Internet Poverty Index

Methodology Note

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Access to the Internet has become a basic need.
What is the Internet Poverty Index?
The two indices offer two different perspectives on internet poverty and the underlying prices. The Internet Poverty Index (IPI) combines price and spending data to access how many people can (not) afford a basic package of mobile internet. The Big Byte Index ranks countries by their prices.

Hence, countries can rank very differently in the two indices. For example, a rich country could have high prices (i.e. have a high Big Byte Index), but still have low Internet Poverty, as people can afford these high prices.
How is Internet Poverty calculated?

CREATE COMPARABLE MEASURE - BASIC PACKAGE OF MOBILE INTERNET

**Quantity**
- Data included in internet baskets
- Data needed for different applications (e.g. news, education)

**Threshold:** 1GB data-only mobile broadband

**Quality**
- Download/upload speed
- Bandwidth
- Latency
- 2G/3G/4G coverage
- # of servers per 1M people

**Threshold:** 10 Mbps of download speed

**Affordability**
- Price of mobile internet
- Share of total individual expenditure on access to mobile internet

**Threshold:** 10% of total spending
How is Internet Poverty calculated?
How is Internet Poverty calculated?

CREATE COMPARABLE MEASURE

- **Affordability threshold**
  - Around 20% of the population of West Africa have access to mobile internet (Rodríguez-Castelán et al. (2021))
  - Combined with collated data on internet prices, evident that people in these countries spend up to 10% of their total expenditure on mobile internet services

- **Quantity threshold**
  - Reasonable threshold for minimum package; also used by ITU

- **Quality threshold**
  - Set as such that 25% of countries globally have worse connection, 75% have better quality (2019)
How is **Internet Poverty** calculated?

1. Combine prices to receive **quantity-adjusted** prices for 1GB in each country.

2. Train a **Random Forest** with the dependent (quantity-adjusted price) and fix all covariates related to internet quality to corresponding threshold to estimate **quality- & quantity-adjusted prices** (for 1GB of mobile internet) for 169 country.

3. Combine quality- & quantity-adjusted prices with **spending data** from World Data Pro.

4. Those who have to **spend more than 10% of their monthly spending** on a basic package (1GB with 10MBps download speed) of mobile internet are considered as **internet poor**.
Internet poverty
share of population that cannot afford a basic package of mobile internet

Internet price
Price for 2.5 GB in USD

Internet quality
Download/upload speed, 2G/3G/4G coverage

Infrastructure
Electricity, urbanization

Economy
GDP/capita, unemployment, inflation, inequality, political stability

Internationally comparable internet prices
Price for 1 GB at fixed quality

WDL data on spending distributions
Partners and Sources
Data Sources.

- Internet Price
  - ITU
  - A4AI

- Internet quality
  - GSMA
  - Ookla

- Infrastructure
  - THE WORLD BANK
  - LiNEA

- Economy
  - THE WORLD BANK
  - UNDP

Internationally comparable internet prices

Data on spending distributions

INTERNET POVERTY INDEX
by WORLD DATA LAB
Our Partners.

Internet Society Foundation

OOKLA for good

Our Data Sources.

OOKLA

WORLD DATA PRO

ITU

International Institute for Applied Systems Analysis

GSMA

THE WORLD BANK

INTERNATIONAL MONETARY FUND

A4AI
Further information & citation
Publications & Blogs.

Ending internet poverty

Internet Poverty: The Next Frontier in Development

Measuring Internet Poverty

The 2023 Internet Poverty Index: Creating Connectivity for All

Read here

Read here

Read here

Read here
Citation.

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  author = {World Data Lab},
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References.

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