Building the A3 Adolescent Indicators Dashboard and Gender Gaps Dashboard

The Adolescent Atlas for Action (A3) is a suite of tools that summarizes the lives and needs of adolescents around the world to promote evidence-based decision-making. Through accessible and easy-to-grasp data just one click away, the A3 bridges the gap between decisionmakers and evidence to inform policies and programs.

The Adolescent Indicators dashboard and Gender Gaps dashboard are two simple but dynamic dashboards that provide insights on the lives of adolescent girls and boys living in low- and middle-income countries (LMICs) across 9 thematic domains of wellbeing. The Adolescent Indicators dashboard showcases how adolescent girls or boys are faring under each theme, globally and subnationally, as well as how the indicators across domains are interlinked. The Gender Gaps dashboard allows you to compare gaps by domain and indicator, both globally and subnationally.

This brief elaborates on the methodology for developing both dashboards.

DEVELOPING THE ADOLESCENT INDICATORS DASHBOARD

Together, the dashboards seek to answer the following questions:

1. How are adolescents faring around the world?
2. How are the indicators of adolescent wellbeing in a country interlinked?
3. How are the experiences and outcomes of girls and boys different?

Landscape analysis

In consultation with key stakeholders, we conducted a landscape analysis of adolescent-focused data and resources. We identified 9 key adolescent-focused themes to explore in the A3, and we refer to these as thematic "domains."

The A3 currently includes 9 domains, including:

- Climate, environment, and infrastructure
- General Health and Nutrition
- Mental Health and Substance Abuse
- Education
- Economics, Employment, and Poverty
- Gender Norms and Agency
- Exposure to Media
- Harmful Practices
- Sexual and Reproductive Health and Rights

Curating the Data

The data sources for both dashboards were selected based on the overarching questions we sought to answer as well as for the potential to scale the dashboards to more countries in the future. With

this in mind, data from the Demographic and Health Survey (DHS) and Multiple Indicator Cluster Survey (MICS) series were selected as the main sources for our analysis. Since DHS and MICS rely on a standardized questionnaire, the indicators derived from these data sources are internationally comparable. These surveys are also nationally representative and subnationally representative at the first administrative level, allowing analysis below the country level. As the DHS and MICS focus on men and women aged 15-49, we are only able to capture self-reported data for adolescents aged 15-19 in our dashboards.

The 93 included countries in the dashboards represent all countries with a DHS and MICS survey completed in the year 2010 or later. The most recent year of data was used in the dashboards, regardless of survey source.

To capture the adolescent population burden, we utilized population estimates from WorldPop. The estimates are made available on a gridded 100mx100m surface, that we aggregate to the relevant regions. These modelled estimates are available for all 5-year age groups and all years between 2000-2020.

To display subnational maps on the dashboard, we collated a database of geospatial data (shapefiles) from sources including DHS, IPUMS, Database of Global Administrative Areas (GADM), Global Data Lab (GDL), as well as custom created shapefiles. All data used in creation of this database are publicly available for download.

Analyzing the Data

To calculate prevalence estimates, we took into consideration the survey design and used appropriate survey weights as provided by the DHS and MICS. Confidence intervals were also generated for all estimates to allow users to gauge the level of certainty or precision and whether any observed differences in prevalence are potentially due to error. For subnational estimates, we disaggregated data at the first administrative level, the level at which the DHS and MICS are designed to be representative.

In addition to the prevalence estimates, we also provide the population burden estimate. To generate this information, we use a subnational estimate of adolescent population in the year of the survey, based on the WorldPop 100mx100m gridded population estimate for girls and boys aged 15-19. Using a shapefile matching the administrative boundaries used in the survey, the population is aggregated to the subregion level. This specificity allowed precise matching of population estimates to our survey, which is not available in other sources.

To present interlinkages between indicators, we used the Wald distance algorithm to calculate the relationship between indicators across all individual girls and boys in a population. The resulting similarity matrix represents the incidence of co-occurrence

between each pair of indicators. The matrix includes values 0 to 1 — 1 meaning highly linked and 0 meaning not linked. The heat map visualization divides the linkage into four categories: Not Linked, Low Linkage, Some Linkage, and Highly Linked. These categories are created by dividing the range of similarity found in a single country matrix into quartiles.

The gender gap is calculated by subtracting the percentage of boys from the percentage of girls, which gives us a percentage points estimate.

CONTINUING TO GROW THE DASHBOARD

We will continue to add data for new indicators and countries and update older data as new DHS and MICS surveys are completed and published.

For any additional inquiries, please contact us at a3@popcouncil.org