

# Towards Measuring the Platform Economy : Concepts, Indicators, and Issues

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# Agenda

## 1. Introduction: Digital Transformation

## 2. Measuring Platform Economy

- Defining Platforms and Typology of Platforms
- Indicators and Data Sources
- Some Issues

## 3. Summary and Ways Forward

# 1. Introduction: Digital Transformation

- Markets of all kinds are becoming increasingly **digital and digitalized**, largely due to rapid use of the **Internet**.
  - By end 2019, Internet has penetrated half (48.2%) of Asia’s population, compared to a tenth (9.7%) in 2015 (ITU, 2020).
  - Global internet protocol traffic, a proxy for data flows, has risen from 100 GB per second in 1992 to 46,600 GB per second in 2017.

- **Digital transformation** driven by **digital data** and **platform-centric ecosystems**



- “Platformization” is raising **measurement issues** and **new data needs**.
  - Measurement of platform economy could improve various statistics, e.g., inflation, productivity, and various economic and financial statistics.

# 1.1. Internet and Social Media Use in Philippines

- **Growing use of internet and social media** also in PH.



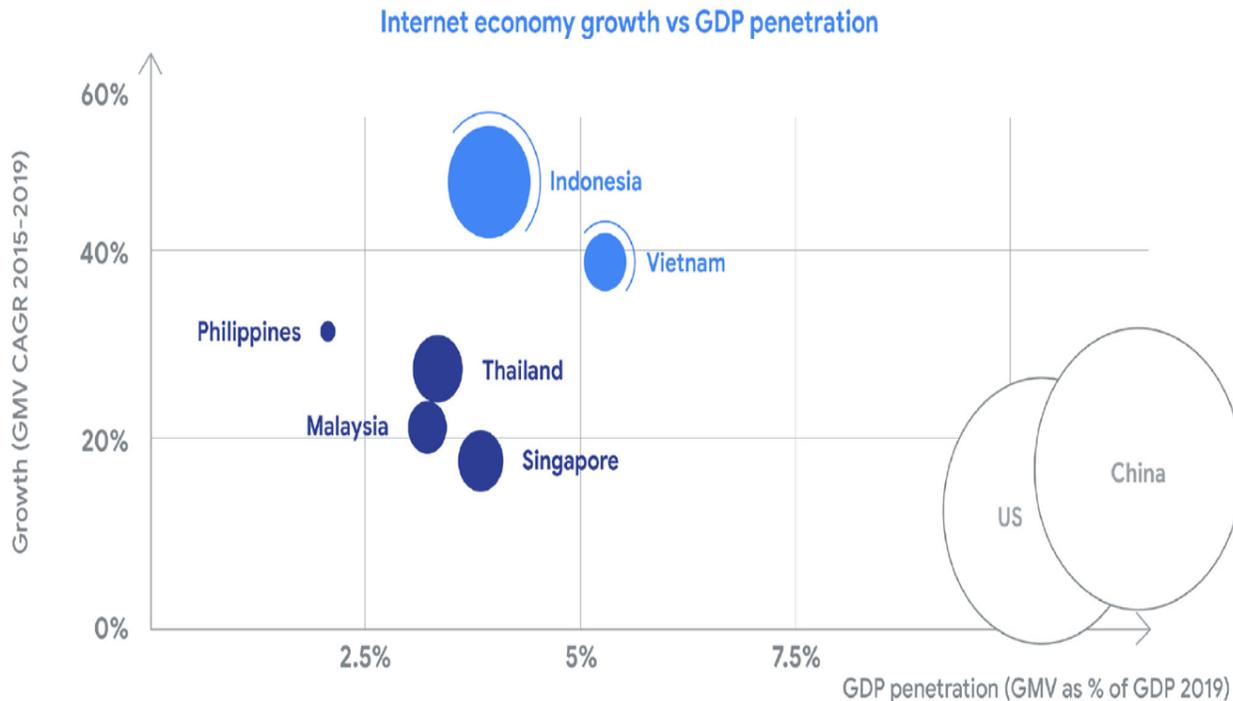
- ITU: net penetration in PH is 60.1 % in 2017 up from 2.0% in 2000.
- WeareSocial : As of Jan 2019, **PH (10 hours) leads in** the "average amount of **time spent** per day" on internet. Average time on social media is 4 hours. Number of FB users in PH was 79M.
- Slightly more than half (52%) of FB users in PH are female; the bulk (17%) among young aged 18-24; Among IG users, females (65%) much more than males; bulk (29 %) of users also between 18-24. Beauty influencers in social media being used to influence buying behavior.



- GlobalWebIndex:  $\frac{3}{4}$  of net users aged 16 - 64 already shop online, but e-commerce market is small
- Statista: Filipinos spent US\$4.7B on online purchases in 2018, with more than  $\frac{3}{4}$  of this –US\$3.5 billion – on **online travel** purchases. About 5 percent of e-commerce spending went to **fashion and beauty**, another 5% to **electronics**, while 2.5% each on (a) food & personal care; (b) furniture & appliances; (c) toys ; (d) video games.

# 1.2. Varying Estimates of PH Internet/Digital Economy

Google, Temasek and Bain & Co. (2019) : internet economy in PH at \$ 2.5 billion (equivalent to 2.1% of GDP) growing between 20% and 30% annually since 2015.



- Hinrich Foundation (2019) : digital trade-enabled benefits to PH valued at ₱160 billion (US\$3.2 billion)
- UNCTAD: ICT sector value added in PH estimated to be in the range of 3.2 to 4.5 percent of GDP. PSA estimate of digital economy is 10.1% of GDP in 2018 (up from 6.9% in 2012)
- Digital Filipino and I-Metrics (2018) estimates e-commerce in PH at 9.5% of GDP (based on purchasing managers index)

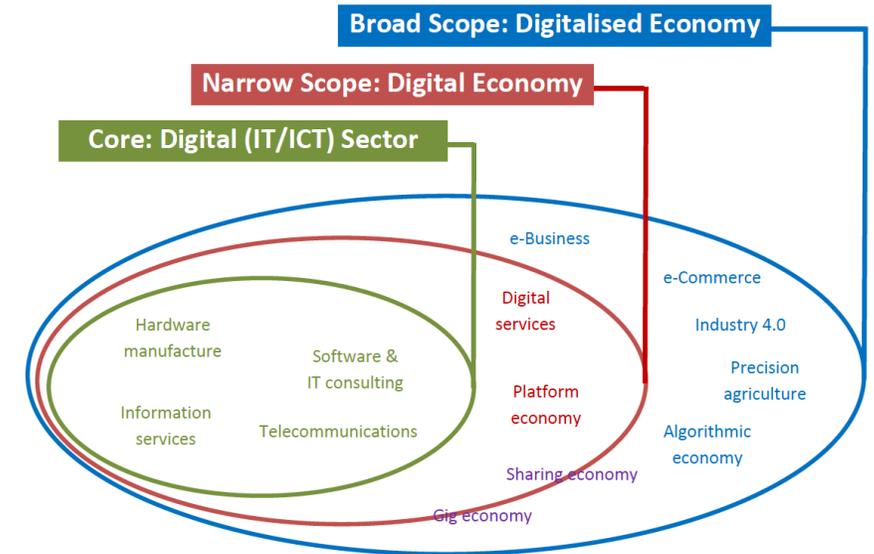
NOTE: Varying estimates of “internet” economy due to differences in statistical frameworks, coverage and data sources

# 2. Measuring the Platform Economy

*Three Dimensions of Digital Transactions.*

## Challenges

- Platform economy is not currently measured by many NSOs given **absence of commonly accepted definition of “platforms”**.
- Even broader **“digital economy”** is also not commonly measured by countries due to absence of def’n of **“digital sector”**.
  - In 2016, the OECD surveyed countries on national accounts compilation practices regarding the digital economy. The 29 responses generally showed slow progress in developing estimates of the digital sector.
  - In 2017, the IMF extended survey to some non-OECD countries (with 11 responses). Many responses indicated that measuring digital sector was not a priority

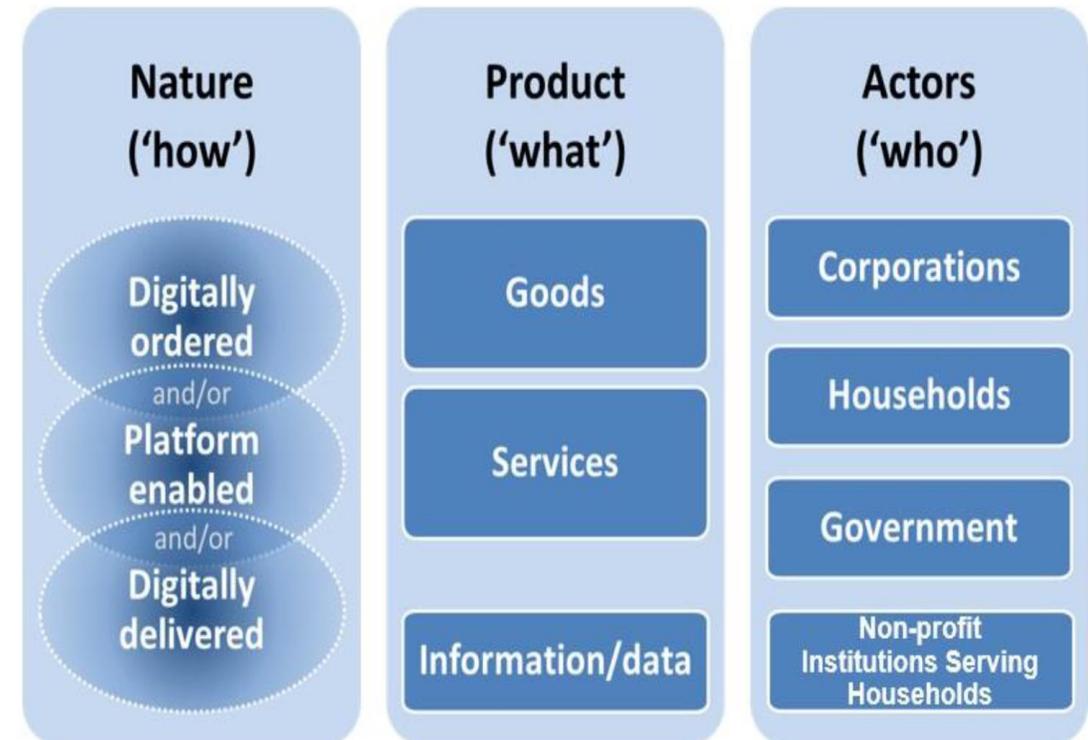


Source: Bukht and Heeks (2017)

## 2. Measuring the Platform Economy

- Defining *digital transactions* is an alternative to defining the digital economy.
  - OECD advisory expert groups on a digital economy satellite account in national accounts and on digital trade in balance of payments statistics take this approach. The possible criteria for distinguishing digital transactions include *how* the transaction is made (digitally ordered, enabled or delivered), *what* is transacted (goods, services or data), and *who* is involved (consumer, business or government).

### Dimensions of Digital Transactions



Source: Fortanier and Matei (2017).

# 2. Measuring the Platform Economy

## Other Challenges & Partial Solutions

- Platform economy is **cross-sectoral** & doesn't easily fit in classifications.
  - **Platforms** and even providers may **not** be **physically located in a country** concerned, therefore their economic transactions are not directly part of national statistics
  - **Transactions are not always financial**, e.g., data and information. **Transactions are not always financial**. Economic **data such as revenue and employment** are **difficult to trace** since platforms spread supply across small-scale non-professional providers. Earnings and employment of these platforms may be under-estimated in traditional business/labor force surveys. Many platforms do not publish their accounts or disaggregate them across country boundaries.
  - A further challenge is that **businesses are not the only actors** in the platform economy; a large numbers of individuals also participate in platforms
- **Ad hoc methods, e.g., web scraping of site usage**, together with conduct of **new surveys**, are used by private sector data providers (such as Statista, GlobalWebIndex, GSMA Intelligence, App Annie). **Extent of coverage unknown.**

## 2.1. Defining Platforms

- A platform is a “digital intermediary and infrastructure that brings together various parties through the internet to interact, thereby matching supply and demand in a multi-sided market”.
  - Platforms, in short, are digital matchmakers (two functional layers: interactions and infrastructure)
  - They facilitate transactions, networking and information exchange

**Table 1. Possible relations between providers and users of online platform**

		User			
		Consumer/Peer	Business	Government	Science
Provider	Consumer/Peer	C2C	C2B	C2G	C2S
	Business	B2C	B2B	B2G	B2S
	Government	G2C	G2B	G2G	G2S
	Science	S2C	S2B	S2G	S2S

## 2.2. Understanding Processes in Platforms

### Main Characteristics of Platforms

- Based on an **infrastructure** enabled by internet technologies
  - A multi-sided and mostly open market, that involves an **ecosystem** of actors
  - Facilitates multi-sided matching and interactions of providers and users, actively as well as passively. For SE, interactions are limited to those of C2C, C2B and C2G.
  - Enables transactions that can benefit provider and buyer, as well as platform.
- **New business models.**
    - For profit or non-profit
    - Turnover from transaction or access commissions or advertisements or a combination; or from inclusion of extra services (insurance, logistic services or cancelation fees)
  - **Governance** driven by user-generated data
  - Matching and transaction **processes** are often based on a user-driven trust mechanism, including reviews and rating systems.
  - New channel for promotion and marketing (advertisers) of (other) goods and services.

### Process Elements of Online Platforms



## 2.3. Typology of Platforms

- **Categorizations** vary widely . They can be either specific or broader, and are based on different **criteria**, including interaction modality (from B2B to P2P), type of transaction (for-profit to not-for-profit), the users of platforms, the kinds of data platforms collect (or what they do with the data), and the strategies for platform participation, or combinations of criteria
  - Center for Global Enterprise (2016) separate online platforms into four functional categories: (a) transaction platforms (b) innovation platforms (c) integrated platforms, and (d) investment platforms.
  - Platforms can be categorized structurally into (i) superplatforms; (ii) platform constellations, and (iii) stand-alone platforms (OECD 2019)
  - OECD (2019) provides another broad functional typology that classifies platforms into (1) “capital platforms” (e.g., Airbnb which relies on matching capital owners with clients who rent the accommodations) and (2) online labor platforms (such as CrowdFlowers and Microworkers that match workers with hirers).
  - Codagnone et al. (2016) propose two sets of typologies, each involving two criteria. The first set uses profit orientation and interaction modality, while the second set is based on interaction modality and asset mix.

## 2.4. Indicators and Measurements

### Sample data and indicators on platforms and their operations

Data	Indicators
<ul style="list-style-type: none"> <li>• Business Name, Registered Name, and address of owner of platform ; Url(s) of the platform(s)</li> <li>• Year the platform(s) started</li> <li>• Geographic reach of platform</li> <li>• Type of platform:</li> <li>• Product/s and service/s exchanged : asset and service mix (economic activity group)</li> </ul>	<ul style="list-style-type: none"> <li>• Number of Platforms by Region</li> <li>• Proportion of Platforms by Age</li> <li>• Number of Platforms by Geographic Reach</li> <li>• Proportion of Platforms by Type of platform</li> <li>• Number (and Size) of Platforms by Economic Activity Group</li> </ul>
<ul style="list-style-type: none"> <li>• Number of transactions per year in past two years</li> <li>• Average prices per transaction</li> <li>• Average transaction costs made to use the platform (commission and/or access)</li> <li>• Investments and value added</li> <li>• Tax payment</li> <li>• International trade/cross-border transactions Main source or supplementary source of income</li> </ul>	<ul style="list-style-type: none"> <li>• Total number ( and Growth) of transactions per year</li> <li>• Total turnover</li> <li>• Total investments and value added</li> <li>• Percentage of providers paying tax</li> <li>• Share of international trade/cross-border transactions (in percent) to total transactions</li> <li>• Percentage of providers whose income from platforms is main source (or supplementary source) of income</li> </ul>
<ul style="list-style-type: none"> <li>• Verifying providers and checking for illegal content</li> </ul>	<ul style="list-style-type: none"> <li>• Number of platforms by provider verification type</li> </ul>

## 2.4. Indicators and Measurements

### Sample data and indicators needed on providers (of a platform)

Data	Indicators
<ul style="list-style-type: none"> <li>Name of Individual/ household respondent or Business</li> <li>Background characteristics: Location; Year that the provider(s) started offering good or service in platform/s; Individual/household or Business;</li> <li>Reasons to use a platform;</li> <li>Type of goods or services offered (relative to some classification system); Part of sharing economy (i.e., offering use of idle asset, or not)</li> <li>Number of transactions per year (including turnover).</li> </ul>	<ul style="list-style-type: none"> <li>Total number of unique providers by type</li> <li>Total number of unique individual providers (active or passive) by location (urban/rural, or region)</li> <li>Growth rates in number of unique providers (active or passive)</li> <li>Total number of providers by reasons to use a platform</li> <li>Total number of providers by type of goods or services offered</li> <li>Percentage of providers in sharing economy, by location</li> </ul>
<ul style="list-style-type: none"> <li>Number of transactions per year in past two years</li> <li>Average prices per transaction</li> <li>Average transaction costs made to use the platform (commission and/or access)</li> <li>International trade/cross-border transactions (percentage compared to all transactions)</li> <li>Main source or supplementary source of income</li> </ul>	<ul style="list-style-type: none"> <li>Total number (and Growth of transactions per year and total turnover.</li> <li>Share of international trade/cross-border transactions (in percent) to total transactions</li> <li>Percentage of providers whose income from platforms is main source (or supplementary source) of income</li> </ul>
<ul style="list-style-type: none"> <li>If provider has working relationship to the platform</li> </ul>	<ul style="list-style-type: none"> <li>Sharee of providers w/ working relationship to platform</li> </ul>

## 2.4. Indicators and Measurements

### Sample data and indicators data needed on clients

Data	Indicators
<ul style="list-style-type: none"> <li>• Name of Platform Client</li> <li>• Background characteristics;</li> <li>• Number of visits to an online platform per year (or month or week);</li> <li>• Number of transactions per year (money spent, including the commission to the platform);</li> <li>• Type of goods or services bought or shared;</li> <li>• Reasons to use online platform(s)</li> <li>• Trust in platforms (e.g. role of reviews and rating systems)</li> </ul>	<ul style="list-style-type: none"> <li>• Total number of unique clients by type (individual/household vs businesses)</li> <li>• Total number of unique clients by sex and by location (and growth or decline)</li> <li>• Average number of visits to a platform per year (or month or week)</li> <li>• Total number of clients by type of goods or services bought or shared</li> <li>• Average prices for major good or service bought or shared</li> <li>• Total number of clients by reason for using platform(s)</li> </ul>
<ul style="list-style-type: none"> <li>▪ Average number of transactions per year (or month or week)</li> <li>▪ Average expenditures on platforms, including the commission to the platform)</li> <li>▪ International trade/cross-border transactions (to total transactions) in platform</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of transactions per year</li> <li>▪ Growth / decline of transactions per year</li> <li>▪ Average expenditures on platforms by type of platforms (including the commission to the platform)</li> <li>▪ Share of cross-border transactions to total transactions in platform</li> </ul>
<ul style="list-style-type: none"> <li>• If provider has working relationship to the platform</li> </ul>	<ul style="list-style-type: none"> <li>• Sharee of providers w/ working relationship to platform</li> </ul>

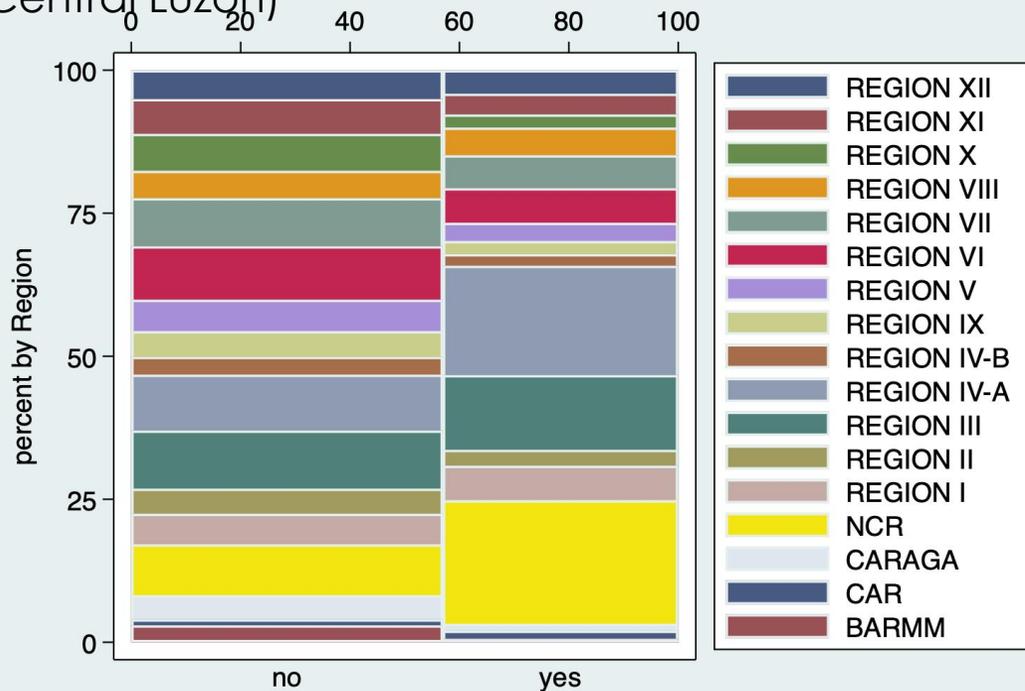
## 2.5. Data Sources

### Possible options

- Retrofit existing surveys, e.g., LFS (working conditions); business surveys; ICT usage of households, and ICT surveys of firms
- New survey of platforms: general (international) experience is that most online platforms are not very willing to share their information.
  - Besides, they often have less information about their users. Issue is also how to make platforms supply their data to NSOs, even when their HQ is outside a country. Dedicated surveys, possibly coordinated at regional levels for developing economies, that could target providers and users as well as the platforms themselves
- Innovative data (e.g., web scraping) integrated with traditional data sources

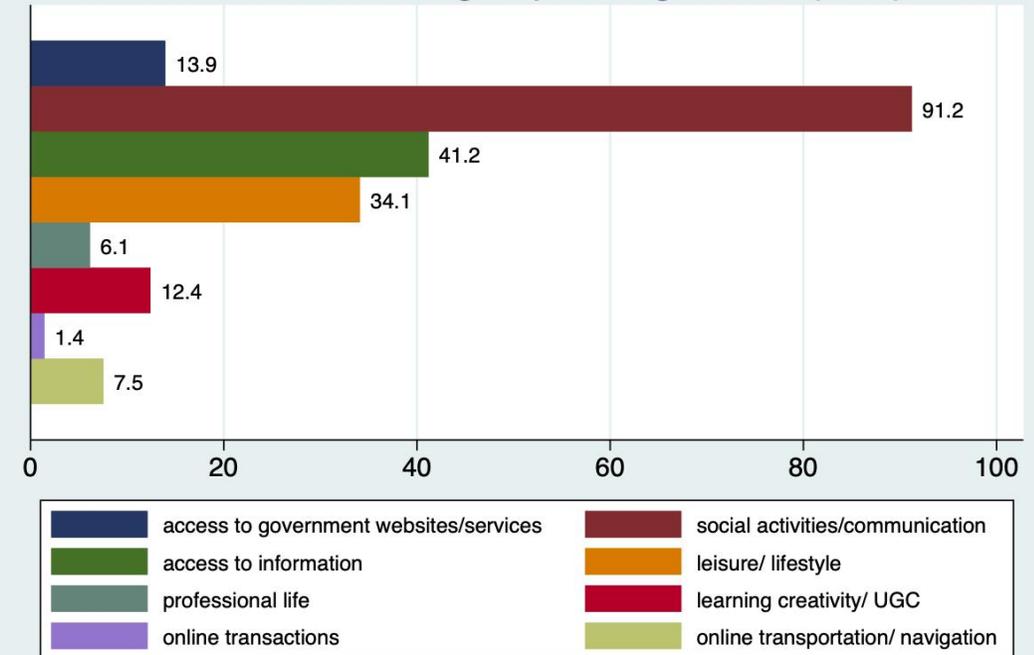
## 2.5. Data Sources

Results of **National Household ICT Survey** conducted in PH by DICT in 2019: suggest that among Filipinos aged 10+, 43 % use internet; of which more than half (53%) are in Metro Manila (NCR) and nearby regions (CALABARZON and Central Luzon)



In the last three months, have you used the internet from any location

Internet Use Among Filipinos aged 10+ (in %)



Among Filipinos aged 10+ who go online, bulk of activity for private or personal purposes is on social activities/ communication (91%); followed by access to information (41%) and leisure/lifestyle (34%). Around 1% go online for online transactions.

## 2.5. Data Sources

- NICTHS shows that **15.5 Billion PhP** was **spent monthly by households** on online purchases, led by Calabarzon, Metro Manila and Central Luzon that have a combined 70% share of total expenditures in PH.
  - A third of total online spending was on clothing, while about a fifth of total expenditures on online purchases was on household goods; meanwhile a tenth of total online spending each was on electronics, and on cosmetics
- **Total monthly income** across PH averaged **12.3 billion PhP**, with clothing garnering a fifth of online income, while a tenth each went to cosmetics (and fragrances), and another tenth came from income from food (including groceries, alcohol and tobacco).
- **Average monthly income of Filipinos** estimated at around 90US\$ (8700 PhP) from online selling in the Philippines.
  - Across regions, Davao and Eastern Visayas led in mean income from online selling, thus suggesting that while spending is skewed toward the Metro, the income from online transactions tend to go outside of the Metro.
  - PSA should integrate such information into the production side of national accounts, as currently accounting of household activities are treated more on the expenditure side.

# 3. Summary and Ways Forward

- **New data needs** arising on platforms.
  - Platform economy measurement is a challenge because of complexity, cross-sector and cross-border capacity, and rapid changes in digital products.
  - International organizations have set up work programs to advance statistical & conceptual frameworks to consistently measure digital economy.
  - NSOs can re-engineer their existing surveys, e.g., LFS, business surveys, HH (and Business) Survey on ICT usage, and supplement traditional data collection with innovative sources (web scraping).
- **Increasing production** from households, food and accommodation industries and culture and recreational industries has **measurement implications for economic performance and labor market.**
- **Rise of platform economy** have wide **policy implications**
  - data privacy and security
  - competition
  - digital taxation

for continuing positive dynamics of social good and encouraging inclusion.



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