

Universal and meaningful connectivity: tackling the measurement imperative

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Fabio Senne
fsenne@nic.br



cetic.br

Centro Regional
de Estudos para o
Desenvolvimento
da Sociedade
da Informação

nic.br

Núcleo de Informação
e Coordenação do
Ponto BR

cgi.br

Comitê Gestor da
Internet no Brasil

DIGITAL INEQUALITIES

CONCEPTUAL OVERVIEW

From digital divide to digital inequalities

Level of analysis

1st level

Infrastructure

- Coverage

Access

- Households
- Individuals

Access quality

- Speed
- Devices

2nd level

Usage

Motivations

Skills

3rd level

Tangible outcomes

Well-being

MACRO

Affordability

Competition

Coverage

Regulation

MESO

Offline networks

Communities

Neighborhood effects

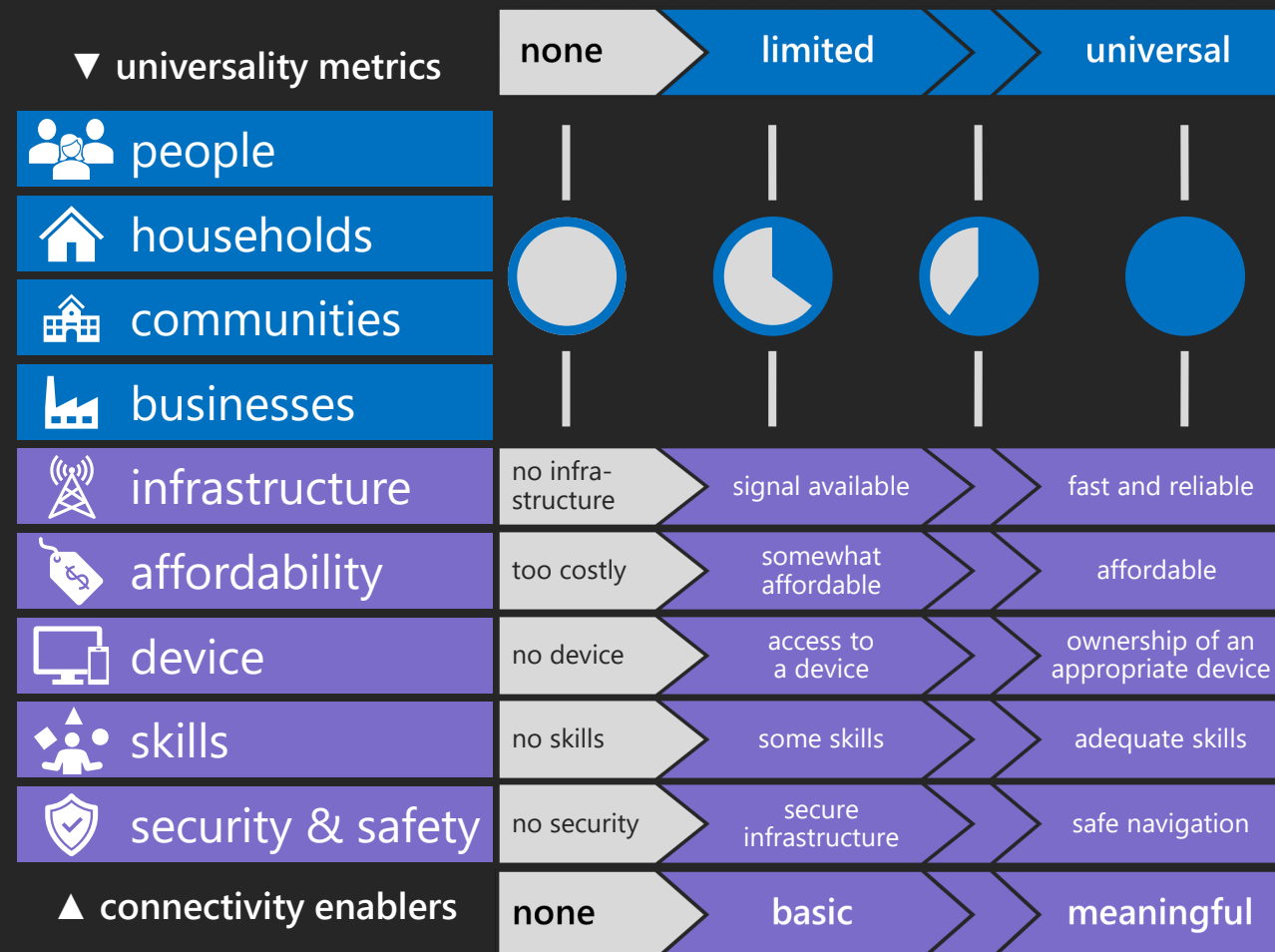
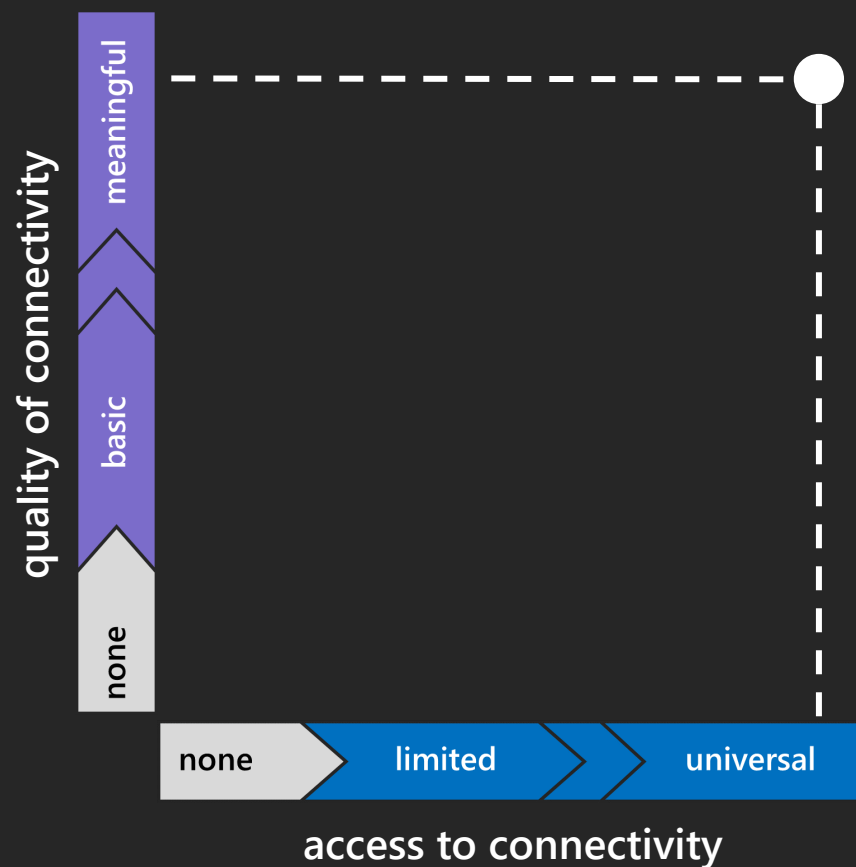
MICRO

Individual demographics
(education, income, age,
gender, etc.)

MEANINGFUL CONNECTIVITY

MULTIDIMENSIONAL APPROACH

The two dimensions of connectivity



SUMMARY

Case study: Brazil

How does Brazil fare regarding meaningful connectivity?

Universal

- People
- Households
- Communities
- Businesses

Meaningful

- Infrastructure
- Affordability
- Device
- Skills
- Security & safety

Final remarks

CASE STUDY: BRAZIL

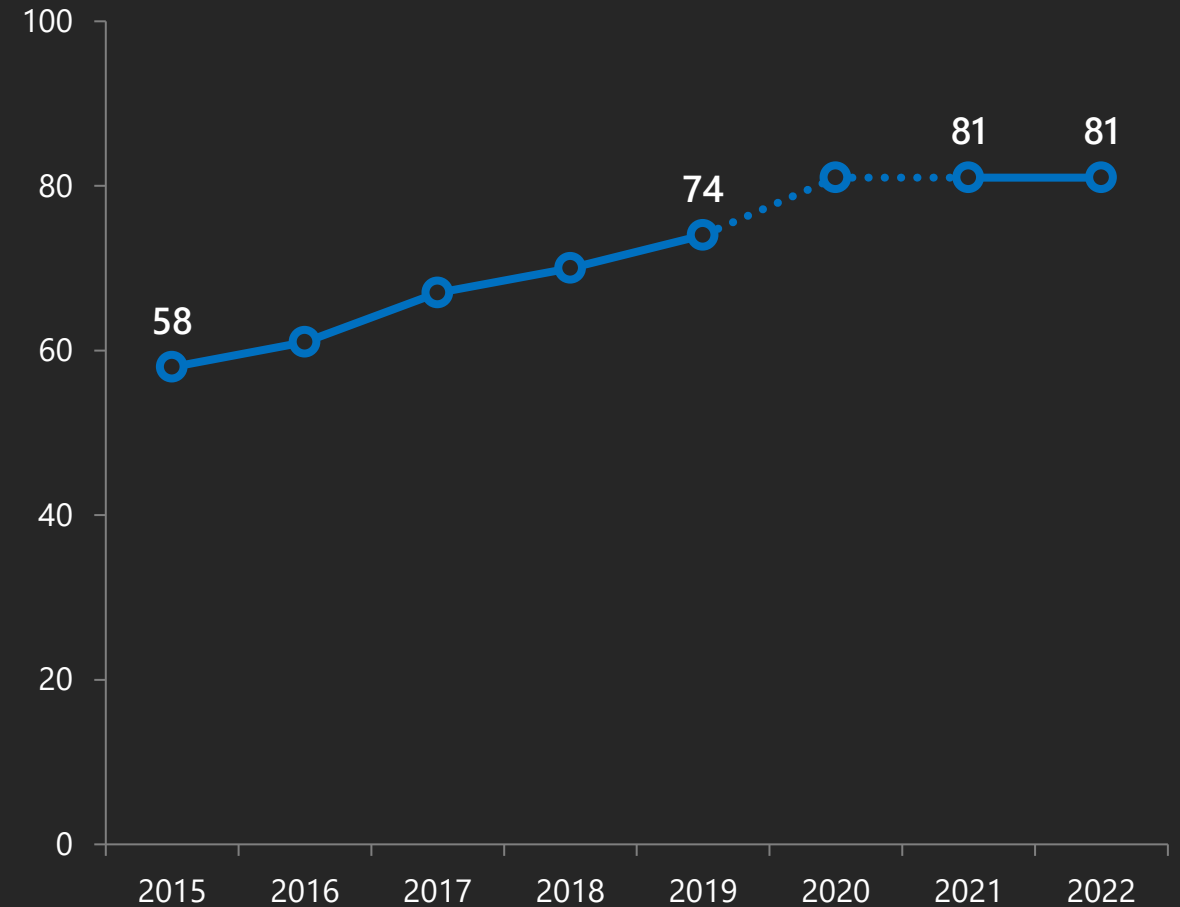
▼ universality metric

people

Increased Internet use

Internet users (2015-2022)

Total population (%)



CASE STUDY: BRAZIL

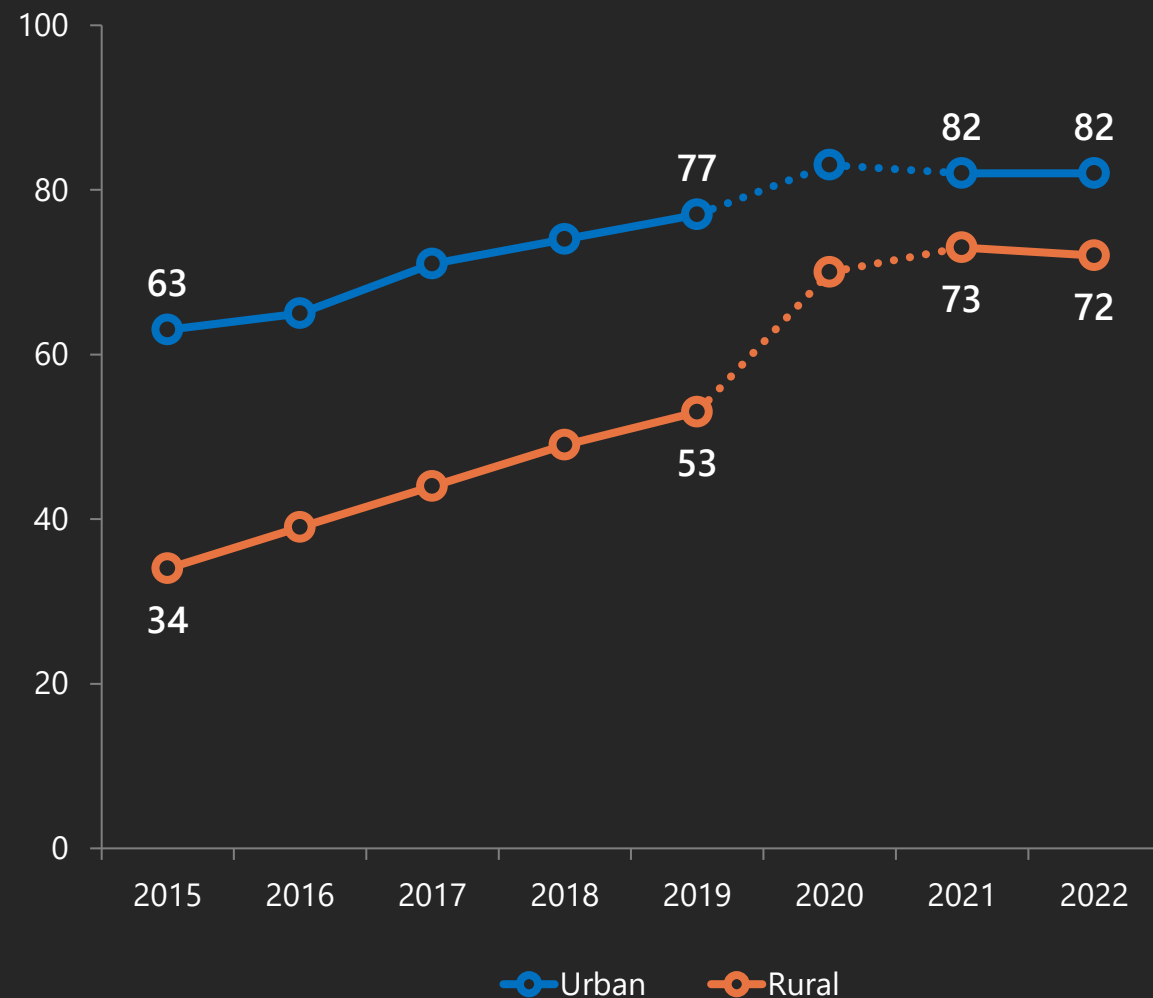
▼ universality metric

people

Increased Internet use
Urban-rural gap closing

Internet users by area (2015-2022)

Total population (%)



CASE STUDY: BRAZIL

▼ universality metric

🏠 households

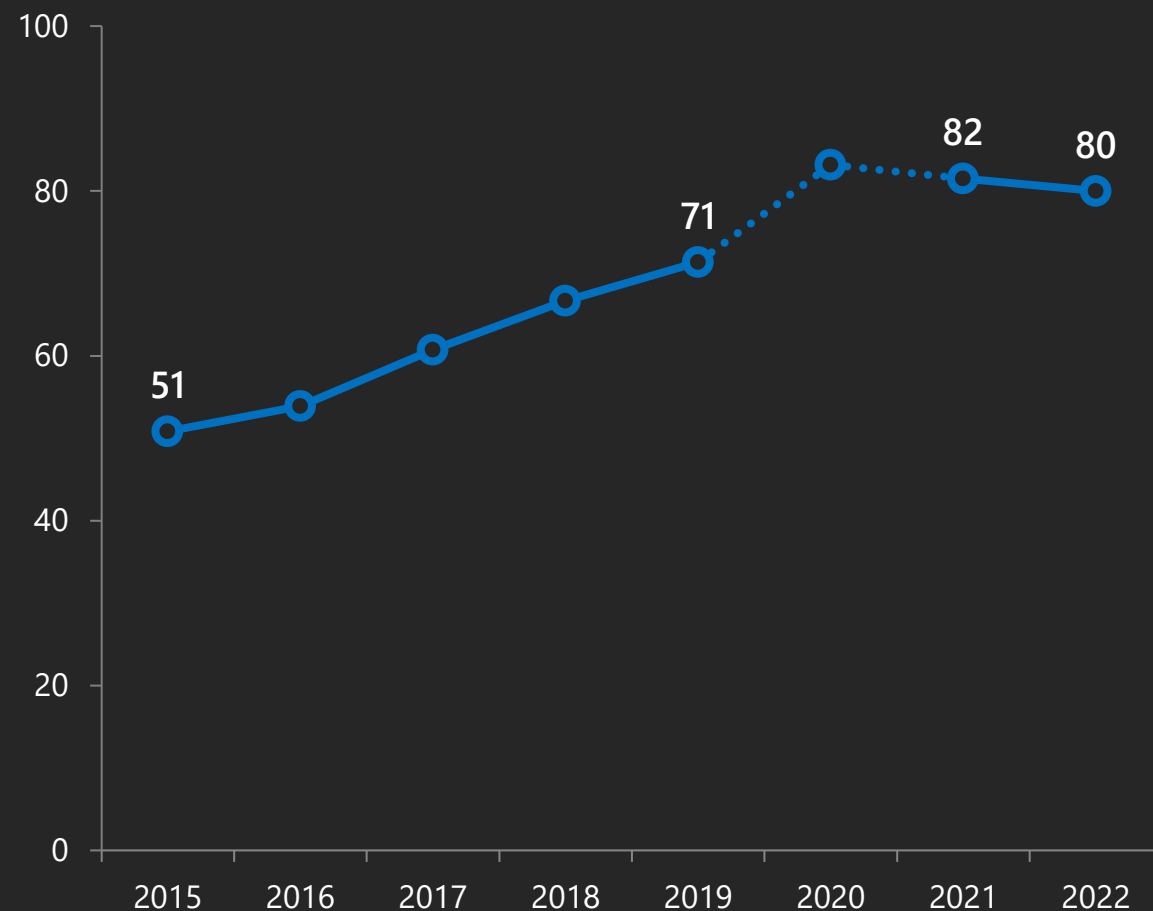
Increased Internet use

Urban-rural gap closing

Increased connectivity in households

Households with Internet access (2015-2022)

Total number of households (%)



CASE STUDY: BRAZIL

▼ universality metric

🏠 households

Increased Internet use

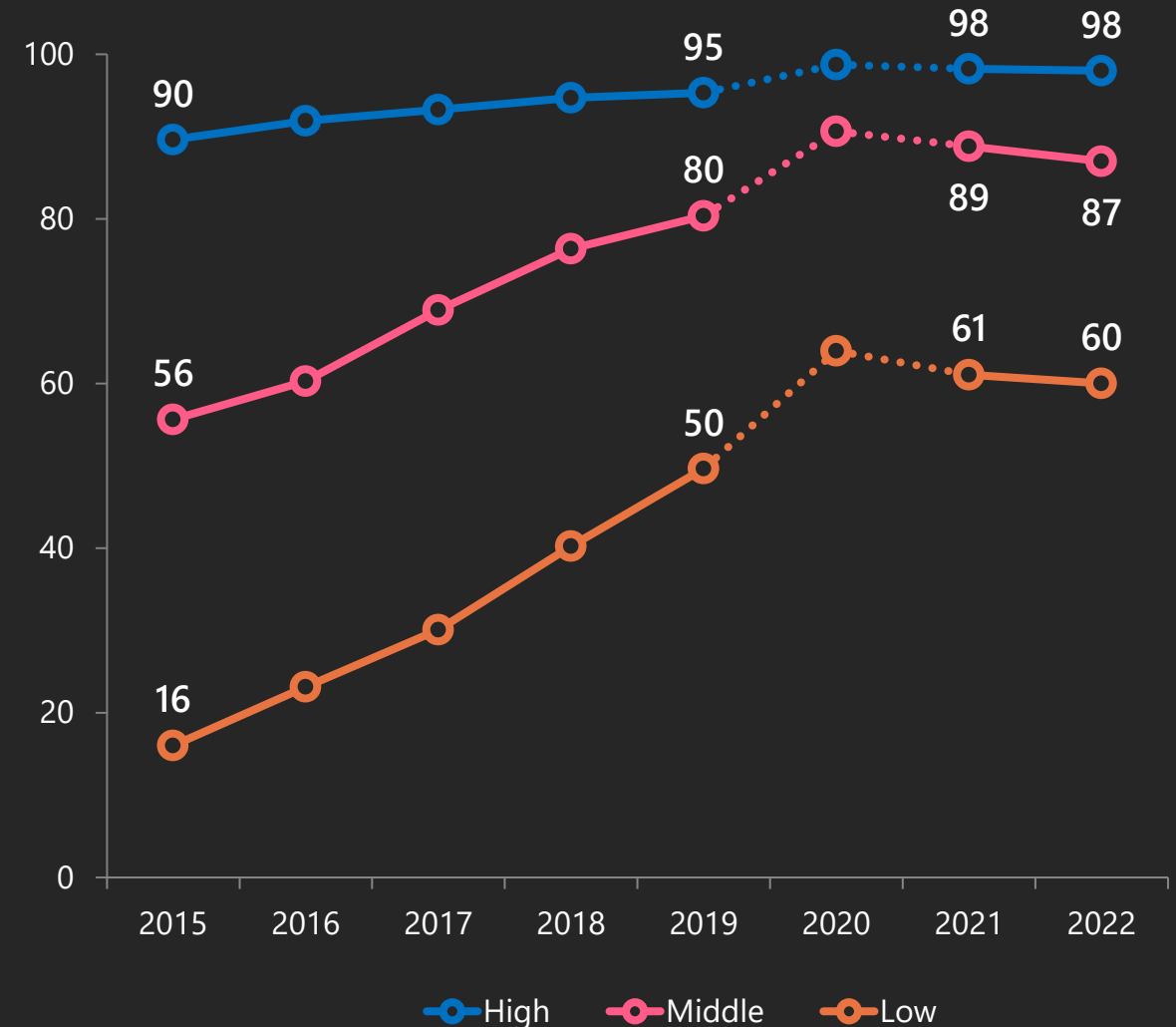
Urban-rural gap closing

Increased connectivity in households

SES gap closing

Households with Internet access by SES (2015-2022)

Total number of households (%)



CASE STUDY: BRAZIL

▼ universality metric

▼ connectivity enabler

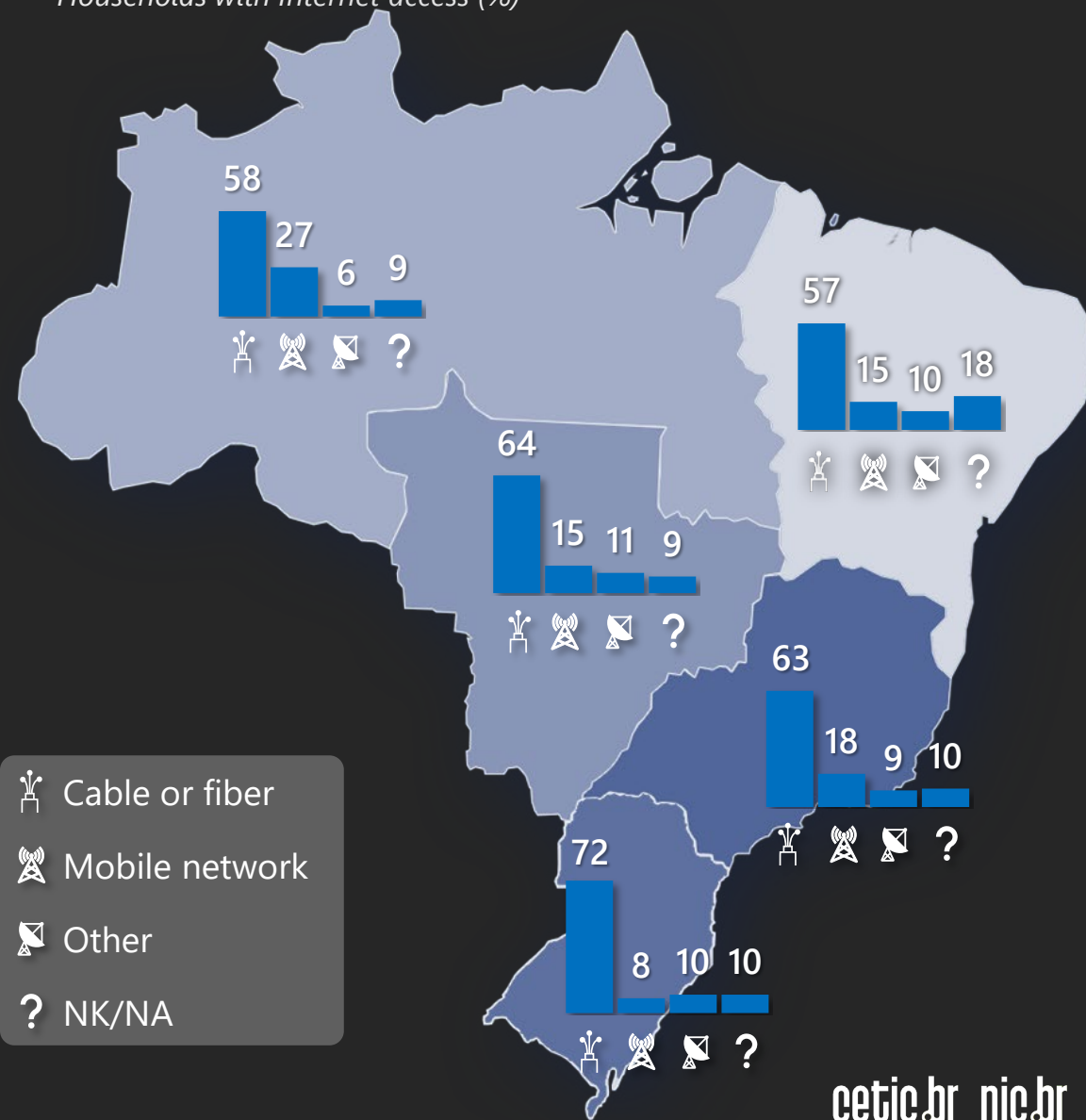
🏠 households

📶 infrastructure

Unequal penetration of fixed broadband in households

Type of main connection by region (2022)

Households with Internet access (%)



- 📶 Cable or fiber
- 📶 Mobile network
- 📶 Other
- ? NK/NA

CASE STUDY: BRAZIL

▼ universality metric

▼ connectivity enabler

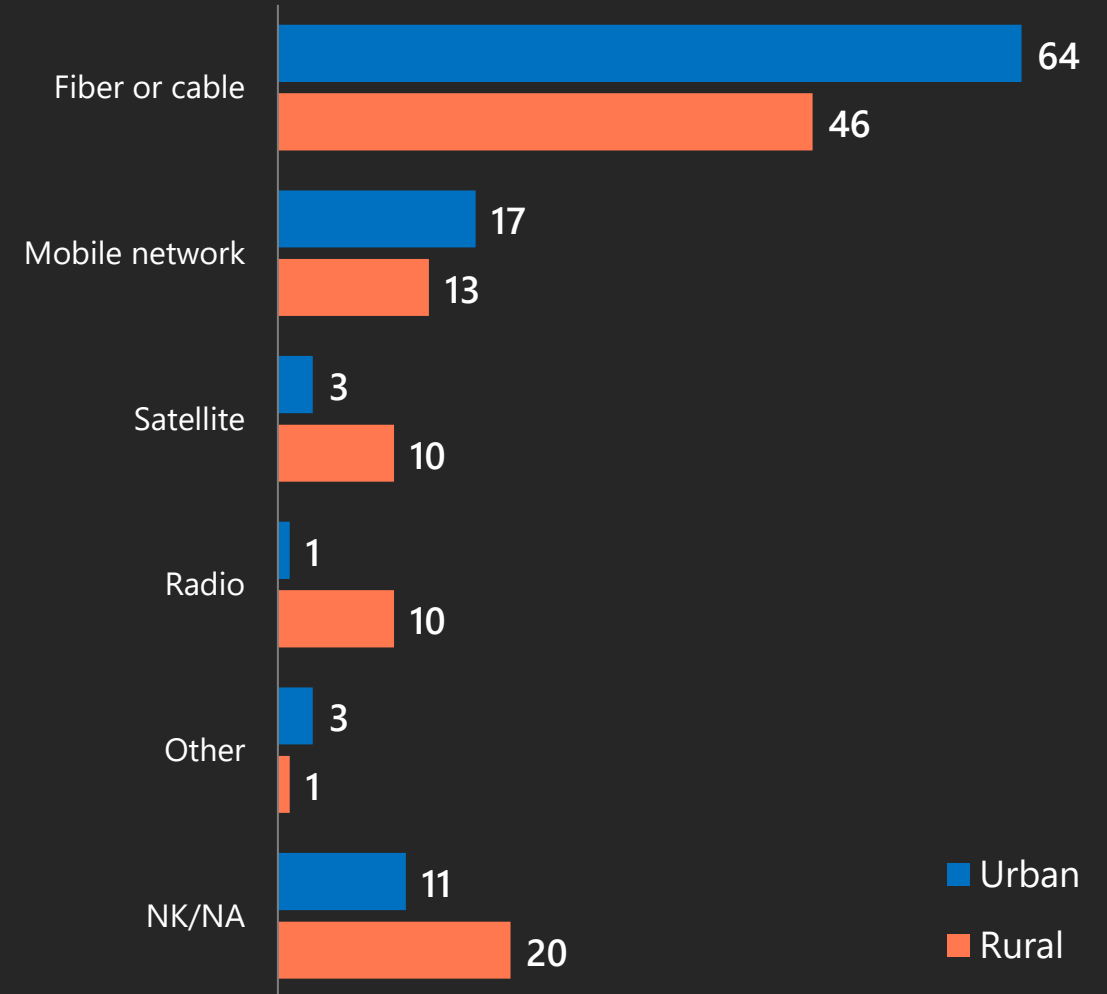
🏠 households

📶 infrastructure

Unequal penetration of fixed broadband in households

Type of main connection by area (2022)

Households with Internet access (%)



CASE STUDY: BRAZIL

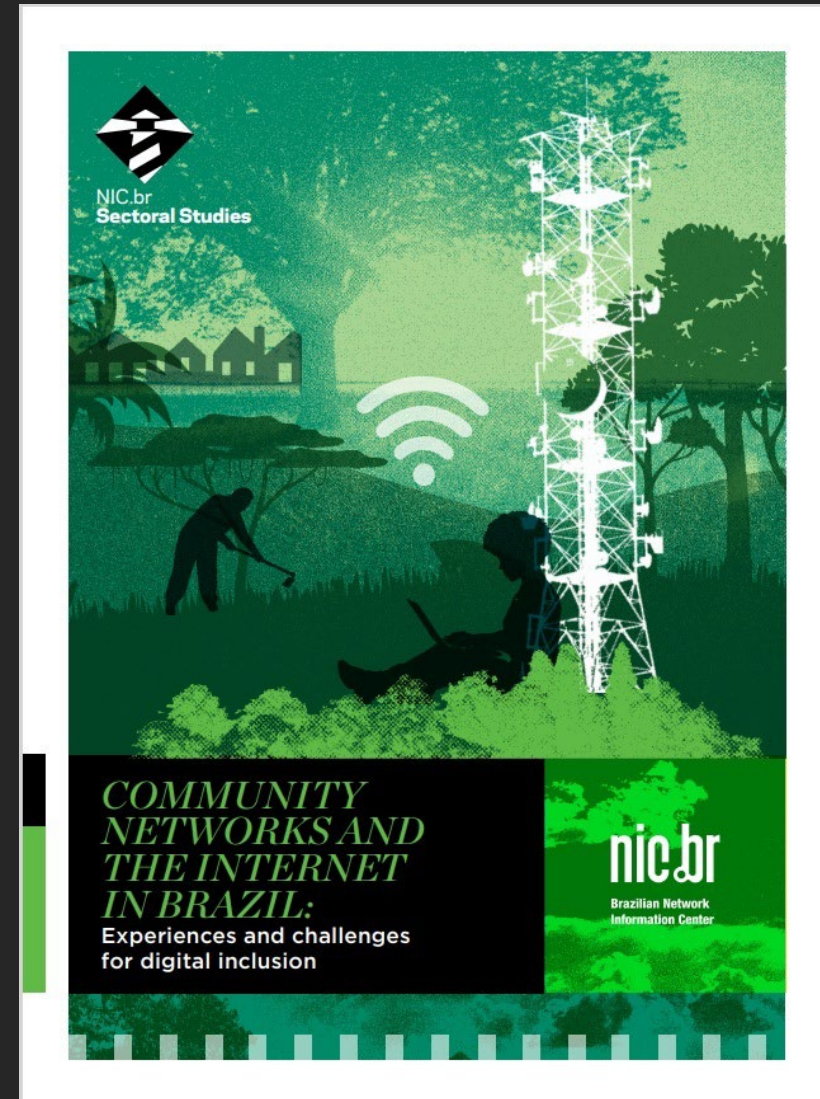
▼ universality metric

 communities

Emerging issue: community networks

Community networks and the Internet in Brazil: Experiences and challenges for digital inclusion

<https://cetic.br/pt/publicacao/community-networks-and-the-internet-in-brazil/>



CASE STUDY: BRAZIL

▼ universality metric

businesses

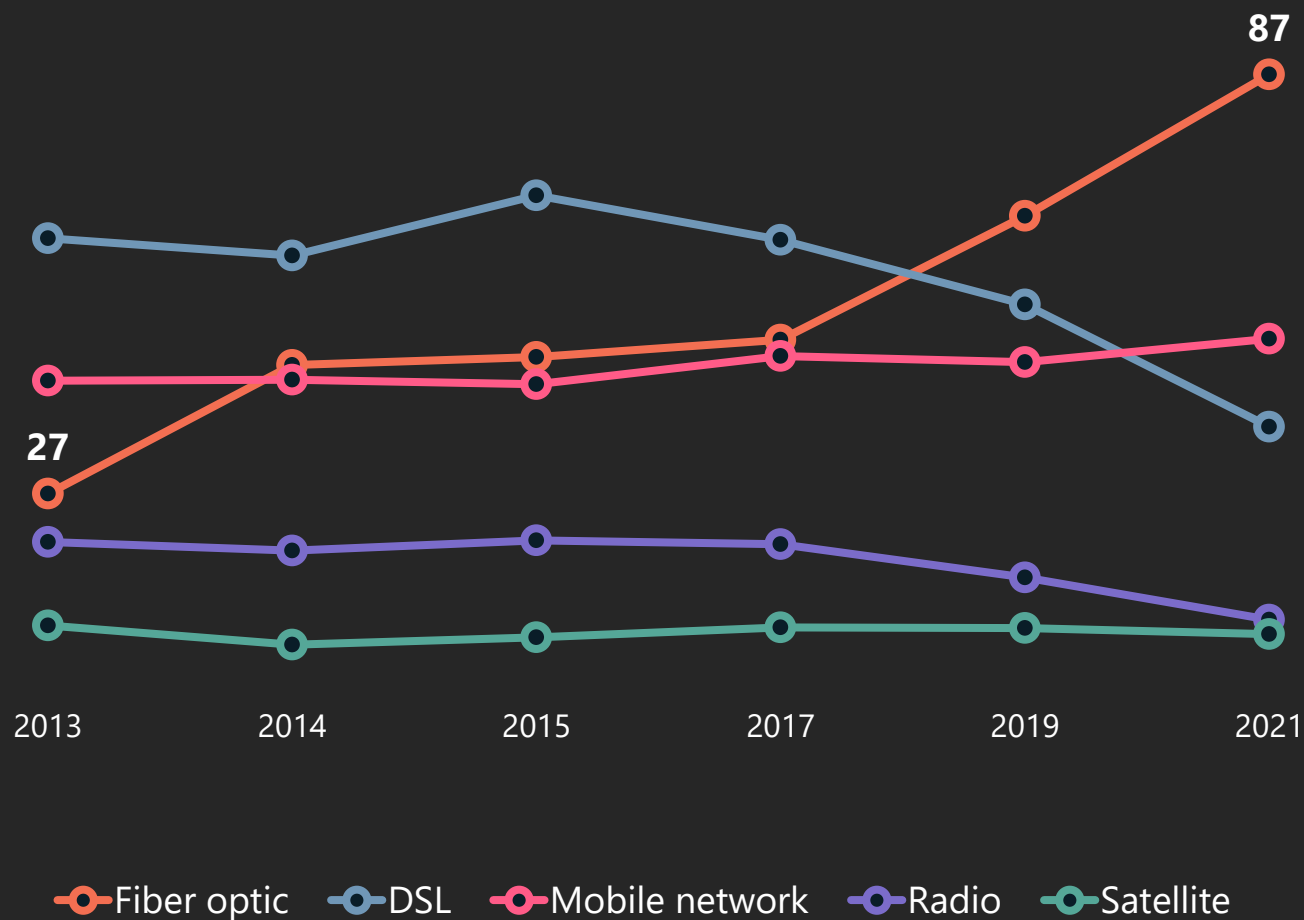
▼ connectivity enabler

infrastructure

Deployment of fiber optics among enterprises

Type of connection (2021)

Enterprises with Internet access (%)



CASE STUDY: BRAZIL

▼ universality metric

▼ connectivity enabler

people

affordability

households

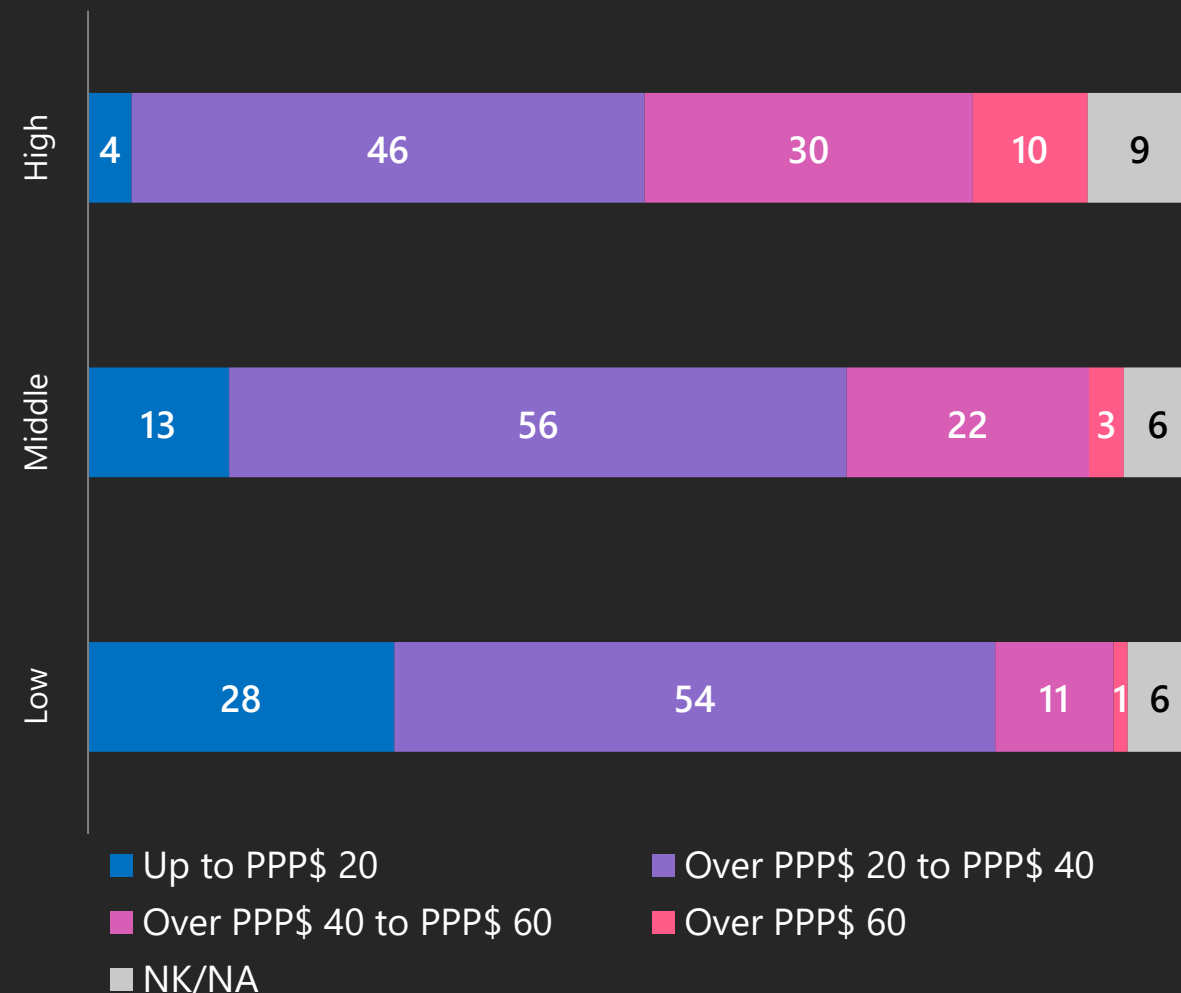
Higher- and lower-income expenditure gap

Data-only mobile-BB basket:
0.55% of GNIpc*

Fixed BB basket:
3.05% of GNIpc*

Price of main connection by SES (2022)

Households with fixed broadband (%)



* 2022 data from ITU. (2023). *ICT Price Baskets (IPB)*. <https://www.itu.int/en/ITU-D/Statistics/Dashboards/Pages/IPB.aspx>

CASE STUDY: BRAZIL

▼ universality metric

▼ connectivity enabler

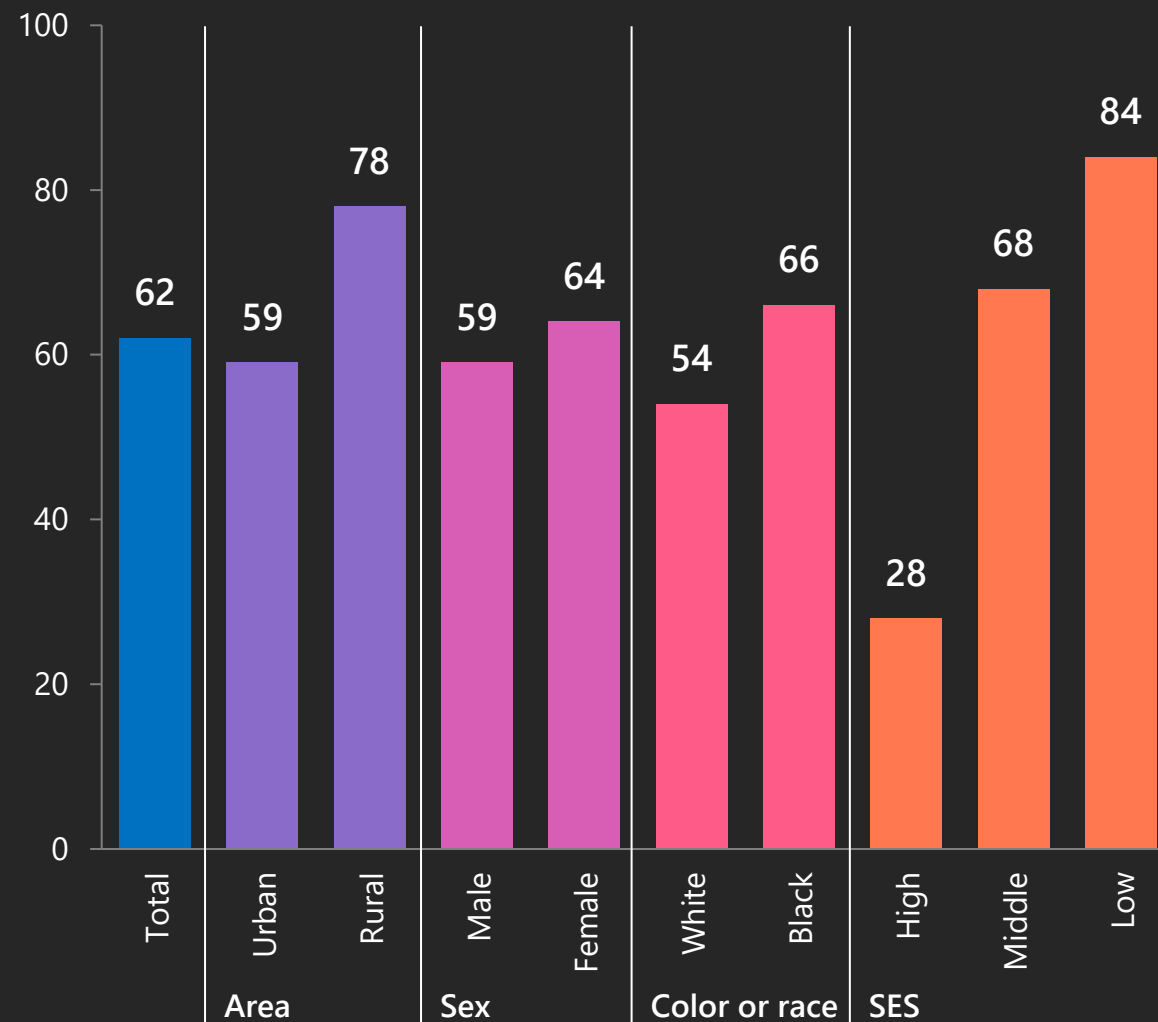
people

device

Majority of users are mobile-only

Internet users by access exclusively via mobile phone (2022)

Internet users (%)



CASE STUDY: BRAZIL

▼ universality metric

▼ connectivity enabler

people

device

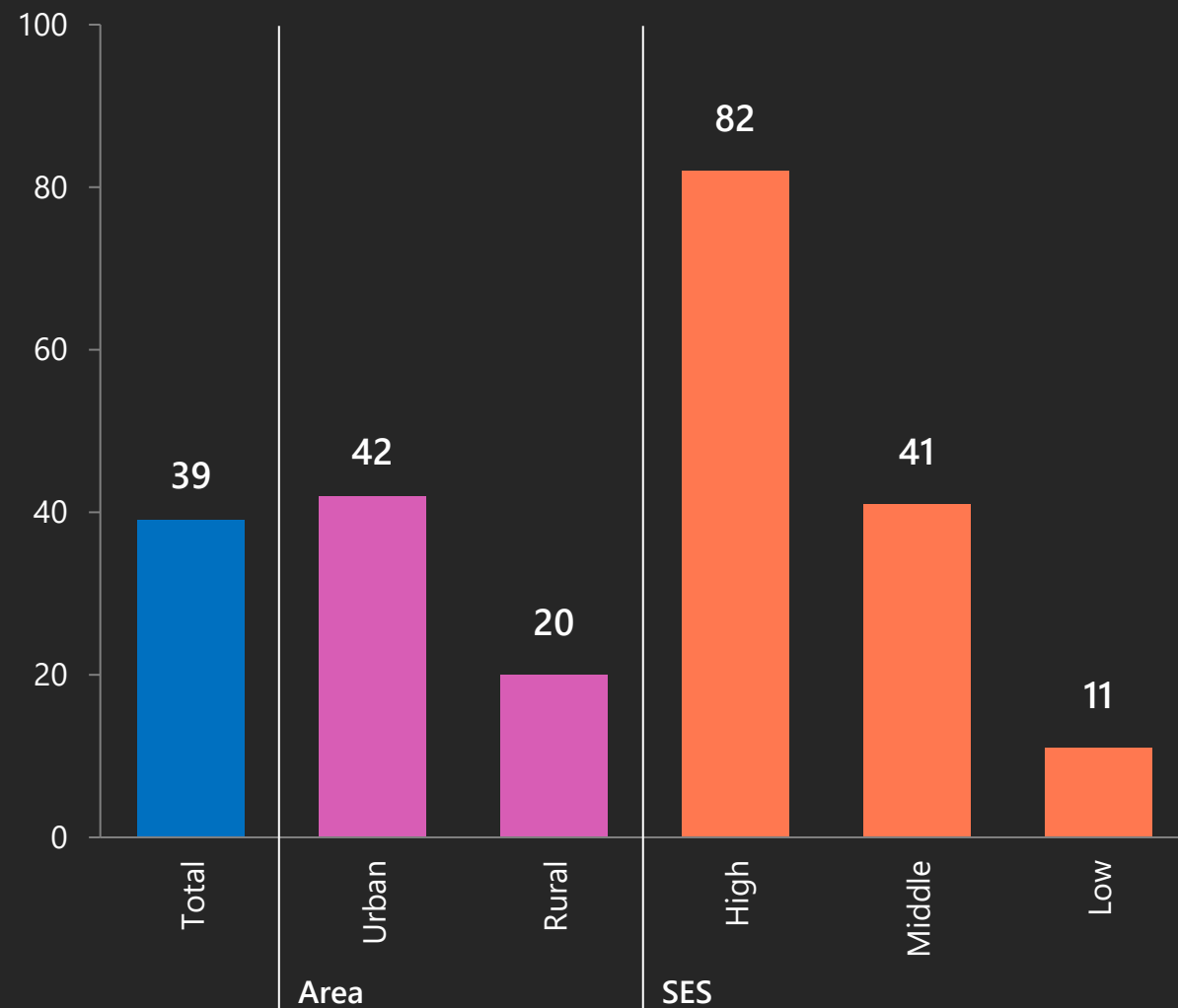
households

Majority of users are mobile-only

Majority of low-SES households with no computers

Households with computers (2022)

Total number of households (%)



CASE STUDY: BRAZIL

▼ universality metric

▼ connectivity enabler



people

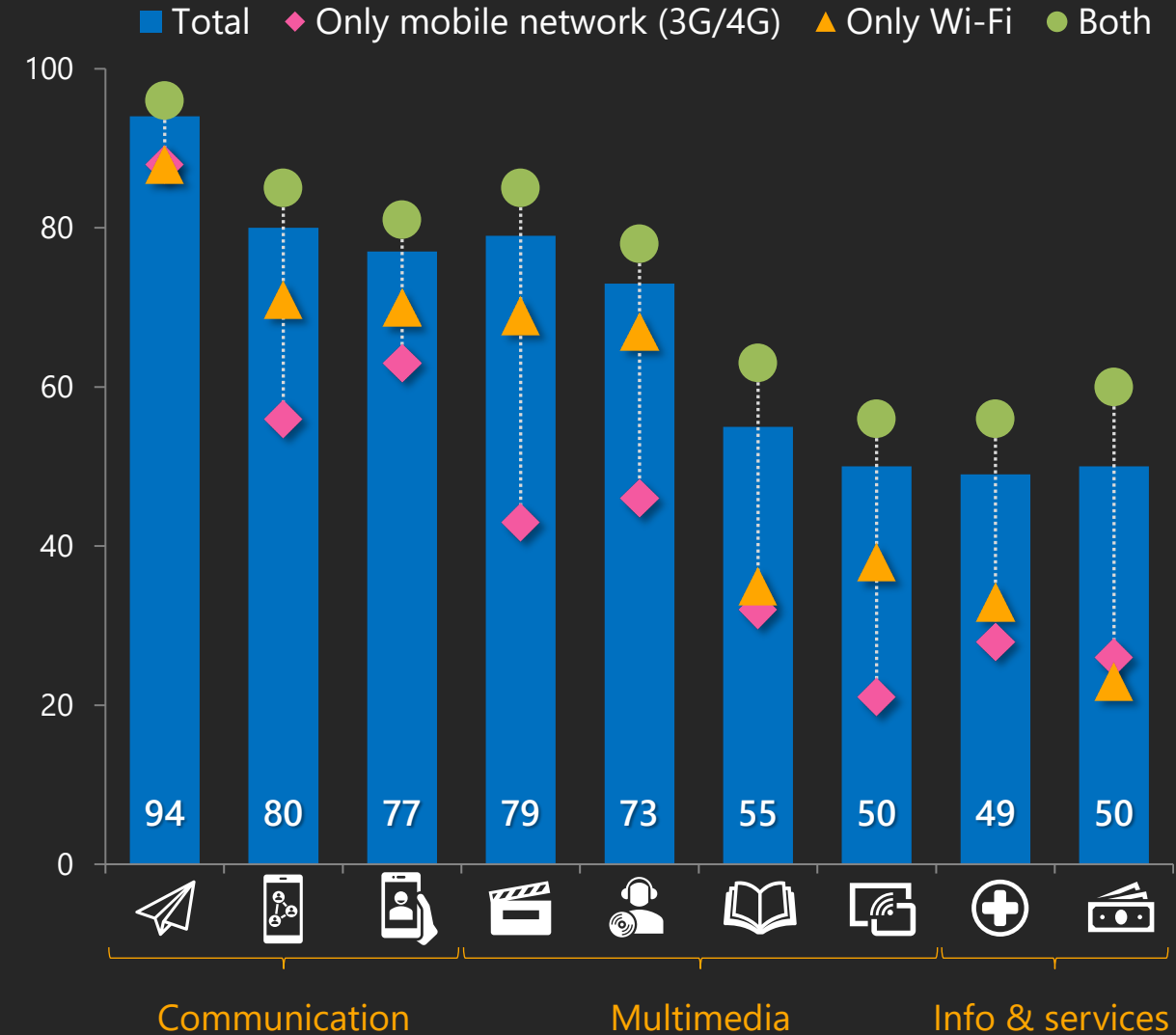


skills

Measuring skills based on activity affected by the **connection** used

Activities carried out on the Internet by type of connection on mobile phone (2022)

Internet users via mobile phone (%)



CASE STUDY: BRAZIL

▼ universality metric

▼ connectivity enabler

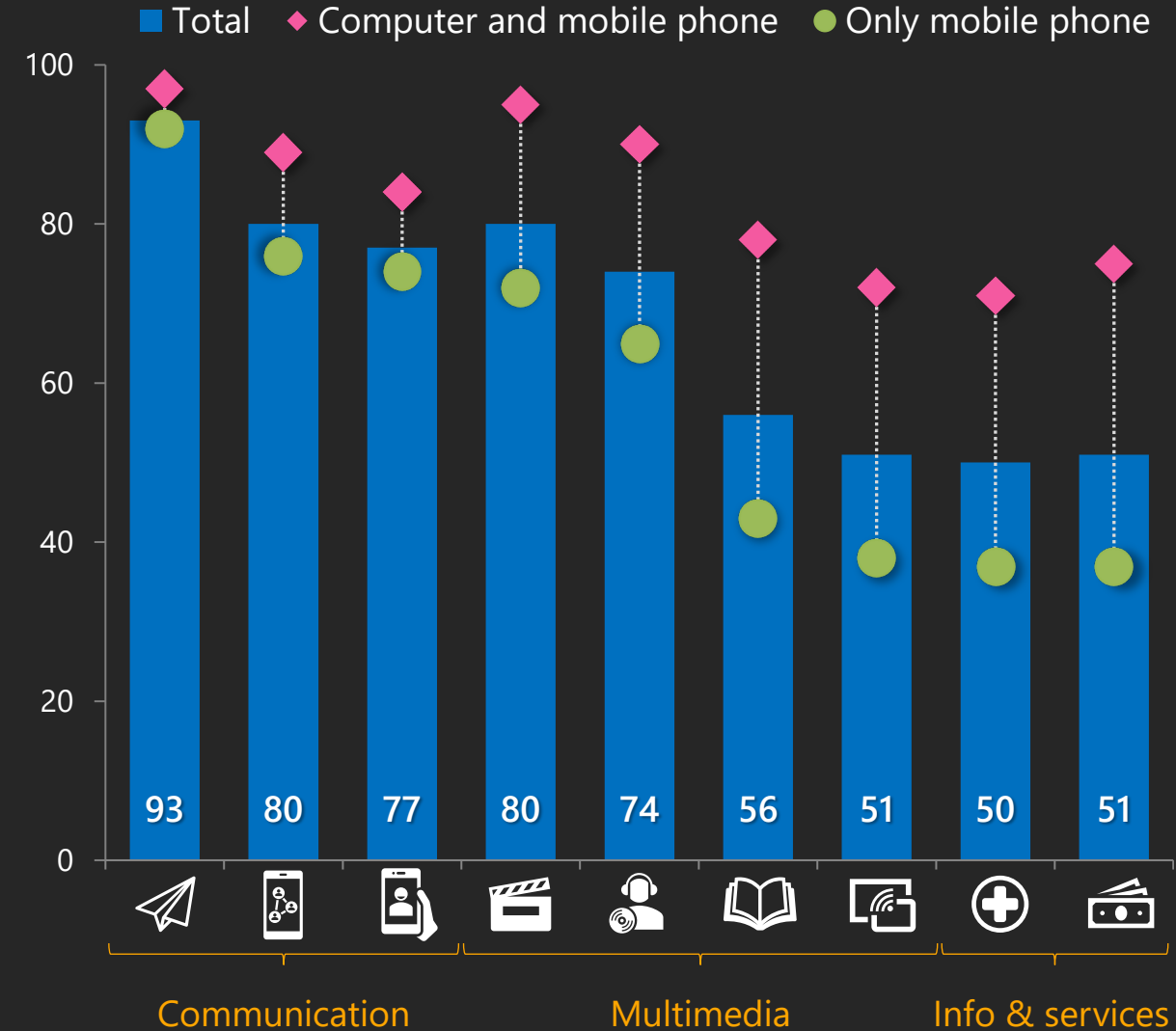
people

skills

Measuring skills based on activity affected by the connection **and devices** used

Activities carried out on the Internet by device used to access the Internet (2022)

Internet users (%)



CASE STUDY: BRAZIL

▼ universality metric

▼ connectivity enabler



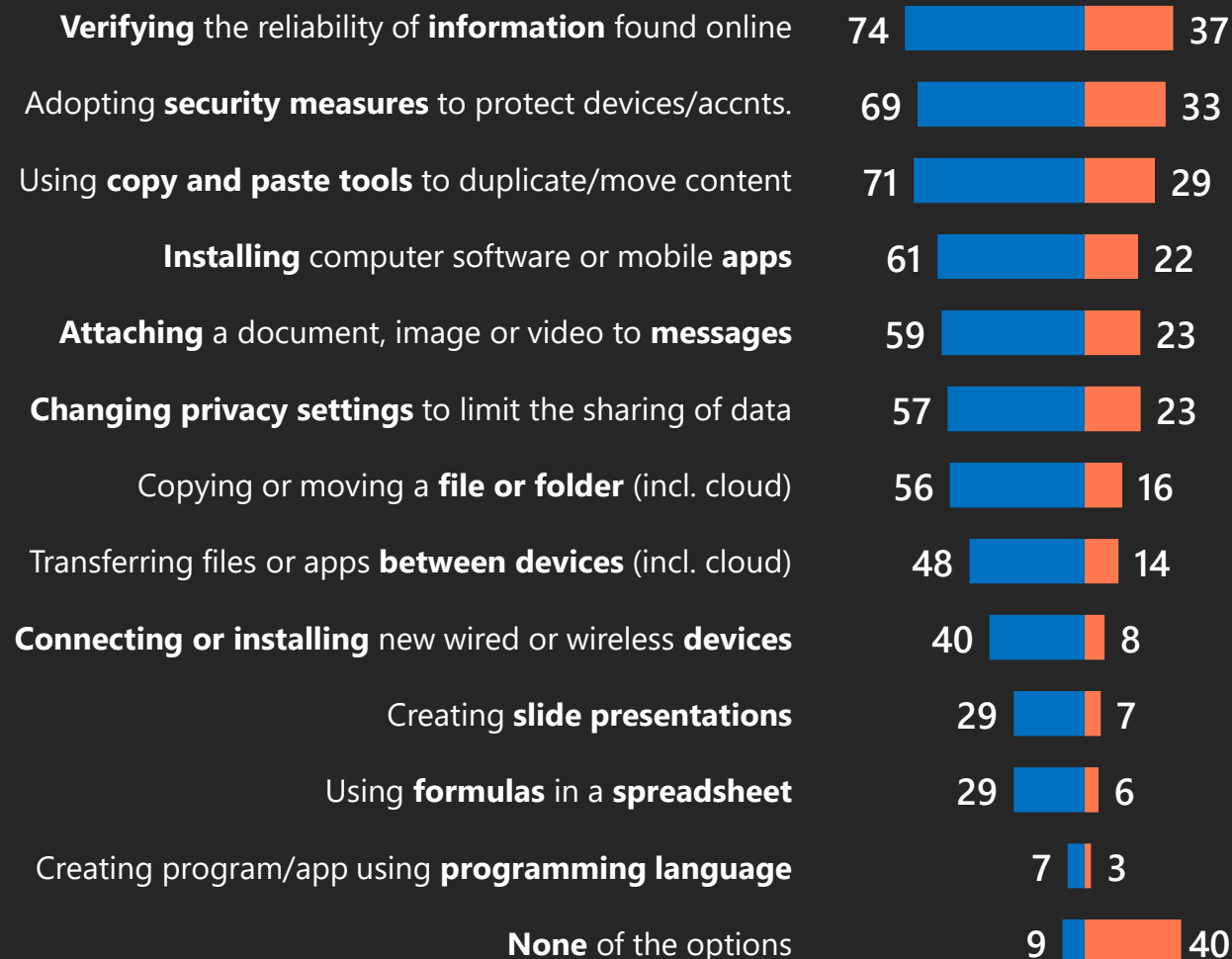
Measuring skills based on activity affected by the connection **and devices** used

Type of digital skills by device used to access the Internet (2022)

Internet users (%)

■ Computer and mobile phone

■ Mobile phone only



CASE STUDY: BRAZIL

▼ universality metric

▼ connectivity enabler

 people

 security & safety

 businesses

Developing survey indicators to measure perception of privacy and personal data protection

Privacy and personal data protection 2021: perspectives of individuals, enterprises and public organizations in Brazil

<https://cetic.br/pt/publicacao/privacidade-e-protecao-de-dados-2021/>



STAKEHOLDER ENGAGEMENT & COOPERATION

National digital plans & strategies (e.g., Obia)

Ministry of Communication

Regulators (Anatel, ANDP)

Other ministries (sectoral digital policies)

Commerce & Industry
Culture
Education

Health
Human Rights
Science & Technology

- » Capacity building on measuring access, use and appropriation of ICT
- » Technical and methodological support to the production of quality, disaggregated and comparable statistical data
- » Fostering multisectoral public debate based on evidence

International organizations

CAF	UNCTAD	UNSD
IADB	UNECLAC	WHO
ITU	UNICEF	
OECD	UNESCO	

Data producers (NSO-IBGE, Ipea)

Civil society organizations (GDIP)

Academia



FINAL REMARKS

Indicators for measuring UMC

The target for meaningfulness

National averages: capturing inequity

Measuring "data scarcity"

Thank you!

Fabio Senne
fsenne@nic.br



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<https://www.cetic.br>

