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Filipinos' Access and Exposure to ICT: A General Overview based on the National ICT Household Survey

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Abstract

Information and communication technology (ICT) is now considered a basic necessity in the digital world. It is noted that it permeates all aspects of life as it provides better and quicker ways for people to learn, interact, and gain access to information. In the Philippines, the 2019 National ICT Household Survey marked the first effort by the government to map the general ICT landscape in the country which examined among others the use of cellular phones and computers and extent of Internet usage and online financial transactions. This survey was administered to a nationally representative sample of households and individuals in the country. This paper provides a general overview of ICT use based solely on this survey. The findings show that there is differentiated access to ICT across sub-national regions. There remains a non-negligible proportion of individuals who do not have access to ICT partly due to lack of infrastructure. There is also much to improve in terms of using ICT for economic purposes such as acquiring skills, doing online financial transactions, and conducting business.

Keywords: ICT, online work, e-entrepreneurship, NICTHS, Philippines

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Filipinos' access and exposure to ICT: A general overview based on the National ICT Household Survey

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and
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1. Introduction

Information and communication technology (ICT) is now considered a basic necessity in the digital world. It is noted that it permeates all aspects of life as it provides better and quicker ways for people to learn, interact, and gain access to information. In the Philippines, the 2019 National ICT Household Survey marked the first effort by the government to map the general ICT landscape in the country which examined among others the use of cellular phones and computers and extent of Internet usage and online financial transactions. This survey was administered to a nationally representative sample of households and individuals in the country. The findings show that there is differentiated access to ICT across sub-national regions. There remains a non-negligible proportion of individuals who do not have access to ICT partly due to lack of infrastructure. There is also much to improve in terms of using ICT for economic purposes such as acquiring skills, doing online financial transactions, and conducting business. This report provides a general overview of the use of ICT based solely on this survey for purposes of analyzing opportunities and constraints in platform work.[2] It discusses general findings, gender dimensions, and e-entrepreneurship. In particular, the objectives are:

1) To describe the extent of overall ICT use by Filipinos aged 10 and above including but not limited to devices use, frequency of usage, purposes of ICT use;
2) To examine online entrepreneurship and its opportunities and constraints; and
3) To draw insights for improving ICT use.

2. The National ICT Household Survey 2019

The National ICT Household Survey (NICTHS) is the first national survey in the country that examines the progress of the country with regards to ICT on both a household and an individual level.[3] The survey is spearheaded by the Department of Information and Communication Technology (DICT), in partnership with the Philippine Statistical Research and Training Institute (PSRTI). The objectives of the project are to gather multi-level ICT data that can be used in monitoring performance indicators for the Sustainable Development Goals (SDGs), Philippine Development Plan (PDP) Results Matrix and other international benchmarking

1 Research Fellow and Research Analyst, respectively, Philippine Institute for Development Studies (PIDS); this work was carried out with the aid of a grant from the International Development Research Centre, Ottawa, Canada. The views expressed herein do not necessarily represent those of IDRC or its Board of Governors.

2 This paper is part of a bigger PIDS study on platform work; the NICTHS is used to profile the general landscape of ICT use in the country.

3 Prior to this, the other nationally representative survey that researchers use to obtain some information about ICT use such as phones is the Family Income and Expenditure Survey (FIES). The FIES, however, does not provide nuanced data about the usage of a wide range of ICT in the country.

standard. Furthermore, the survey aims to identify ICT demand in aid of planning and policy making, geared towards both the improvement of public service delivery and harnessing the potential of the digital economy.

Interviews for the survey were conducted in 2019, wherein 43, 838 households were sampled using the 2013 Master Sample of the Philippine Statistics Authority (PSA). Data were collected from communities where these households are located, and interviews were conducted with every individual from 10 to 74 years of age within the sampled households. Three questionnaires were used to be able to achieve the multi-level ICT indicators being desired. More specifically, the Community Questionnaire covers barangay ICT infrastructure, the Household Questionnaire focuses on ICT access and usage, while the Individual Questionnaire tackles a respondent's access, knowledge and usage of ICT. To analyze the general landscape of ICT use, this paper conducted a descriptive analysis of the survey particularly aspects that are important in understanding online platform work for men and women. It also offers some policy-related insights for improving ICT access, opportunities and benefits.

This paper primarily utilizes information from the Individual Questionnaire of the NICTHS. The first section of the paper analyzes trends in usage and access of ICT devices and platforms. This was taken from questions revolving around the individuals' ownership of devices (computers, cellphones, etc.), and the type of devices that they own. The paper also used information such as computer skills, internet utilization and frequency, and activities being done in the internet. Perceptions of individuals regarding internet usage were also examined. Finally, data on awareness and ownership of platforms such as online financial transactions, online accounts, and social media usage of individuals were also analyzed.

A portion of the paper is also allocated towards identifying characteristics of online sellers. This was achieved by collecting information on the number of people that have sold goods in the past 12 months. This was supplemented by other variables such as the type of products sold, the digital platforms used in selling, and income earnings. Opinions and perceptions on online selling were also analyzed from both online sellers and non-sellers to get a perspective of the view of the online sector as a whole. These indicators were disaggregated by social characteristics, such as gender, age, highest level of education and worker status to add further nuance to the insights provided. To further augment the findings of the research, the Individual Dataset was merged with Household Dataset. This was instrumental in providing for metrics on internet and broadband usage, as well as adding further disaggregation categories to the entire analysis, particularly whether a household was in an urban or rural area.

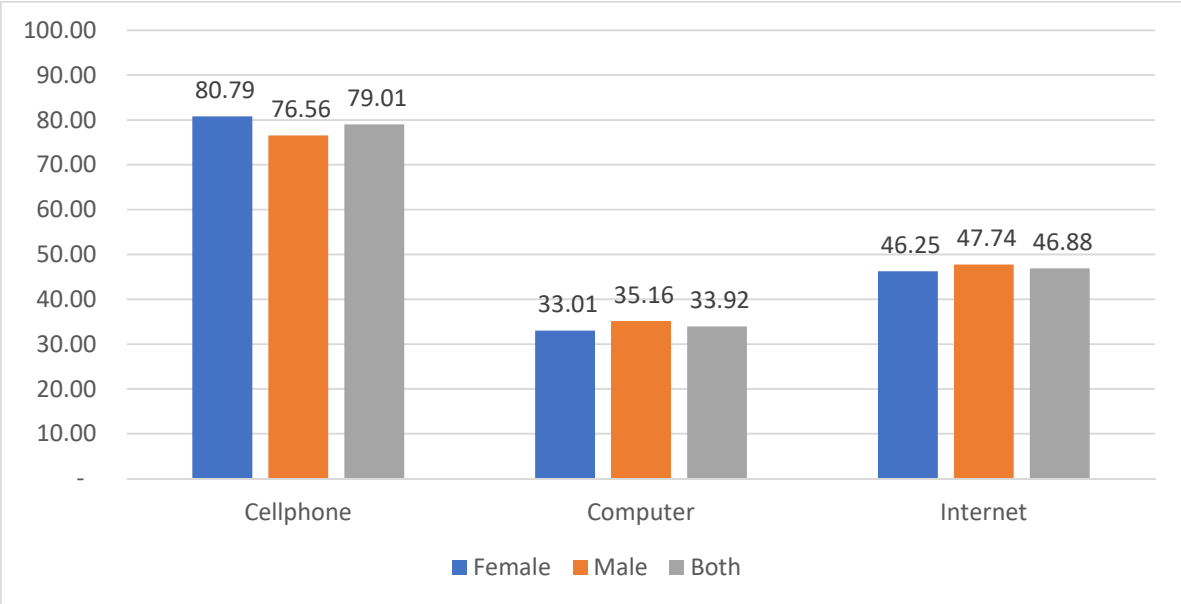
While the NICTHS is a groundbreaking endeavor towards better understanding ICT usage and exposure to digital platforms in the country, the survey is quite limited in some aspects. For instance, the NICTHS uses a different set of labor force status variables from that of the official ones by the Philippine Statistics Authority (PSA). While PSA has the following categories in the Labor Force Survey – employed, unemployed, not in the labor force, the NICTHS has additional categories like homemakers, persons with disability, members of cooperatives.

Furthermore, the household-level data do not include the data for all eligible members of the household. This limits the development of aggregate household-level data from the individual-level module of the survey.

3. ICT Use by Individuals

Among all individuals aged 10 and above, the survey found that nearly 79 percent have used a cellphone within the past three months. The percentage is slightly higher for women at 81 percent compared to men's 77 percent (see Figure 1). Among those who use cellular phones, 89 percent reported they only have one unit while the rest have more than one. Computer usage, meanwhile, is low at approximately 34 percent. Women is at par with men in computer usage rate. Among those who use the computer, the most common type used is a desktop computer (44%); some 39 percent noted they use a laptop unit while 22 percent reported they use a tablet computer.

Figure 1 ICT usage rate, by sex (%)



Source: NICTHS

Computers are mainly used for communication purposes as reported by nearly 69 percent of all computer users. There is a slightly higher proportion of women (nearly 72%) than men (66%) who use computers for interacting with others (see Table 1). Majority (63%) of Filipino users also noted they used it for entertainment and gaming. About 23 percent use computer for sending electronic mail. Interestingly, many Filipinos do learn through computers – 22 percent of all users said they used computers for online courses or distance learning; the percentages women are slightly higher than the men, though distance learners are mostly young people. Among the youth, there is higher percentage of women than men who are in distance learning. Other uses of computers are in copying (23%), transferring files (20%), data encoding (22%) and creating documents in word processing software (18%). The least common uses of

computers are in conducting modelling and simulation (2.3%), data management and analysis (4.3%), and running software programs (4.53%).

Table 1 Uses of computer (among individuals who used computer in past three months)

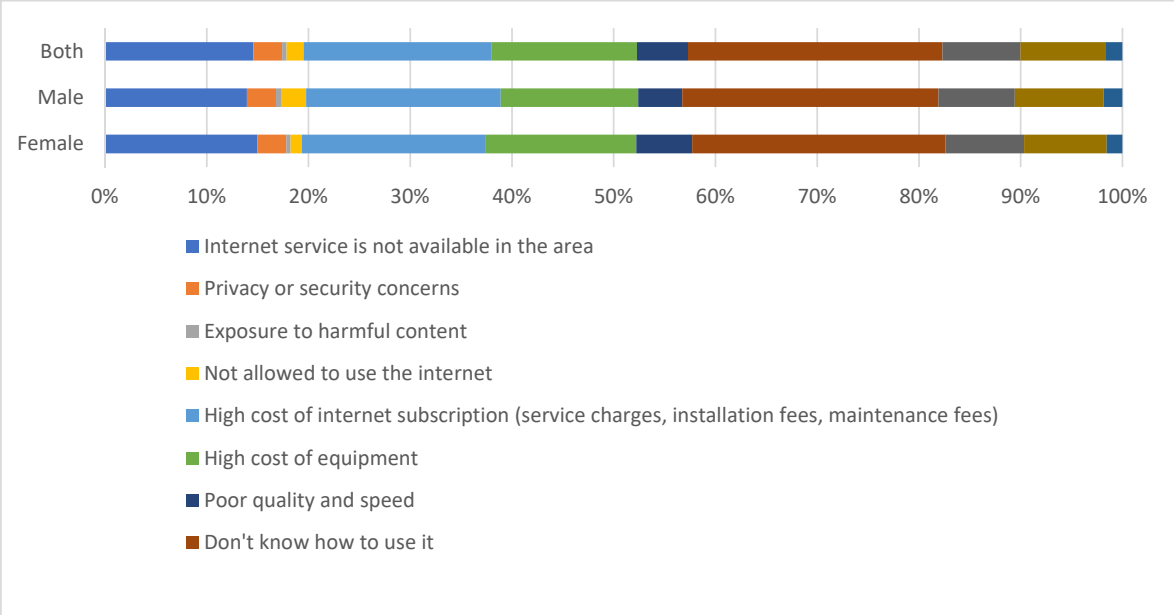
Purpose	Percent to total		
	Women	**Men**	**All**
Communication	71.6	65.7	69.0
Entertainment and Gaming	56.2	72.8	63.4
Distance/Online/Computer-aided Learning	23.2	20.7	22.1
Using copy and paste tools to duplicate/move information (files/folder)	23.8	21.7	22.9
Transferring files between a computer and other devices	20.1	19.8	20.0
Sending emails (plain text)	23.5	22.5	23.1
Sending emails with attached files (document, picture, video)	23.0	22.7	22.8
Data encoding	23.0	19.7	21.5
Finding, downloading, installing and/or configuring, running software	10.4	8.8	9.7
Running software program	4.6	4.4	4.5
Using basic arithmetic formula in a spreadsheet	5.8	7.1	6.4
Creating documents using a word processing software	18.7	16.7	17.8
Creating electronic presentations with software	8.0	8.2	8.1
Data management and analysis	4.0	4.8	4.3
Using modelling, simulation and rendering software	1.6	3.3	2.3

Source: NICTHS

Internet usage among the population aged 10 and above is at 47 percent. The percentage of men that use the internet (48%) are slightly higher than women (46%). About 21.1 million of said population has access to the internet, which comprises of more women (12.1 million) than men (9.1 million). However, the estimated magnitude for women without internet access is higher at 14.0 million compared to their male counterpart with 9.9 million non-users of Internet. The device commonly used for accessing the Internet is cellular phone with 85 percent of Internet users reporting that such is their way for Internet access. This is followed by desktop computer where about 30 percent of users use it. Only 19 percent of those who use the Internet reported they use mainly laptop computer. Only a few use tablet devices at 7 percent.

When Internet non-users were asked about their reasons for not using the Internet, one of the most common reasons is lack of knowledge on how to use the Internet and what Internet is (51%). Other important reasons are high cost of Internet subscription (29%) and high cost of equipment (22%) (see Figure 2). A non-negligible proportion (23%) also reported that Internet service is not available in their area. A few reported that they do not need the Internet (nearly 13%), or are concerned with privacy and security (4%).

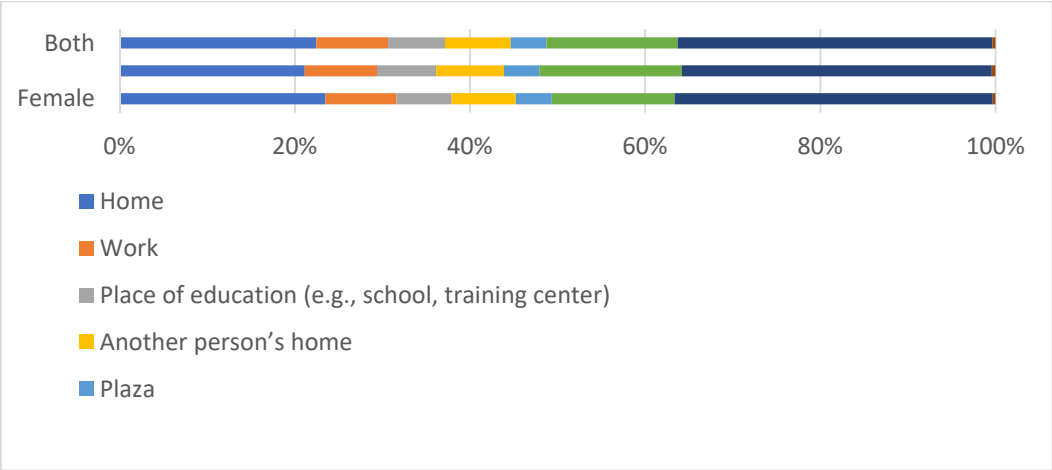
Figure 2 Reasons for not using the internet, by sex (%)



Source: NICTHS

Majority (63%) of Internet users access the Internet through mobile data while in mobility. Nearly 4 in 10 said that they use Internet at home, about 26% reported they use it when they are in public places like mall, restaurants, internet cafes) while some (14%) reported that they do so when at work (see Figure 3). There is not much gender variation in this aspect except that more men (15%) used the Internet when at work than women (14%).

Figure 3 Area of internet usage, by sex (%)

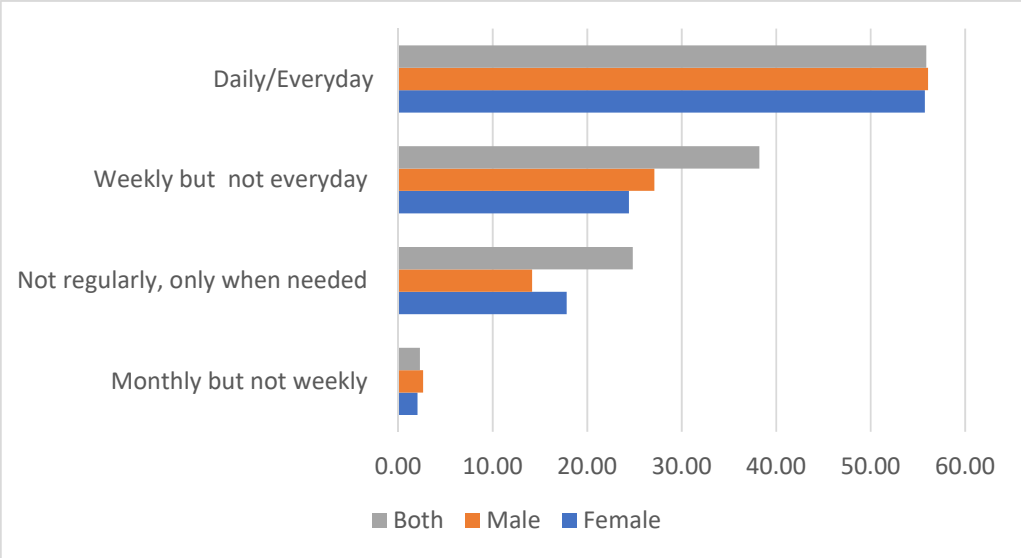


Source: NICTHS

Majority (56%) of Internet users access the Internet every day. Some 38 percent reported that they do it less frequently - that is weekly rather than daily (se Figure 4). One fourth of them

reported that they use Internet only when necessary or irregularly. Again, there are no gender disparity in the frequency of using the Internet.

Figure 4 Frequency of internet usage, by sex (%)



Source: NICTHS

In terms of Internet usage, 94 percent of users reported that they use it for social activities or communication purposes. Interestingly, 44 percent noted that they use it to access information (see Table 2). There is little disparity between men and women in this regard. Around 37% use it for leisure or lifestyle activities such as online gaming, downloading music, and streaming. A larger proportion (44 percent) of male users reported such usage while only 31 percent of women did. Only 15 percent reported that they use the Internet for learning which is narrowly defined as engaging in online courses, academic research, accessing e-book and dictionaries. Meanwhile, 13 percent said they use it to access government website or services. It is surprising that only 6 percent use the Internet for their professional life such as doing job search, business activities online, or professional networking. It is important to note that the way the survey is designed may have allowed overlaps between the following usages – access to information, learning, and professional life activities.

Only 6.7 percent used the Internet for online transactions like banking, booking/reservations, and shopping. Another small percentage (5%) used Internet for navigation and transportation. And a very tiny proportion of less than 2 percent used it for creativity or user-generated content.

Table 2 Usage of internet among individuals in the past 3 months, by sex (% of total internet users)

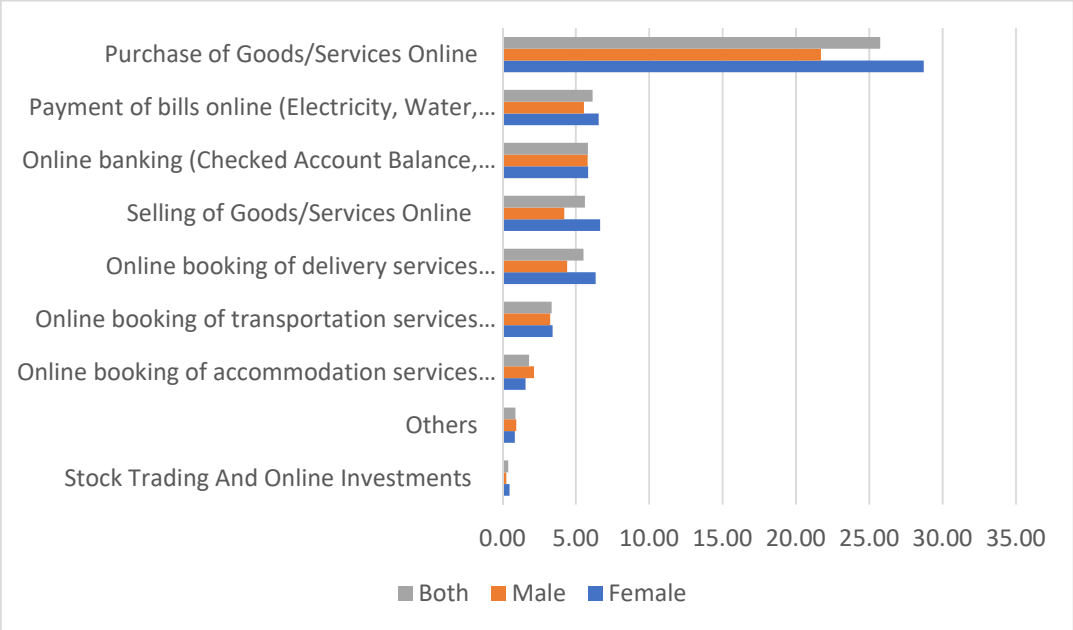
Types of internet usage, by sex (% of internet users)			
Purpose	Female	Male	Both
Social activities/communication	94.61	93.62	94.18
Access to information	43.66	44.38	43.97
Leisure/ Lifestyle	30.95	44.01	36.55
Learning	15.11	14.27	14.75
Access to government website/services	13.64	12.05	12.96
Online Transactions	7.02	6.17	6.66
Professional Life	6.16	5.33	5.80
Online Transportation/ Navigation	4.25	5.40	4.74
Creativity/ User-Generated Content (UGC)	1.77	1.51	1.66
Others	0.43	0.77	0.58

Source: NICTHS

In relation to abovementioned findings, majority (51%) of individuals interviewed are not aware that they can do financial transactions online. The awareness level among women is slightly higher at 51 percent compared to 47 percent among their male counterpart. Only about 7 percent have online bank accounts while only 6 percent have electronic and mobile money account. Only 1 in 10 individual respondents have online selling or buying accounts. The proportion is slightly higher for women at 11% compared to 9% among men.

With respect to the usage of online platforms, the activity that is most commonly done by Internet users is the purchase of goods/services (26% of Internet users). This percentage is higher among women (29%) who are Internet users than among men (22%) (see Figure 5). Very small proportions use online platforms for paying bills (6%), online banking activities (6%), online delivery of services (6%), and online selling of goods/services (6%). The prevalence of online investing such as stock trading and other online investments does not even reach 1 percent of Internet users (only 0.4%).

Figure 5 Utilization of digital platforms, by sex (% of platform users)



Source: NICTHS

Cellular phones are the most commonly used device for online purchases. Eight in 10 individuals who have purchased online used their cellular phones to carry out the transactions. Some 16 percent noted they used a computer for buying online. On the average, online purchasers bought four times each month within the last 12 months. There is no significant gender variation in this aspect. On a monthly basis, an online buyer had spent approximately P2,300 on the average. There is not marked disparity between the spending of men and women. Most online buyers get the merchandise via delivery/courier (with 68% of online buyers using this method). Some 18 percent reported that they do meet-ups to get their purchases.

4. E-entrepreneurship

Among the estimated 1.1 million individuals who have engaged in online selling during the past 12 months (or 5% of all Internet users), a quarter (or an estimated 255,828) reported that this activity is their primary source of income. For most, online selling is shown as a supplementary rather than a primary source of income. This is true for both men and women but more so for women.

The most common products being sold in online platforms are 1) clothing, footwear, sporting goods and accessories (41% of all online sellers), 2) cosmetics and fragrances (30%), 3) food, groceries, alcohol and tobacco (15%), and 4) consumer electronics and accessories (14%). Almost half of all women online sellers did sell clothing and accessories while only 27 percent of male online sellers did (see Table 3). There is also higher proportion among women online sellers engaged in food and groceries business (18% compared to 11%

for men). This is also the case for cosmetics with 38 percent of female sellers and only 15 percent of male sellers.

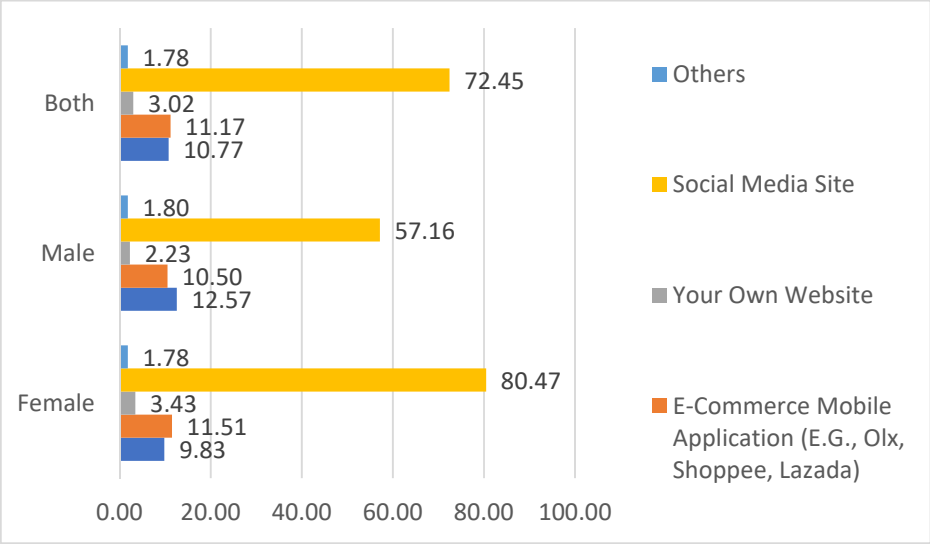
Table 3 Products of online sellers, by sex (% of online sellers)

Products of online sellers, by sex (% of online sellers)			
Purpose	Female	Male	Both
Clothing, Footwear, Sporting Goods, or Accessories	48.32	26.83	40.93
Cosmetics and Fragrances (E.G. Lipstick, Foundation, Skin Care, Perfume Etc.)	37.80	15.14	30.00
Food, Groceries, Alcohol or Tobacco	17.75	10.57	15.28
Consumer Electronics and Accessories (Cellphones, Television Sets, Digital Cameras, Chargers)	13.49	15.67	14.24
Others	7.89	13.42	9.79
Travel Products (E.G. Airfare, Transportation, Accommodation, Etc.)	3.18	11.09	5.90
Household Goods (E.G. Furniture, Dinnerware, Toys; Excluding Consumer Electronics)	5.11	5.35	5.19
Medicine	4.28	0.07	2.83
Computer Equipment or Parts (E.G. Peripheral Equipment)	2.02	2.49	2.18
Professional Services (E.G., Online Tutors, Virtual Assistants, Online Encoders, Online Marketers)	2.21	1.17	1.85
Computer Software (E.G. Software Upgrades and Paid Apps; Games)	1.09	1.84	1.35
Financial Products (E.G. Stocks, Bonds, Health/Life Insurances, Etc.)	1.63	0.17	1.13
Creative Content (E.G. Blogging, Vlogging)	0.13	1.22	0.50
Computer or Video Games	0.22	0.99	0.49
Tickets or Bookings for Entertainment Events (E.G Concert, Theater Play, Sports, Movies, Etc.)	0.26	0.74	0.43
Books, Magazines, or Newspapers	0.21	0.00	0.14

Source: NICTHS

A significant proportion (72% or around 0.78 million individuals) of online sellers utilize social media site for selling their products online. Some 11 percent use e-commerce websites like Lazada and Shopee (including mobile application) (see Figure 6). A very minimal percentage of 3 percent utilize their own website for selling their products.

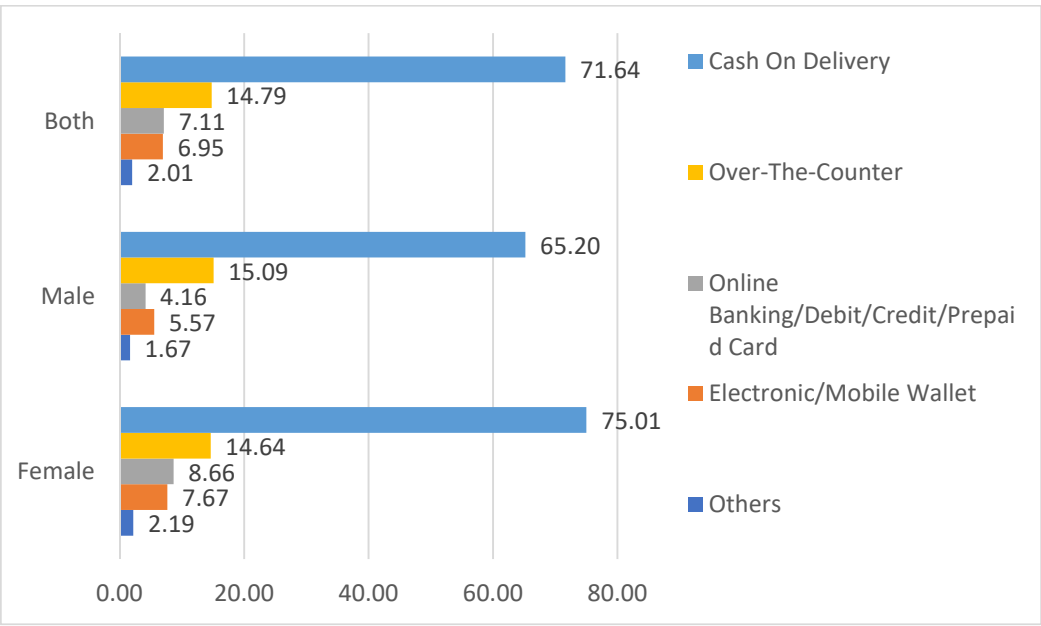
Figure 6 Platforms used by online sellers, by sex (% of online sellers)



Source: NICTHS

The dominant mode of payment is cash-on-delivery (COD) with 72 percent of online sellers reporting to have used such mode. This is followed by making over-the-counter payments (15%) in remittance centers and convenience stores (see Figure 7). Only a very small percentage used electronic or mobile wallet (7%) and only 7 percent used online banking, and debit/credit card. It is important to note that 9 in 10 online sellers reported that they recommend online selling to others and the common reason for this is that it is a good income source (74%) and the transactions are fast (71%).

Figure 7 Modes of payment used by online sellers

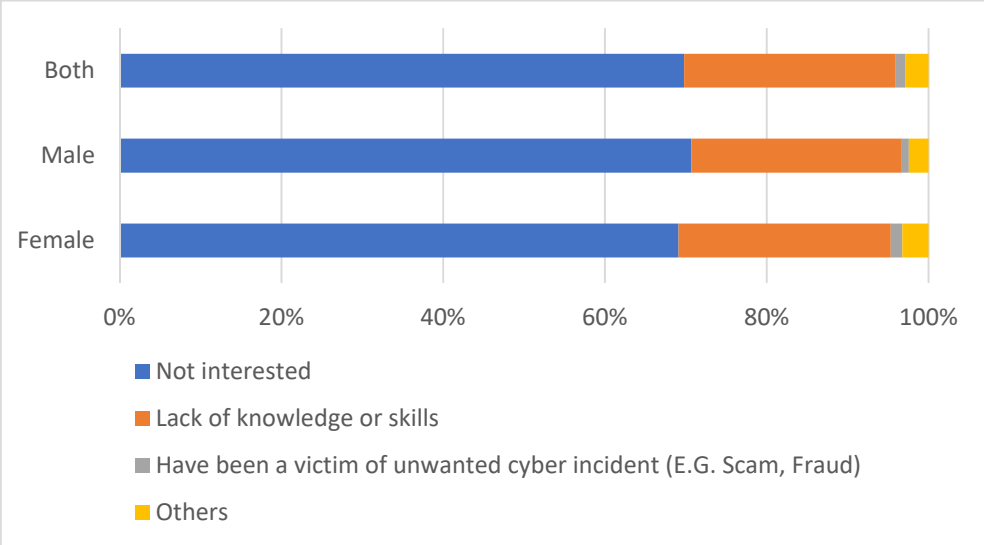


Source: NICTHS

The average income earned from online selling is at P7,774 per month. This is slightly higher among male online sellers at P10,898 compared to a mean of P6,041 for women. A large proportion (71%) of all online sellers earn P10,000 or below each month on the average; 74 percent of women online sellers earn up to P10,000 per month.

The most common reasons behind internet using, non-sellers' decision not to engage in online work is lack of interest (82%) and lack of knowledge or skills (31%), respectively (see Figure 8). The survey showed no disparity between men and women in this regard. In terms age, individuals from 18 to 34 years old comprise the majority (46%) of those who choose not to sell for lack of interest. This is followed by individuals aged 35 to 54 years old (25%). Individuals aged 10 to 18 years old leads the majority of those who choose not to sell due to lack of knowledge (38%), this time trailed by the individuals from 18 to 34 years old (32%).[4]

Figure 8 Reasons for not selling online among internet users, by sex



Source: NICTHS

With regard to trust, the survey did not find a considerable lack of trust by individuals who are non-platform buyers. To gauge trust, the survey inquired about people's reasons for not making purchases online. The proportion of those who had trust concerns is a low 5 percent. The survey found no difference between men and women in their response. Instead of trust issue, the most common reasons for not purchasing online are lack of interest (61% of non-buyers), preference to shop in person (39%), and lack of knowledge or skill for online

[4] It is important to note that estimates based on age may not be representative of the population. Only one member per household was interviewed for the survey based on the NICTHS dataset, thus vastly limiting sample with regards to age analysis.

purchasing (32%). The lack of knowledge is relatively more common among older individuals (53% among those aged equal to or above 35) than younger individuals (22%).

5. Infrastructure

Many Filipinos face a lot of infrastructural constraints in relation to their access to ICT. While many sub-national regions have almost 100 percent access to electricity, there remains five regions who have below 90 percent proportion of households without electricity including BARMM (84.7%) and Region IX (88.6%). The survey shows 5 percent of all households do not have electricity at home. Some 17 percent of households do not have television at home. Some 10 percent of barangays are still without cellular phone signals, only 40 percent have TV signals in their area, and only 3 out of 10 barangays have fiber optic cables installed. Only around 18 percent of households have their own internet access at home. Efforts to install free public Wi-Fi in the barangays have a long way to go as only 13 percent have such.

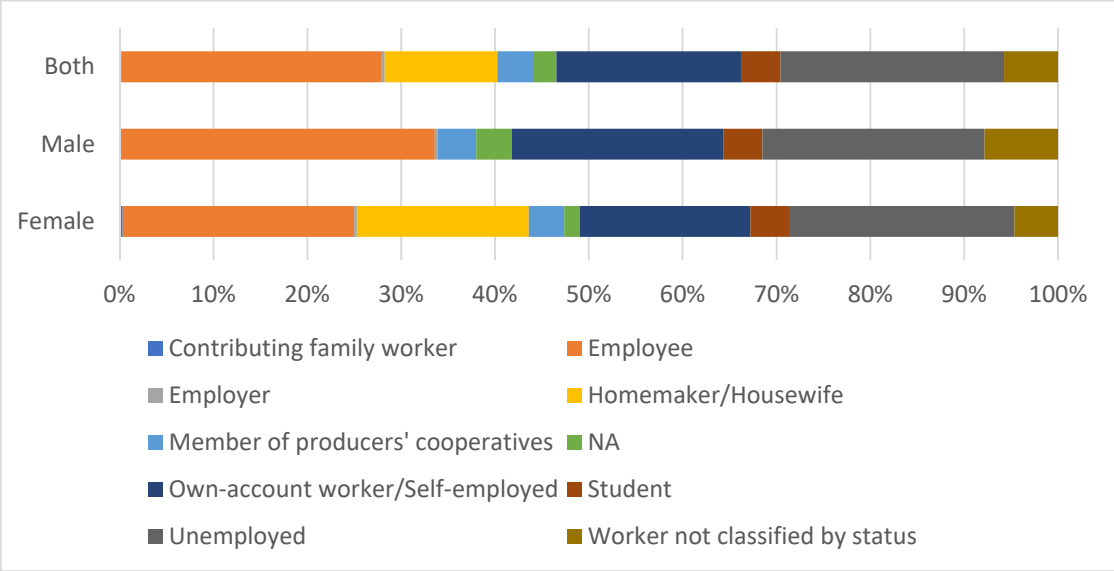
6. Gender Dimension

The NICTHS results do not show wide variation in men's and women's overall access to ICT; though women are slightly at an advantage in several aspects. There is no distinguishable disparity between men and women in Internet usage and computer usage. There are slightly more women (81%) than men (77%) who use the cellular phone. Awareness in online business transactions among women is higher at 51% compared to 47% of men. More women (11% of internet users) than men (8.8%) have online buying/selling account. More women also engage in online purchasing. There is no difference between percentage of women and men with online bank accounts. The holds for usage of electronic wallet.

Looking more deeply into the characteristics of women online sellers, the largest proportion (25%) is under the category employed which is consistent with the finding that online selling is a supplementary income source for many women. Also, the aggregate of homemakers and self-employed is at 36 percent of all women online sellers. Interestingly, some 24 percent of female online sellers were categorized in the survey as unemployed.[5]

[5] In the Philippine Statistics Authority official definition of employed, being employed refers to having a work or job for at least 1 hour within the reference week; online selling for at least one hour would qualify the individual as employed. This suggests that online selling was not treated as work or job in the NICTHS definition; that is why some online sellers were categorized as unemployed although they were conducting such economic activity.

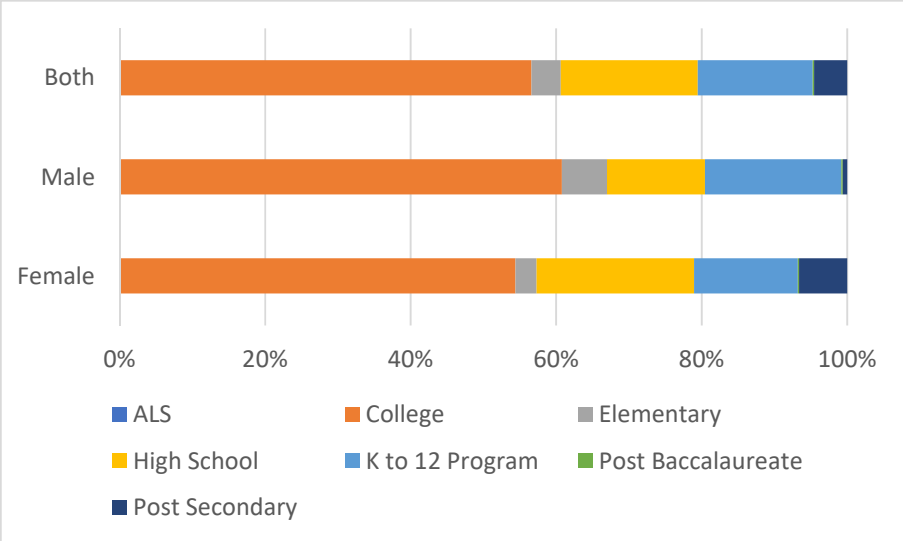
Figure 9 Online sellers, by type of work



Source: NICTHS

People who are finding livelihood opportunities in online selling are mostly the highly educated ones or those who had college education. This is true for both men and women online sellers. This points to the need to improve ICT use opportunities for the less educated.

Figure 10 Women online sellers, by level of education



Source: NICTHS

More women (93%) than men (89%) positively recommend online selling to others. A higher proportion of women (79% compared to men's 63%) also perceive that online selling is good income source. Also, more women (73%) than men (65%), noted that online selling offers fast transaction.

7. Recommendations

The continuing emergence of ICT and the industries that come with it, particularly online selling, seems to spur economic participation from otherwise disengaged members of the population. Online selling appears to be a viable option for homemakers to engage in economic activity, which could possibly lead to high income and improved well-being for their families. This opportunity is also extended both to employees that want to augment their income, and the unemployed, though an interesting point is raised on whether unemployed workers that are into online work can still be classified as such. However, prevailing disparities in ICT utilization brought about disparities in education, and availability of ICT infrastructure, if not addressed, may prove detrimental in bridging gaps and providing equal opportunities.

Efforts to improve ICT access and to encourage people to utilize ICT more in their daily activities must focus on improving awareness, knowledge and skills for using ICT. The survey found that ICT usage offers a lot of opportunities, that Filipinos are confident in using it in their daily lives and business transactions, and are hopeful and positive in the benefits that they can gain through it. However, the low awareness (such as in online financial transactions) and lack of knowledge of many in using the Internet prevent them from maximizing the gains from ICT. Older people and those who have low educational attainment must be targeted in information and education programs. Online women sellers, for instance, consist of mostly high-school- and college-educated individuals.

In online purchases, the dominant use of cash-on-delivery may also be related to the lack of awareness in how to use available online financial technology. In relation to addressing the skills gap with regards to the utilization of ICT, efforts must also be made to improve access and usage of the available technology, as the tedious process of installing and registering for particular online services may disincentivize prospective users to participate.

Another important aspect to focus on is infrastructure. There remain some parts of the country without access to basic infrastructure like electricity. Improving coverage of mobile phone signals are crucial in improving access because most users utilize cellular phones in accessing the Internet.

One of the important policy questions involving the rise of online platforms and online entrepreneurship opportunities is how to improve online entrepreneurs' access to social protection. Most online sellers utilize social media platforms rather than their own websites. Therefore, a feasible channel for introducing social protection initiatives may be through government's engagement or partnership with online platforms especially social media platforms where most online entrepreneurship by individuals are being conducted. Requiring them to register for social insurance at this level of earnings may be too constraining. Though the possibility of linking government services to these platforms must be carefully explored, there are definite benefits in using social media as way to disseminate information and awareness on essential public services such as social protection. For example, the platforms,

however, can initiate avenues for enrolling in social insurance such as SSS and PhilHealth as an option.

It is important to note however that an overwhelming majority of online sellers use online selling not as primary income source but as supplementary source of livelihood. The average income earned each month is only up to P10,000 for 85 percent of these online sellers. It is important for the government to provide a facilitative policy environment with regards to online selling businesses. Efforts that narrow the digital divide are crucial so that all segments of the population can equitably benefit from the gains of ICT with respect to improving access to livelihood opportunities.

Finally, rigorous and comprehensive exploration into this relatively new field of study would require that currently available and future data is structured towards addressing the nuances brought about by ICT and the online industry. A concrete step towards this direction is the further alignment of the NICTHS to conform to the official definitions of other official surveys of the Philippine Statistics Authority (PSA), and possibly explore linking such surveys together so that more comprehensive data may be available to analyze issues regarding ICT and the online sector. Having additional characteristics regarding the labor status, income and skills of individuals, as well as household variables such as household income and assets could prove beneficial in finding linkages and correlations regarding the profile and participation of people in the online sector. Data regarding the amount of time an individual dedicates to their online venture may also be useful, especially in explaining the disparity of incomes between male and female online sellers. Evidently, strong foundations in the formulation and gathering of information shall be key in providing relevant and evidence-based recommendations for this sector as it continues to grow. It is important to note that this study provides only a general overview; more in-depth, possibly qualitative and behavior-based analyses can provide better understanding of the opportunities and constraints in ICT use.

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ANNEX

Table A.1 Test of difference of proportion of usage to total population on ICT usage, between women and men

ICT Usage	Difference	t-value
Cellphone usage	*0.381****	*7.65*
Computer usage	*0.005*	*0.9609*
Internet usage	*0.009***	*1.613*

Note: Null hypothesis: diff = mean(Female) - mean(Male)=0.

** Cannot reject the alternative hypothesis: diff = mean(Male) - mean(Female)>0 at 0.05 level significance

***Cannot reject the alternative hypothesis: diff = mean(Male) - mean(Female)>0 at 0.01 level significance