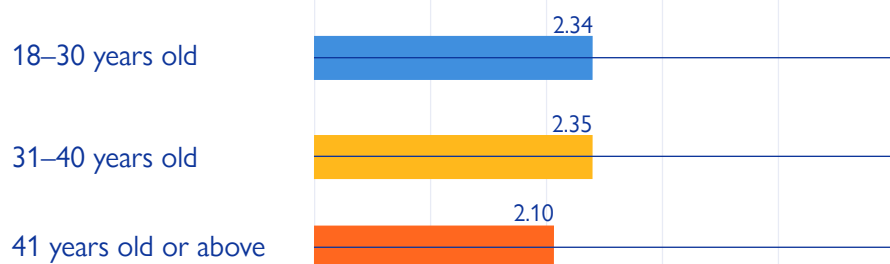
0 1 2 3 4 5

Respondents from Cambodia reported noticeably higher levels of digital skills than respondents from Myanmar on average (Figure 4.9).[13] Myanmar respondents have a slightly higher average score in information than Cambodians but had lower scores than Cambodian respondents in problem solving. In other competence areas, Cambodian respondents reported slightly higher scores than Myanmar respondents on average.

FIGURE 4.9: SKILLS AVERAGES IN COMPARISON BETWEEN MIGRANT WORKERS FROM CAMBODIA AND MYANMAR

INFORMATION

Myanmar — 2.35
Cambodia — 2.15

COMMUNICATION

Myanmar — 2.39
Cambodia — 2.51

CONTENT CREATION

Myanmar — 1.95
Cambodia — 2.21

ONLINE SAFETY

Myanmar — 2.16
Cambodia — 2.27

PROBLEM SOLVING

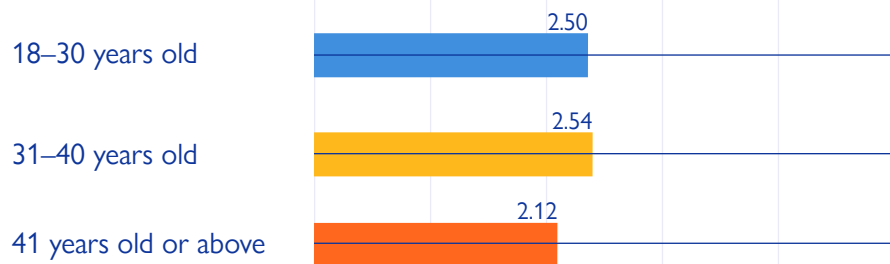Myanmar — 1.92
Cambodia — 2.76

0 1 2 3 4 5

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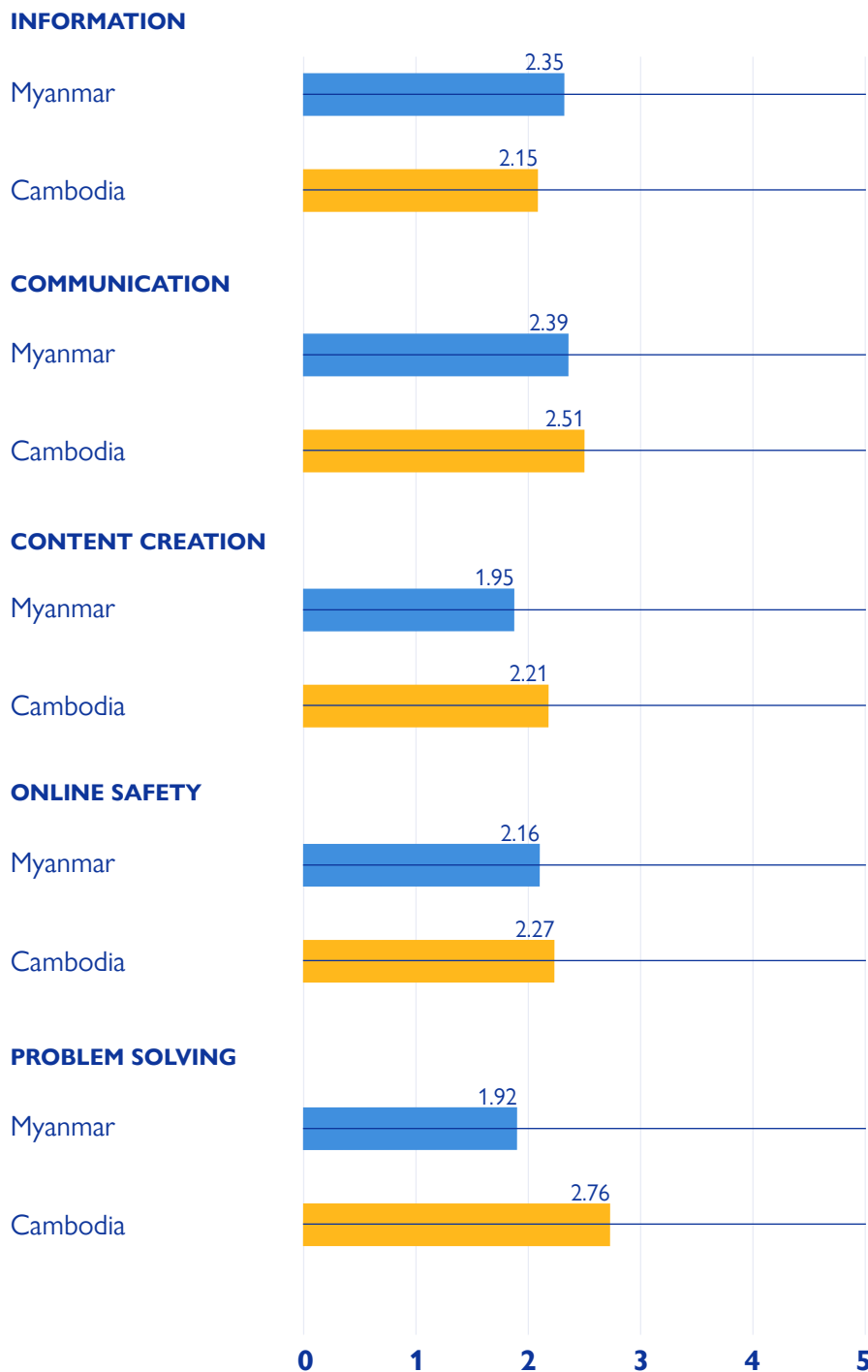
[13] Because of the small number of respondents with diverse gender expression and/or identity (34), they were not included in this figure for comparison.

The levels of education are positively correlated with digital skills levels, with the highest increase at the tertiary level (Figure 4.10). Respondents reporting no educational background have noticeably lower scores in every competence area.

FIGURE 4.10: SKILLS AVERAGES FOR DIFFERENT EDUCATION GROUPS

INFORMATION

Education	Score
None	1.69
Primary	2.23
Secondary	2.45
Tertiary	3.20

COMMUNICATION

Education	Score
None	2.10
Primary	2.45
Secondary	2.54
Tertiary	3.39

CONTENT CREATION

Education	Score
None	1.62
Primary	2.05
Secondary	2.17
Tertiary	2.73

ONLINE SAFETY

Education	Score
None	1.84
Primary	2.16
Secondary	2.36
Tertiary	3.07

PROBLEM SOLVING

Education	Score
None	1.80
Primary	2.41
Secondary	2.25
Tertiary	2.58

FIGURE 4.11: SKILLS AVERAGES BY BUSINESS SECTORS

INFORMATION

Sector	Value
Construction	2.46
Manufacturing	2.13
Service	2.22

COMMUNICATION

Sector	Value
Construction	2.52
Manufacturing	2.11
Service	2.58

CONTENT CREATION

Sector	Value
Construction	2.12
Manufacturing	1.65
Service	2.20

ONLINE SAFETY

Sector	Value
Construction	2.32
Manufacturing	1.85
Service	2.34

PROBLEM SOLVING

Sector	Value
Construction	2.02
Manufacturing	1.71
Service	2.79

0 1 2 3 4 5

To identify whether the higher digital skill levels among migrant workers in the construction and service sectors are related to the higher educational levels, cross-tabulations across different factors are implemented. As shown in Table 4.4, workers in manufacturing have lower education levels than those in the construction sector, but they have higher education levels than those in the service sector. However, when we cross-tabulate the sector with income levels in Table 4.5, it shows that respondents working in the manufacturing sector have lower income levels compared to other sectors. Additionally, workers in the manufacturing sector also have a lower proficiency level in Thai language compared to other sectors (Table 4.6).

TABLE 4.4: RESPONDENTS IN DIFFERENT SECTORS BY EDUCATION LEVELS

	CONSTRUCTION	MANUFACTURING	SERVICE	TOTAL RESPONDENTS
NONE	11	4	32	47
PRIMARY OR ELEMENTARY SCHOOL	61	18	83	162
SECONDARY OR HIGH SCHOOL	96	48	42	186
UNDERGRADUATE OR ABOVE	5	4	3	12
TOTAL RESPONDENTS	173	74	160	407

Note: Respondents who reported "prefer not to say" on education levels and "other" on employment sector were omitted.

TABLE 4.5: RESPONDENTS IN DIFFERENT SECTORS BY MONTHLY INCOME

	CONSTRUCTION	MANUFACTURING	SERVICE	TOTAL RESPONDENTS
LESS THAN THB 5,000	1	20	0	21
THB 5,001–10,000	29	43	73	145
THB 10,001–15,000	101	14	88	203
THB 15,001 AND ABOVE	44	2	34	80
TOTAL RESPONDENTS	175	79	195	449

Note: Respondents who reported "prefer not to say" on monthly income and "other" on employment sector were omitted.

TABLE 4.6: RESPONDENTS IN DIFFERENT SECTORS BY PROFICIENCY LEVEL IN THAI

	CONSTRUCTION	MANUFACTURING	SERVICE	TOTAL RESPONDENTS
NONE	107	26	2	135
A LITTLE	48	43	113	204
QUITE WELL	11	9	69	89
VERY WELL	12	2	11	25
TOTAL RESPONDENTS	178	80	195	453

Note: Respondents who reported "other" on their employment sector were omitted.

Digital skills are mostly evenly distributed across different age groups (Figure 4.12). The exception includes the area of problem solving, where respondents whose tenure in their current job was less than one year reported lower scores on average.

FIGURE 4.12: SKILLS AVERAGES FOR DIFFERENT TENURE GROUPS

INFORMATION

Less than a year — 2.48
1–5 years — 2.24
6–10 years — 2.24
11 years and above — 2.52

COMMUNICATION

Less than a year — 2.52
1–5 years — 2.45
6–10 years — 2.49
11 years and above — 2.62

CONTENT CREATION

Less than a year — 2.09
1–5 years — 2.10
6–10 years — 2.01
11 years and above — 2.09

ONLINE SAFETY

Less than a year — 2.37
1–5 years — 2.22
6–10 years — 2.21
11 years and above — 2.27

PROBLEM SOLVING

Less than a year — 2.09
1–5 years — 2.37
6–10 years — 2.45
11 years and above — 2.44

Respondents not living with any family members report slightly higher scores in all competence areas on average (Figure 4.13).

This could suggest that the need to use mobile phones to connect with family members encourages the use of communication services.

FIGURE 4.13 SKILLS AVERAGES BY LIVING CONDITIONS

INFORMATION

No — 2.34
Yes — 2.28

COMMUNICATION

No — 2.56
Yes — 2.02

CONTENT CREATION

No — 2.15
Yes — 2.02

ONLINE SAFETY

No — 2.32
Yes — 2.20

PROBLEM SOLVING

No — 2.43
Yes — 2.21

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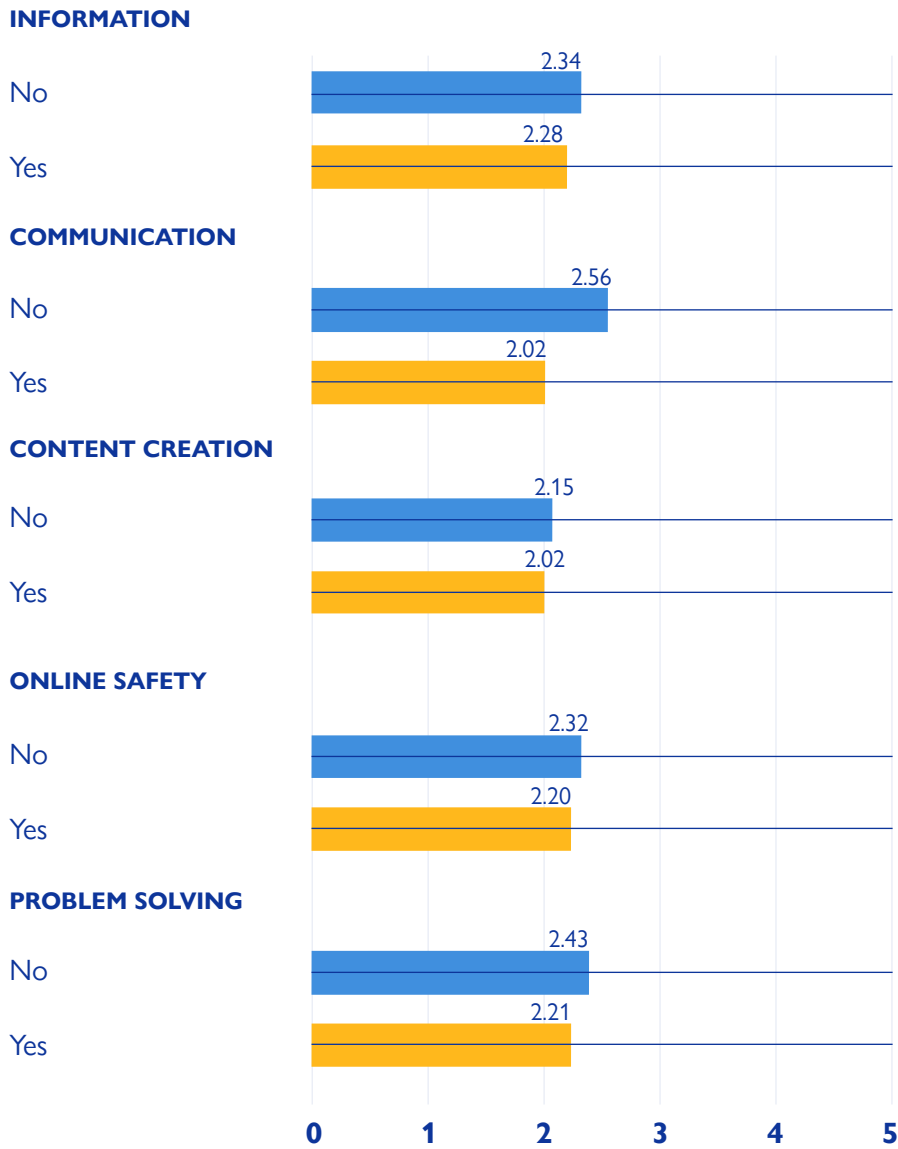
Figure 4.14 shows that respondents with "Good" proficiency level in Thai report noticeably higher levels of digital skills, while the differences between the "No" and "A little" levels appear to be somewhat unclear.

FIGURE 4.14: SKILLS AVERAGES BY PROFICIENCY LEVELS IN THAI

INFORMATION

No	2.37
A little	2.13
Good	2.55

COMMUNICATION

No	2.41
A little	2.37
Good	2.76

CONTENT CREATION

No	1.96
A little	2.02
Good	2.32

ONLINE SAFETY

No	2.20
A little	2.14
Good	2.50

PROBLEM SOLVING

No	1.92
A little	2.28
Good	2.82

0   1   2   3   4   5
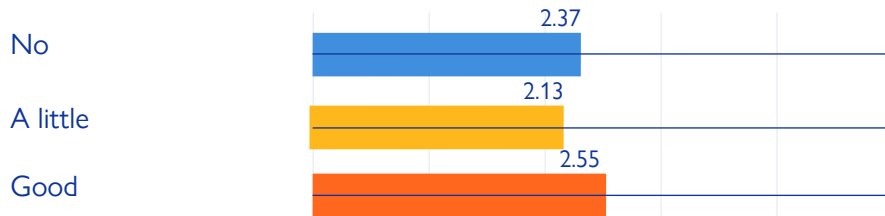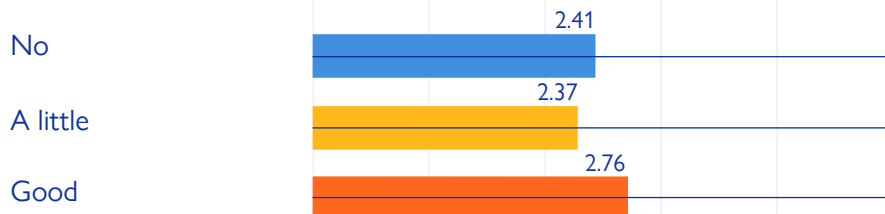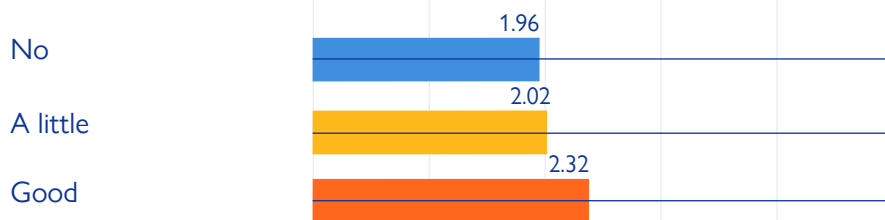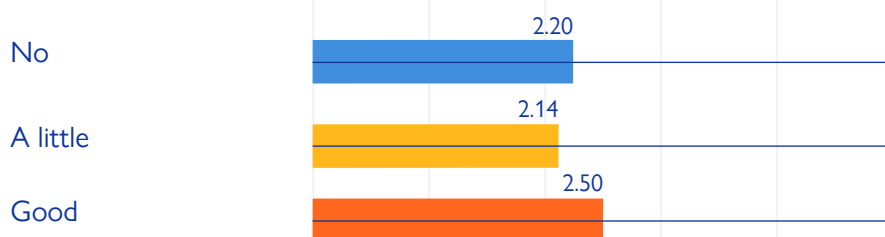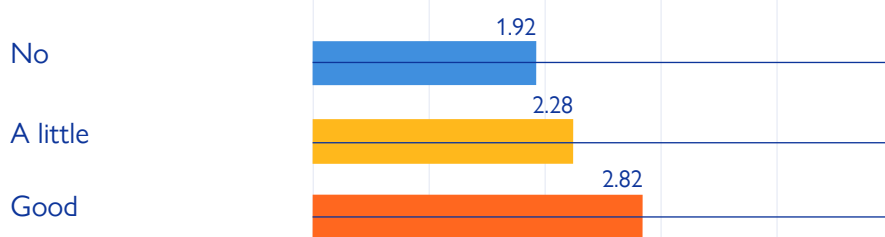
As shown in Figure 4.15, respondents with an income lower than THB 10,000 reported noticeably lower scores in all competence areas, while the differences between those with income between THB 10,001–15,000 and above THB 15,000 are negligible.

FIGURE 4.15: SKILLS AVERAGES FOR DIFFERENT INCOME GROUPS

INFORMATION

Less than 10,000 baht	2.09
10,001–15,000 baht	2.43
15,001 or above	2.46

COMMUNICATION

Less than 10,000 baht	2.29
10,001–15,000 baht	2.58
15,001 or above	2.64

CONTENT CREATION

Less than 10,000 baht	1.90
10,001–15,000 baht	2.18
15,001 or above	2.22

ONLINE SAFETY

Less than 10,000 baht	2.05
10,001–15,000 baht	2.44
15,001 or above	2.23

PROBLEM SOLVING

Less than 10,000 baht	2.17
10,001–15,000 baht	2.43
15,001 or above	2.37
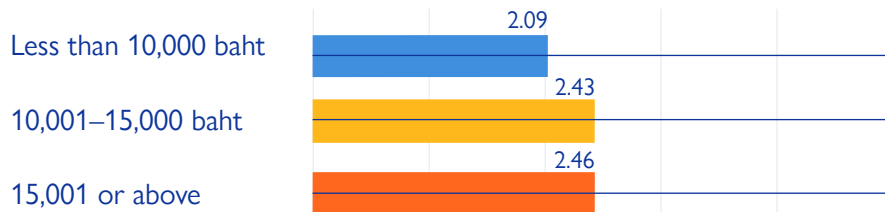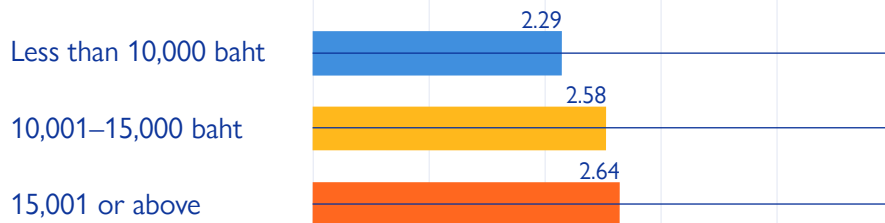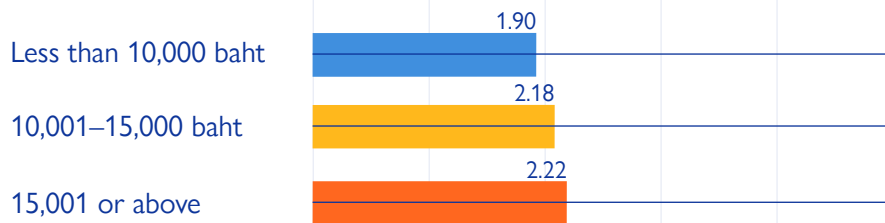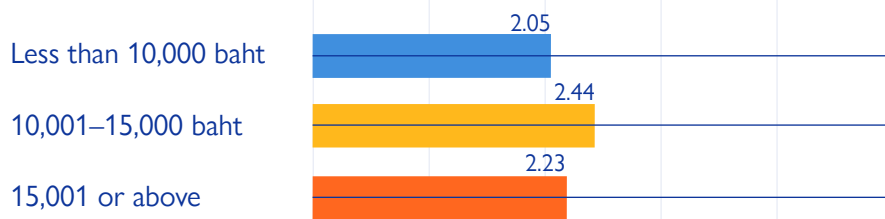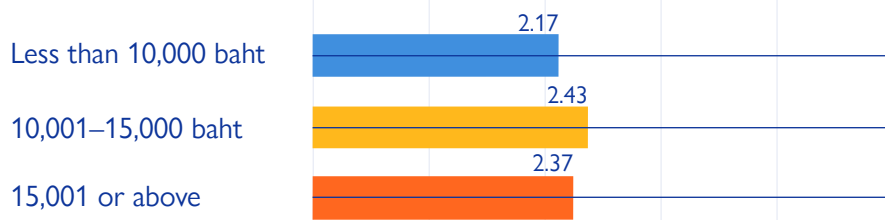
0   1   2   3   4   5

Overall, the average self-reported digital skills levels tend to be around two out of five across all five competency areas, suggesting that there is room for digital skills training. The key findings are as follows:

1. No significant difference exists in digital skills levels between different gender groups.

2. Migrant workers younger than 41 years reported higher digital skills than those older than 41 years.

3. Education, income and Thai language proficiency levels seem to be most strongly correlated with digital skills levels.

Furthermore, the analysis of variance (ANOVA) was also conducted to identify whether there are differences in digital skill levels among migrant workers statistically, please see Appendix B for more details.

IOM conducts digital skills training for migrant workers in Thailand. © IOM 2021/Javier Vidal
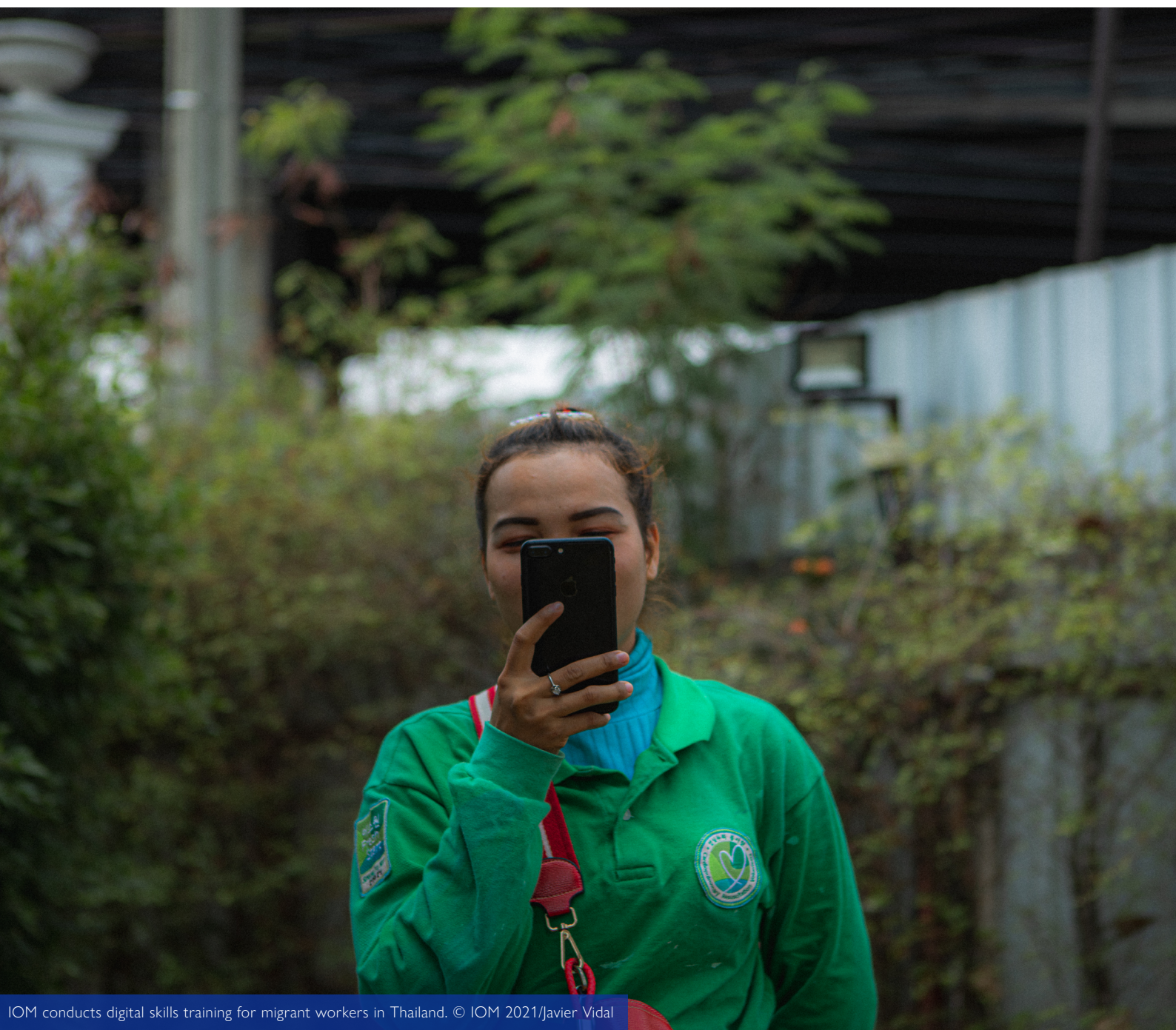
4.4 FACTORS THAT LIMIT OR ENABLE MIGRANT WORKERS' USE OF DIGITAL TECHNOLOGY

Digital technologies learning

When respondents were asked what factors could hinder them from learning digital technology learning, most respondents (81.7%) indicated lack of time, lack of knowledge/skills (37.4%), and lack of training (29.5%) as some of the most important factors. Most Laotian migrant workers who reported "other" indicated that the language barrier is the factor that could hinder them from learning digital technology as most online services tend to be in English. A noticeably lower percentage of Cambodian labour migrants indicated lack of training, budget, learning materials and/or facilities or supporting resources as factors affecting their learning in digital technologies (Table 4.7).

TABLE 4.7: FACTORS AFFECTING RESPONDENTS' LEARNING IN DIGITAL TECHNOLOGIES

	CAMBODIA	MYANMAR	LAO PEOPLE'S DEMOCRATIC REPUBLIC	TOTAL
LACK OF TIME	87.70%	77.80%	79.40%	81.70%
LACK OF KNOWLEDGE/ SKILLS	45.30%	31.00%	44.10%	37.40%
LACK OF TRAINING	18.40%	36.10%	38.20%	29.50%
LACK OF INTERESTS/ MOTIVATION	19.00%	32.90%	41.20%	28.20%
LACK OF BUDGET	10.60%	34.10%	20.60%	24.10%
LACK OF LEARNING MATERIALS	8.90%	18.70%	26.50%	15.50%
LACK OF FACILITIES/ SUPPORTING RESOURCES	4.50%	17.90%	14.70%	12.50%
OTHER	0.00%	0.40%	2.90%	0.40%

Figure 4.16 reveals that about 42 per cent indicated that they were not sure whether they would like to participate in the digital skill training programmes, mainly due to lack of time. Some other reasons are lack of interest/motivation, permission from husbands or employers, and dependent on training content and topics provided.

FIGURE 4.16: INTENTION TO PARTICIPATE IN DIGITAL TRAINING PROGRAMMES

27.5%

41.5%

30.3%

YES   NO   NOT SURE

Migrant youth participating in an IOM supported computer class. © IOM 2022/Rachaphon Riansiri
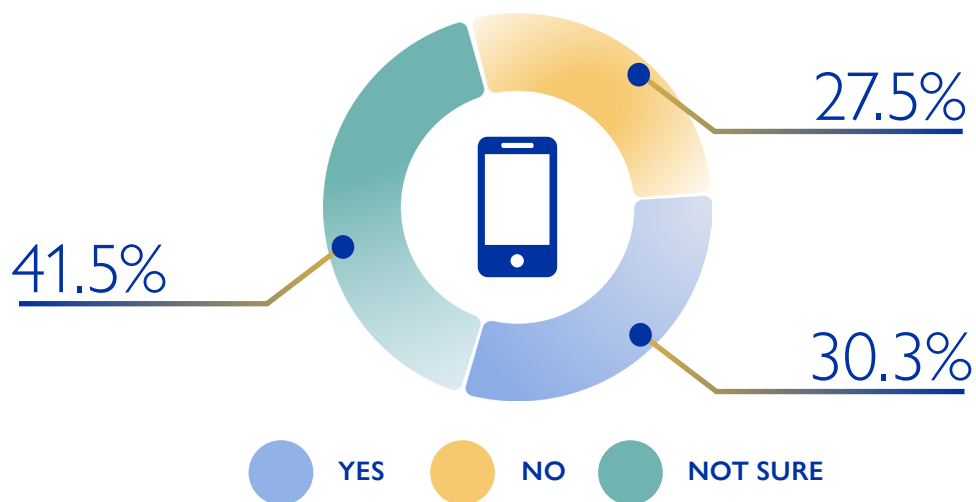
Regarding digital skills training programmes respondents would be interested in, participants were asked to rank three digital skills they would like to learn the most. Approximately 65 per cent (300 respondents) reported online banking transaction as well as communication and collaboration skills as the digital skills that they would like to learn the most or could be most helpful to them. This answer was followed by operation skills (45%) and technical problem-solving skills (43%), respectively. The interest in online banking transaction skills training could be due to the ubiquity of mobile banking and payment in the country. On the other hand, participants ranked online safety as the least interesting skill although it was the most limited skill reported (Table 4.13).

TABLE 4.8: DIGITAL SKILLS TRAINING PROGRAMMES INTERESTED BY RESPONDENTS

DIGITAL SKILLS	PERCENTAGE	DESCRIPTION
ONLINE BANKING TRANSACTION SKILLS	**65%** (300 RESPONDENTS)	Be able to register and apply for online services, buy and sell goods and services, and administer and manage transactions online.
COMMUNICATION AND COLLABORATION SKILLS	**65%** (300 RESPONDENTS)	Be able to communicate with others digitally using email and other messaging applications and interact and collaborate safely online such as post messages, photographs or videos on social media platforms.
OPERATION SKILLS	**45%** (207 RESPONDENTS)	Be able to operate business practices online such as downloading and saving photos or files online, completing online forms, and opening a browser to find and use a website.
PROBLEM SOLVING SKILLS	**43%** (200 RESPONDENTS)	Be able to solve technical problems when operating devices, programmes or applications, such as updating/re-install/closing programmes, restart computer, reconnect Wi-Fi network, checking the internet connection, and finding solutions to problems using digital tools such as online tutorials, FAQs and advice forums.
ONLINE SAFETY SKILLS	**37%** (173 RESPONDENTS)	Be able to protect devices, personal data and privacy by using anti-viruses and passwords for websites and accounts.

4.5 SUMMARY

● Almost all migrants (95%) used smartphones daily, mostly communication and social connection, followed by entertainment purposes.

● Facebook is the most widely used social media platform among migrant workers (87%) whereas LINE (52%) and Facebook Messenger (46%) are the most common messaging applications that migrant workers reported using for both personal and work-related communication.

● On average, migrant workers rated their current digital skills at 2 ("Not very true of me") across all five competence areas derived through the DigComp 2.0 framework.

● The survey found that communication and collaboration was the highest rated competence area, which can be attributed to the reliance on such skills to stay in contact with family members and friends back home, as well as to network with migrant communities in Thailand.

● Less than half of migrant workers have used online banking services and know how to transfer money online; online banking transaction is the digital skill they would like to learn the most.

● Migrant workers ranked online safety as the skill they were least interested in learning, although it was the lowest self-assessed skill across all five competence areas.

● Education, income and Thai language proficiency levels have the strongest correlation with digital skills levels. The higher the education, income and Thai language proficiency levels, the higher the digital skills obtained by migrant workers.

● There were statistically significant differences among the digital skill levels of migrant workers based on sector of employment. Migrant workers in the service sector reported the highest skills in almost all digital competence areas, followed by migrant workers in the construction and manufacturing sectors.

● There was no significant difference in digital skill levels among migrant workers in terms of gender, age or nationality, with only some exceptions. For instance, men reported a higher level of information and data literacy, whereas women reported higher problem-solving skills. While migrant workers from Cambodia reported a higher level of digital content creation and problem-solving skills, Myanmar migrant workers reported a higher level of information and data literacy skills statistically. Moreover, migrant workers aged 41 years or older reported the lowest level of information and data literacy as well as online safety skills.

● Migrant workers reported lack of time as the main obstacle in learning new digital skills, followed by a lack of knowledge on how to attain additional skills and a lack of training.

5

CLOSING THE GAP: UNDERSTANDING THE DIGITAL SKILLS DEMAND AND REQUIREMENTS OF EMPLOYERS

In this chapter, qualitative results show the perception of employers of the importance of digital skills of migrant workers, which can be essential in facilitating digital skills development for migrant workers. Respondents were asked about their considerations regarding the digital skills of migrant workers in order to identify the gap between the existing digital skills of migrant workers and the digital skills in demand. Employers from different sectors and company sizes were interviewed to identify whether the type and size of businesses impact employers' demand of digital skills from migrant workers.

5.1 EMPLOYERS' PERCEPTION OF THE IMPORTANCE OF DIGITAL SKILLS OF MIGRANT WORKERS

5.1.1 Digital skills required in the construction sector

The construction sector largely contributes to Thailand's GDP, equivalent to 34.8 per cent (USD 176 billion) in 2021 (World Bank, 2022a). The construction sector in Thailand relies on migrant workers from Cambodia, Lao People's Democratic Republic and Myanmar, with indications that migrants form almost 80 per cent of the workforce in these sectors (Foreign Workers Administration Office, 2022). Employers have different views of the digital skills of migrants, depending on the size of the company.

For example, an employer from a small size company[14] (C1) considers that digital skills are strongly needed to facilitate work-related tasks, and to improve workers' lives and alleviate poverty. The employer (C1) of the small construction company perceives that technology, particularly in terms of communication via smartphones, plays a crucial role in the field of construction, for example when workers need to communicate across sites. This employer also thinks that

technology can improve some construction activities. Accordingly, migrant workers who work with this employer are encouraged to obtain a smartphone for communication, particularly when working remotely. The digital skills required of migrants, are at minimum, communication and collaboration skills via smartphone applications such as LINE or Facebook Messenger. The employer also directly trains migrant workers to enhance their digital skills in using digital engineering applications[15] that are more specific and relevant to their jobs, suggesting the relative high degree of closeness between employer and employees in small size companies. On the other hand, the demand for digital skills in large companies is different.[16] Employers from large companies

Notably, *all employers in this sector suggest that migrant workers should learn how to remit their money digitally through formal channels to avoid fraud and the expensive fees associated with informal alternatives.*

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[14] According to the Revenue Department of Thailand (2022), the number of workers in small-size companies must be less than 50 and capital investment less than THB 20 million. Medium size companies have 50–200 employees, and the investment must be THB 20–200 million. The number of employees and capital investment amount must be higher than that medium-sized companies.

[15] Examples of mobile-based engineering applications are Bubble-level applications to help align and level horizontally or vertically to set up construction objects, and Tape measuring application to measure rooms or objects.

[16] The first respondent of a large construction company is a foreman (C2) who has worked in one of the biggest three construction companies in Thailand for almost 20 years. The respondent's job is to advise and inspect migrant workers regarding their work. Another respondent (C3), a security and safety manager of a consulting company who works with a very large construction company, has been working at this company for more than 13 years and has been working with thousands of migrant workers (most of them were Myanmar). Other respondents (C4 and C5) are engineers who work with C3.

5.1.2 Digital skills required in the manufacturing sector

The manufacturing sector contributed to the Thai Economy by approximately USD 136.7 billion (27% of the GDP) (World Bank, 2022b). High technology skills, ranging from software developers and artificial intelligence scientists to product designers, are in high demand not only in Thailand but also around the world (Phuapan et al., 2016; Collett et al., 2022). This sector needs to acquire digital skills specialists to compete with its rivals. However, low-skilled workers, migrants in particular, are still in high demand by Thai employers because of cost–competitiveness, particularly in jobs of production line and assembly in factories (Chalamwong, 2012; Pholphirul, 2012).

Employers in the manufacturing sector have mixed views when it comes to digital skill for migrant workers. Some recognized the importance of digital transformation of the business and training for migrant workers. Some mentioned that they only need migrant workers to have simple digital skills for work such as using Facebook Messenger or LINE to facilitate communication, similar to employers in the construction sector. Nevertheless, the skills that they need the most from migrant workers is Thai language proficiency and technical skills.

In a company with 85 full-time employees, mostly migrant workers (95%), the management has been gradually transforming the company from a labour-intensive factory into a technology-intensive factory. The employer, therefore, agrees with the digital skills enhancement of migrant workers.

"I do strongly agree with the idea of digital skills improvement for migrant workers. For me, if the migrants can improve their digital skills, such as Microsoft Office, product design programmes, or digital production machines, I can increase their wages. It is important to improve their lives, I would like to make them richer so they can live a better life and remit more money to their families," said employer M1.

This respondent is a young owner who can see the value of investing in human capital for both Thais and migrant workers.

Another employer (M2), is the owner of a metal production and engineering company. The company now has 300 workers, more than half migrant workers. They only work at the assembly lines and production lines, while marketing, HR, operations, accounting and other back-office jobs are performed by Thai workers. The owner's opinions were contrary to those who think migrant workers should have digital skills.

"I do not think you are coming in the right direction; those migrant workers do not need any digital skills improvement. The most crucial skills that might be able to improve their wages and improve standard of living would rather be Thai language and work-related skills proficiency," said employer M2.

5.1.3 Digital skills required in the service sector

The service sector is one of Thailand's most crucial business sectors, contributing to 25 percent (USD 126.5 billion) of Thailand's GDP, equivalent to approximately THB 506 billion annually (World Bank, 2022c). The hospitality sector has started to contribute more towards economic growth, employment and the reduction of poverty, particularly in developing nations (Ghani and Kharas, 2010).

The nature of service sector businesses demands various digital skills, ranging from the use of simple digital platforms such as Facebook and LINE to more complex programmes such as Microsoft Office and hotel bookings platforms (such as Booking or Agoda). Most of the jobs in the sector are held by Thai workers; however, respondent (H1), noted that there is an increasing number of hotels that employ migrant workers.

Respondent (H1) is employed as a reception employee in the hotel and is the first-line supervisor of migrant workers, most of whom are from Lao People's Democratic Republic.[17] Laotian employees work in various positions, from housekeeping to reception. According to this respondent, the only way migrant workers are promoted in this sector is through acquiring digital skills. Typically, when migrant workers started to work in this hotel, they initially were hired as housekeepers or gardeners. However, upon developing their digital skills and Thai language proficiency, they were promoted.

The basic digital skills necessary for migrant workers to have, according to the employer, are: using digital devices including computers, tablets and smartphones, using communications platforms, and navigating applications to access and manage hotel data and processes. These digital skills facilitate customer relations and hotel management.

5.1.4 Digital skills required outside work

While certain digital skills at work are beneficial to employers, they also have significant benefits for migrant workers' daily lives. Employers suggest that migrant workers should at least have digital skills that enable them to communicate with family members and friends in their countries of origin. Being able to do so reduces stress and homesickness, which makes migrant workers stay in their jobs for a longer time. Therefore, the company's turnover rate and recruitment and training costs are reduced, which benefits employers.

"I always teach them how to use a smartphone as well as the necessary applications such as

LINE and Facebook messenger so they can call their families and send them pictures. After I taught them how to use these applications, they felt happier than when they first arrived here," said C1.

Most employers also view sending remittances digitally as an important skill for migrant workers. Low-skilled migrant workers tend to remit money via informal channels (Schiopu and Siegfried, 2006). However, the World Bank and the United Nations continually advocate for sending remittances through formal channels (Mohapatra and Ratha, 2011; Takenaka et al., 2020) and for reducing the transaction costs

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17 Three employers from the service sector were interviewed; however, we found that the information collected was similar in nature, and therefore selected findings from only one employer to present in this report.

of migrant remittances to less than 3 per cent by 2030 (SDG 10 target 10.c) in order to avoid fraud by middle-persons as well as expensive transactions.

"In my point of view, migrants must have digital skills so they can acquire the knowledge to make them smarter not only for work but also for their living lives. Migrants still believe in old-fashioned remittance channels, for example.

Migrant workers often send their money back home via an informal channel [human carrier] by transferring the money to the person who is travelling back to the destination country; that person then transfers or gives the money to the migrant worker's family. But every time they send money this way, migrant workers have to pay approximately THB 300; it's a lot of money because these migrants send money every 15 to 30 days," said C3.

5.2 ATTITUDES TOWARDS THE DIGITAL SKILLS IMPROVEMENT OF MIGRANT WORKERS

Overall, more than half of the employer respondents recognized the importance of digital skills for migrant workers. For instance, the employer in the construction sector (C1) is ready to increase wages if migrants have digital skills that would benefit their work, such as using engineering applications or 3D designing programmes. Some employers also expressed that acquiring digital skills can contribute to poverty and inequality reduction among migrant workers and improve their quality of life while they are in Thailand. They believe that the higher the migrants' digital skills, the higher the wages they receive.

"I think the life of these migrant workers is not good compared to Thai citizens, including their wages and living and working conditions. I strongly agree with improving migrants' digital skills. I also think that digital skills can improve their lives by increasing their wages and working conditions. In my office, 100 per cent of the employees are Thais. Migrants only work outside the office, and all of them are low-skilled workers in the labour-intensive tasks combined with 3Ds jobs that Thais do not want to do," said (C2).

Although some of the respondents are keen to support the enhancement of digital skills for migrant workers, some hold contrary views. This can also be attributed to the attitudes and perceptions of Thai people towards migrant workers. For example, some employers felt that migrant workers did not need to improve their digital skills because they were afraid that migrant workers would "steal" the jobs of Thais. Thais are still often reticent to work with migrant workers, which can be the prelude to conflict between national and non-national workers. Respondent (C4) and respondent (C5) are engineers and first-line supervisors of migrant workers in a large construction company, and they mention that:

"I think digital skills for [low-skilled] migrant workers are necessary only for communication through mobile applications, for example, LINE or Facebook messenger. Sometimes, it takes time for us to observe the construction site, so the applications help us check whether the migrants are doing the tasks properly or I can give them recommendations and feedback before mistakes happen. We (both C4 and C5) do not think that the migrant workers need to have digital skills. As we work in the construction sector, we still need a large number of low-skilled migrant workers. In addition, we also do not want those low-skilled workers to steal jobs from Thai people. However, in my opinion, the most crucial skill for the migrants is not any digital skills but Thai language skills."

Therefore, xenophobia and fear that migrant workers who have higher digital skills would not take low-paid, lower-skilled jobs, can be a barrier to the improvement of migrant workers' digital skills.

5.3 SUMMARY

● Results from qualitative interviews with employers demonstrated varying levels of interest and support in promoting digital skills among migrant workers, especially in relation to work-related digital skills.

● Most employers reported that digital communication skills through messaging applications such as LINE and Facebook Messenger was beneficial for work, with some employers requiring the use of such applications to facilitate work-related communication.

● Employers from small-sized of companies were more likely to consider digital skills beneficial for improving the lives of migrant workers and to offer support in work-related digital skills training, compared to employers from larger companies. A few employers in smaller companies expressed willingness to increase wages for migrant workers who obtained work-related digital skills, such as Microsoft Office and product design programmes.

● Employers from larger companies tended not to see the benefits of migrant workers acquiring digital skills as they primarily hired migrant workers for manual labour and lower-skilled jobs.

● While employers' attitudes toward migrants' work-related digital skills varied, almost all of them acknowledged the value of digital life skills, particularly in messaging applications, to facilitate both personal and work-related communication and online banking applications to encourage safe remittance channels.

● Discrimination and xenophobia in the workplace can impede the improvement of digital skills in migrant workers as some reported that Thai white-collar workers did not want to work alongside migrant workers in the office or were afraid that their jobs would be taken over by migrants if they acquired more digital skills.

6

CONCLUSION AND RECOMMENDATIONS: BRIDGING THE DIGITAL SKILLS DIVIDE

6.1 CONCLUSION

Despite the significant contributions migrant workers make to the Thai economy, their employment in primarily low-skilled occupations and limited skills development opportunities increase their vulnerabilities to digital exclusion. This study aims to assess the current digital skills level and needs of migrant workers and examines the perception of employers to distinguish the type of skills, if any, that are required for migrants to live and work in Thailand. The key objective of the study is to provide evidence-based input for the development of digital skills training programmes and to identify entry points for the promotion of digital inclusion among migrant workers in Thailand.

The findings from this study reveal that almost all migrant workers (95.3%) used smartphones daily for various purposes, mostly for communicating and facilitating social networks, with Facebook being the most used platform (87%). LINE (52%) and Messenger (46%) were the most common messaging applications, not only for personal connections but also for work-related communication.

Across the survey results, the average self-reported digital skill levels was approximately two ("Not very true of me") out of five across all five competence areas derived through the DigComp 2.0 framework, which reveals the need for digital skills training. Out of the five digital competence areas, communication and collaboration, was the highest rated competence area, followed by information and data literacy, and problem-solving skills. There was no significant difference in digital skill levels among migrant workers in terms of gender, age and nationality, with only some exceptions.

The majority of migrant workers were unaware of online sources that provide credible information. Additionally, almost 80 per cent of migrant workers had never used online banking services, and online banking transaction was the digital skill that they would like to learn the most. Migrant workers ranked online safety as the least interesting skill although it was the most limited skill reported. It should also be noted that lack of time is the most important factor affecting migrants' learning in digital technologies.

Many employers suggested that communication through mobile applications was helpful for work reporting and monitoring. They also reported that they often used LINE and Messenger applications to communicate with migrant co-workers when they work in different locations. While employers from small-sized companies reported that they were willing to increase the pay rate if migrants can obtain digital skills, particularly, those that benefit their jobs such as Microsoft Office, product design programmes, and digital machines usage, employers from large companies tended not to see the benefits of migrant workers acquiring digital skills, because they intended to hire migrant workers for manual labour and low-skilled jobs, paying minimum wages in return.

Even though the attitudes of employers toward migrants' digital skills related to work were diverse according to their business size and sector, none of them denied the necessity of digital skills improvement in relation to the life of migrant workers. Several interviewees who worked closely with the migrant workers reported that the majority of them remitted their income through an informal channel (human carrier), which came with a high cost and the risk of fraud, suggesting the importance of online banking transaction skills for income remittance. In addition to online banking transaction skills, most employers also encourage migrant workers to learn simple digital communication skills to communicate with family members back home, thus improving their livelihoods.

Discrimination and xenophobia can still be found in the workplace as some employers reported that Thai white-collar workers would not want to work alongside migrant workers in the office or were afraid that their jobs would be taken over by migrants if they acquired more digital skills. Thus, this could impede the improvement of digital skills in migrant workers.

6.2 RECOMMENDATIONS

Migrant communities in Thailand can benefit from a holistic approach to developing digital skills to use digital technologies meaningfully and safely, to help narrow socioeconomic gaps and build a more inclusive society. Engagement and consultation with the target population and relevant stakeholders are key in designing a digital skills curriculum and interventions that are suited to the needs of migrant workers and employers.

Despite hesitancy among some employers in investing in work-related digital skills for migrant workers, the value of digital life skills was unanimously recognized among both employers and migrant workers. Migrant workers particularly welcomed the opportunity to improve their digital skills, particularly in relation to online banking applications and communication platforms.

Development partners and CSOs should provide opportunities to promote digital skills trainings among migrant workers whilst increasing advocacy efforts with employers, government authorities and migrant communities to recognize the importance and benefits of digital inclusion for migrant workers. Considering the basic needs and existing challenges faced by migrants in Thailand as well as the rapid development of digital technology, it is recommended that government authorities, development partners and CSOs, and employers and employer associations take steps to bridge the digital divide amongst migrant workers through a coordinated and holistic approach.

Government authorities

Raise awareness of digital public services through post-arrival orientation sessions and ensure service platforms are accessible through smartphone and in migrant's languages. Authorities must also ensure online information and services are accessible using mobile phones and in migrants' languages to enable equitable access among migrant workers.

Leverage social media platforms to disseminate important information to migrant communities. Based on the study findings, Facebook is the most widely used social media platform among migrants. Government agencies should develop their social media presence to tap into migrants' heavy social media usage as part of digital outreach, information-sharing and misinformation mitigation initiatives.

Expand scope of employment and digital skills development opportunities for migrant workers as a means of advancing the Thailand 4.0 initiative. The Royal Thai Government should leverage upon and build the capacity of the migrant workforce in order to advance the objectives of Thailand 4.0. Such measures should include removing policy limitations confining migrants to manual work and prioritizing their upskilling, which may also contribute to widening employers' interests in promoting digital skills development for migrant workers.

Addressing xenophobia among Thai employers and employees through evidence-based information and digital campaigns. Xenophobia remains an obstacle in the upskilling of migrant workers, as demonstrated through interviews with employers. Government authorities should promote digital campaigns that addresses the root of negative attitudes towards migrant workers and coordinate an evidence-based information campaign on the socioeconomic contribution of migrant workers.

Development Partners and Civil Society Organizations

Customize a digital skills training curriculum designed to meet the specific needs of migrant workers, as demonstrated by the study findings. Training modules introduced in the curriculum should include:
- Online banking applications and digital remittance services
- Instant messaging applications and social media platforms
- Digital safety
- Access to information and data literacy
- Language translation applications

Training modules should be short, time-flexible, digitalized and easily accessible through smartphones as well as available in the migrants' native languages. Digital learning platforms have greater reach due to its accessibility features, scalability, sustainability, and affordability. Trainings should be developed, organized and presented according to modules, to enable the selection of subject areas based on a migrant's individual needs and skill level.

Pilot a specializing in-person training programme on using computers/laptops for all interested migrant workers, especially in the service sector. Development partners and CSOs should pilot a specialized training programme, aimed at developing migrants' basic skills, such as keyboard typing, Microsoft Office and Email. Although these programmes should target all migrant workers, special consideration should be given to those employed in the service sector based on indications that such skills can make migrants eligible for promotions.

Employers and Employer Associations

Coordinate with development partners and CSOs to disseminate digital skills training programmes. This includes advocating for the digital inclusion of migrant workers to generate active support among employers in promoting participation in digital skills trainings without imposing any reduction in wages.

Incorporate a digital life skills component into existing pre-employment orientation programmes and training initiatives for migrant workers. As almost all employers recognized the value of digital life skills, existing orientation programmes and training initiatives currently led by employers should aim to incorporate information on instant messaging applications such as LINE or Facebook Messenger for work-related communication and mobile banking applications.

Ensure the inclusion of migrant workers in all internal efforts to digitize work processes and procedures within the enterprises. As businesses ramp up efforts to digitize work processes with the aim of improving operational efficiency and cutting costs, any efforts to digitize work processes should be equally applied to migrant workers. Employers must ensure migrant workers have the skills and knowledge to meaningfully naviagate new digital procedures.

APPENDIX A

TABLE 4.8: DIGITAL SKILLS TRAINING PROGRAMMES INTERESTED BY RESPONDENTS

DIGITAL COMPETENCE AREAS (BASED ON DIGCOMP 2.0: THE DIGITAL COMPETENCE FRAMEWORK FOR CITIZENS)	SURVEY QUESTIONS
1. INFORMATION AND DATA LITERACY	
1.1. Browsing, searching and filtering data, information and digital content	2.1. I know how to use search engines (e.g. Google) to find information online. 2.2. I know how to use navigation apps (e.g. Google Maps, Apple Maps) to find way to my destination and share my location online. 2.3. I know how to use language translator apps (e.g. Google Translate) to digitally translate foreign languages.
1.2. Evaluating data, information and digital content	2.4. I know not all information online and content I see is reliable.
1.3. Managing data, information and digital content	2.5. I know how to download/save files or content (e.g. pictures, text, videos, blogs, webpages) I found online and retrieve them once saved.
2. COMMUNICATION AND COLLABORATION: INTERACTING THROUGH DIGITAL TECHNOLOGIES	
2.1. Sharing through digital technologies	2.6. I know how to share files and content with others digitally using email or other simple tools. 2.7. I know how to create an online account, including filling in online forms.
2.2. Engaging in citizenship through digital technologies	2.8. I know how to digitally access public services (e.g. banks, hospitals, government agencies). 2.9. I know how to manage and transfer my money online, including making online payments for products and services.
2.3. Collaborating through digital technologies	2.10. I know how to communicate with others using email, mobile phone, or other messaging Apps. 2.11. I know how to digitally access any social communities, using appropriate apps or websites.
2.4. Netiquette	2.12. I know which information I should and shouldn't share online and I am careful to make online comments.
2.5. Managing digital identity	2.13. I understand the importance of communicating securely.

DIGITAL COMPETENCE AREAS (BASED ON DIGCOMP 2.0: THE DIGITAL COMPETENCE FRAMEWORK FOR CITIZENS)	SURVEY QUESTIONS
3. DIGITAL CONTENT CREATION	
3.1. Developing digital content	2.14. I know how to create digital content (e.g. text, tables, images, audio or video files).
3.2. Integrating and re-elaborating digital content	2.15. I know how to make basic editing to the content created by others.
3.3. Copyright and licenses	2.16. I know that online content can be subjected to copyright and licenses.
3.4. Programming	2.17. I know how to apply simple functions and modify setting of the applications or software that I use.
4. ONLINE SAFETY	
4.1. Protecting devices	2.18. I am aware that viruses can damage my device and anti-viruses' software should be used to prevent this.
4.2. Protecting personal data and privacy	2.19. I know how to protect my private information using different and secure passwords for online accounts.
4.3. Protecting health and well-being	2.20. I am aware that using digital technology too extensively can affect my health and well-being.
4.4. Protecting the environment	2.21. I know that using digital technology has consequences for the environment, and constantly buying new technology can lead to a lot of electronic waste.
5. PROBLEM SOLVING	
5.1. Solving technical problems	2.22. I know how to solve some technical problems (e.g. update/re-install/close programme, re-start computer, re-connect Wi-Fi network, check internet connection).
5.2. Identifying needs and technological responses	2.23. I know how to find technical support and assistance when confronted with technological problem or when using a new device, software and application.
5.3. Creatively using digital technologies	2.24. I know how to use digital tools (e.g. online tutorials, FAQs and advice forums) to solve technological and non-technological problems and improve my skills.
5.4. Identifying the digital competency gap	2.25. I understand that although digital tools can help me in problem solving, they have their limitations.

APPENDIX B

TABLE B.1. ANALYSIS OF VARIANCE (ANOVA) BY EMPLOYMENT SECTOR OF MIGRANT WORKERS

DIGITAL COMPETENCE AREAS	CONSTRUCTION	MANUFACTURING	SERVICE	F
INFORMATION AND DATA LITERACY	2.46	2.11	2.22	4.550**
COMMUNICATION AND COLLABORATION	2.52	2.09	2.57	8.502***
DIGITAL CONTENT CREATION	2.11	1.63	2.18	10.926***
ONLINE SAFETY	2.32	1.85	2.32	8.177***
PROBLEM SOLVING	2.07	1.70	2.78	52.261***
N = 453[a]	n=178	n=80	n=195	

Note: *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

[a] Respondents who reported "other" on their employment sector were excluded from the analysis.

Consistent with predictions, the educational attainment of migrant workers had a highly significant effect on digital skill supplies ($p < 0.001$). As shown in Table B.2, the results from the analysis of variance revealed that migrant workers with higher educational degrees reported higher levels of digital skills in all competence areas than those who obtained a lower degree of education.

TABLE B.2. ANALYSIS OF VARIANCE (ANOVA) BY EDUCATION LEVEL OF MIGRANT WORKERS

DIGITAL COMPETENCE AREAS	NONE	PRIMARY OR ELEMENTARY SCHOOL	SECONDARY OR HIGH SCHOOL	UNDERGRADUATE OR ABOVE	F
INFORMATION AND DATA LITERACY	1.67	2.23	2.44	3.20	12.541***
COMMUNICATION AND COLLABORATION	2.10	2.45	2.52	3.39	8.591***
DIGITAL CONTENT CREATION	1.62	2.04	2.15	2.69	7.676***
ONLINE SAFETY	1.81	2.15	2.34	3.07	10.828***
PROBLEM SOLVING	1.80	2.39	2.24	2.58	8.834***
N = 408[a]	n=48	n=168	n=190	n=12	

Note: *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

[a] Respondents who reported "prefer not to say" on their education levels were excluded from the analysis.

There is no significant difference in digital skill levels between men and women migrant workers, except for information and data literacy as well as problem-solving skills. However, the significance levels in both areas are indicated to be low ($p < 0.05$).

As Table B.3 shows, male migrant workers reported higher digital skill levels in terms of information and data literacy, whereas female workers reported a higher level of digital skills in problem-solving.

TABLE B.3. ANALYSIS OF VARIANCE (ANOVA) BY GENDER OF MIGRANT WORKERS

DIGITAL COMPETENCE AREAS	MALE	FEMALE	F
INFORMATION AND DATA LITERACY	2.38	2.20	3.466*
COMMUNICATION AND COLLABORATION	2.49	2.45	0.213
DIGITAL CONTENT CREATION	2.08	2.07	2.076
ONLINE SAFETY	2.24	2.26	0.837
PROBLEM SOLVING	2.24	2.43	3.522*
N = 460[a]	n=290	n=170	

Note: *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

[a] Respondents who reported "non-binary/others" on their gender were excluded from the analysis.

Similarly, when comparing the different age groups of migrant workers, there were few significant differences in digital skill attainment in some competence areas. Information and data literacy as well as problem-solving skills were lower for the 51 years and older and 41–50 years age groups than for the 18– 20, 21–30 and 31–40 years age groups (Table B.4).

TABLE B.4. ANALYSIS OF VARIANCE (ANOVA) BY AGE GROUP OF MIGRANT WORKERS

DIGITAL COMPETENCE AREAS	18–20 YEARS OLD	21–30 YEARS OLD	31–40 YEARS OLD	41–50 YEARS OLD	51 YEARS OLD OR ABOVE	F
INFORMATION AND DATA LITERACY	2.42	2.30	2.41	1.87	1.53	3.378**
COMMUNICATION AND COLLABORATION	2.51	2.49	2.52	2.17	1.92	2.092
DIGITAL CONTENT CREATION	2.21	2.07	2.09	1.89	1.58	1.640
ONLINE SAFETY	2.33	2.21	2.35	2.03	1.83	2.428*
PROBLEM SOLVING	2.41	2.30	2.35	2.19	1.75	1.629
N = 463[a]	n=40	n=255	n=138	n=24	n=6	

Note: *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$
[a] Respondents who reported "Prefer not to say" on their age categories were excluded from the analysis.

Table B.5 shows the impact of migrant workers living status on their digital skill proficiency. Migrant workers who live without family members in the destination country reported higher digital skill levels than those who live with their family members in both problem-solving and communication and collaboration areas. This finding could indicate that the degree of self-dependency of migrant workers may have a significant effect on digital technology usage.

TABLE B.5. ANALYSIS OF VARIANCE (ANOVA) BY THE LIVING STATUS OF MIGRANT WORKERS

DIGITAL COMPETENCE AREAS	LIVING WITH FAMILY MEMBERS	LIVING WITHOUT FAMILY MEMBERS	F
INFORMATION AND DATA LITERACY	2.28	2.34	0.646
COMMUNICATION AND COLLABORATION	2.40	2.55	4.831*
DIGITAL CONTENT CREATION	2.01	2.12	2.526
ONLINE SAFETY	2.19	2.30	3.063
PROBLEM SOLVING	2.20	2.42	8.303**
N = 465	n=240	n=255	

Note: $*p < 0.05$; $**p < 0.01$; $***p < 0.001$

Furthermore, regarding the countries of origin of migrant workers, results in Table B.6 show a highly significant difference in some digital skill attainment. Migrant workers from Cambodia reported higher digital skill proficiency in most competence areas, except for information and data literacy than Myanmar migrant workers.

TABLE B.6. ANALYSIS OF VARIANCE (ANOVA) BY COUNTRY OF ORIGIN OF MIGRANT WORKERS

DIGITAL COMPETENCE AREAS	CAMBODIA	MYANMAR	F
INFORMATION AND DATA LITERACY	2.15	2.34	5.315*
COMMUNICATION AND COLLABORATION	2.50	2.38	2.775
DIGITAL CONTENT CREATION	2.20	1.93	14.834***
ONLINE SAFETY	2.28	2.15	2.441
PROBLEM SOLVING	2.79	1.91	147.744***
N = 465	n=179	n=252	

Note: *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$
[a] Due to a small number of respondents from Lao People's Democratic Republic (34 respondents), they were excluded from the analysis.

A significant difference in digital skill levels was also found among migrant workers at different income levels of migrant workers (Table B.7). Compared to migrant workers who earn less than THB 5,000 per month, those with higher monthly salaries reported more digital skill proficiency.

TABLE B.7. ANALYSIS OF VARIANCE (ANOVA) BY INCOME LEVEL OF MIGRANT WORKERS

DIGITAL COMPETENCE AREAS	LESS THAN THB 5,000 / MONTH	THB 5,001–10,000 /MONTH	THB 10,001–15,000 BAHT/MONTH	MORE THAN THB 15,000	F
INFORMATION AND DATA LITERACY	1.74	2.13	2.43	2.45	5.866***
COMMUNICATION AND COLLABORATION	1.73	2.35	2.57	2.63	8.896***
DIGITAL CONTENT CREATION	1.50	1.95	2.16	2.21	6.078***
ONLINE SAFETY	1.63	2.10	2.43	2.21	10.007***
PROBLEM SOLVING	1.38	2.27	2.42	2.36	9.282***
N = 461[a]	n=21	n=147	n=207	n=86	

Note: $*p < 0.05$; $**p < 0.01$; $***p < 0.001$

[a] Respondents who reported "Prefer not to say" on their income levels were excluded from the analysis.

TABLE B.8. CORRELATIONS AMONG STUDY VARIABLES

	1	2	3	4	5	6	7	8	9	10	11
1. GENDER	1.00										
2. AGE	-0.08	1.00									
3. DURATION	0.05	0.43***	1.00								
4. INCOME	-0.17***	0.35***	0.29***	1.00							
5. EDUCATION LEVEL	-0.05	0.02	-0.11*	-0.07	1.00						
6. EMPLOYMENT SECTOR	0.20***	-0.08	0.29***	-0.12**	-0.33***	1.00					
7. INFORMATION SKILL	-0.08	-0.07	-0.05	0.17***	0.16***	-0.15**	1.00				
7. COMMU-NICATION SKILL	-0.02	-0.06	0.00	0.22***	0.12**	-0.00	0.74***	1.00			
9. CONTENT CREATION SKILL	0.02	-0.06	-0.04	0.20**	0.14**	0.00	0.61***	0.70***	1.00		
10. ONLINE SAFETY SKILL	0.03	-0.01	-0.07	0.18***	0.14**	-0.02	0.66***	0.73***	0.69***	1.00	
11. PROBLEM SOLVING SKILL	0.12*	-0.03	0.13**	0.18***	-0.05	0.34***	0.50***	0.63***	0.63***	0.60***	1.00

Note: *p < 0.05; **p < 0.01; ***p < 0.001.

Gender: 1 = men, 2 = women; Age: 1 = 18–20, to 5 = older than 50 years; Duration: 1 = less than 1 year, to 5 = above 15 years; Income: 1 = less than THB 5,000, to 4 = above THB 15,000; Education level: 1 = none, to 4 = undergraduate or above; Employment sector: 1 = construction, 2 = manufacturing, 3 = service; Skill level: 1 = not at all true of me, to 5 = very true of me.

APPENDIX C

QUESTIONNAIRE ON MIGRANT DIGITAL SKILLS (FOR MIGRANT WORKERS)

Assessment of migrant workers' current digital skills

You are invited to participate in a research study to support poverty reduction through safe migration, skills development, and enhanced job placement of migrants from Cambodia, Lao People's Democratic Republic, Myanmar and Thailand. This study is being conducted by the International Telecommunication Union (ITU) and the International Organization for Migration (IOM).

The aim of the study is to assess digital skills gaps among migrant workers and the digital skills demand of employers. Therefore, it is important to measure migrant workers' current digital skills level and understand how digital technology is used inside and outside work. The study focuses on migrant workers from Cambodia, Lao People's Democratic Republic and Myanmar working in Thailand.

Your participation in this survey is voluntary and will take no more than 20 minutes of your time. To ensure the success of this survey, you are encouraged to complete the survey as much as possible. You may skip/leave blank the questions that you cannot answer. You can also decide to withdraw from participating in the survey.

The survey is completely anonymous, and none of your answers will be linked back to you directly. Your answers will be treated in strict confidence and will not be shared with your employer or any authorities. The information you provided will be analysed along with other respondents to develop an appropriate digital skills training programme and curriculum in the future.

I understand that:
- Participation is voluntary, and I am able to withdraw at any stage.
- That the information obtained will be confidential to the research team mentioned above.
- That no financial or other incentive will be provided for participation.
- I seek assistance from the research assistant for any questions related to his survey.
- Data generated from this study will be used to contribute to open data sets following this study. I understand that this does not include any personally identifiable information.

☐ By checking this box, I consent to participate in this survey.

Thank you very much for your time and for your participation. Should you have further questions about this survey, please feel free to contact us at katikar.tipayalai@gmail.com

SECTION 1: DEMOGRAPHIC INFORMATION

For each question, please mark your response with a tick (√), unless otherwise indicated. For "Other" responses, provide a brief response.

1.1. What is your gender?

☐ Male ☐ Female ☐ Non-binary/Others

1.2. Which category below includes your age?

☐ 15–20 years old
☐ 21–30 years old
☐ 31–40 years old
☐ 41–50 years old
☐ 51 years old or older
☐ Prefer not to say

1.3. What is your country of origin?

☐ Myanmar
☐ Lao People's Democratic Republic
☐ Cambodia
☐ Other (please specify) _____

1.4. What is your highest level of education?

☐ None
☐ Primary or elementary school
☐ Secondary or high school
☐ Undergraduate or above
☐ Prefer not to say

1.5. What is your proficiency level in Thai?

☐ No (I do not understand Thai language.)
☐ A little (I can form basic sentences, including asking and answering simple questions.)
☐ Quite well (I can carry on limited casual conversations at work and handle basic work commands and social phrases).
☐ Very well (I can carry out most work functions, speak at a normal speed in the language, and have an extensive vocabulary.)

1.6. Is everyone who lives with you a member of your household/family?

☐ Yes ☐ No

1.7. What is your field of your current job?

☐ Construction
☐ Manufacturing
☐ Service
☐ Domestic worker
☐ Unemployed
☐ Other (please specify) _____

1.8. Do you think that your skills or education matches your current job expectations?

☐ Yes ☐ No ☐ Don't know

1.9. How long have you been in the current work/position?

☐ Less than 1 year
☐ 1–5 years
☐ 6–10 years
☐ 11–15 years
☐ 16 years and older

1.10. Monthly salary

☐ Less than THB 5,000
☐ THB 5,001–10,000
☐ THB 10,001–15,000
☐ THB 15,001 and above
☐ Prefer not to say

SECTION 2: DIGITAL SKILLS MEASUREMENT

How would you rate your answer to the following statements? Please put a tick (/) in the box at the appropriate spot: "(1) Not at all true of me", "(2) Not very true of me", "(3) Neither true nor untrue of me", "(4) Mostly true of me", or "(5) Very true of me".

DIGITAL COMPETENCE AREAS*	(1) NOT AT ALL TRUE OF ME	(2) NOT VERY TRUE OF ME	(3) NEITHER TRUE NOR UNTRUE OF MEINFORMATION	(4) MOSTLY TRUE OF ME	(5) VERY TRUE OF ME
INFORMATION AND DATA LITERACY					
2.1. I know how to use search engines (e.g. Google) to find information online.					
2.2. I know how to use navigation apps (e.g. Google Maps, Apple Maps) to find way to my destination and share my location online.					
2.3. I know how to use language translator apps (e.g. Google Translate) to digitally translate foreign languages.					
2.4. I know not all information online and content I see is reliable.					
2.5. I know how to download/save files or content (e.g. pictures, text, videos, blogs, webpages) I found online and retrieve them once saved.					
COMMUNICATION AND COLLABORATION					
2.6. I know how to share files and content with others digitally using email or other simple tools.					
2.7. I know how to create an online account (e.g. Facebook, Google, etc), including filling in online forms (e.g. Google online form)					
2.8. I know how to digitally access public services (e.g. immigration, hospitals, government agencies).					
2.9. I know how to manage and transfer my money online, including making online payments for products and services.					
2.10. I know how to communicate with others using email, mobile phone, or other messaging Apps.					
2.11. I know how to digitally access any social communities, using appropriate apps or websites.					

DIGITAL COMPETENCE AREAS*	(1) NOT AT ALL TRUE OF ME	(2) NOT VERY TRUE OF ME	(3) NEITHER TRUE NOR UNTRUE OF MEINFORMATION	(4) MOSTLY TRUE OF ME	(5) VERY TRUE OF ME
2.12 I know which information I should and shouldn't share online and I am careful to make online comments.					
2.13. I understand the importance of communicating securely.					
DIGITAL CONTENT CREATION					
2.14. I know how to create digital content (e.g. text, tables, images, audio or video files).					
2.15. I know how to make basic editing to the content created by others.					
2.16. I know that online content can be subjected to copyright and licenses.					
2.17. I know how to apply simple functions and modify setting of the applications or software that I use.					
ONLINE SAFETY					
2.18. I am aware that viruses can damage my device and anti-viruses' software should be used to prevent this.					
2.19. I know how to protect my private information using different and secure passwords for online accounts.					
2.20. I am aware that using digital technology too extensively can affect my health and well-being.					
2.21. I know that using digital technology has consequences for the environment, and constantly buying new technology can lead to a lot of electronic waste.					
2.22. I know how to how and where to seek help if I experience any form of online/physical threats/fraud/ bullying/abuse					
PROBLEM SOLVING					
2.23. I know how to solve some technical problems (e.g. update/re-install/close programme, re-start computer, re-connect Wi-Fi network, check internet connection).					
2.24. I know how to find technical support and assistance when confronted with technological problem or when using a new device, software and application.					
2.25. I know how to use digital tools (e.g. online tutorials, FAQs and advice forums) to solve technological and non-technological problems and improve my skills.					
2.25. I understand that although digital tools can help me in problem solving, they have their limitations.					

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SECTION 3: CURRENT USE OF DIGITAL TECHNOLOGY

3.1. Which of the following ICT devices do you own or have access to, and how often do you use them? Please tick (√) all that apply.

	DEVICES	FREQUENCY OF USE	NUMBER OF DEVICES OWNED	NUMBER OF DEVICES I HAVE ACCESS TO
3.1.1	Smartphone	☐ Never ☐ Just once or sometimes ☐ At least once a month ☐ At least once a week ☐ Everyday		
3.1.2	Tablet	☐ Never ☐ Just once or sometimes ☐ At least once a month ☐ At least once a week ☐ Everyday		
3.1.2	Laptop/PC	☐ Never ☐ Just once or sometimes ☐ At least once a month ☐ At least once a week ☐ Everyday		

3.2. If you own or have access to a smart phone, please indicate the brand.

☐ Samsung

☐ Apple

☐ Xiaomi

☐ Huawei

☐ Oppo

☐ Other (please specify) _____

3.3. If you do not own a smart phone, please tick (/) all that apply.

☐ I do not need it.

☐ I cannot afford it.

☐ I do not know how to use it.

☐ I am not allowed to own one.

☐ There is no network access where I live/work.

☐ I had one but I gave it to a friend/family member.

☐ Other (please specify) _____

3.4. Do you have internet or wireless access at home?
☐ Yes (Go to 3.4.1.)   ☐ No (Go to 3.5.)

3.4.1 What kind of internet or wireless access do you have? Please tick (√) all that apply.

☐ Public Wi-Fi
☐ Company or Employer's WI-Fi
☐ Own Wi-Fi
☐ Fixed Broadband at home
☐ Friend's Wi-Fi/ hot spot
☐ Other (please specify) _____

3.5. Which of the following functions do you use on the devices that you own/have access to? Please tick (√) all that apply.

3.5.1.	Smart phone	3.5.2.	Tablet	3.5.3.	Laptop or PC
☐	Making voice calls	☐	Making voice calls	☐	Making voice calls
☐	Receiving voice calls	☐	Receiving voice calls	☐	Receiving voice calls
☐	Making video calls	☐	Making video calls	☐	Making video calls
☐	Receiving video calls	☐	Receiving video calls	☐	Receiving video calls
☐	Sending text messages/SMS	☐	Sending text messages/SMS	☐	Sending text messages/SMS
☐	Taking photos/videos	☐	Taking photos/videos	☐	Taking photos/videos
☐	Internet browsing	☐	Internet browsing	☐	Internet browsing
☐	Using social media	☐	Using social media	☐	Using social media
☐	Playing games	☐	Playing games	☐	Playing games
☐	Watching videos	☐	Watching videos	☐	Watching videos
☐	Mobile banking/e-payments	☐	Mobile banking/e-payments	☐	Mobile banking/e-payments
☐	Translate foreign language	☐	Translate foreign language	☐	Translate foreign language
☐	Reading/watching news	☐	Reading/watching news	☐	Reading/watching news
☐	Looking up for job	☐	Looking up for job	☐	Looking up for job
☐	Listening to music	☐	Listening to music	☐	Listening to music
☐	Shopping online	☐	Shopping online	☐	Shopping online
☐	Use support/help services	☐	Use support/help services	☐	Use support/help services
☐	Others (please specify) _____	☐	Others (please specify) _____	☐	Others (please specify) _____

3.6. How would you rate your level of proficiency in using the following devices? Please put a tick (√) in the box at the appropriate spot.

	DEVICES	(1) I DON'T KNOW HOW TO USE THIS	(2) I OFTEN STRUGGLE AND NEED HELP	(3) I SOMETIMES STRUGGLE TO USE THIS	(4) I CAN USE THIS WELL	(5) I CAN TEACH SOMEONE HOW TO USE THIS
3.6.1.	Smartphone					
3.6.2.	Tablet					
3.6.3.	Laptop/PC					

3.7. How often do you use each of the following online services on any of the devices you own/ have access to? Please put a tick (√) in the box at the appropriate spot.

	DEVICES	FREQUENCY	PLEASE SPECIFY WHICH APPS
3.7.1.	Social networking Apps (The social media platforms that are used to stay connected with friends, family or peers. For example, Facebook, Twitter, Instagram)	☐ Never ☐ Just once or sometimes ☐ At least once a month ☐ At least once a week ☐ Everyday	
3.7.2.	Messaging Apps (The applications or platforms that enable users to chat, send an instant message, and connect with each other through their computers or mobile devices. For example, Line, WeChat, WhatsApp, Viber, Messenger, Skype)	☐ Never ☐ Just once or sometimes ☐ At least once a month ☐ At least once a week ☐ Everyday	
3.7.3.	Entertainment Apps (The applications that are related to a wide range of leisure activities from listening to music, playing games, to watching videos and movies. For example, YouTube, Spotify)	☐ Never ☐ Just once or sometimes ☐ At least once a month ☐ At least once a week ☐ Everyday	
3.7.4.	Work-related tools (The digital tools or programmes that are used to perform or complete a specific job or work-related task. For example, MS Office, Email)	☐ Never ☐ Just once or sometimes ☐ At least once a month ☐ At least once a week ☐ Everyday	

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	DEVICES	FREQUENCY	PLEASE SPECIFY WHICH APPS
3.7.5.	Banking/Remittance Apps (The applications or digital services provided by bank or other financial institution that allow its customers to conduct financial transactions remotely using digital devices, such as smartphone or tablet.)	☐ Never ☐ Just once or sometimes ☐ At least once a month ☐ At least once a week ☐ Everyday	
3.7.6.	Language and Navigation Apps The applications or digital services helps you to navigate when you travel to a foreign country and communicate/understand foreign language (e.g. Google Map, Waze, Google Translate)	☐ Never ☐ Just once or sometimes ☐ At least once a month ☐ At least once a week ☐ Everyday	
3.7.7.	Others (please specify) _____	☐ Never ☐ Just once or sometimes ☐ At least once a month ☐ At least once a week ☐ Everyday	

3.8. What are the main reasons for your current use of different devices? Please tick (√) all that apply.

☐ Connecting with family and friends back home
☐ Making local friends in host community
☐ Work-related
☐ Banking/Remittance
☐ News
☐ Entertainment
☐ Other (please specify) _____

SECTION 4: DIGITAL TECHNOLOGIES LEARNING

4.1. How do you learn how to use new digital technologies? Please tick (√) all that apply.

☐ Friend ☐ Family members
☐ Teacher/Trainer ☐ Yourself
☐ Books/Magazines ☐ Websites
☐ Social networks ☐ Other (please specify) _____

4.2. What do you think are the important factors affecting your learning in digital technologies? Please tick (√) all that apply.

☐ Lack of time ☐ Lack of budget
☐ Lack of knowledge/skills ☐ Lack of interest/motivation
☐ Lack of training ☐ Lack of facilities/supporting resources
☐ Lack of learning materials ☐ Other (please specify) _____

4.3. If the digital skills training programmes are available online free of charge, would you like to participate in the programmes?

☐ Yes ☐ No ☐ Not sure (please provide reason) _____

4.4. What kind of digital skills would you like to learn the most or could be most helpful for you? Please rank three (1–3) of the following skills in order of importance with 1 being the most important.

☐ Problem solving skill ☐ Social and communication skill
☐ Operational skill ☐ Transacting skill
☐ Information Navigation skill ☐ Content creative skill
☐ Online safety skill ☐ Other (please specify) _____

This is the end of the survey. Thank you very much for your time and for your participation. Your responses will allow us to develop the suitable digital skills training programme and curriculum in the future. If you have any questions about this survey and if you wish to follow up with your answers, feel free to contact us at katikar.tipayalai@gmail.com

APPENDIX D

ENUMERATOR GUIDELINES
Digital skills assessment for migration workers in Thailand

The following document will cover the main components of your tasks as an enumerator and common questions and challenges you may encounter throughout the activity.

1. In-person interview (questionnaire)
When calling a respondent, start by clearly introducing yourself and the activity by mentioning:
1) You work for IOM/ITU.
2) You are conducting a survey on their digital skills to find gaps between the needs of employers and the existing digital skills of migrant workers for, at the end of the day, improving their living standards.
3) The survey will last between 15–20 minutes
4) Participation in the survey is entirely voluntary and the survey is completely anonymous.
5) There are no direct benefits involved in participating in the survey, but their contribution to the survey will greatly help people in similar situations.

**Remark: Please request the respondents to check the box/sign their names on the cover page before starting the interview. Although the minimum age by Labor Protection Act B.E. 2541 is 15 years, an employee younger than 18 years is considered a young worker. Thus, the minimum age of the respondent to be interviewed needs to be 18 years.

Pre-interview Checklist
If a person is willing to participate in the survey, before starting the interview remember that:
- Participation is entirely voluntary.
- Respondents can end the survey at any time.
- If respondents do not feel comfortable or do not want to answer a question, that is completely fine. They can tell you "I do not want to answer" any time they feel like it.
- There is no direct benefit to participating in this study.
- Information collected by IOM/ITU is kept anonymous and is held to IOM/ITU data protection standards. Participation in the study is and will remain anonymous.
- Ask if the respondent has any questions before starting the interview.

Below is a short introductory message that you should read at the start of each interview:

"Hello. My name is_____, and I would be grateful if you could spend about 20 minutes of your time answering my questions. This research will help us to better understand your current digital skills level and understand how digital technology is used inside and outside work. This study has been commissioned by the United Nations International Telecommunication Union (ITU) and the International Organization for Migration (IOM) to help them assess digital skills gaps among migrant workers and the digital skills demand of employers. Our work as researchers is not to provide any direct assistance but to make sure that your concerns are voiced upwards, to those who can help you.

This interview is anonymous, and your name will not be mentioned in any report or document. Personal identifying information will be kept secure, and confidential, and will be removed from the dataset. You are not obliged to answer any question, and you can stop at any moment you want. I thank you for accepting to help me. Do you want to ask me anything about the interview before you decide to participate?"

Interview quota

Kindly aim to complete 5 to 8 interviews per day.

2. Common questions and answers

Respondents may ask questions before agreeing to be interviewed. Below, you can find some examples of common questions and answers:

Question 1: Why are you asking me these questions/surveying me again?
● We want to learn about the digital skills that migrant workers have in Thailand and what skills would be helpful, which help us to make sure migrants have access to tailored and useful digital skills training. Your insights are extremely valuable to us.

Question 2: I am afraid if I participate in this survey, it will jeopardize my situation further (for example, if the person is in a foreign country and travelled there irregularly).
● Your participation in this survey is completely anonymous, we will not collect any information on your name, place of residence, or other personal/sensitive information. We will not share your data with anybody external. In addition, as IOM, our goal is to promote safe and orderly migration for the benefit of all and it is our mandate to serve the migrants. With this research, we aim to gather information to improve the situation of migrants, irrespective of their legal status.

Question 3: How will I benefit from this?
● There is no direct benefit from participating in this study. However, if you are willing to participate, we will use this information, together with other interviews, to try to improve migrants' access to useful digital skills training. Your time and experience can make a difference.

Question 4: Will I be able to get other assistance from you?
● As we are exclusively part of the data collection unit, we, unfortunately, will not be able to provide you with any additional assistance.

3. Going over some survey questions

Part 1: General Information
Q1.1) This question asks about the gender of the respondent. If the respondents feel uncomfortable answering this question or they indicate an alternative gender, put a tick at "Non-binary/Others".

Q1.2) This question asks about the age of the respondent. If the respondent feels uncomfortable answering this question, put a tick at "Prefer not to say".

Q1.3) This question asks about the country of origin of the respondent. If the respondent comes from other countries other than Cambodia, Lao People's Democratic Republic and Myanmar, put it under "other (please specify)".

Q1.4) This question asks about the highest level of the completed education of the respondent. If a respondent is doing his Secondary education but is not done, you cannot put it as an answer. Instead, you have to put primary education. Also, if the respondent feels uncomfortable answering this question, put a tick at "Prefer not to say".

Q1.6) This question asks whether the respondent lives in Thailand with their family members or not. If at least one of their members stays with them, put a tick at "Yes".

Q1.10) This question asks about the salary of the respondent in a month. If the respondent receives wages on a daily/weekly basis, ask them how many days they work in a month and calculate their salary per month.

Part 2: Digital Skill Measurement

This part is about asking the respondent "How would you rate your answer to the following statements? Please put a tick (√) in the box at the appropriate spot: "(1) Not at all true of me", "(2) Not very true of me", "(3) Neither true nor untrue of me", "(4) Mostly true of me", or "(5) Very true of me"."

REMARK**

The question may be met, in this part, with the respondent's hesitation to rate their digital skills. However, you may use the following guidelines for the respondent in answering each item in Q2);

"(1) Not at all true of me" = If the respondent does not have any confidence in a particular digital skill at all, or they neither know how to use this skill or programme nor even recognize it at all. They also cannot find benefits from using this programme or having this skill, and they do not understand how this skill or programme can facilitate their daily life.

"(2) Not very true of me" = If the respondent slightly has confidence in a particular digital skill when they need to use this skill or programme, they have to ask others to help. They only find a few benefits from this skill or programme.

"(3) Neither true nor untrue of me" = If the respondent is quite confident in a particular digital skill, but they still need to continuously improve it. The respondent can properly use this skill or programme; however, they still lack to use this skill or programme occasionally. They can sometimes find benefits from using this skill or programme.

"(4) Mostly true of me" = If the respondent feels confident in a particular digital skill, they know how to use this skill or programme. They also can facilitate their life by using this skill or programme. However, they still cannot make use of the full potential of this specific skill or programme, and cannot transfer the digital knowledge to others.

"(5) Very true of me" = If the respondent feels very confident in a particular digital skill, they know how to use this skill or programme. They also can completely facilitate their life by using this skill or programme. Moreover, they can make use of the full potential of this specific skill or programme, also, transferring the digital knowledge to others is included. They can obtain a lot of benefits from this skill or programme.

Part 3: Current use of digital technology

Asking about which of the following ICT devices you own or have access to, and how often you use them. Please tick (√) all that apply. In Q3.1), this section divided the devices into 3 categories which are smartphones, tablets, and personal computers (PC). The respondent needs to address 3 subsections of this part: frequency of use, number of digital devices they own, and number of digital devices they can access (these digital devices can belong to the company, family, or friend)

Q3.3) This question asks the reason for not having a smartphone of the respondent. The respondent can answer in more than one answer, and if they have other reasons, put it under "other (please specify)".

Q3.4) This question refers to the accessibility to the internet or wireless access. If the respondent has mobile internet from their smartphone, put a tick at "yes" and go to Q3.4.1). However, if they say "no", you may skip Q3.4.1) and go to Q3.5).

Q3.5) For all the functions given in this question, you may consider reading the respondent one by one and asking them whether they use it on their device or not.

Q3.6) This question is about the digital tools proficiency of the respondent categorized into a smartphone, tablet, and PC.

Q3.7) If the respondent uses online services, ask them to name the applications that they use and put it under "please specify which apps".

Part 4: Digital Technologies Learning

Q4.3) This question asks whether the respondent would be interested if there are free courses for them to improve their digital skills. Make sure you confirm with them that the training course will be provided outside their working hours. If the respondent is still not sure about this, put a tick at "not sure" and also ask them to give the reason.

Q4.4) This question asks the respondent to rank three of the digital skills they would like to learn the most or could be most helpful for them. Please ask the respondent to prioritize their preference and importance with 1 being the most important. In case they cannot name the skill, read them the list of digital skills on this survey.

Ending

Q4.4) is the last question in this questionnaire, after the respondent answers all questions, the enumerator must show appreciation by saying "thank you very much" to the respondent. Also, the enumerator must inform the respondent of the contact (email) in case he/she might have any questions or wish to follow up with their answers.

4. Data Monitoring

To ensure that the data collection process goes smoothly and well with high-quality data, the lead researcher will conduct data monitoring every four days. To do so, she will look at the data from the previous four days and look for mistakes and inconsistencies. However, if you have any questions or concerns regarding the interviews and data collection, please feel free to contact her anytime. The schedule for data monitoring will be as follows:

Day 1	Day 2	Day 3	Day 4	Day 5 and Data monitoring
Day 5	Day 7	Day 8	Day 9 and Data monitoring	Day 10
Day 11	Day 12	Day 13 and Data monitoring	Day 14	Day 15

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International Organization for Migration
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