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Promoting a more innovative and inclusive society through ICT development

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Information and communications technologies (ICTs), such as the internet, can promote inclusion, efficiency, and innovation, resulting in more jobs, better services, and sustained economic growth (World Bank 2016). Technology can promote social good, but it can also create new barriers to opportunities, especially among the poor and vulnerable. Digital platforms, also called internet platforms that act as intermediaries of markets, are connecting people to interact either socially or financially. They allow people to access vast amounts of information they can use in their daily living, such as participating in online learning activities, buying or selling products and services, and even obtaining healthcare through telemedicine. Google et al. (2020) reported rising investments in some areas of the internet economy across Southeast Asia, including the Philippines, ironically accelerated by the coronavirus disease 2019 (COVID-19) pandemic. The report also discussed how digital investments are starting to show dividends with increased online adoption of e-wallets and e-commerce. These changes in transactions are likely to be sustained post-COVID-19.

Salient Points:

- *Promoting access, digital skills, and use of digitalized services is crucial for ensuring that the benefits of ICTs are shared among all Filipinos.*
- *There is a digital divide in ICT access and use. Based on the 2019 National ICT Household Survey, only 1 in 4 households own a computer, while 3 in 4 own at least a cellphone. Meanwhile, about 4 in 5 persons reported using a cellphone in the three months preceding the survey. In addition, owning a computer is more common in urban households and among the young and educated.*
- *About half of Filipinos are internet users, with communication or social media and entertainment or gaming as the most performed online activities. Still, digital skills are limited, with only 2 in 5 Filipinos having at least 1 of the 6 basic ICT skills monitored for attaining the Sustainable Development Goals.*

ICTs enable governments to work differently, transform public services and governance with a transparency and accountability framework, and ultimately make service delivery more efficient and effective (DICT 2017). In addition, through the internet, social media, digital platforms, and micro and small firms can connect with potential clients in international markets and sustain business relationships at lower transaction costs (Albert et al. 2016).

The benefits of ICT products, services, and tools are reaching far and wide, potentially unlocking innovative solutions to complex challenges in attaining the Sustainable Development Goals (SDGs), such as the global goals on food security, quality healthcare, disaster risk management, and education for all.

But not all have benefited equally from digital dividends. Wi-Fi speed in the Philippines remains slow and entails huge costs, with a substantial portion of the population having no access to this technology. Therefore, ICT development matters a lot as ICTs can either be a channel to make all segments of society benefit from digital dividends or be a mechanism to increase socioeconomic inequalities further. ICTs have to be available and accessible widely, supported by infrastructure and institutions. Moreover, people should have the skills to use ICTs and harness their many applications.

This *Policy Note* profiles ICT development in the Philippines in terms of access and consumption of digital services at the household and individual levels using the 2019 National ICT Household Survey (NICTHS) results.[1] It also describes the digital skills of Filipinos and provides insights into how the country can advance inclusion and innovation through ICTs.

Access to ICT (devices and the internet)

The 2019 NICTHS results reveal that a quarter (24%) of households own a computer,[2] and most of them are in the urban areas (64%). Across regions, computer ownership among households is highest in CALABARZON (Region IV-A) (43%), followed by National Capital Region (NCR) (37%), and Cordillera Administrative Region (CAR) (30%), while lowest in Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) (8%). BARMM is the only region where less than 10 percent of households have a computer.

Consistently, at the individual level, the use of computers (34%) is as low as computer ownership. However, ownership and cellphone use is much higher, with three quarters (75%) of Filipinos owning at least one cellphone and 79 percent using one[3] in the last three months before the survey. Moreover, computer usage is slightly higher among men (35%) than women (33%). Conversely, cellphone ownership and use are somewhat higher among women (8 in 10) than men (7 in 10).

Computer usage is observed mostly among children aged 10–17 years old (49%) and least among those aged 55 years and above (13%). Moreover, the majority of those using a computer have educational attainment beyond high school[4] (52%). Computer use among those with no or little schooling[5] is lowest at only 3 percent.

Cellphone ownership across age groups, educational attainment, and labor force status is over 60 percent, except for individuals with no or little schooling (46%) and aged 55 years and above (59%). The same pattern is observed in cellphone use.

As for connectivity, half (47%) of Filipinos are internet users (Figure 1). Internet usage is higher in urban (57%) than in rural areas (36%). Internet penetration is highest (over 60%) in NCR and CALABARZON (Region IV-A) and Central Luzon (Region III) while lowest (13%–20%) in BARMM and Caraga Administrative Region. Internet access rates of men and women are almost the same at 48 percent and 46 percent, respectively. Among age groups, access is highest among the younger (10–34 years) while lowest among the older (55 years and above) population. Likewise, education correlates with internet use—higher among people with higher educational attainments (beyond high school) (66%) than with no or little schooling (6%). Meanwhile, the proportion of internet users is high among the employed (45%) and unemployed (71%) but low among people not in the labor force (33%).

[1] NICTHS is the first household survey focusing on ICT in the country. The 2019 survey was conducted by the Department of Information and Communications Technology in partnership with the Philippine Statistical Research and Training Institute.
[2] Computer is defined in the 2019 NICTHS as a desktop, laptop, tablet, or other devices that can be used by any household member at any time.
[3] This is partly on account of household ownership of cellphones referring to joint use.
[4] Beyond high school refers to postsecondary, college, and postbaccalaureate.
[5] With no or little schooling refers to no schooling or preschool.

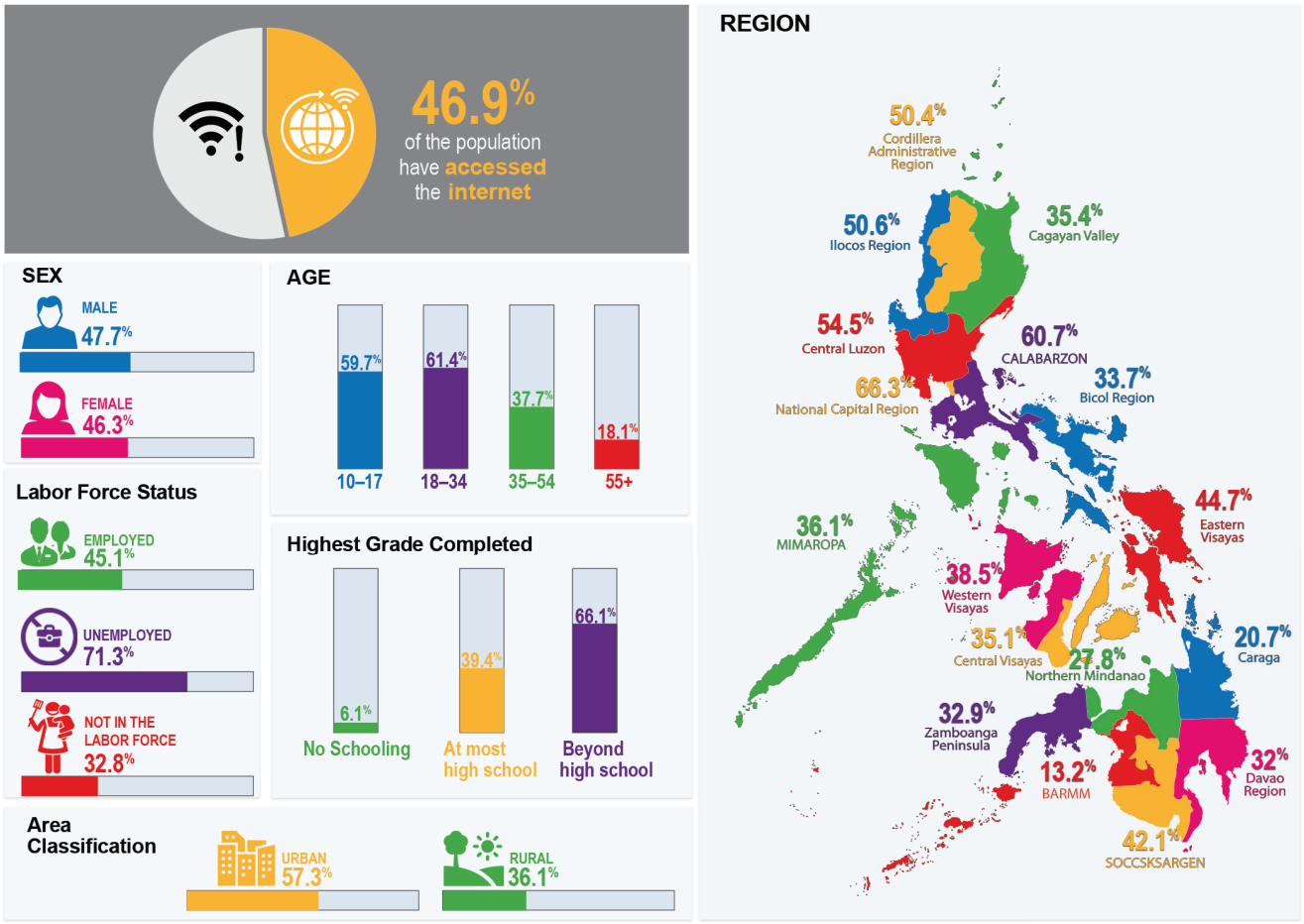
Finally, half of all students and a tenth of persons with disabilities have used the internet.

Internet connection at home[6] is low. Only about a fifth of households (18%) are connected to the internet. In urban areas, the proportion of households with home internet access is higher (24%) than in rural areas (11%).

[6] Internet can be accessed by any member of the household at any time.

Internet connection is available in most households in NCR, CAR, CALABARZON, and Central Luzon but not in BARMM, Zamboanga Peninsula (Region IX), Northern Mindanao (Region X), MIMAROPA (Region IV-B), and Bicol (Region V). Households cited the lack of knowledge or information—either they do not know how to use the internet or do not know what the internet is—as the main reason for not having an internet connection at home.

Figure 1. Proportion (%) of internet users* in the Philippines by individual characteristics



CALABARZON = Cavite, Laguna, Batangas, Rizal, Quezon; MIMAROPA = Mindoro (Occidental and Oriental), Marinduque, Romblon, Palawan; SOCCSKSARGEN = South Cotabato, Cotabato, Sultan Kudarat, Sarangani, General Santos City; BARMM = Bangsamoro Autonomous Region in Muslim Mindanao
*The period covers the three months preceding the 2019 National ICT Household Survey.
Notes:
(1) No or little schooling: no schooling, preschool
(2) At most high school: elementary, junior and senior high school, Alternative Learning System
(3) Beyond high school: postsecondary, college, postbaccalaureate
(4) Employed: employer, employee, own-account worker/self-employed, member of producers' cooperatives, contributing family worker, worker not classified by status
(5) Not in the labor force: student, retired, homemaker/housewife, person with disability
Source of data: DICT (2019)

Additionally, individual data from the survey shows a lack of awareness about the internet among older adults.

Connectivity should be accessible, secure, and affordable (Word Bank 2016). In the Philippines, the average spending of PHP 1,280.59 on a home internet connection (DICT 2019) is about 7 percent of the indicative monthly income of "low-income" families of five at 2017 prices (Albert et al. 2018).[7]

Digital skills

NICTHS data show that Filipinos are not quite digitally skilled, with only two-fifths (40%) of the population aged 10 and over having at least one of the six ICT skills used as indicators to measure the performance of a country on SDG 4.4.18. Further, more women than men are digitally skilled, although there are nuances in the digital gap if age and sex are taken into account.

Close to half of young Filipinos (aged 15–24 years) possess at least one ICT skill identified in SDG 4.4.1 (Table 1).

However, only a few are ICT-skilled among the older population (65 and above). Generally, more females than males are skilled (41% versus 38%), but there appear differences if age is considered. For example, more females than males aged 15–24 (and younger) are digitally skilled, while more males than females among the working-age and older adults are ICT skilled. This shows that females tend to acquire skills more than males while in school, while males acquire skills more than females in the workplace (especially since males participate more in the labor market than females).

Across many ICT-related activities, Filipinos mostly use ICTs for communication and entertainment/gaming. In particular, the working-age female and young males are into entertainment/gaming, although the older adult males and females are more into communication (including social media use). The survey results also show that the working-age population possesses data management and analysis skills and uses modeling, simulation, and rendering software more than the youth. Between sexes, females dominate males in digital skills related to communication, sending emails, creating documents, encoding, and managing files. On the other hand, males dominate females in intermediate digital skills, such as data management and analysis, modeling and simulation, and performing basic arithmetic formulas in spreadsheets.

[7] This refers to the indicative monthly family income ranges (for a family of five) in the Philippines at 2017 prices: poor (less than official poverty threshold) if less than PHP 9,520; low-income class but not poor (between the poverty line and twice the poverty line) if between PHP 9,520 and PHP 19,040.

[8] The SDG indicator on digital skills refers to the proportion of youth and adults with ICT skills by sex and type of skill. The 2019 NICTHS capture six (of the nine) ICT skills: using basic arithmetic formula in a spreadsheet; using copy and paste tools to duplicate or move information within a document; sending emails with attached files; creating electronic presentations with presentation software; finding, downloading, installing, and configuring a software; and transferring files between a computer and other devices.

Table 1. Proportion (%) of individuals with at least one of six ICT skills identified for measuring SDG Indicator 4.4.1

Sex	Age Group				Total
	10–14	15–24	25–64	65 and Above	
Male	16.1	40.7	45.2	30.8	37.8
Female	30.4	52.3	37.4	13.4	41.4
Total	23.1	46.7	40.3	18.0	39.8

Source of data: DICT (2019)

Availability and use of digitalized services

The 2019 NICTHS results reveal that many internet users access digital services offered by the government and private sector. Yet, adoption is low in e-commerce and digital finance (e.g., electronic payments, online banking, etc.), at least in the period before the pandemic. Online purchase of goods and services is the most performed online transaction among Filipinos, but payments are primarily made through cash on delivery as of 2019. Among online buyers, survey results indicate that 80 percent pay in cash, and among online sellers, 72 percent received payments in cash. Likewise, over-the-counter payments are usually made in cash, with electronic payments being the least used among payment modes in 2019.

The sluggish e-commerce activities and use of electronic payments are associated with consumers' low appreciation, exposure, and trust in digital payments. The 2019 NICTHS results indicate that many Filipinos (42%) do not use electronic payments in online purchases because of security concerns, particularly in giving personal and card details. In addition, those with little or no schooling identified a lack of awareness about electronic payments as the main reason for not using such platforms (77%). Similarly, lack of knowledge or skills and trust concerns (related to warranty, return/refund, scamming, and product quality) are cited reasons for not shopping or selling online. Nonetheless, there are prospects for increased e-commerce activities, with more than half of online sellers recommending selling online as a good source of income. Moreover, there is evidence that e-commerce has considerably increased amid the pandemic, and these e-commerce activities are likely to continue even beyond the pandemic (Google et al. 2020).

Policy insights

Adequate infrastructure is vastly and urgently needed to support ICT development in the country. The National Broadband Plan and the Free Wi-Fi in Public Places Program are being implemented by DICT to improve connectivity in the country. The 2019 NICTHS results suggest the importance of giving attention to areas prone to exclusion from ICT, such as rural and remote communities. One example that should be replicated is the DICT's initiative to push for inclusive access to satellite services for internet connectivity (Executive Order 127, s. 2021). The deployment of satellite services, especially in areas where other terrestrial and submarine broadband technologies are not feasible, is one way to improve the coverage and quality of connectivity in the countryside.

Investing in the development and measurement of digital skills is crucial. Results of the NICTHS suggest that digital skills in the country need vast improvement. Consequently, investments to upgrade the courses or curricula offered in educational institutions, training programs in the business sector, and the government's human resource development programs are critical. A good balance of demand and equity, be it gender, age, or any other circumstance, should also be considered in building digital skills—both life and workplace skills. Efforts should also be made to identify, collect, and measure specific digital skills that are important to assess the country's global competencies, especially in the wake of changes in the labor market resulting from the Fourth Industrial Revolution (FIRe) and the great reset from the COVID-19 pandemic. Relatedly, there is scope for DICT to work with the Philippine Statistics Authority (PSA) to ensure that digital skills measurement is integrated into functional literacy measurements, such as in the PSA's Functional Literacy, Education, and Mass Media Survey.

Policies should involve advocacy of digital literacy and internet safety. ICT development would not be harnessed if existing technologies were not used. The DICT can partner with other agencies, such as the *Bangko Sentral ng Pilipinas* and the private sector, in a national campaign to systematically inform the general public about ICTs and FIRe technologies and their applications

as well educate them on cybersecurity and business or consumer protection. The ultimate goal should be to encourage people to go online, use the internet, and be informed about policies that protect them.

The NICTHS should be conducted regularly, preferably every two or three years. What is not measured cannot be managed or improved. Thus, monitoring of progress and benchmarking are important inputs to policy decisions on ICT development. Currently, the NICTHS is the only data source on Filipinos' digital skills. Meanwhile, future conducts of the NICTHS should account for comparability of country statistics in measuring ICT development. While the NICTHS generates ICT statistics for country use, the need to comply with international statistical standards to benchmark the country's statistics with those of other countries should not be ignored as statistics ultimately become more meaningful when compared.

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