Innovative and Digital Technologies for Inclusive Policymaking that Leaves No One Behind in Indonesia

Inception Meeting

Social Development Division
ESCAP

25 November 2026
Jakarta, Indonesia

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Reducing multiple dimensions of inequality

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SUSTAINABLE DEVELOPMENT GOALS

Opening Remarks

Ms. Ulziisuren Jamsran

UN Women
Representative for Indonesia
and
Liaison Officer for ASEAN and
Co-chair of UN Indonesia
Cross Cutting group



Opening Remarks

Ms. Katinka Weinberger

Chief
Sustainable Socioeconomic Transformation Section

ESCAP



Opening Session

Introduction of participants

Opening Session

Group Photo

Introduction of ESCAP LNOB Project



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Key Parameters

- **Target countries:** Bhutan, Indonesia, Sri Lanka, Pakistan and Viet Nam
- **Timeline:** June 2026 – December 2029
- **Relevant SDGs:** 1, 2, 3, 4, 5, 6, 7 and 8
- **Geographic scope:** Asia and the Pacific and partly Africa
- **Collaboration:** Resident Coordinator's Offices in target countries and the Economic Commission for Africa



Objective

Strengthen national capacities to leverage innovative and digital tools for inclusive social policymaking

- **Outcome I:** Strengthened capacity of policymakers to generate and integrate tailored LNOB evidence into social development strategies, plans and/or policies, or national development plans.

- **Outcome II:** Strengthened capacity of policymakers to use innovative digital policy tools with enhanced evidence on inequality of opportunity and its drivers.

Project Outputs

	Year
• **Organize** inception meetings to launch the project and identify focal institution(s) and policy processes.	2026
• **Expand** the ESCAP LNOB Platform with new evidence	2026/27
• **Build** technical capacity to use the LNOB platform and algorithm	2027
• **Develop** knowledge products to support inclusive and evidence-based policies in the social sector	2027/28
• **Convene** national consultations to review/validate evidence and form partnership for sustained use of the digital tool	2028/29
• **Convene** regional event to disseminate good practices and lessons learned	2028
• **Convene** global events to strengthen South-South collaboration	2027/28

Objectives of the inception meeting

- **Raise awareness** on the ESCAP LNOB approach to identify intersecting vulnerabilities and furthest behind groups in Indonesia

- **Identify** policy areas and reform processes where project activities can contribute to more inclusive policy cycles in the social sector

- **Identify** opportunities to strengthen the use of disaggregated data and evidence in policy decision-making to advance equitable and inclusive development outcomes.

Session I:

LNOB Context and Policy Priorities in Indonesia



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Policy Priorities in Indonesia

BAPPENAS

Kementerian Perencanaan Pembangunan Nasional/
Badan Perencanaan Pembangunan Nasional

UN Initiatives on LNOB in Indonesia

Highlights

United Nations Country Team
in Indonesia

Plenary Discussion



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Coffee/Tea Break
(15 minutes)



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Session II:

How can ESCAP LNOB Approach support inclusive policymaking in Indonesia?



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Welcome Remarks

Pungkas Bahjuri Ali, STP., MS., Ph.D

Deputy Minister for Human Development and Culture

Ministry of National Development Planning (BAPPENAS)



Leaving No One Behind (LNOB)

- LNOB is the central transformative pledge of 2030 Agenda and SDGs.

- Delivering on LNOB pledge is not easy. Policymakers need innovative, scientific and evidence-based solutions.

- **What needs to be done?**

    - **Identify** the furthest behind groups
    - **Inform** plans and policies
    - **Tailor** implementation/delivery
    - **Monitor** and **evaluate**



Why is LNOB analysis important?



Find which SDGs have the most "Left Behind"

SDGs are not equal in terms of the size and composition of groups left behind in their achievement.

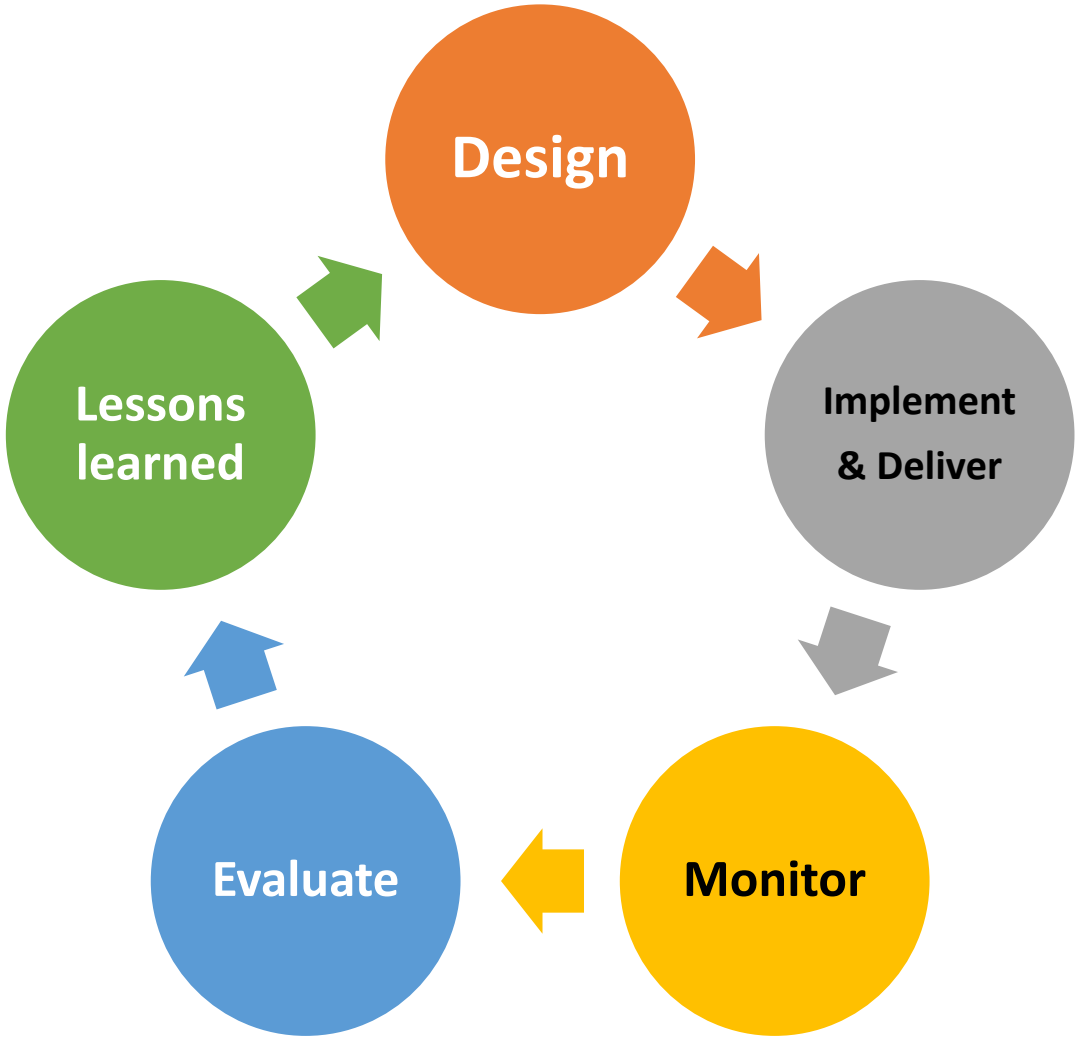
Uncover who are the "Left Behind" in specific SDGs

Unique combinations of individual and household circumstances identify who are left behind and where.

Monitor gaps and inequality in SDG achievements?

The groups that are furthest left behind change over time across SDGs both for the good and the bad.

LNOB in the Policy Cycle



Action points

- Identify a policy question.
- Access the data source to be used for analysis.
- Apply the LNOB algorithm for descriptive analysis.
- Expand to other and more rigorous methodologies, if needed.

What is ESCAP LNOB Analysis?

- An **empirical analysis of inequality** in access to **opportunities** with an exclusive emphasis on SDG indicators.
- An efficient **disaggregation tool** that captures **intersectionalities** among individual/household **circumstances** that leave people behind.
- Driven by data that are **nationally representative** and ideally conducive to **subnational disaggregation.**
- Based on a supervised **machine learning algorithm** within Classification and Regression Tree Analysis (CART) and Dissimilarity Index.

Why Machine Learning?

- A relatively new yet interestingly cross-disciplinary approach to data analytics – melting pot of **statistics**, **computer science** and **AI**
- A set of innovative tools that help **reduce complexity** and convert **large data** into knowledge and value
- Based on **algorithm computation** and **graphics** – more appealing and intuitive results
- In the business of **prediction** rather than inference – **establishing causality is not the objective**

Disaggregating **Internet Usage** in Indonesia

Outcome: Proportion of population who used the internet in the last 3 months

Reference Population: Individuals aged 10+

Data Source: SUSENAS 2024

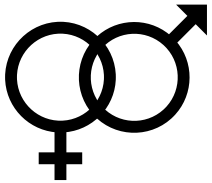
Circumstances:

17 PARTNERSHIPS FOR THE GOALS

Age



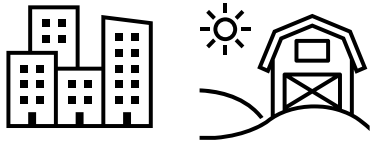
Sex



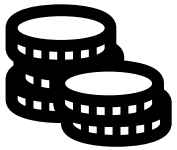
Education



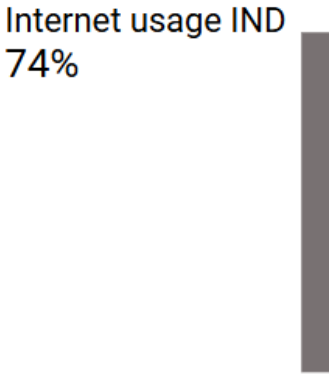
Location



Expenditures



Building an LNOB Tree for Internet Usage in Indonesia

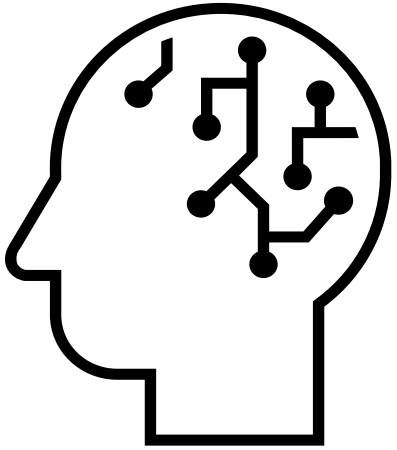


National Average:

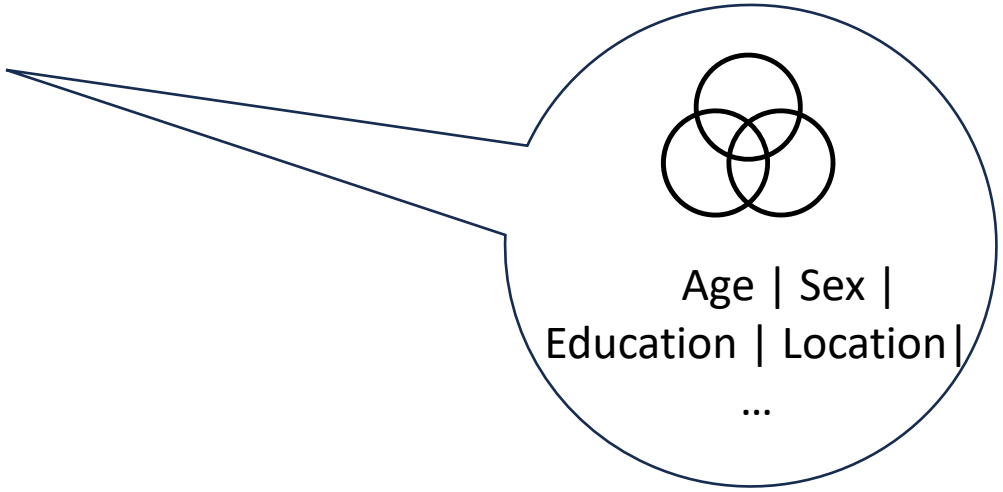
74% of the population aged 10 and above used the internet in the last three months in Indonesia. In other words, 26% of the population did not use the internet.

Building an LNOB Tree for Internet Usage in Indonesia

Internet usage IND
74%



Which circumstances are associated with different internet usage in Indonesia?



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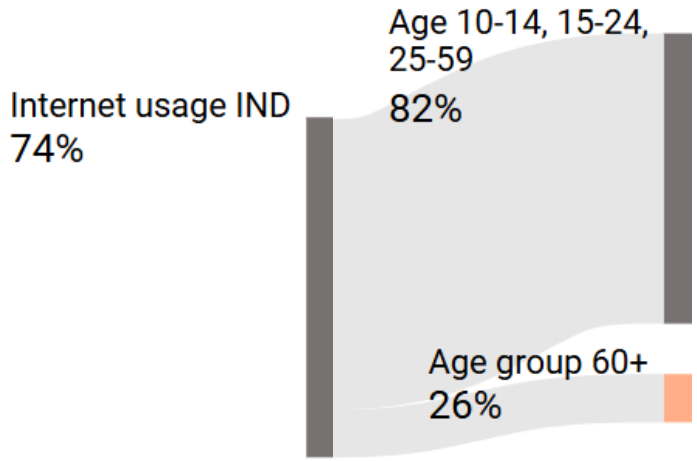


Data legend

- Furthest ahead
- Other terminal nodes
- Furthest behind

LNOB algorithm finds that age matters the most.

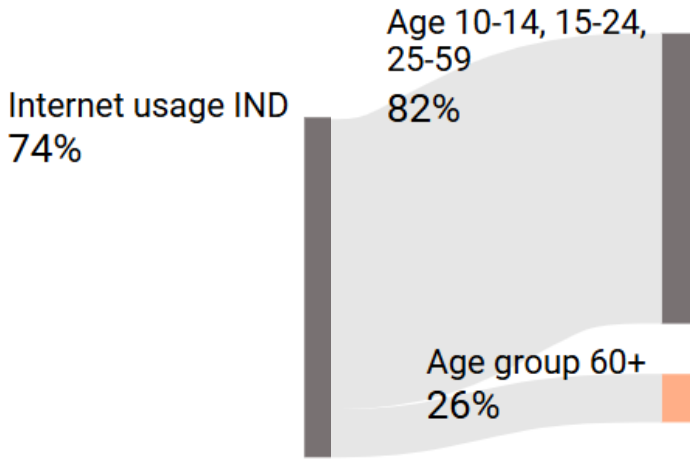
82% of people aged 10-59 used the internet.

26% of people aged 60+ used the internet.

The gap between the two group is **56 percentage points**.

Orange marks the **furthest behind**.

Building an LNOB Tree for Internet Usage in Indonesia



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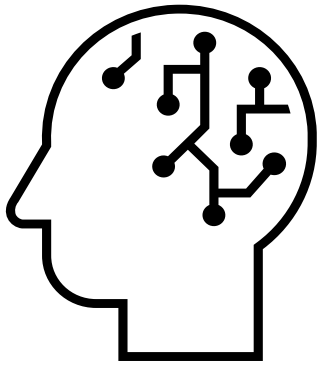
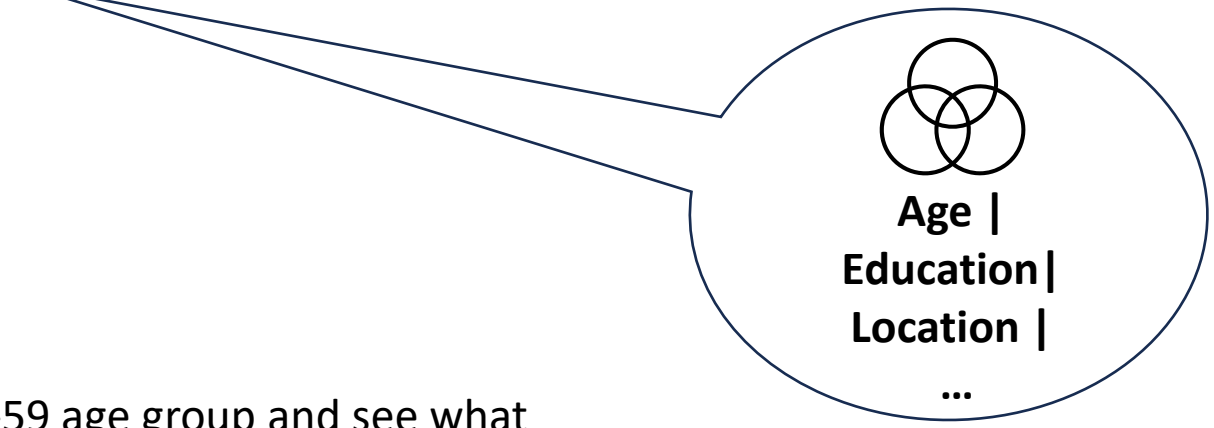
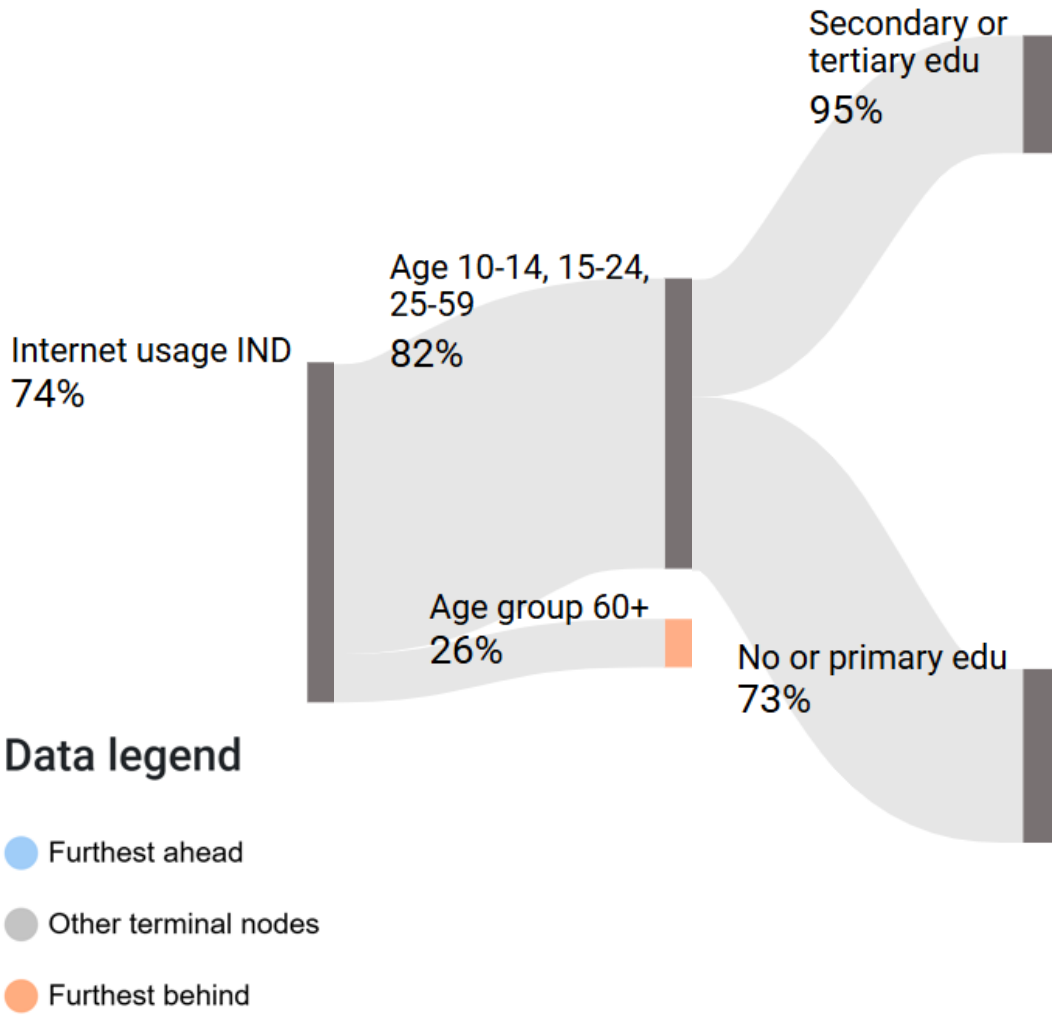




Let’s focus on 10-59 age group and see what sort of gaps are there…

Building an LNOB Tree for Internet Usage in Indonesia



Among **10-59 age group,** the algorithm finds a relatively smaller **gap by the level of education**.

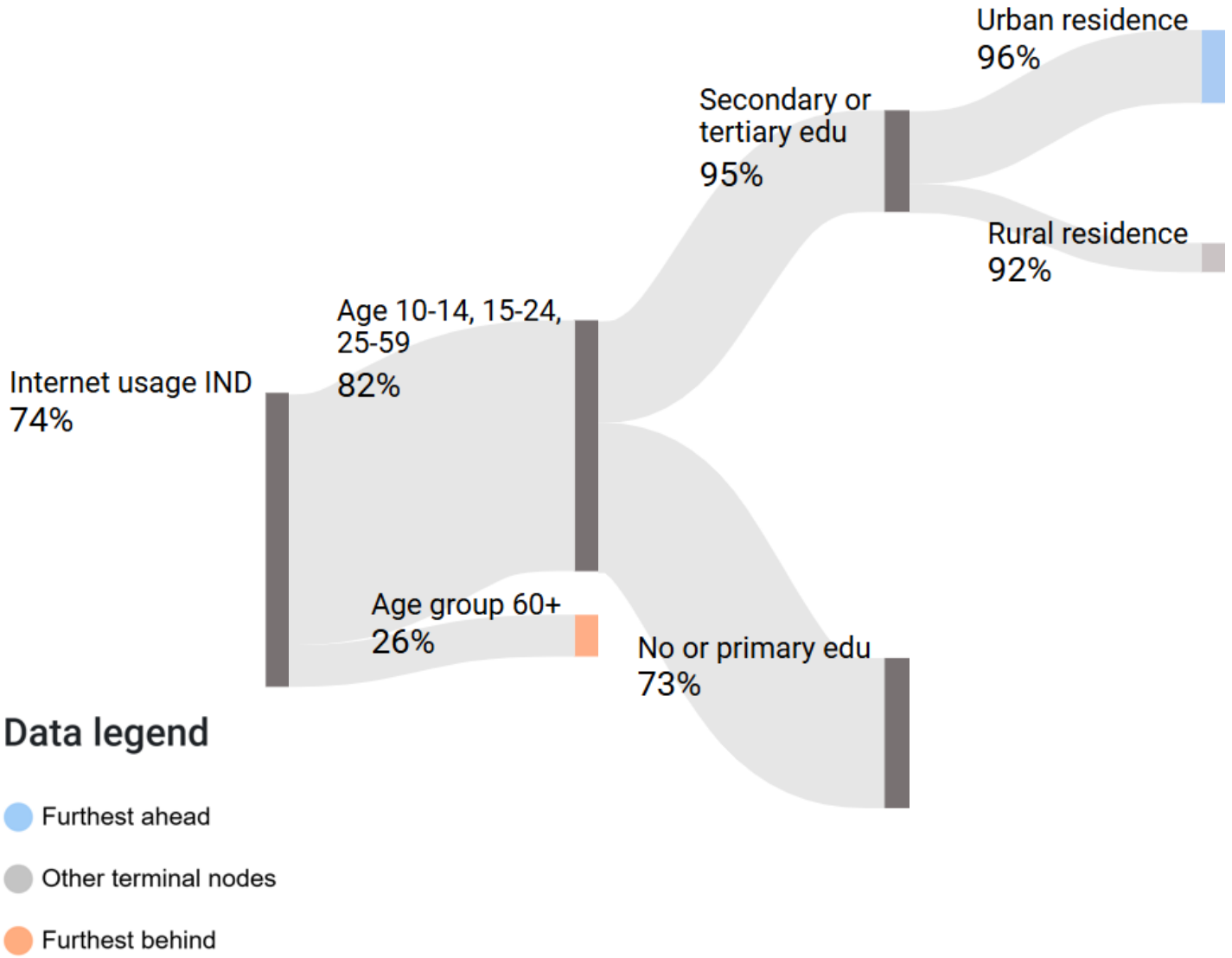
95% of this group with secondary and tertiary education use the internet.

73% of people aged 10-66 less than secondary education used the internet. This group clearly has more children and youth.

The gap between the two groups is **22 <u>percentage points</u>**.

Notice that the branch representing those secondary/higher education is smaller.

Building an LNOB Tree for Internet Usage in Indonesia



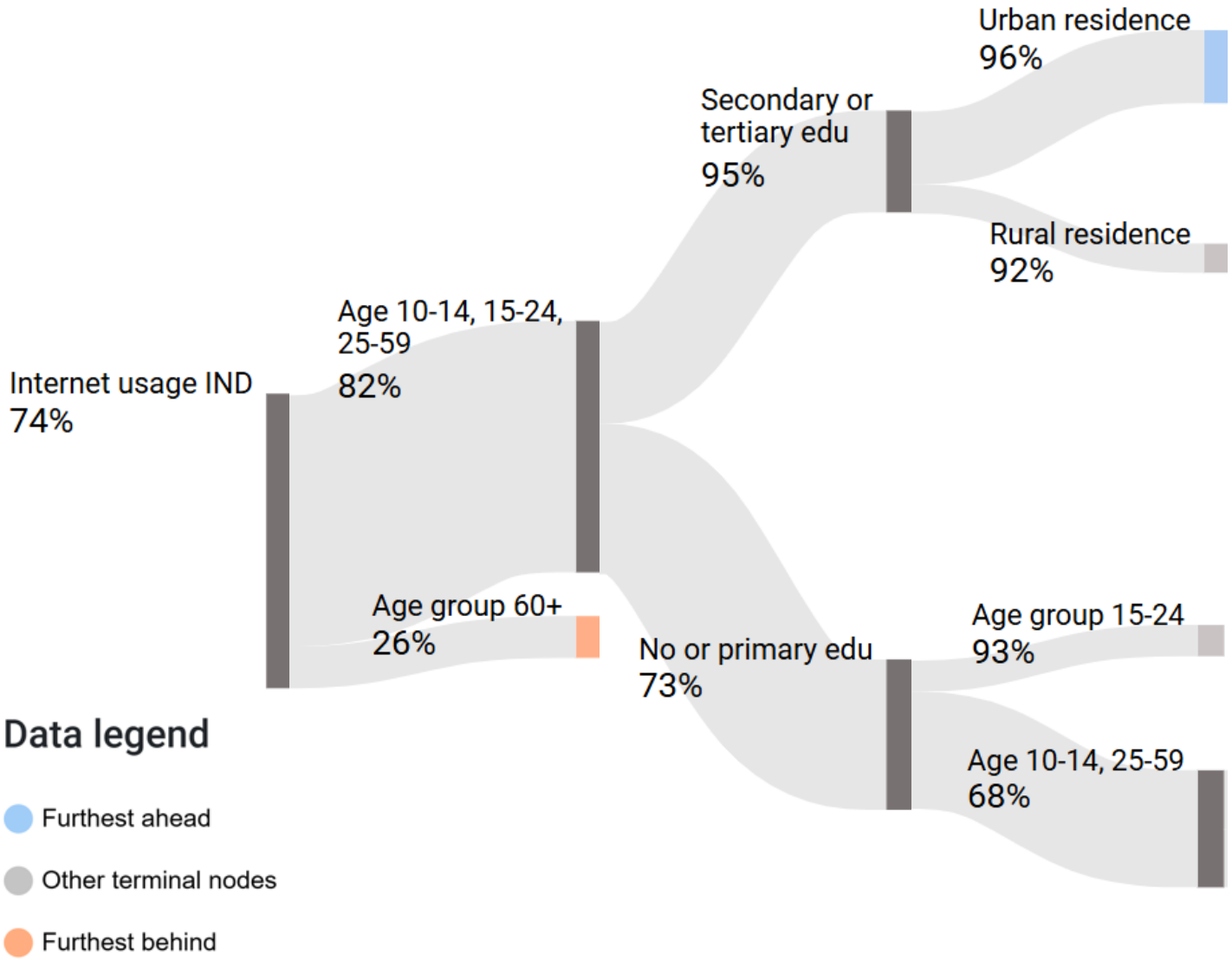
Among **10-59 age group with secondary or tertiary education,** the algorithm finds a small **gap by location of residence the level of education**.

96% of 10-59 age group with secondary or tertiary education living in urban areas use the internet.

92% of 10-59 age group with secondary or tertiary education living in rural areas used the internet.

The gap between the two groups is **only 4 <u>percentage points</u>**.

Building an LNOB Tree for Internet Usage in Indonesia



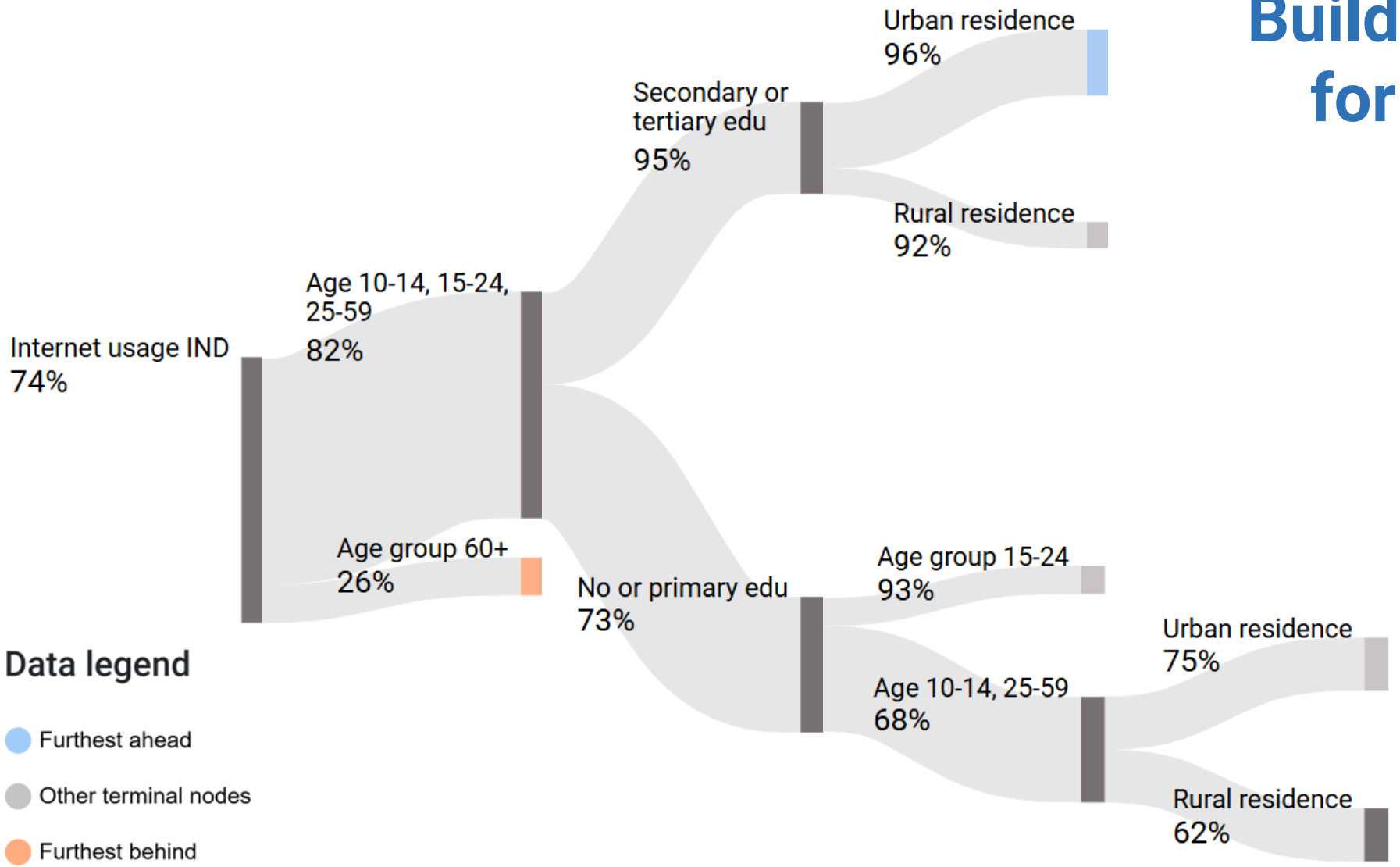
Among 10-59 age group with no or primary education**, age circumstanc**e come back.

93% of youth with no or primary education used the internet.

68% of children or adults with no or primary education used the internet.

The gap between the two groups is **25 percentage points**.

Building an LNOB Tree for Internet Usage in Indonesia

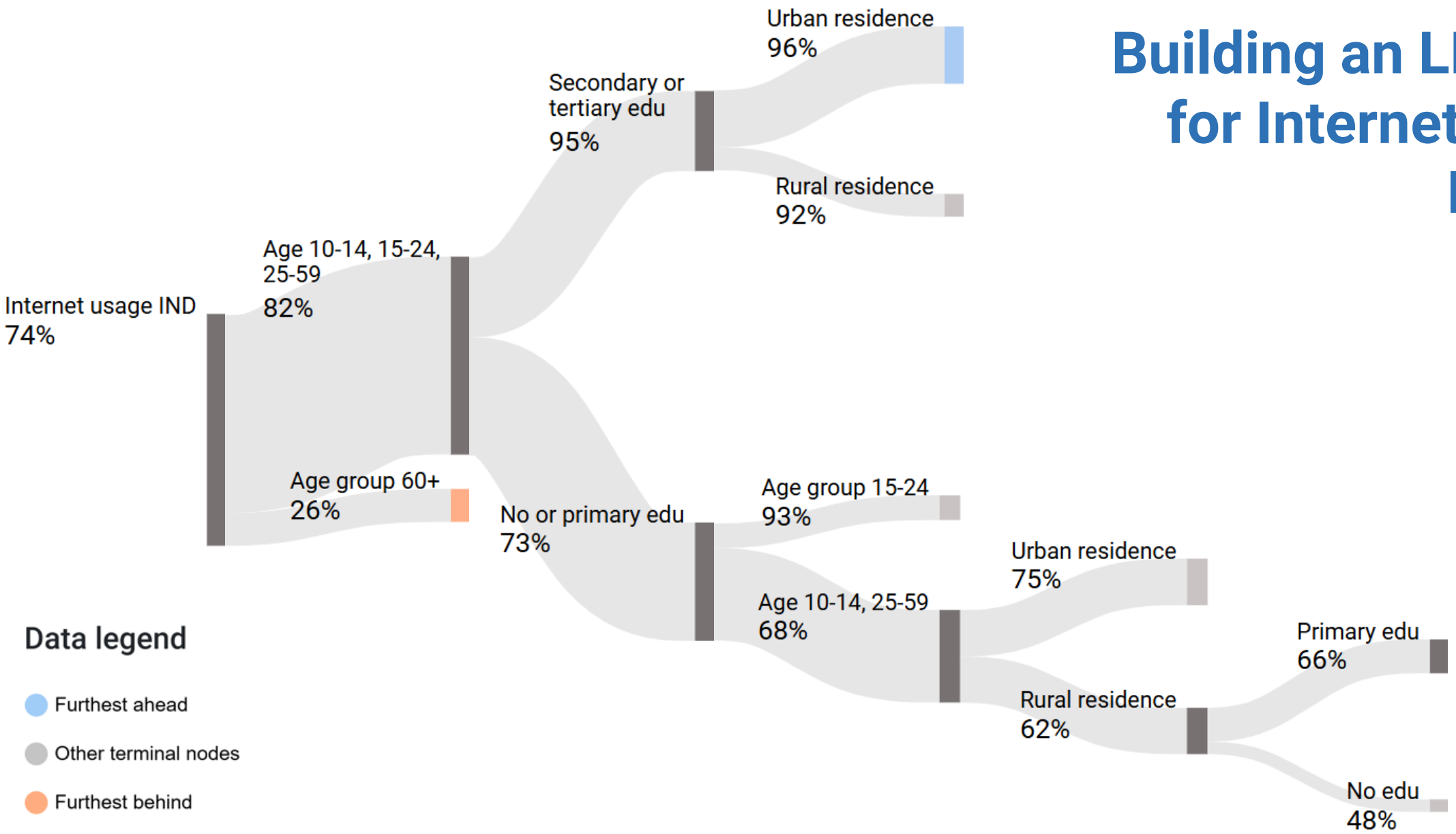


Among children and adults with no or primary education, location matters.

75% of this group living in urban areas used the internet as opposed to **62%** of the same group that lives in rural areas.

The gap between the two groups is **only <u>13 percentage points</u>**.

Building an LNOB Tree for Internet Usage in Indonesia



Data legend

- Furthest ahead
- Other terminal nodes
- Furthest behind

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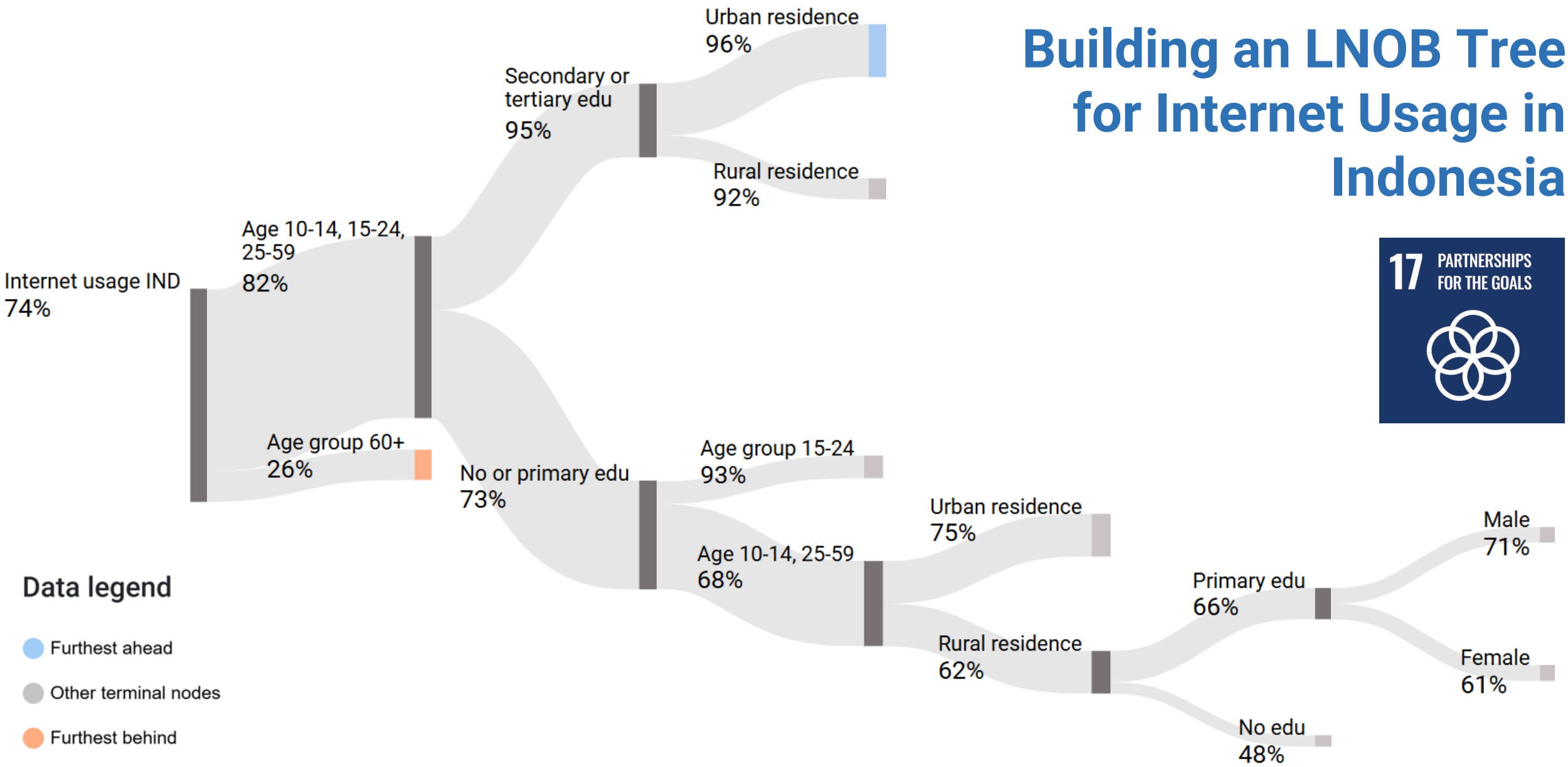
Building an LNOB Tree for Internet Usage in Indonesia



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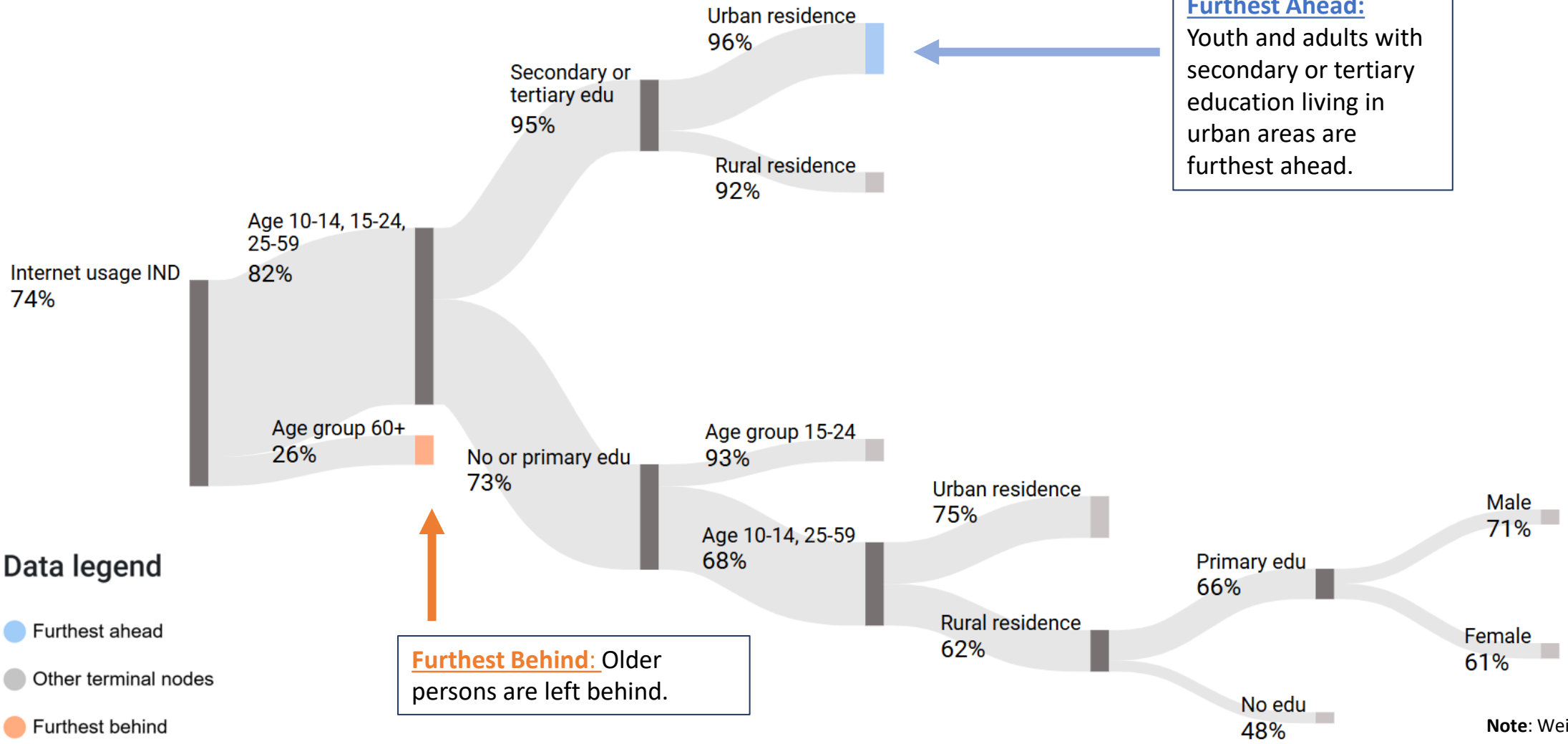
LNOB Tree for Internet Usage in Indonesia



Furthest Ahead: Youth and adults with secondary or tertiary education living in urban areas are furthest ahead.

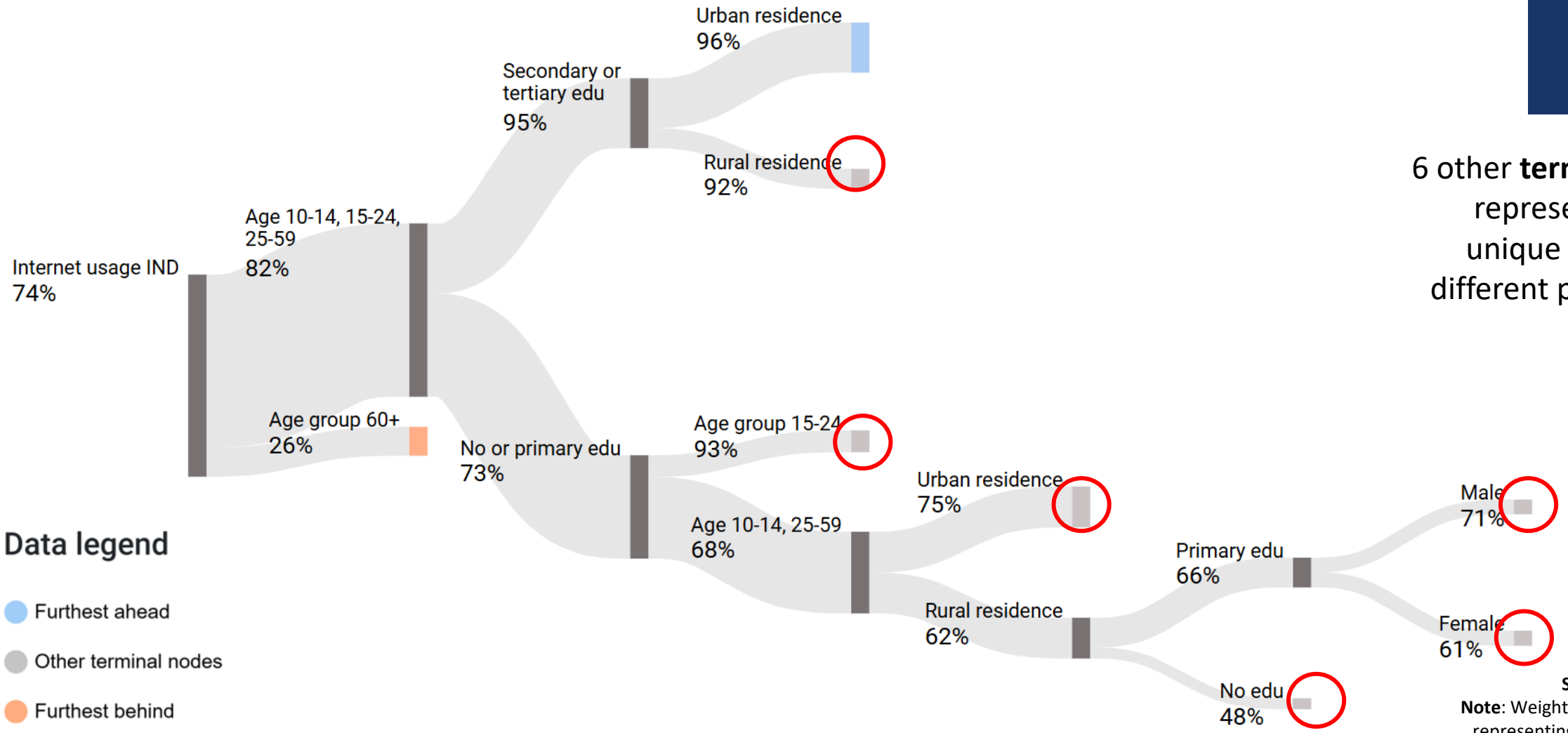
Furthest Behind: Older persons are left behind.

Data legend

- Furthest ahead
- Other terminal nodes
- Furthest behind

Source: SUSEANS (2024).
Note: Weighted results are presented representing 236 million individuals.

LNOB Tree for Internet Usage in Indonesia



6 other **terminal nodes** representing other unique groups with different participation rates

Data legend

- Furthest ahead
- Other terminal nodes
- Furthest behind

Source: SUSEANS (2024).
Note: Weighted results are presented representing 236 million individuals.

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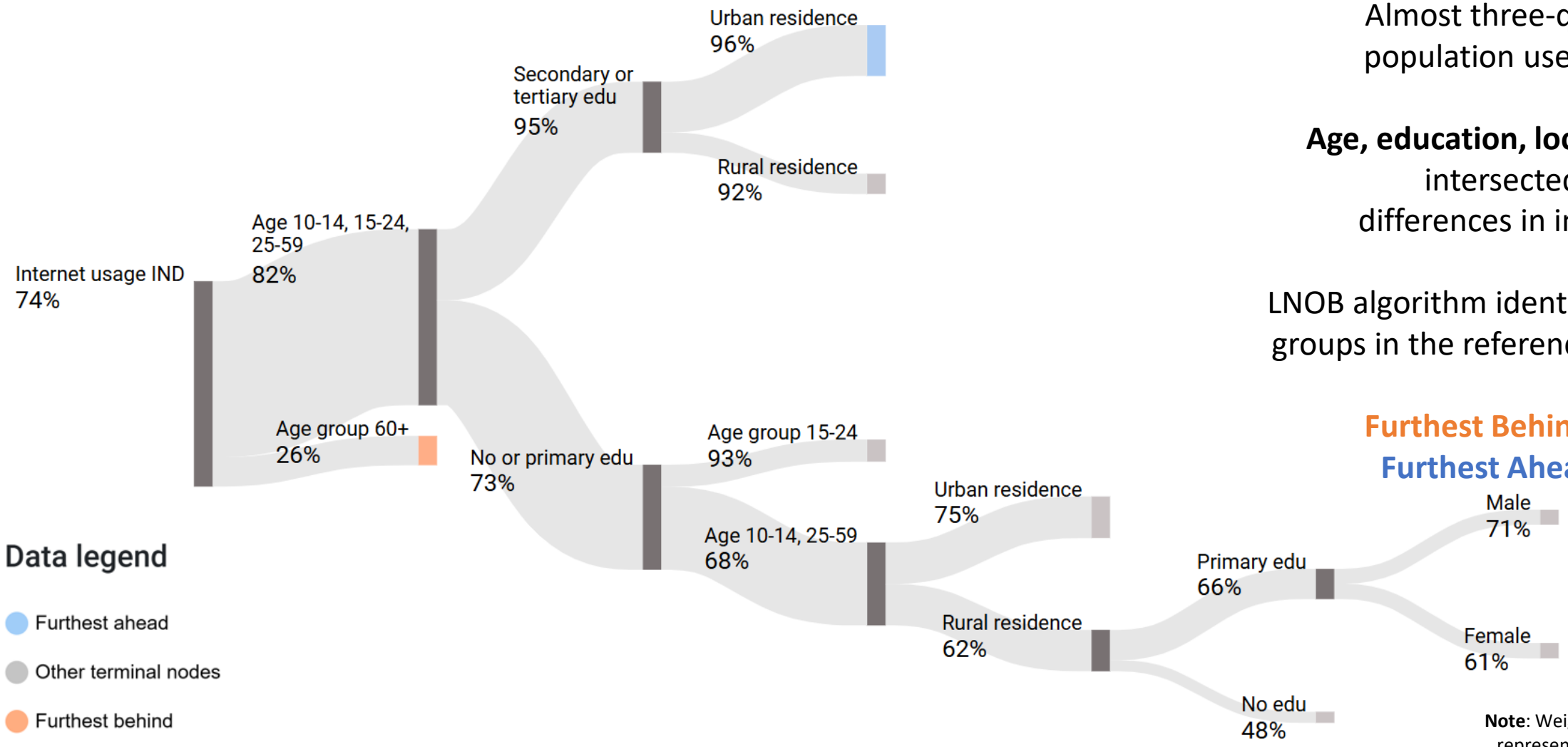
LNOB Tree for Internet Usage in Indonesia



Source: SUSEANS (2024).
Note: Weighted results are presented representing 236 million individuals.

Summary:

Almost three-quarters of the population used the internet

Age, education, location and sex intersected in explaining differences in internet usage.

LNOB algorithm identified 9 distinct groups in the reference population.

Furthest Behind: 26% usage
Furthest Ahead: 96% usage

Key takeaways from LNOB analysis

- **Furthest behind groups are never the same across SDG indicators.** Different circumstances intersect differently even within the country.
- **Rarely does one circumstance identify the furthest behind group.** It's rarely monetary poverty that derives inequality. Poverty intersects with other circumstances
- **Furthest behind groups are usually small and distinct groups.** It can identify small groups usually less than 10% of the population.
- **Surveys are great starting** points but for granular results and province or district level, we need more comprehensive data sources like census or administrative data.

Classification and Regression Trees

LNOB Trees can…

- Identify the groups that are furthest behind based on their shared circumstances.
- Reveal which circumstances are associated with the biggest gaps in access to basic opportunities.
- Help policymakers understand whom to prioritize for interventions to reduce inequality.

LNOB Trees can't…

- Explain causal relationships between circumstances and outcome.
- Predict who will be the furthest behind in the future or in a different sample.
- Be easily compared to one another over time, as splits may involve different circumstances.

Use of LNOB Evidence in Asia and the Pacific

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Mainstreaming LNOB across Asia-Pacific

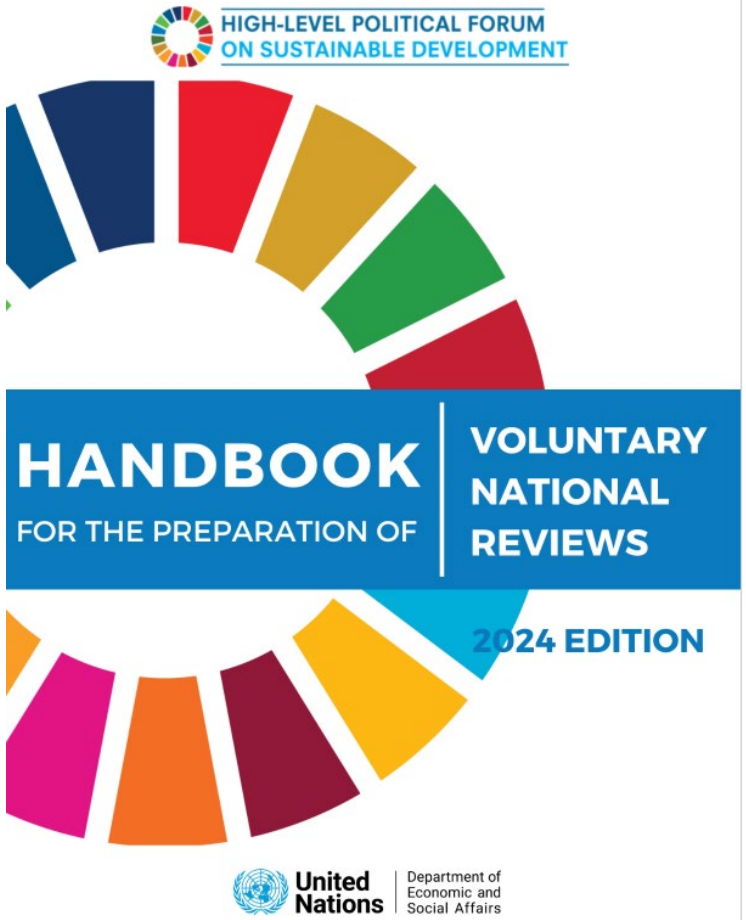


Red – LNOB evidence used in VNR

Blue – LNOB evidence on the Platform

Disclaimer:
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Role of LNOB in VNRs/VSRs/VLRs



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Leaving no one behind

Countries could set out actions they have taken to mainstream the principle of leaving no one behind in the implementation of the SDGs. This could include actions to prioritise outcomes for vulnerable groups, as well as looking beyond population averages to identify who they are, where they are located and what their specific needs may be. Countries are encouraged to go beyond social policies and include macroeconomic policies and technology that impact the situation of those who are furthest behind. Particular attention should be placed on efforts to empower women and girls. Starting points for addressing the area of 'leaving no one behind' could include actions to end extreme poverty, policies aimed at reducing inequalities and policies aimed at overcoming discriminatory barriers, including those arising from geography, as well as efforts to ensure inclusive and effective participation in implementation. The impact of multiple and overlapping inequalities—for example the challenges of women with disabilities living in rural areas—could also be considered.

Some questions that could be considered include the following:

- How are vulnerable groups and those furthest behind being identified?
- Who is being left behind and what are the underlying reasons for their vulnerability?
- What disaggregated sources of data are available and what are the data gaps?
- What actions are being taken to determine the needs of the vulnerable and furthest behind?
- What is being done to support the empowerment of vulnerable groups?

Country examples

Ireland took an open draft approach to their second VNR and allowed non-governmental participants to review and contribute to the VNR report. Key national stakeholder groups representing a variety of sectors were invited to contribute a chapter for inclusion in the VNR

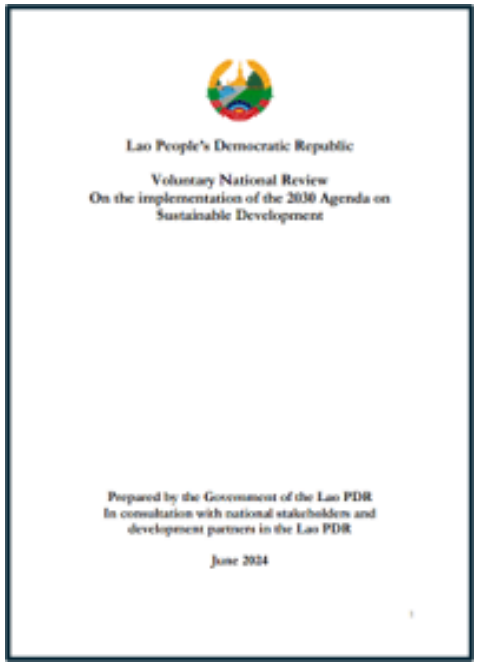
LNOB in VNRs in Southeast Asia



Indonesia
(2025)

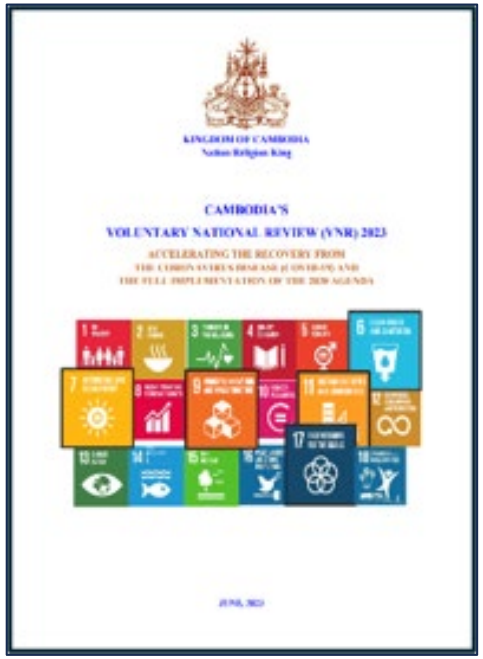
Thailand
(2025)





Lao People's Democratic Republic
(2024)

Cambodia
(2023)



Nepal (2024)

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LNOB in the VNR of India (2025)



INDONESIA VNR 2025

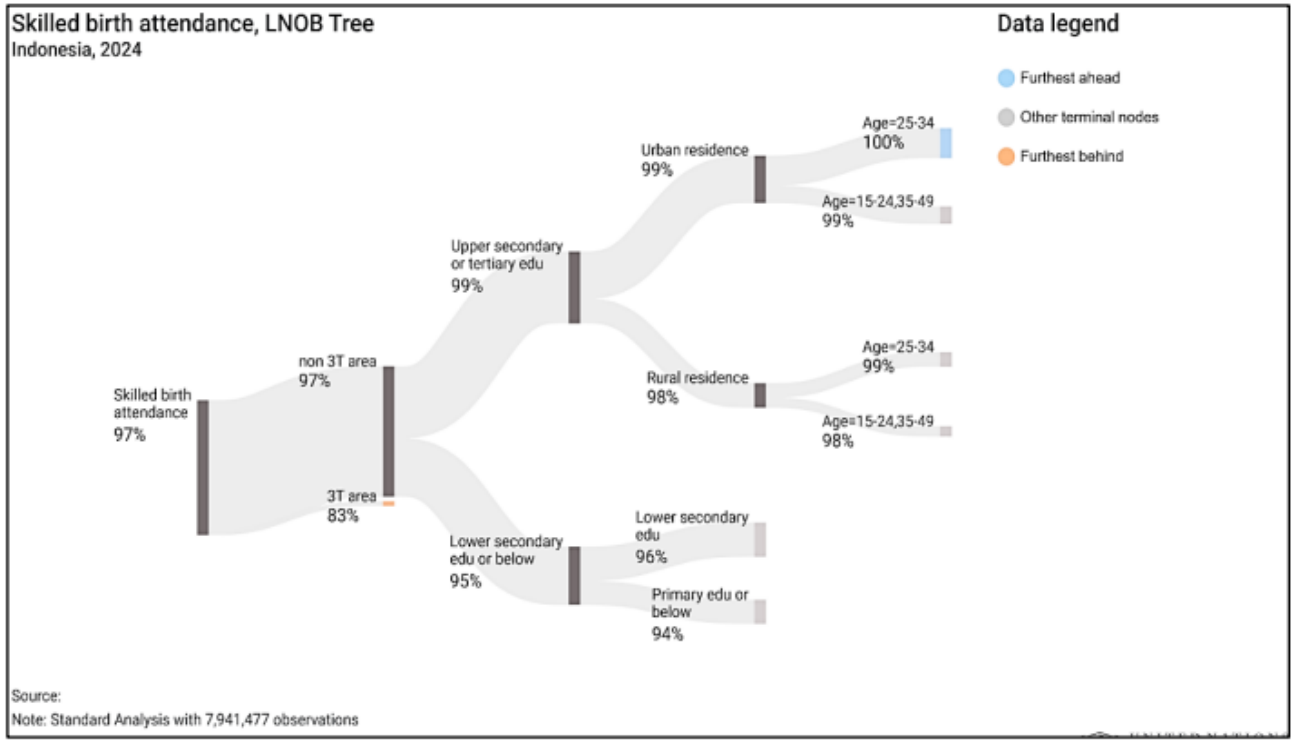
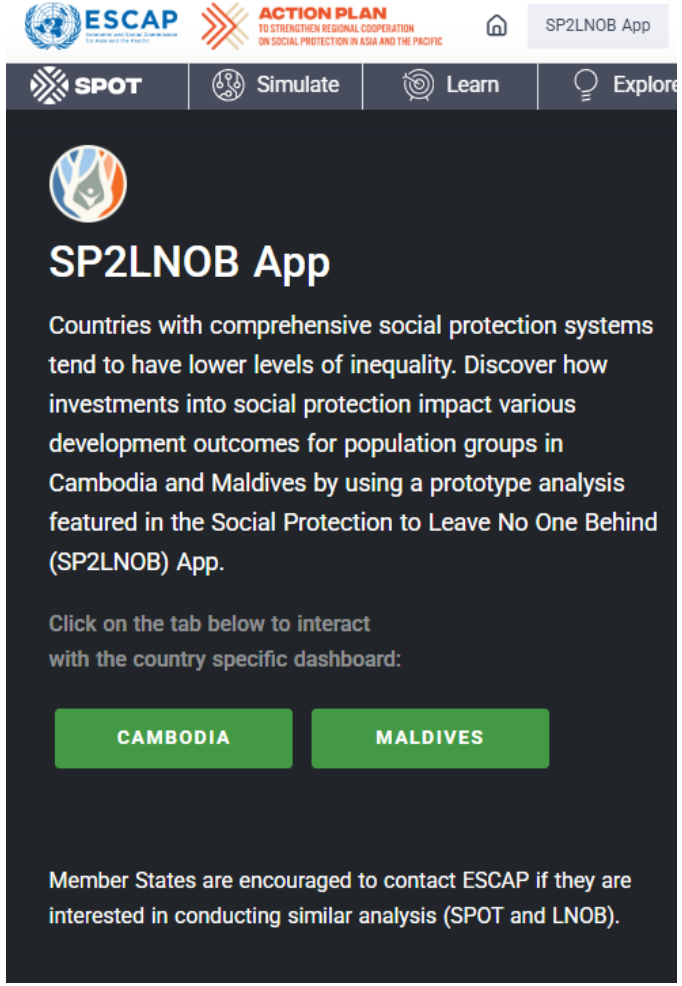
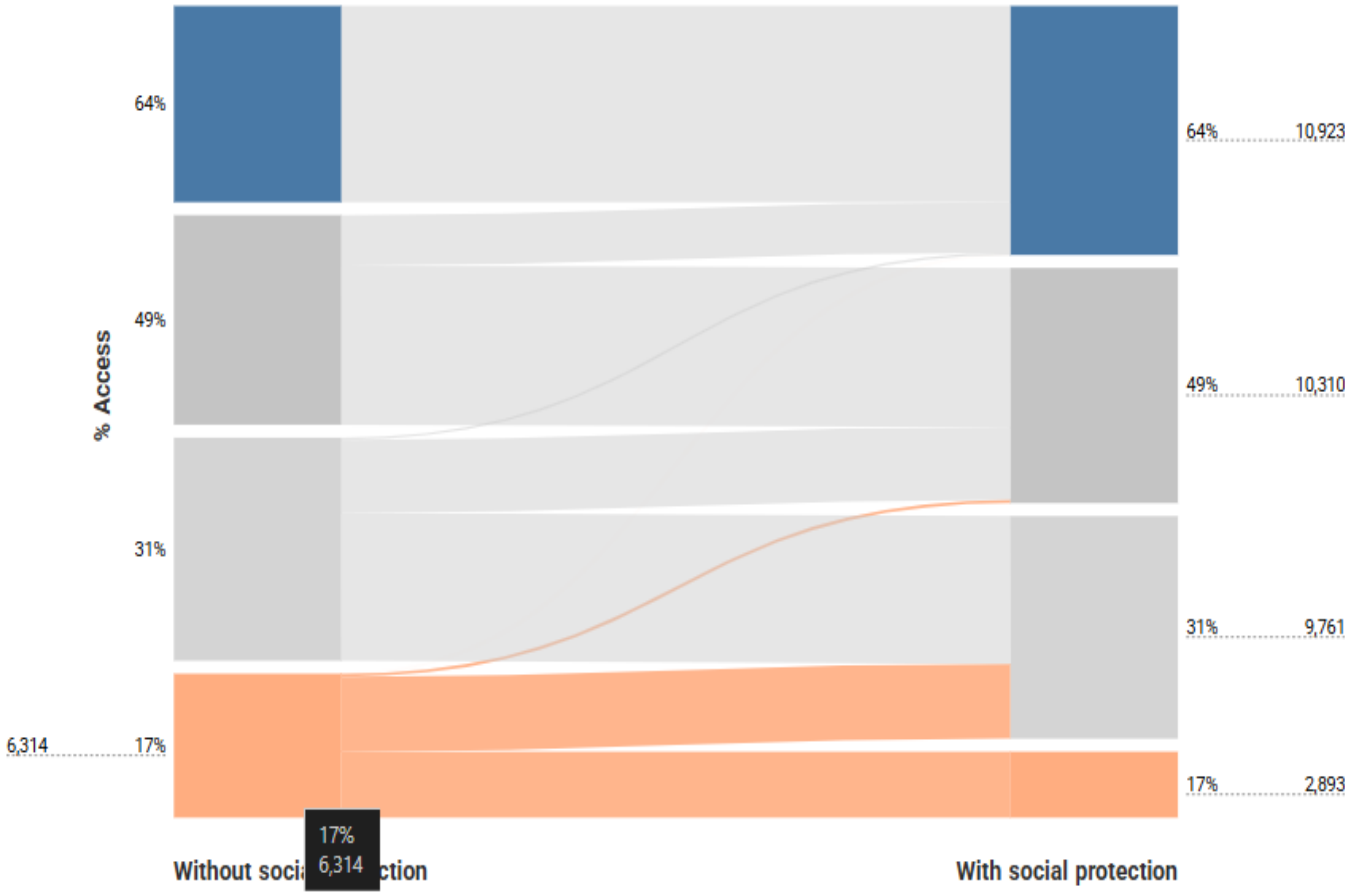


Figure 4. 14 LNOB Tree of Skilled Birth Attendance
(source: BPS-Statistics Indonesia and UNESCAP, processed)

Social Protection to Leave No One Behind (SP2LNOB)





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LNOB Platform and SDG Dashboard

Presentation by the SDG Sekretariat

Ministry of National Development Planning (BAPPENAS)



BAPPENAS

Kementerian Perencanaan Pembangunan Nasional/
Badan Perencanaan Pembangunan Nasional



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Lunch Break



Session III:
Exploring the LNOB Platform



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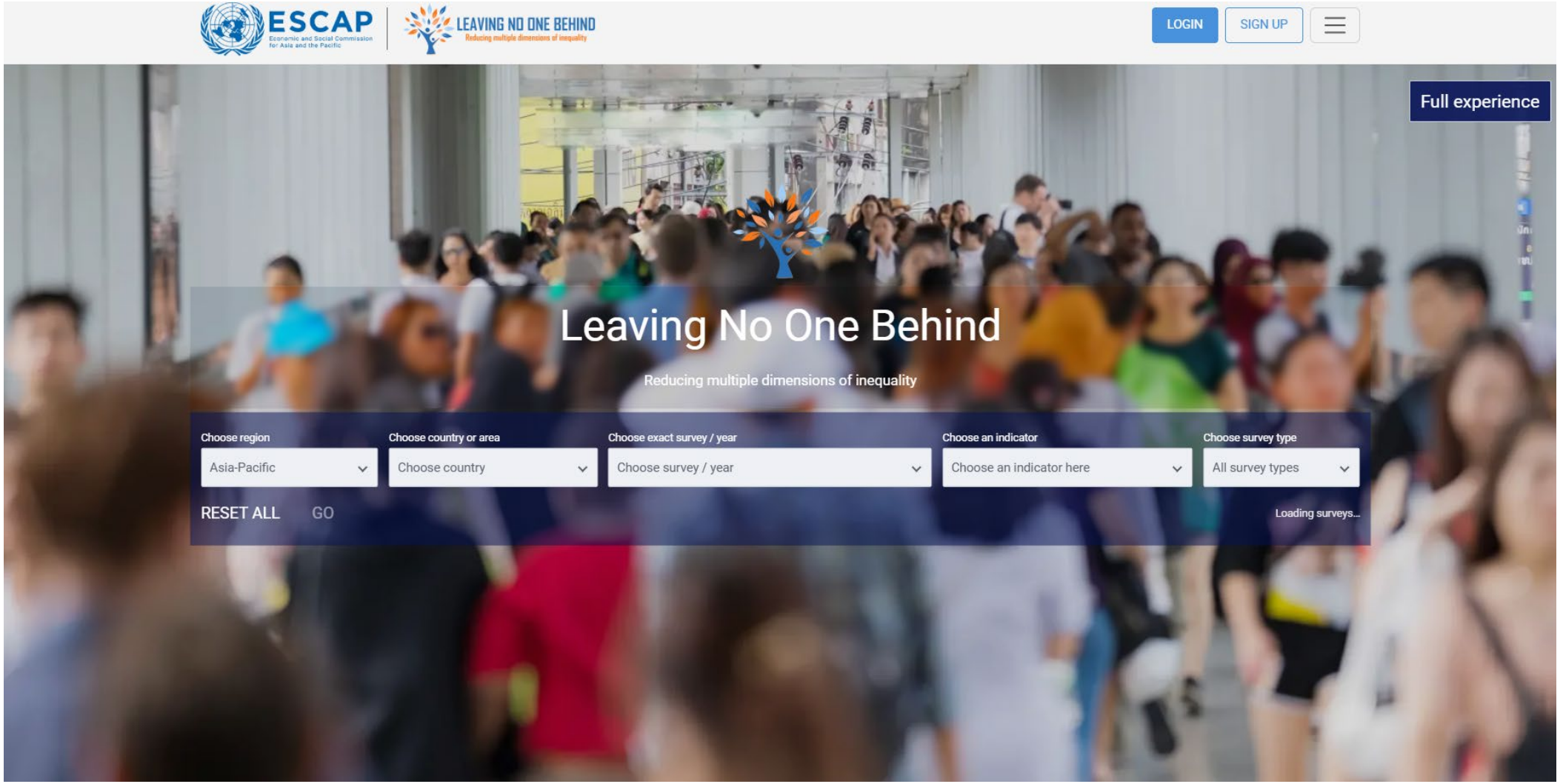
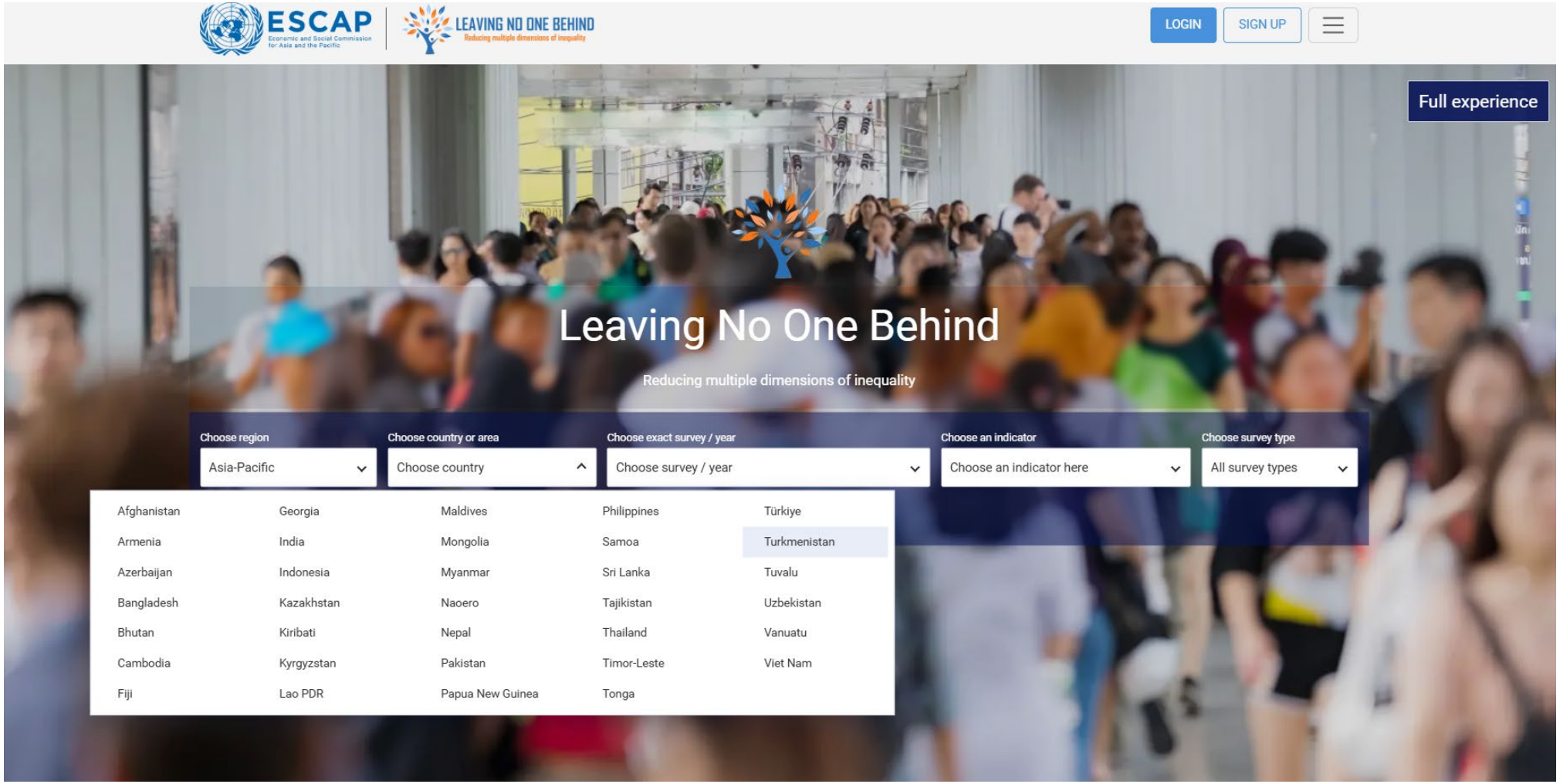
ESCAP LNOB Platform

- **Highlights** inequalities and gaps in SDG indicators at **national** and **subnational** levels **in 34 countries** across Asia and the Pacific in **2010-2025** period.
- **Identifies** groups that are **furthest behind** in SDGs by disaggregating **19 SDG indicators** (SDGs 1-8, 16 and 17).
- **Helps** policymakers understand **whom to prioritize for interventions** to reduce inequality of opportunity.
- **Monitors** gaps and inequality in SDG achievements and supports **Voluntary National Reviews**.
- [*Forthcoming*] **Informs** sectoral policies, plans and strategies and national development plans with inclusive evidence.

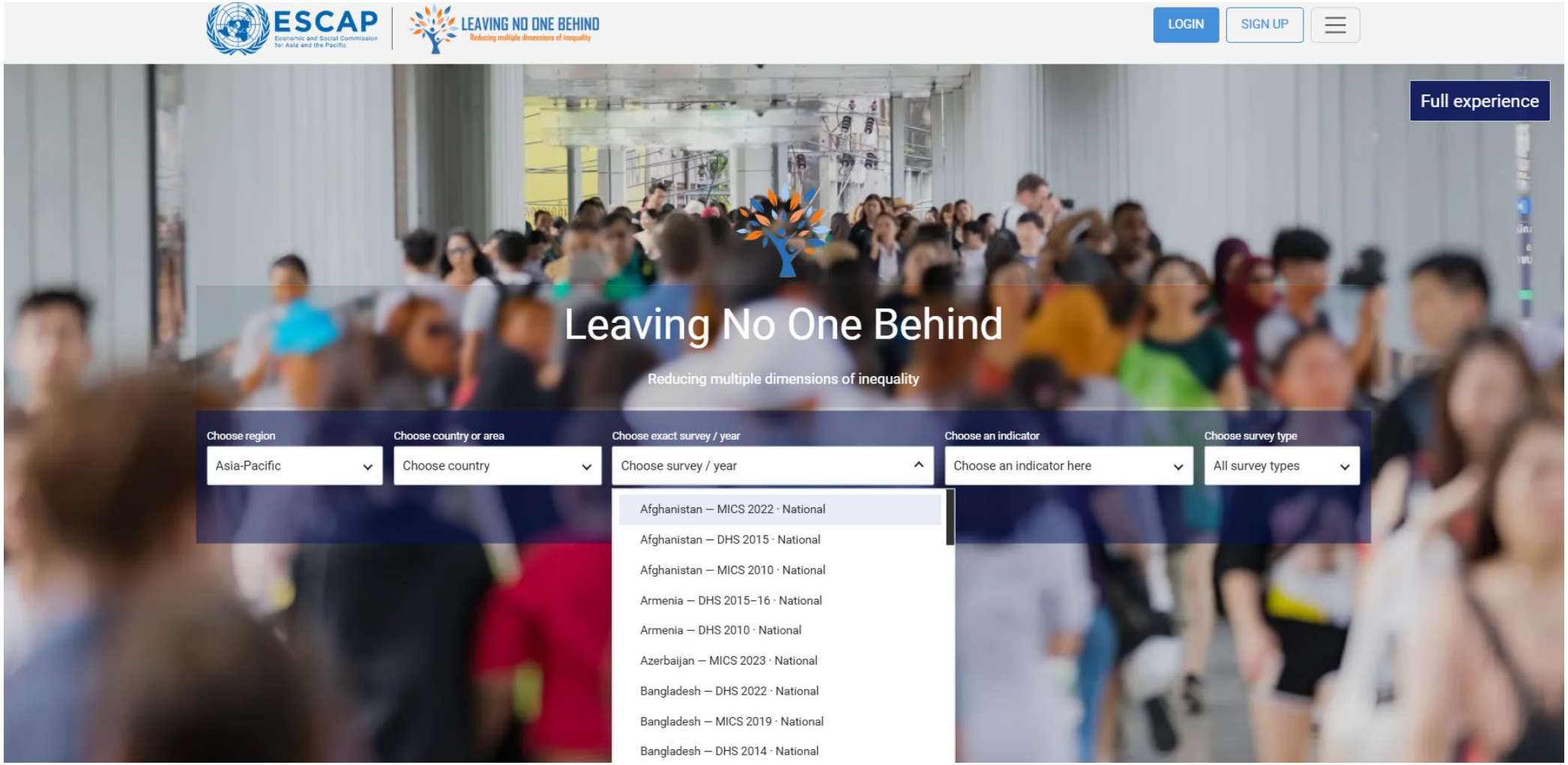
ESCAP LNOB Platform



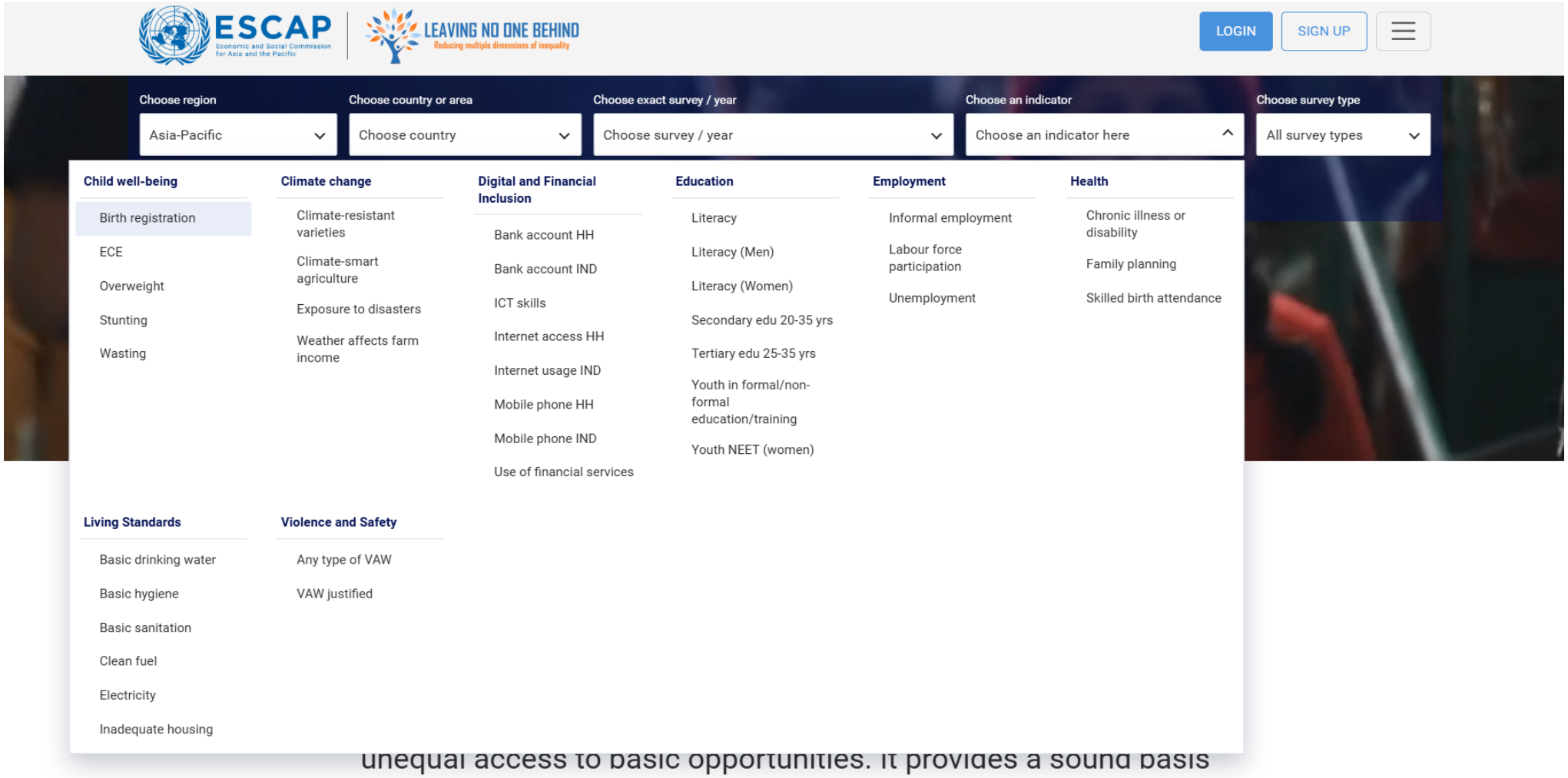
ESCAP LNOB Platform



ESCAP LNOB Platform



ESCAP LNOB Platform



Another example from the platform



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Group Work I



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Guidance for Group Work

Objective: Review and discuss LNOB results from provinces of Indonesia.

- **Step 1**: Identify a notetaker and a presenter for your group
- **Step 2:** Explore the LNOB tree for selected indicator(s) at national and provincial levels and discuss the results. Who are the furthest behind?
- **Step 3:** Discuss alternative ways of disaggregating this indicator. Anything missing among the circumstances? Another survey data?
- **Step 4:** Discuss what additional work is needed to make this result useful for you?
- **Step 5:** Recommend specific SDG or other indicators for deeper LNOB analysis in the future.

Group Presentations



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Session IV:

Defining Priority Areas for Collaboration under the LNOB Project



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Upcoming Activities in Indonesia

- **Data analysis**
  - Analyze SUSENAS and SAKERNAS (2026) at national/provincial levels. Any other surveys?
  - Draft a briefing notes for BPS and BAPPENAS for review and validation.

- **Build Technical Capacity-Building Workshop in Colombo**
  - Transfer the LNOB algorithm to statisticians and technical specialists.
  - Use the upgraded algorithm with better inference and post-estimation statistics.

- **Support Inclusive and Evidence-based Policymaking**
  - Collaborate with government institutions to identify policy questions.
  - Analyze national survey data and administrative data, if available.
  - Draft policy briefs to inform policy discussions
  - Organize national consultation

Data Landscape in Indonesia

Dr. Budi Setiawan

Director of Social Welfare Statistics
Badan Pusat Statistik (BPS)



BADAN PUSAT STATISTIK

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Group Work II



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Guidance for Group Work

- What existing **policy commitments, national strategies, or international reporting obligations** (i.e., in relation to the 2030 Agenda) could this work support?

- What **policy frameworks or strategies are expected in the next 1-3 years** that could benefit from the project's evidence and analysis?

- Which ministries or agencies have a mandate or influence over these policy areas? Would you like to collaborate with ESCAP?

- Are you collaborating with any United Nations entities in Indonesia on any of these policy areas in design and implementation?

Guidance for Group Work

Policy area or upcoming policy process/document	Timeline	Government focal point(s); any UN partner(s)	Candidate indicators/data sources	Notes/action points

Coffee/Tea Break
(15 minutes)



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Evaluation



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