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UIS methodology for regional and global aggregates

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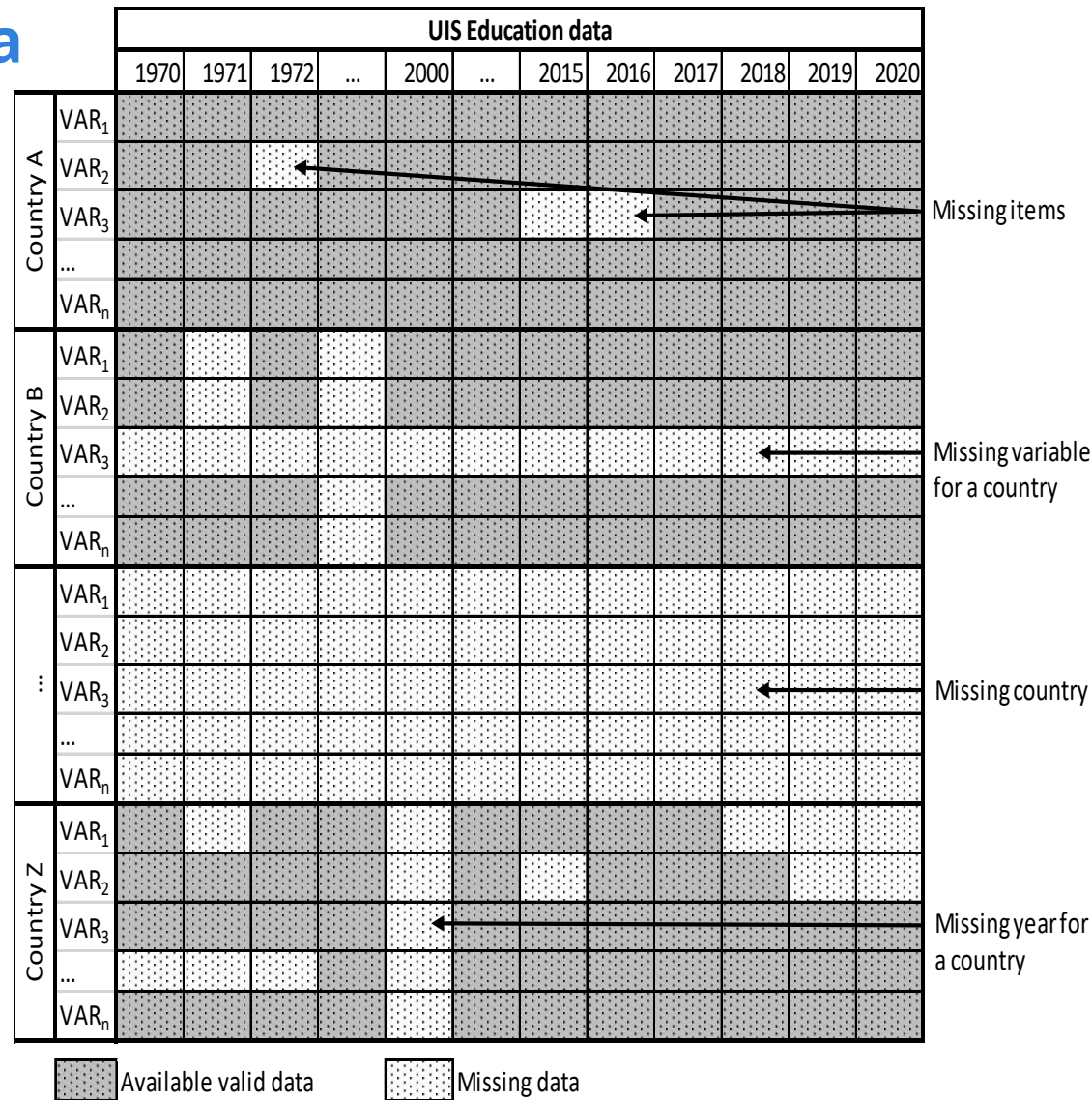
Seventh meeting of the Technical Cooperation Group on SDG 4 – Education 2030

27 October 2020



Types of missing data

- Statistical units are countries.
- Data are missing if:
 - Not reported by a country, or
 - judged by the UIS to be not publishable.
- Types of missing data:
 - Individual indicator value
 - Variable
 - Country
 - Year



UIS imputation model for missing national data

- Developed at UIS, initially for education data.
- Goal of imputation:
 - Fill gaps in UIS database before calculation of regional aggregates.
 - Imputed values are not published.
- UIS relies on deterministic imputation:
 - Imputation based on available data for a country.
 - Countries without data: imputation based on data for other countries in the region.
 - Imputations can be reproduced (no random elements).
 - Calculation is transparent and efficient.
 - Results are consistent across countries, years and indicators.

Three types of imputation

1. Simple nearest-year imputation (SNYI):
 - Countries have data for some but not all years.
2. Nearest-year imputation with auxiliary data (NYIAD):
 - Countries have missing data for some indicators.
 - Countries have data for related indicators.
3. Unweighted group mean imputation (UWGMI):
 - Countries have no data.
 - Other countries in the same region have data.

Note: for large countries, missing data are estimated manually but not published, to enable calculation of regional aggregates.

Summary

- Calculation:
 - Formulas are straightforward and easy to understand.
 - Imputation methodology for missing data is automated and transparent.
- Quality:
 - Quality control throughout the calculation process.
 - Quality rating of regional estimates.
- Availability:
 - New regional aggregates are released every year in September.
 - Scope: SDG regions, WB income groups, UIS regions, GPE regions, UNICEF regions, UN Regional Economic Commissions.



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