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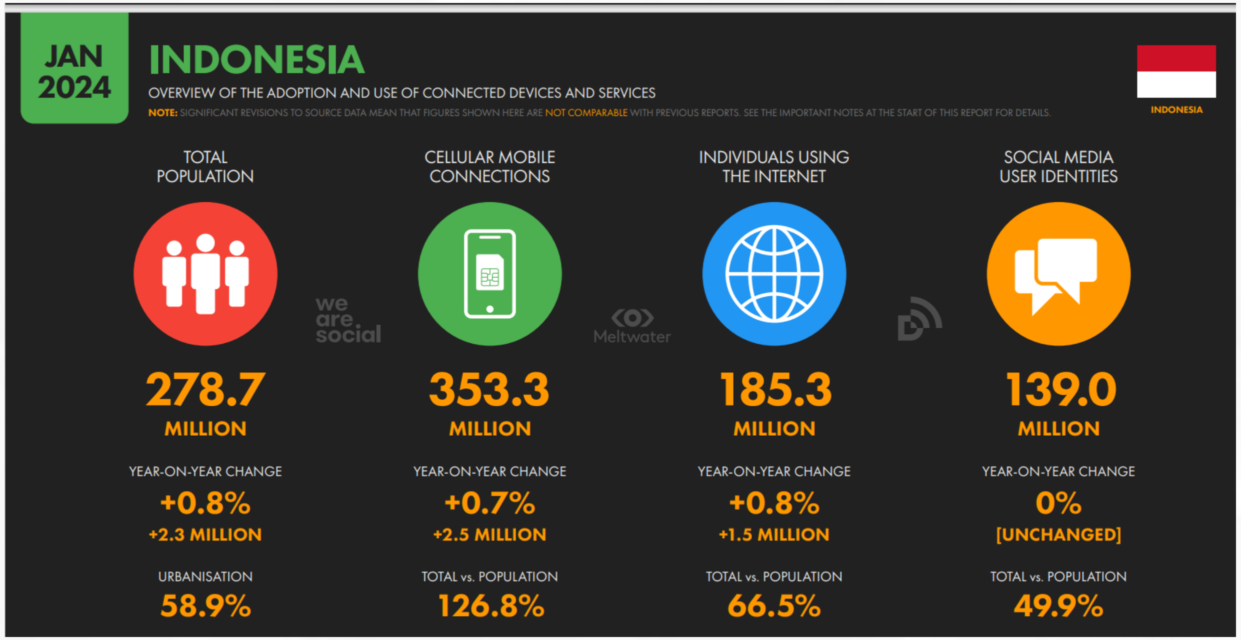
BANK SENTRAL REPUBLIK INDONESIA

Indonesian Approach: Compilation of Digital Trade in Goods and Services

Bank Indonesia
December 11th , 2024

Profile of Mobile, Internet, & Social in Indonesia (Jan 24)

Indonesia has a very attractive profile and high prospects for the development of the digital economy in line with the high population and ease of digital access.



Sources : U.N.; GOVERNMENT AUTHORITIES; GSMA INTELLIGENCE; ITU; EUROSTAT; CNNIC; KANTAR & IAMAI; PLATFORM RESOURCES; OCDH; BETA RESEARCH CENTER; KEPIOS ANALYSIS

JAN 2024

TOP WEBSITES: SIMILARWEB RANKING

SIMILARWEB'S RANKING OF THE MOST VISITED WEBSITES, BASED ON WEBSITE TRAFFIC BETWEEN DECEMBER 2022 AND NOVEMBER 2023

INDONESIA

#	WEBSITE	TOTAL VISITS (MONTHLY AVE.)	UNIQUE VISITORS (MONTHLY AVE.)	AVERAGE TIME PER VISIT	AVERAGE PAGES PER VISIT
01	GOOGLE.COM	1.97 B	111 M	9M 06S	8.3
02	YOUTUBE.COM	814 M	63.9 M	19M 29S	11.2
03	FACEBOOK.COM	432 M	51.9 M	8M 23S	7.6
04	INSTAGRAM.COM	222 M	34.7 M	8M 13S	11.4
05	WHATSAPP.COM	191 M	29.8 M	16M 05S	1.7
06	SHOPEE.CO.ID	184 M	52.4 M	6M 11S	4.7
07	TWITTER.COM	177 M	25.5 M	12M 02S	13.1
08	DETIK.COM	155 M	28.9 M	4M 31S	3.0
09	KOMPAS.COM	143 M	35.6 M	3M 57S	2.5
10	TRIBUNNEWS.COM	138 M	37.2 M	3M 55S	2.7
11	TOKOPEDIA.COM	103 M	24.2 M	7M 37S	6.9
12	YANDEX.COM	85.4 M	12.7 M	8M 01S	11.3
13	XNXX.COM	77.1 M	8.97 M	6M 51S	12.6
14	HOTSTAR.COM	77.1 M	21.0 M	6M 20S	5.4
15	TIKTOK.COM	71.3 M	24.1 M	3M 33S	7.6
16	WIKIPEDIA.ORG	68.4 M	21.5 M	3M 46S	2.6
17	OPENAI.COM	67.6 M	9.67 M	5M 47S	5.9
18	LAZADA.CO.ID	64.5 M	27.9 M	4M 35S	3.3
19	HEYLINK.ME	62.2 M	10.7 M	3M 12S	2.1
20	CNNINDONESIA.COM	55.1 M	18.6 M	1M 28S	2.0

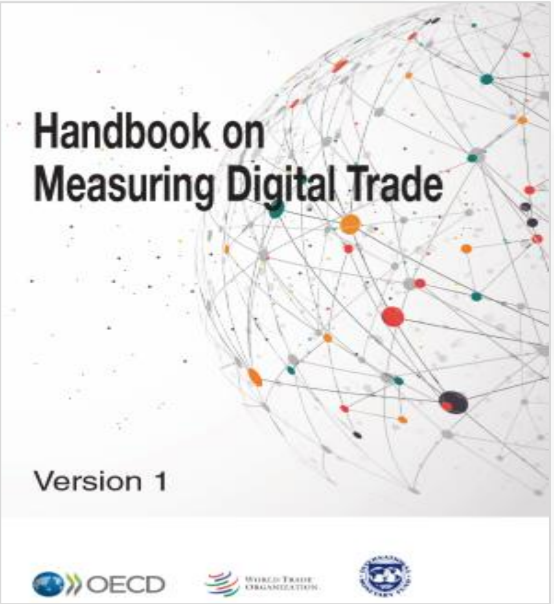
SOURCE: SIMILARWEB. RANKING AND VALUES BASED ON TRAFFIC BETWEEN DECEMBER 2022 AND NOVEMBER 2023. N

Thinking framework of cross-border digital trade statistical compilation

ICT has triggered deep changes in economy

New Statistical tools are needed to measure

Digital Economy



Digital Trade

Cross border
Digital Trade
(Goods & Services)

OUTPUT OF DIGITAL TRADE STATISTICS

1. **Transactors of *cross border digital trade in goods and services*** (exporter & importer).
2. **Transaction Model of *cross border digital trade in goods & services*** (*digitally ordered, digitally delivered*).
3. **Transaction amount, partner countries and commodities of *cross border digital trade in goods & services***

Bank Indonesia Approach

The methodology does not currently include **surveys**. Primarily using **"digital trader" approach**, that is, identifying whether the importers or the exporters use digital channel, then match their transactions data as digital trade

Using analytics extensively, especially for **entity resolutions techniques** to match different databases that is used to compile the statistics.

Capturing **low-value transactions** through customs **e-commerce reporting requirements** and **credit card transactions data**

Complement the information with FGDs with big corporations which likely use **internal systems** for intra-group transactions

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Data Sources

The compilation of cross-border digital trade statistics utilizes five main data sources...

International Transactions Reporting System (ITRS)

Identify cross-border digital trade transactions through several **Transaction Code (TC) related to Goods and 8 types of services**, as well as considering the financial affiliation between the actors.

Official Data (customs & telco authorities)

- Identify imported goods that are indicated to be transacted via e-commerce through invoice submitted by the trade platform
- Identify cross-border electronic system organizers through telco authorities

KEMENTERIAN KEUANGAN
DIREKTORAT JENDERAL BEA DAN CUKAI
KOMINFO
Direktorat Tata Kelola Aptika

Marketplaces

Data related to the profiling of exporters which use DIP for their sales order

InaExport
MADE IN INDONESIA

Websites & Data Provider

Profiling the companies for website sales presence and identifying passenger air transport digital order.

Credit Card and Debit Card (Monthly Bank Report)

Identify credit card and debit card transactions from Monthly Bank Reports which is categorized as digital trade transaction.

01 02 03 04 05

Digital Trade – Goods Export & Import

Digital Trade – Services Export & Import

Methodology Framework

Compiling cross-border digital trade statistics on goods and services involves 3 main processes: profiling of digital trade actors, data processing and analysis, statistics compilation and output analysis...

Input | **Process** | **Output**

1 ***Profiling* the Actors**

Platform/ Website

Import Declaration

Export Declaration

ITRS

Electronic System Operator/E-Commerce Platform

Filtering

- *Web Scraping* *)
- *Website Profiling*
- Classification of financial relationship (affiliation)
- *Focus Group Discussion* (FGD)d

Disaggregation

- *Digital Intermediary Platform (DIP)*
- *Internal System (IS)*
- *Website*

***Database of* Digital Trade Actors**

Database of Transaction Value (ITRS, Declaration, E-Commerce Platform, Credit & Debit Card

Advanced Analytics

2 ***Data Matching (Entity Resolution/*ER) *)**

Google Data Studio

CLOUDERA

3 ***Data Processing & Analytics***

- Cleansing/ Deduplication
- Classification of Business Model

Digital Trade Statistics of Goods and Services

Methodology – Details on Goods

Identify the digital trader:

- **Clean ITRS data** with **entity matching algorithm** (string similarity) and use the resulting database to identify digital trader using **internal systems** and **websites**:
  - **Filter financial relationships**, then do pilot surveys on related parties transactions (internal system trader)
  - **Identify website commercial presence** (ability to order) to identify website trader
- **Web scraps marketplaces data** on exporters (e.g. INAEXPORTS, Made in Indonesia) to identify **DIP traders**

Match trader with transactions data:

Use **entity matching algorithm** of the identified digital traders **with the customs data**

Augment (import only) with Consignment Note and Card Payment Data:

- Customs has rules for e-commerce platforms that imports more than 1.000 goods a year to submit invoices of those transactions to be matched with the low-value consignment notes goods. Customs also has field to identify sender’s name, which includes DIP senders (which has not submitted invoices yet).
- BI use the resulting data to augment digital trade imports through DIP
- Debit and credit card payment with criteria of: i) off-us international transactions and ii) card not present is assumed to be the population of retail digital trade transactions, thus act as a limit for the retail goods import

Methodology – Details on Services

Identify the digital trader:

- **Clean ITRS data, filter financial relationships and do website profiling (same as goods)**
- Additionally web profile the services provided to identify the digitally delivered products,
- Do pilot survey to largest transactors in each components to confirm the pre-profiling patterns
- Use the patterns to other pre-profiled traders
- Directly use ITRS transactions data with the filter of identified traders

Use **entity matching algorithm** (string similarity) of the identified digital traders **with the customs data**

Augment with Transport Data Provider:

- BI has subscription to an aircraft passenger data provider, which can identify flights that are booked through DIP's
- We use the percentage of flights booked through DIP to determine the digital trade for aircraft passenger components

Augment with card payment data:

- Use the residual of card payment data (minus goods import and aircraft passenger value) to augment the other services data

Output Extracted from the Approach

Share of Digital Trade to Total Indonesian International Trade

Identify specific products and to which countries they are traded to identify opportunities

Tracking external balance impact from Digital Trade

Mostly used channels in conducting digital trade, currently only for goods (website, DIP, internal system)

Challenges and Way Forward

The current digital trader approach, while has an advantage of granularity, is quite resource intensive to update. BI will consider augmenting the approach with:

- Generalizable surveys, especially to obtain other dimensions, e.g. mode of supply
- Further automating website profiling through analytics (especially to extract unstructured data)
- Approach tax authority for digital VAT returns data to augment the retail digital services provided (e.g. Netflix, etc)

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THANK YOU