



Module 4: Household Surveys for Monitoring SDG 4

Module overview – objectives, topics and learning outcomes

Although many education indicators are available from Education Management Information System (EMIS) data and annual school censuses, these systems are not capable of capturing all relevant data, particularly regarding populations that have never entered the formal school system, or those that have dropped out indefinitely, such as adults, children with disabilities, ethnic minorities, migrants, out-of-school children and other marginalized populations.

It is essential to take note of this circumstance because Sustainable Development Goal (SDG) 4 emphasizes paying particular attention to marginalized populations. With this in mind, household surveys have the unique reach to include these populations. Adopting household surveys enables interested parties to capture a wider spectrum – and therefore greater coverage of data for the world education agenda.

The objective of this module is to familiarize the reader with household surveys for education policies and programmes and monitoring. Understanding the usefulness of household survey data will aid in establishing better collaborations between survey designers and education specialists. The ultimate aim is to confer and decide on the

types of data which are of highest relevance in monitoring education.

After providing brief background information on the importance of household surveys, this module will present which current education indicators can be retrieved from surveys; what types of household surveys collect education data; as well as challenges in collecting education-related data through household surveys.

Finally, this module will provide an outline for the creation of institutional mechanisms – for collaboration with interested parties – so household surveys can be utilized effectively to yield the most significant SDG 4 indicator data.

The following topics are covered in this module:

- Household surveys and education monitoring;
- SDG 4 indicators from household surveys;
- Institutional mechanisms to fully utilize household surveys for SDG 4 data collection.

After completing the module, learners will have acquired the following learning outcomes:

- An understanding of the importance of household surveys in monitoring SDG 4;
- An overview of the many existing household surveys which contain education relevant data;
- Knowledge on relevant information retrievable from household surveys to monitor SDG 4;
- The ability to maximize the use of household surveys to their fullest capacity.

1 The Importance of Household Surveys

The concept of collating education related data from household surveys and censuses for use in education monitoring, planning and management is not entirely a new one.

Household surveys have been a valuable monitoring tool for a long time and they are in fact more than just a registration of the population; they are a prime societal assessment tool which national policymaking can be based on. It is significant that the global monitoring mechanism has explicitly mentioned and urged the use of household surveys for monitoring SDG 4.

Household surveys are an important source of education data for policymakers at the national and international levels, as well as at the sub-national level if the sample size is sufficient. Information gathered from household surveys is especially valuable because it can be cross-referenced with other characteristics to create insightful analysis that informs sound policy decisions.

Characteristics, such as health, employment, income, expenditure and other topics covered in household surveys provide adequate insight for evidence-based policy formulations and planning purposes.

Nevertheless, due to various reasons, the application of household survey data in monitoring and planning of education has been limited. The most broadly used series of household surveys (the Demographic and Health Survey and Multiple Indicator Cluster Survey) use sets of about six, or nine education questions that cover only the most fundamental education topics.

In contrast, some household surveys ask over 40 education questions and touch on a variety of topics, but these often lack rigorous design and formulation.

Household surveys usually collect data on the characteristics of both the household and individuals within the household. Data on individual household members is collected for several variables, spanning usually the age and sex of the respondent, literacy status, educational attainment, missing school participation and employment situation, among other characteristics.

The same can be requested for household members on whose behalf the respondent answers. Household surveys typically collect data from a nationally representative sample of households, which are randomly selected from a list of households.

Table 1: Information that can be registered through household surveys

| Household-related | Individual-related |
|--|---|
| <ul style="list-style-type: none"> • Household/family composition; • Food expenditures; • Housing characteristics; • Household (physical) assets; • Savings; • Health expenditures; • Combined household income/ purchasing power (adequacy or financial ability to buy products and services). | <ul style="list-style-type: none"> • Sex; • Age; • Place of birth; • Marital status; • Education attainment; • Literacy status; • Distance to school; • Health care access; • Anthropometrics (e.g. height, weight); • Fertility status; • Migratory background/ethnicity; • Employment status; • Occupation; • HIV status. |

Source: Porta Emilio, Gustavo Arcia, Kevin Macdonald, Sergiy Radyakin, Michael Lokshin, 2011: Assessing Sector Performance and Inequality in Education. (See Chapter 2 on 'Using Household Survey Data'), Washington, DC, The World Bank, **access:** <http://siteresources.worldbank.org/EXTEDSTATS/Resources/3232763-1252439241095/ADePTBookChap-2.pdf>; Strauss, John and Duncan Thomas, 1995: Human Resources: Empirical Modeling of Household and Family Decisions. In: Handbook of Development Economics (vol. 3A), ed. J. Behrman and T. N. Srinivasan. Amsterdam, North Holland Press.

It is well known that household surveys also provide the means to estimate the national demand and need for education because the decision to enrol and keep children in school is made at the household level by household members who weigh the cost against the benefit of an education.

Household surveys can deliver insights into factors of deciding for, or against education and its associated activities. For instance, enrolling boys and girls in formal schooling; enrolling them at the appropriate age; participating as parents in school governance activities; and complementing learning activities as a family at home. Factors like these are subject to significant private investment for families before these very families capture the economic benefits of education¹.

Challenges with household surveys

A general problem with household surveys is that the collected education data is not always uniform and thus not necessarily comparable across the different surveys in different countries. Differently formulated, sampled and processed data ultimately tells different stories. Policy formulations that have been built on household survey data evaluations in one country, therefore, cannot be translated into any other country context

¹ Strauss, John and Duncan Thomas, 1995: Human Resources: Empirical Modeling of Household and Family Decisions. In: Handbook of Development Economics (vol. 3A), ed. J. Behrman and T. N. Srinivasan. Amsterdam, North Holland Press.

where similar survey results appear to be present.

It is of further concern that currently available education data from household surveys is under-utilized in education planning, despite its invaluable information to inform policy debates. One reason is that the data user is often not aware of the usefulness of education data in household surveys due to an apparent limitation in terms of variables and question design. Another reason is that the present education data is understood primarily as background characteristics, rather than an object of study². Given these characteristics, as outlined above for the household and individual levels, household surveys offer a wealth of possibilities to identify marginalized populations and concentrate development efforts.

As to the utilization of household survey data on education, it is important to properly interpret the data, as data by itself may not explain anything if not put into perspective by comparing, disaggregating and correlating different variables.

With this in mind, it is necessary to look at socio-economic, cultural and demographic characteristics of the population; at time periods, pre-, present and past educational programmes and reforms; and systemic and infrastructural conditions addressed with teacher, facility/facilities and available teaching materials.

For more general information on household surveys, see:

 **Using Household Survey Data³**

 **Exploring Household Surveys⁴**
(See modules B1 to B5 on 'Household Survey Data for EFA Monitoring')

² Ibid.

³ Porta, E., Arcia, G. Macdonald, K., Radyakin, S. and M. Lokshin, 2011: Assessing Sector Performance and Inequality in Education. Washington, DC, The World Bank Group. (Chapter 2 on 'Using Household Survey Data'). Access: openknowledge.worldbank.org/bitstream/handle/10986/2326/632520PUB0Exto00public00BOX361512B0.pdf

⁴ Systematic Monitoring of Education for All, Training Manual, access: <http://uis.unesco.org/sites/default/files/documents/systematic-monitoring-of-education-for-all-training-modules-for-asia-pacific-en.pdf>

1.1 Examples of household surveys

Different types of household surveys are used to collect data on different issues, including education. Among household surveys, some are national and some are internationally-led.

The national household survey

National household surveys are generally designed to generate data and information relevant for the national context for specific issues. Such design does not necessarily apply to all international standards, definition, and methodologies in generating data. Data populated from such surveys might not be comparable with other household survey data produced in other countries.

The following is an example from the Lao Social Indicator Survey 2017. The first example shows the collection of information on basic household member characteristics, while the second example shows how to collect education relevant information.

Figure 1: Example 1 from the Lao Social Indicator Survey II in 2017

| LIST OF HOUSEHOLD MEMBERS | | | | | | | | | | | | | | | | | | HL | | |
|--|---|---|--|--|------|--|--|---|---|--------------------------------------|--|---|--|--|--|---|--|--|--|---|
| <p>First complete HL2 for all members of the household. Then proceed with HL3 and HL4 vertically. Once HL2-HL4 are complete for all members, make sure to probe for additional members: Those that are not currently at home, any infants or small children and any others who may not be family (such as servants, friends) but who usually live in the household. Then, ask questions HL5-HL20 for each member one at a time. If additional questionnaires are used, indicate by ticking this box:</p> | | | | | | | | | | | | | | | | | | | | |
| HL1. Line number | HL2. First, please tell me the name of each person who usually lives here, starting with the head of the household. <i>Probe for additional household members.</i> | HL3. What is the relationship of (name of the head of household)? | HL4. Is (name) male or female? 1 MALE 2 FEMALE | HL5. What is (name)'s date of birth? 98 DK 9998 DK | | HL6. How old is (name)? <i>Record in completed years.</i> <i>If age is 95 or above, record '95'.</i> | HL7. Did (name) stay here last night? 1 YES 2 NO | HL8. Record line number if woman and age 15-49. | HL9. Record line number if man, age 15-49 and HH8 is yes. | HL10. Record line number if age 0-4. | HL11. Age 0-17? 1 YES 2 NO ☺ <i>Next Line</i> | HL12. Is (name)'s natural mother alive? 1 YES 2 NO ☺ 8 DK ☺ <i>HL16</i> | HL13. Does (name)'s natural mother live in this household? 1 YES 2 NO ☺ <i>HL15</i> | HL14. Record the line number of mother and go to HL16. | HL15. Where does (name)'s natural mother live? 1 ABROAD 2 IN ANOTHER HOUSEHOLD IN THE SAME PROVINCE 3 IN ANOTHER HOUSEHOLD IN ANOTHER PROVINCE 4 INSTITUTION IN THIS COUNTRY 8 DK | HL16. Is (name)'s natural father alive? 1 YES 2 NO ☺ 8 DK ☺ <i>HL20</i> | HL17. Does (name)'s natural father live in this household? 1 YES 2 NO ☺ <i>HL19</i> | HL18. Record the line number of father and go to HL20. | HL19. Where does (name)'s natural father live? 1 ABROAD 2 IN ANOTHER HOUSEHOLD IN THE SAME PROVINCE 3 IN ANOTHER HOUSEHOLD IN ANOTHER PROVINCE 4 INSTITUTION IN THIS COUNTRY 8 DK | HL20. Copy the line number of mother from HL14. If blank, ask: Who is the primary caretaker of (name)? <i>If 'No one' for a child age 15-17, record '90'.</i> |
| LINE | NAME | RELATION* | M F | MONTH | YEAR | AGE | Y N | W 15-49 | M 15-49 | 0-4 | Y N | Y N DK | Y N | MOTHER | Y N DK | Y N | FATHER | | | |
| 01 | | 0 1 | 1 2 | | | | 1 2 | 01 | 01 | 01 | 1 2 | 1 2 8 | 1 2 | | 1 2 3 4 8 | 1 2 8 | 1 2 | | 1 2 3 4 8 | |
| 02 | | | 1 2 | | | | 1 2 | 02 | 02 | 02 | 1 2 | 1 2 8 | 1 2 | | 1 2 3 4 8 | 1 2 8 | 1 2 | | 1 2 3 4 8 | |
| 03 | | | 1 2 | | | | 1 2 | 03 | 03 | 03 | 1 2 | 1 2 8 | 1 2 | | 1 2 3 4 8 | 1 2 8 | 1 2 | | 1 2 3 4 8 | |
| 04 | | | 1 2 | | | | 1 2 | 04 | 04 | 04 | 1 2 | 1 2 8 | 1 2 | | 1 2 3 4 8 | 1 2 8 | 1 2 | | 1 2 3 4 8 | |
| 05 | | | 1 2 | | | | 1 2 | 05 | 05 | 05 | 1 2 | 1 2 8 | 1 2 | | 1 2 3 4 8 | 1 2 8 | 1 2 | | 1 2 3 4 8 | |
| 06 | | | 1 2 | | | | 1 2 | 06 | 06 | 06 | 1 2 | 1 2 8 | 1 2 | | 1 2 3 4 8 | 1 2 8 | 1 2 | | 1 2 3 4 8 | |
| 07 | | | 1 2 | | | | 1 2 | 07 | 07 | 07 | 1 2 | 1 2 8 | 1 2 | | 1 2 3 4 8 | 1 2 8 | 1 2 | | 1 2 3 4 8 | |
| 08 | | | 1 2 | | | | 1 2 | 08 | 08 | 08 | 1 2 | 1 2 8 | 1 2 | | 1 2 3 4 8 | 1 2 8 | 1 2 | | 1 2 3 4 8 | |
| 09 | | | 1 2 | | | | 1 2 | 09 | 09 | 09 | 1 2 | 1 2 8 | 1 2 | | 1 2 3 4 8 | 1 2 8 | 1 2 | | 1 2 3 4 8 | |
| 10 | | | 1 2 | | | | 1 2 | 10 | 10 | 10 | 1 2 | 1 2 8 | 1 2 | | 1 2 3 4 8 | 1 2 8 | 1 2 | | 1 2 3 4 8 | |
| 11 | | | 1 2 | | | | 1 2 | 11 | 11 | 11 | 1 2 | 1 2 8 | 1 2 | | 1 2 3 4 8 | 1 2 8 | 1 2 | | 1 2 3 4 8 | |
| 12 | | | 1 2 | | | | 1 2 | 12 | 12 | 12 | 1 2 | 1 2 8 | 1 2 | | 1 2 3 4 8 | 1 2 8 | 1 2 | | 1 2 3 4 8 | |
| 13 | | | 1 2 | | | | 1 2 | 13 | 13 | 13 | 1 2 | 1 2 8 | 1 2 | | 1 2 3 4 8 | 1 2 8 | 1 2 | | 1 2 3 4 8 | |
| 14 | | | 1 2 | | | | 1 2 | 14 | 14 | 14 | 1 2 | 1 2 8 | 1 2 | | 1 2 3 4 8 | 1 2 8 | 1 2 | | 1 2 3 4 8 | |
| 15 | | | 1 2 | | | | 1 2 | 15 | 15 | 15 | 1 2 | 1 2 8 | 1 2 | | 1 2 3 4 8 | 1 2 8 | 1 2 | | 1 2 3 4 8 | |

* Codes for HL3: Relationship to head of household:
 01 HEAD
 02 SPOUSE / PARTNER
 03 SON / DAUGHTER
 04 SON-IN-LAW / DAUGHTER-IN-LAW
 05 GRANDCHILD
 06 PARENT
 07 PARENT-IN-LAW
 08 BROTHER / SISTER
 09 BROTHER-IN-LAW / SISTER-IN-LAW
 10 UNCLE/AUNT
 11 NIECE / NEPHEW
 12 OTHER RELATIVE
 13 ADOPTED / FOSTER / STEPCHILD
 14 SERVANT (LIVE-IN)
 16 OTHER (NOT RELATED)
 98 DK

Source: Lao Statistics Bureau, 2018: Lao Social Indicator Survey II 2017, Survey Findings Report. Vientiane, Lao Statistics Bureau and UNICEF, access: <https://www.lsb.gov.la/wp-content/uploads/2017/05/Lao-Social-Indicator-Survey-Lsis-II-2017.pdf>

Figure 2: Examples from the Lao Social Indicator Survey II in 2017

| EDUCATION 1 | | | | | | | | | | | ED | | | | | |
|----------------------------|--|---|-----|---|-----|---|---------------|--|------------|---|---|----|---|----|-----|----|
| ED1. <i>Line number</i> | ED2. <i>Name and age.</i> <i>Copy names and ages of all members of the household from HL2 and HL6 to below and to next page of the module.</i> | ED3. <i>Age 3 or above?</i> 1 YES 2 NO ☹ <i>Next Line</i> | | ED4. <i>Has (name) ever attended school or any Early Childhood Education programme?</i> 1 YES 2 NO ☹ <i>Next Line</i> | | ED5. <i>What is the highest level and grade or year of school (name) has ever attended?</i> LEVEL: 0 ECE ☹ <i>ED7</i> 1 PRIMARY 2 LOWER SECONDARY 3 UPPER SECONDARY 4 POST SECONDARY 5 TERTIARY EDU. 8 DK <i>ED7</i> | | GRADE/YEAR: 11-15 PRIMARY 21-24 LOW SEC 31-33 UP SEC 41 -43 POST SEC NON TER. 51-57 TERTIARY 98 DK ☹ <i>ED7</i> | | ED6. <i>Did (name) ever complete that (grade/year)?</i> 1 YES 2 NO 8 DK | ED7. <i>Age 3-24?</i> 1 YES 2 NO ☹ <i>Next Line</i> | | ED8. <i>Check ED4: Ever attended school or ECE?</i> 1 YES 2 NO ☹ <i>Next Line</i> | | | |
| Line | Name | Age | Yes | No | Yes | No | Level | | Grade/Year | Y | N | DK | Yes | No | Yes | No |
| 01 | | | 1 | 2 | 1 | 2 | 0 1 2 3 4 5 8 | | | 1 | 2 | 8 | 1 | 2 | 1 | 2 |
| 02 | | | 1 | 2 | 1 | 2 | 0 1 2 3 4 5 8 | | | 1 | 2 | 8 | 1 | 2 | 1 | 2 |
| 03 | | | 1 | 2 | 1 | 2 | 0 1 2 3 4 5 8 | | | 1 | 2 | 8 | 1 | 2 | 1 | 2 |
| 04 | | | 1 | 2 | 1 | 2 | 0 1 2 3 4 5 8 | | | 1 | 2 | 8 | 1 | 2 | 1 | 2 |
| 05 | | | 1 | 2 | 1 | 2 | 0 1 2 3 4 5 8 | | | 1 | 2 | 8 | 1 | 2 | 1 | 2 |
| 06 | | | 1 | 2 | 1 | 2 | 0 1 2 3 4 5 8 | | | 1 | 2 | 8 | 1 | 2 | 1 | 2 |
| 07 | | | 1 | 2 | 1 | 2 | 0 1 2 3 4 5 8 | | | 1 | 2 | 8 | 1 | 2 | 1 | 2 |
| 08 | | | 1 | 2 | 1 | 2 | 0 1 2 3 4 5 8 | | | 1 | 2 | 8 | 1 | 2 | 1 | 2 |
| 09 | | | 1 | 2 | 1 | 2 | 0 1 2 3 4 5 8 | | | 1 | 2 | 8 | 1 | 2 | 1 | 2 |
| 10 | | | 1 | 2 | 1 | 2 | 0 1 2 3 4 5 8 | | | 1 | 2 | 8 | 1 | 2 | 1 | 2 |
| 11 | | | 1 | 2 | 1 | 2 | 0 1 2 3 4 5 8 | | | 1 | 2 | 8 | 1 | 2 | 1 | 2 |
| 12 | | | 1 | 2 | 1 | 2 | 0 1 2 3 4 5 8 | | | 1 | 2 | 8 | 1 | 2 | 1 | 2 |
| 13 | | | 1 | 2 | 1 | 2 | 0 1 2 3 4 5 8 | | | 1 | 2 | 8 | 1 | 2 | 1 | 2 |
| 14 | | | 1 | 2 | 1 | 2 | 0 1 2 3 4 5 8 | | | 1 | 2 | 8 | 1 | 2 | 1 | 2 |
| 15 | | | 1 | 2 | 1 | 2 | 0 1 2 3 4 5 8 | | | 1 | 2 | 8 | 1 | 2 | 1 | 2 |

Source: Lao Statistics Bureau, 2018: Lao Social Indicator Survey II 2017, Survey Findings Report. Vientiane, Lao Statistics Bureau and UNICEF, access: <https://www.lsb.gov.la/wp-content/uploads/2017/05/Lao-Social-Indicator-Survey-Lsis-II-2017.pdf>

With socio-economic variables, as seen in the example, household surveys constitute an important source of education data for policymakers as they allow them to correlate information and perform detailed analysis that would not be possible with information from any other source⁵.

Just like we can obtain education relevant information through household questionnaires, other information on wide-ranging issues of national and international concern can be obtained through these means in a one-off survey, such as on the use of computers, communication and technology and Water, Sanitation and Hygiene (WASH) facilities.

Population censuses

The population census is the oldest type of household survey with the broadest coverage. Population censuses collect data about the entire population, in a specified area, at a regularly marked time interval, usually every five-to-ten years. Each person is asked questions about personal characteristics such as age, sex, marital status, education and employment status.

Population censuses can provide data about the number and composition of the entire population at a given point in time and selected socio-economic and educational characteristics of households and individual persons within the country.

Since the census collects data from every household in the country, it can provide valuable information for policies and the planning of socio-economic development – from national down to local administrative levels. Moreover, the census is the main source and basis for constructing sampling frames for selecting households and population for other surveys. The census is the most comprehensive source of demographic and socio-economic data for several countries. It is also important to remember that data collected from a census is essential to developing the sampling needed for any subsequent thematic-based household surveys.

International household surveys

Internationally-led household surveys are probably the most important source of data for socio-economic and demographic issues. They are conducted in several countries and they apply internationally agreed designs, methodologies and standards in collecting data and generating information⁶. Data generated from international household surveys are comparable across the countries that participated in the surveys. Depending on the purpose of the household surveys, data and information are collected. Some of the international household surveys include adequate modules to collect enough data on education.

⁵ fhi360, 2009: Education Policy and Data Centre, Household Survey Guidelines on Education, access: https://www.epdc.org/sites/default/files/documents/Household_Survey_Guidelines_on_Education.pdf

⁶ The Inter-secretariat Working Group on Household Surveys (ISWGHs) provides further advice on household surveys, access: <https://unstats.un.org/iswghs/>

Some household surveys are designed as multipurpose surveys, with a focus on a broad set of demographic and socioeconomic issues, whereas other surveys focus explicitly on specific subjects such as health. Surveys take a sample from the population and are representative, or can be made representative of the population as a whole (or whatever target population is defined for the survey). They have the advantage of permitting more detailed data collection than is feasible in a comprehensive census. Although many surveys are conducted on an ad hoc basis, there are an increasing number of multi-round integrated survey programmes.

To mention some of the most important, these include the Living Standards Measurement Study; the Demographic and Health Surveys (ORC Macro); the Multiple Indicator Cluster Surveys; and the Labour Force Surveys. The following sections provide a brief overview of some of the internationally-led household surveys, with SDG 4 relevant questions in their surveys.

Multiple Indicator Cluster Survey

The Multiple Indicator Cluster Survey (MICS) is a household survey developed by UNICEF to enable countries to monitor the situation of children and women. It is capable of producing statistically sound and internationally comparable estimates of a wide range of indicators. MICS was originally developed in response to the World Summit for Children to measure progress towards an internationally agreed set of mid-decade goals and has since evolved into addressing other international commitments, such as the United Nations General Assembly Special Session on HIV/AIDS and the Abuja targets to combat malaria.

Meanwhile, the sixth version of MICS generates information on multi-dimensional poverty, malnutrition, birth attendance, under-five mortality rates, early childhood development, pre-school attendance, early marriage, safe water and sanitation, child labour, birth registration and other indicators relevant for the SDGs, including SDG 4.

The MICS programme will also cover new areas, e.g. social protection, victimization, learning, use of clean fuels and technology and crucial data for disaggregation by disability and migration status.

 **Multiple Indicator Cluster Survey⁷**

Demographic and Health Survey

Since 1984, the Demographic and Health Survey (DHS) project has provided technical assistance to countries to help advance a global understanding of health and population

⁷ The UNICEF Multiple Indicator Cluster Survey, access: <http://mics.unicef.org/>

trends⁸. The DHS has gained a worldwide reputation for collecting and disseminating accurate, nationally representative data about health and populations in developing countries.

The DHS is implemented by Macro International Inc., which is funded by the United States Agency for International Development (USAID), with contributions from other donors such as UNICEF, UNFPA, WHO and UNAIDS. Macro International has partnered with several internationally experienced organizations, such as The Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs, Program for Appropriate Technology in Health (PATH), Blue Raster and The Futures Institute, to expand access to, and the use of DHS data.

DHS surveys collect information about fertility, reproductive health, maternal health, child health, immunization and survival, HIV/AIDS, maternal mortality, child mortality, malaria and women and children's nutrition. The set of questions is similar to the questions used in MICS.

A central aim of DHS is to provide quality data for policy development and programme planning, monitoring and evaluation. To build the policy and programmatic evidence-base, DHS data is first transformed into information, which is then made accessible to decision-makers. Robust analysis of data, beyond those published by the DHS project in its survey reports, is essential for transforming data into information. The results of such analysis when made readily available, understood and assimilated by policy-makers and programme managers can be very effective in these areas. Education-related information when made available through such surveys can add great value towards national and international monitoring of SDG 4.

Demographic and Health Survey⁹

Cross-comparability between MICS and DHS

MICS and DHS initially started out with their unique focus and the issues that they aimed to collect. However, due to data demands from countries and the progress made by both these surveys over the years, they have evolved and worked together to harmonize common practices and associated tools – to the extent they have begun to resemble each other.

The table below, based on a 2016 study¹⁰, shows that 77 per cent of all MICS questions can be found in DHS, and 66 per cent of all DHS questions can be found in MICS. Such

⁸ The Demographic and Health Survey, access: <https://dhsprogram.com>

⁹ The Demographic and Health Surveys Programme, access: <https://dhsprogram.com>

¹⁰ Lisowska, Beata, 2016. Household Surveys: Do competing standards serve country needs? Discussion Paper No. 4, June 28, 2016. Data Scientist, Development Initiatives, access: <http://www.publishwhatyoufund.org/wp-content/uploads/2016/11/Household-surveys-do-competing-standards-serve-country-needs.pdf>

commonality between these household surveys enhances the possibility of doing more in-depth analysis over larger populations, over a given period of time.

Figure 3: Commonly occurring questions between MICS and DHS

| Questions | Questionnaire | | | | | | Total (Common Questionnaires) | |
|--|---------------|-----|------|-----|-----------|-----|-------------------------------|-----|
| | Women | | Men | | Household | | MICS | DHS |
| | MICS | DHS | MICS | DHS | MICS | DHS | | |
| Total number of questions in questionnaire | 283 | 327 | 111 | 164 | 69 | 53 | 463 | 544 |
| Exact for close matches with counterpart | 189 | 178 | 78 | 78 | 49 | 43 | 316 | 299 |
| All matches with counterpart | 225 | 217 | 82 | 96 | 51 | 48 | 358 | 361 |
| Percentage of all matches with counterpart | 80% | 66% | 74% | 59% | 74% | 91% | 77% | 66% |

Source: Lisowska, Beata, 2016: Household Surveys: Do competing standards serve country needs? Discussion Paper No. 4, June 28, 2016. Data Scientist, Development Initiatives, **access:** <http://www.publishwhatyoufund.org/wp-content/uploads/2016/11/Household-surveys-do-competing-standards-serve-country-needs.pdf>

Living Standard Measurement Study

The Living Standard Measurement Study (LSMS) was established by the World Bank's Development Economics Research Group (DECRG) to explore ways of improving the quality of household data collected by statistical offices in developing countries.

LSMS is a research project initiated in 1980 and the programme is designed to help policymakers identify how policies can be designed and improved to positively influence outcomes in health, education, economic activities, housing and utilities, etc.

LSMS' surveys are different from the other surveys in that they collect detailed expenditure data, income data, or both. LSMS' surveys are in a sense a type of household budget survey. Many countries implement household budget surveys in some form or other on a semi regular basis.

A core objective of these surveys is to capture the essential elements of the household income and expenditure pattern. In some countries, the surveys focus exclusively on this objective, but it is also common for household budget surveys to include additional modules – for example, on health and nutrition.

The objectives of LSMS include:

- To improve the quality of household survey data.
- To increase the capacity of statistical institutes to perform household surveys.

Module 4

- To improve the ability of statistical institutes to analyse household survey data for policy needs.
- To provide policy makers with data that can be used to understand the determinants of observed social and economic outcomes.

LSMS provides users with actual household survey data for analysis and links to reports and research done using LSMS data.

Living Standard Measurement Study¹¹

Labour Force Survey

The Labour Force Survey (LFS) supported by the International Labour Organization (ILO) is one of the most common and most frequently collected household surveys¹².

First conducted in 1940 in the USA, LFS is conducted monthly in the USA and quarterly (four-times a year) in Australia, New Zealand, the United Kingdom and almost all European Union countries.

Labour force surveys are also conducted in most countries in the Asia-Pacific region, such as Brunei Darussalam, Indonesia, Mongolia, Myanmar, Nepal, Thailand and Viet Nam, among others.

The main objectives of LFS include:

- To capture labour market data with regards to qualification and occupation characteristics of the population.
- To estimate the unemployment rate in the country.

In addition to generating official labour force statistics, data from LFS is employed by academics and other researchers. LFS can also be used as a data source for research projects on topics such as female employment, the economic returns of education, migration and ethnic minority groups.

Labour Force Surveys¹³

¹¹ The World Bank Living Standard Measurement Study, access: <http://surveys.worldbank.org/lsm>

¹² For a list of labour force surveys, see ILO information on Labour Force Surveys, access: <https://www.ilo.org/dyn/lfsurvey/lfsurvey.home>

¹³ For a list of labour force surveys, access: <https://www.ilo.org/dyn/lfsurvey/lfsurvey.home>

2 Education Data in Household Surveys

As mentioned previously, education data can be retrieved from several household surveys and household survey data provides a wealth of information that cannot be obtained from other sources. It is used to inform policies and interventions, particularly to address issues around out-of-school children¹⁴.

Table 2 provides an overview of the wide range of common indicators which can be obtained from household surveys; the characteristics they can be disaggregated by; and the kind of questions they can be recognized by.

Though it is not always standard, most of the household surveys collect data on various issues with different disaggregation, mainly by age, sex, wealth, location, disability, ethnicity, etc. However, other household surveys also disaggregate the data by mother tongue/first language, second/other language(s) and migration status in order to identify marginalized groups that require aid and a development focus.

Table 2: Education-related indicators and example questions as found in household surveys

| INDICATOR | EXAMPLE QUESTIONS |
|---------------------------------|--|
| Literacy/illiteracy rate | <p>i. Can the person read and write with an understanding of [NATIONAL] language?</p> <p>Can the person read and write with an understanding of another language? [INDICATE LANGUAGE]</p> <p>Sources: General Population Census of the Kingdom of Cambodia 2008; Household Income and Expenditure Survey, Bangladesh. 2000; Living Standard Survey, Nepal, 2003; Integrated Household Survey, Pakistan, 2001.</p> <p>ii. Can [NAME] read letters/books/newspaper?</p> <p>Source: Bangladesh Education Household Survey 2014.</p> <p>iii. Can you read OR Write?</p> <p>Source: Expenditure and Consumption Survey, Lao PDR, 2003.</p> <p>iv. As a regular part of this work, do you (did you) have to read the following [CHOOSE ITEM]? (bills, payments, newspapers, forms, other)</p> <p>Source: China - STEP Skills Measurement Household Survey 2012 (Wave 1), Yunnan Province, 2012.</p> |

¹⁴ Compare: Gale, Charles, 2014: What Household Surveys Tell Us About Education. Global Partnership for Education, access: <https://www.globalpartnership.org/blog/what-household-surveys-tell-us-about-education>

| | |
|--|---|
| <p>Educational attainment/ completion rate</p> | <p>i. What is the highest level and grade or year of school [NAME] has ever attended? Source: MICS6.</p> <p>ii. What is the highest qualification [NAME] obtained? Source: Vietnam Household Registration System Survey 2015.</p> <p>iii. What is the highest level of education that (NAME) completed? Source: Myanmar Labour Force Survey, 2015.</p> |
| <p>Access and participation (attendance)</p> <p>Gross Intake Rate for Grade one of primary education (GIR)</p> <p>Net Intake Rate for Grade one of primary education (NIR)</p> <p>Gross attendance rate (GAR)</p> <p>Net attendance rate (NAR)</p> <p>Age-specific Attendance Ratio (ASAR)</p> | <p>i. During [CURRENT] school year, what level and grade [is/was] [NAME] attending? Source: DHS Cambodia 2014.</p> <p>ii. What grade or year is [NAME] currently attending? Source: Household Profile Questionnaire Philippines 2012.</p> <p>iii. What is the level of education currently attended? (for person in question) Source: Brunei Darussalam Labour Force Survey 2017.</p> |
| <p>Transition rate</p> <p>Promotion rate</p> <p>Repetition rate</p> <p>Dropout rate</p> <p>Survival rate</p> | <p>i. Did [NAME] attend school at any time during the [PREVIOUS] school year? During [CURRENT] school year, what level and grade [is/was] [NAME] attending? Source: DHS Cambodia 2014.</p> <p>ii. During that previous school year, which level and grade or year did [NAME] attend? During this current school year, which level and grade or year is [NAME] attending? Source: MICS6 for Household.</p> |
| <p>Out-of-school population</p> | <p>i. Did (NAME) ever attend school?</p> <p>ii.a. Did [NAME] attend school at any time during the [PREVIOUS] school year?</p> <p>ii.b. During [CURRENT] school year, what level and grade [is/was] [NAME] attending? Source: DHS Cambodia 2014.</p> <p>iii.a. What is the highest level and grade or year of school [NAME] has ever attended?</p> <p>iii.b. During that previous school year, which level and grade or year did [NAME] attend?</p> <p>iii.c. During this current school year, which level and grade or year is [NAME] attending? Source: MICS6.</p> |

| | |
|--------------------------------|--|
| Over-age /under-age | i. At which level of education is [NAME]? Which grade is [NAME] attending? Source: Vietnam Household Registration System Survey 2015. ii. See examples under access and participation |
| Education expenditure | i. In the last 12 months, how much money was spent for each studying member of the household? (By item, such as books, paper, tuition fees, uniforms, examination fee, internet, etc.) Source: Bangladesh Education Household Survey 2014. ii. What are the expenditures on [NAME]'s education over the past 12 months for compulsory subjects in school? (open question) How much do you have to pay to enrol [NAME] in school? Source: Vietnam Household Registration System Survey 2015. |

We should take good notice at this point that all the above indicators are retrievable from household surveys and can be disaggregated by the following factors: **AGE, SEX, WEALTH, LOCATION, DISABILITY, ETHNICITY, MOTHER TONGUE/FIRST LANGUAGE, SECOND/OTHER LANGUAGE(S) AND MIGRATION STATUS**

When designing household survey questionnaires, levels of education should be standardized for ease of interpretation across countries in alignment with the International Standard Classification of Education (ISCED) system (see Module 1) and to keep in mind the official age range for the intended education levels.

Household Survey Guidelines on Education¹⁵

Other data collected in household surveys

There are other examples from household surveys that ask questions related to reasons for not attending school. General household questionnaires are also used to obtain information about the perceptions of school quality by parents.

This is one important source of information about quality of education provided by the school. It does not replace other sources, such as standardized tests that measure learning. Questionnaires that contain direct questions about how parents perceive school quality for children provide unique information, even though the responses have elements of subjectivity in words such as: 'often,' 'relevant,' 'needs,' 'good,' 'mediocre,' and 'judge'. The questions also assume that survey respondents have enough knowledge to pass reliable judgment on all these questions.

¹⁵ Fhi360, 2009: Household Survey Guidelines on Education for use in the context of the IHSN Question Bank EPDC Working Paper No. EPDC-09-04, access: https://www.epdc.org/sites/default/files/documents/Household_Survey_Guidelines_on_Education.pdf

2.1 SDG 4 indicators from household surveys

The purpose of the following section is to show that almost half of all SDG 4 indicators are, or can already be collected by household surveys, thus reducing a concern of how to collect important education data for SDG 4.

When taking a thorough look at the 43 SDG 4 indicators, both global and thematic, it becomes evident that almost half can be calculated purely from household surveys.

For some indicators, household surveys are the only source of data; for others household surveys are one of the sources and can be retrieved from other sources, such as administrative data. Table 3 shows which indicators can be retrieved by means of household surveys.

Table 3: SDG 4 indicators by target retrievable from household surveys

| Indicator number | Indicator clause | HHS is the only source | HHS is one of the sources | Other possible sources |
|---|---|------------------------|---------------------------|------------------------|
| Target 4.1 By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes | | | | |
| 4.1.3 | Gross intake ratio to the last grade (primary education, lower secondary education) | | √ | EMIS |
| 4.1.4 | Completion rate (primary education, lower secondary education, upper secondary education) | √ | | |
| 4.1.5 | Out-of-school rate (primary education, lower secondary education, upper secondary education) | | √ | EMIS |
| 4.1.6 | Percentage of children over age for grade (primary education, lower secondary education) | | √ | EMIS |
| Target 4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education | | | | |
| 4.2.1 | Proportion of children under five years of age who are developmentally on track in health, learning and psychosocial well-being | √ | | |
| 4.2.2 | Participation rate in organized learning (one year before the official primary entry age), by sex | | √ | EMIS |

| | | | | |
|---|---|---|----------------|------------------|
| 4.2.3 | Percentage of children under five years experiencing positive and stimulating home learning environments | √ | | |
| 4.2.4 | Gross early childhood education enrolment ratio in (a) pre-primary education; and (b) early childhood educational development | | √ | EMIS |
| Target 4.3 By 2030, ensure equal access for all women and men to affordable quality technical, vocational and tertiary education, including university | | | | |
| 4.3.1 | Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months | | √ | EMIS |
| 4.3.2 | Gross enrolment ratio for tertiary education | | √ | EMIS |
| 4.3.3 | Participation rate in technical vocational programmes (15-to-24-year olds) | | √ | EMIS |
| Target 4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship | | | | |
| 4.4.1 | Proportion of youth and adults with Information and Communications Technology (ICT) skills, by type of skill | | √ | EMIS |
| 4.4.3 | Youth/adult educational attainment rates by age group, economic activity status, levels of education and programme orientation | √ | | |
| Target 4.5 By 2030, eliminate sex disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous people and children in vulnerable situations | | | | |
| 4.5.1 | Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous people and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated | | √ | EMIS |
| 4.5.2 | Percentage of students in primary education whose first, or home language is the language of instruction | | √ | EMIS |
| 4.5.4 | Education expenditure per student by level of education and source of funding (public and private) | | √ (private) | EMIS (public) |

| Target 4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy | | | | |
|--|---|---|---|--------------|
| 4.6.1 | Percentage of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy; and (b) numeracy skills | | √ | Examinations |
| 4.6.2 | Youth/adult literacy rate | √ | | |
| 4.6.3 | Participation rate of illiterate youth/adults in literacy programmes | | √ | EMIS |
| Target 4.7. By 2030, that all learners acquire the knowledge and skills needed to promote sustainable development, including among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development | | | | |
| 4.7.2 | Percentage of students by age group (or education level) showing adequate understanding of issues relating to global citizenship and sustainability | | √ | Examination |
| 4.7.3 | Percentage of secondary education students showing proficiency in knowledge of environmental science and geoscience | | √ | Examination |
| 4.7.4 | Percentage of schools that provide life skill-based HIV and sexuality education | | √ | EMIS |

Source and details: UIS, 2018: Metadata for the global and thematic indicators for the follow-up and review of SDG 4 and Education 2030, **access:** <http://uis.unesco.org/sites/default/files/documents/sdg4-metadata-global-thematic-indicators-en.pdf>

SDG 4 and the Education 2030 Agenda heavily emphasize the importance of obtaining disaggregated data in order to allow policymakers to focus on the Agenda's main objective of ensuring 'no one is left behind'. As adopted by the education community and Member States with the Incheon Declaration and SDG 4–Education 2030 Framework for Action, the focus rests on inclusion and equity by giving everyone an equal opportunity¹⁶.

¹⁶ Education 2030 Steering Committee, 2016: Incheon Declaration and Framework for Action for the implementation of SDG 4, access: http://uis.unesco.org/sites/default/files/documents/education-2030-incheon-framework-for-action-implementation-of-sdg4-2016-en_2.pdf



Remember!

All people, irrespective of sex, age, race, colour, ethnicity, language, religion, political, or other opinion, national or social origin, property or birth, as well as persons with disability, migrants, indigenous people and children and youth, especially those in vulnerable situations, or other status, should have access to an inclusive, equitable quality education and lifelong learning opportunities. – Incheon Declaration and Framework for Action for the implementation of Sustainable Development Goal 4.

Primary importance is given to age, sex, wealth, location, disability, ethnicity, mother tongue(s), migration status and individual characteristics available from household survey background questions. However, this does not mean that other disaggregation is not relevant. SDG Target 4.5 is meant to precisely encapsulate that all indicators are to be disaggregated by socio-economic factors.

2.2 Strengthening SDG 4 monitoring through improved survey data coverage

As mentioned in a previous module, SDG 4 covers areas beyond basic education and expands to include Technical and Vocational Education and Training (TVET), higher education and adult education. Most of the household surveys do not have full coverage, or have little coverage of TVET, higher education, as well as non-formal and adult education. To make household surveys more relevant and useful for SDG 4 monitoring, the data collection can be expanded. However, there are a few countries and a few surveys that already have good coverage of some of the desired indicators under SDG 4.

2.2.1 Improving coverage on TVET and skills

TVET has increased in many Asia-Pacific countries in recent times. Due to rapid economic development and a growing demand for a skilled labour force in various job sectors, countries need good data on how populations are accessing TVET and skills development programmes.

TVET and skills programmes are provided by various agencies and some of the programmes consist of very basic skills training, whereas others lead to diploma entry and degree courses. Therefore, it is necessary to discuss with the relevant agencies and authorities to decide which programmes and what skills need to be covered in data collection.

Box 1: TVET and skills coverage in MLCS, Myanmar



The Myanmar Living Condition Survey (MLCS) included vocational education in their highest completed level of education and in the current attendance grade/level category.

What is the highest level of education that (NAME) completed?

- | | | |
|------------------|---------------------------------|------------------|
| 00 NIL | 04 Vocational certificate > Q37 | 07 Bachelor |
| 01 Below primary | 05 High school | 08 Post-graduate |
| 02 Primary | 06 Under graduate | 09 Master |
| 03 Middle | /diploma | 10 PhD |

What is the highest level of education that (NAME) completed?

- 01 YES
- 02 NO

What is the highest level of education that (NAME) completed?

- | | | |
|----------------------------|----------------------|------------------|
| 01 Kindergarten/ grade1 | 07 Grade 7 | 14 Bachelor |
| 02 Grade 2 | 08 Grade 8 | 15 Post graduate |
| 03 Grade 3 | 09 Grade 9 | 16 Master |
| 04 Grade 4 | 10 Grade 10 | 17 PhD |
| 05 Grade 5 | 11 Grade 11 | 18 Others |
| 06 Grade 6 | 12 Vocational school | |
| | 13 Under Graduate | |

To capture broader skill areas in the survey, the questionnaire also included a separate section (section VII) on training. Myanmar’s questionnaire defines training as ‘outside the general education system’ and the data was collected for persons 12 years-old and above.

Under the above section, three questions have been included:

- Did (NAME) ever attend any vocation/technical training for improving/acquiring professional / technical skills?
- During the last year i.e. since (DATE) to today, how many trainings did (NAME) attend?
- What was the subject of the most recent training that (NAME) attended? (by ISCED level)

Source: UNDP, 2017: Myanmar Living Condition Survey, 2017, **access:** <http://www.mm.undp.org/content/myanmar/en/home/library/poverty/MLCS.html>

Box 2: Literacy and NFE programmes coverage in Cambodia Socio-Economic Survey, 2014



What kind of non-formal classes is (NAME) currently attending/did (NAME) attend?

1. Literacy (6 months).
2. Vocational training (tailoring, motor repairing, Khmer classical music, hair dressing, poultry raising etc.).
3. Post literacy (Agricultural training activities).
4. Foreign languages.
5. Computer literacy.
6. Others.

Source: National Institute of Statistics, 2014: Cambodia Socio-Economic Survey 2014: Household Questionnaire. Royal Government of Cambodia, **access:** <http://nada-nis.gov.kh/index.php/catalog/19/download/126>

Looking at MLCS, it can be seen that the survey would be able to calculate TVET and skills-related indicators such as: i) Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex; and ii) The participation rate in technical vocational programmes (15 to 24 years-old) by sex.

Similarly, the Labour Force Survey (LFS) of Cambodia (2011- 2012) covers extensively the various skills acquired through training and participation in various types of programmes, both formal and non-formal. A total of eight questions are dedicated to cover access, the type of training, the place of training and the duration of training. The codes used for the various types of courses studied can help analyse the range of skills that are acquired by individuals.

2.2.2 Improving coverage on literacy and Non-Formal Education in household surveys

Information on literacy programmes is not often collected through household surveys. However, some of the countries started collecting this information through surveys to collect data on those attending literacy and NFE programmes.

Programmes in literacy and NFE can be very diverse in terms of content as well as duration. Therefore, a proper consultation should be undertaken with agencies who are responsible for designing and implementing in-country literacy and NFE programmes.

Combining data with the population who have been attending formal education, data on NFE would help to calculate the indicator on the *participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex*. The data can also help to calculate the indicator *participation rate of illiterate youth/adults in literacy programmes*.

The following are examples from Bangladesh and the Philippines that attempted to collect data on non-formal education programmes and adult literacy through household surveys.

Figure 4: Excerpt from LFS of Cambodia (2011-12)

| Section C. Training within the last 12 months (outside of the general education system) For persons aged 15 years and over | | | | | | | | | | | | |
|---|---|---|--|--------------------------|--|--|--|--|--------------------------|--|---|--|
| ID | Did (NAME) attend any courses, seminars, workshops or receive private lessons or instruction outside the regular education system within the last 12 months, that is since [MONTH/YEAR]? 1= Yes 2= No ⓄD.1 | How many of these training activities did (NAME) attend within the last 12 months? 1= 1 training 2= 2 trainings 3= 3 trainings 4= 4 or more trainings | What was the subject of the (most recent) training that (NAME) attended within the last 12 months? | | For how long did (NAME) attend this training? 1= Less than 1 week 2= 1 week to < 2 weeks 3= 2 weeks to < 3 weeks 4= 3 weeks to < 4 weeks 5= 1 month to < 3 months 6= 3 months to < 6 months 7= 6 months or longer | Who was the main provider of this training? 1= Government 2= State-owned enterprise 3= Non-governmental/non-profit organization 4= Private business/person 5= International organization 6= Other (specify) If C.2=1 ⓄD.1 | | What was the subject of the <u>second</u> most recent training that (NAME) attended within the last 12 months? | | For how long did (NAME) attend this training? 1= Less than 1 week 2= 1 week to < 2 weeks 3= 2 weeks to < 3 weeks 4= 3 weeks to < 4 weeks 5= 1 month to < 3 months 6= 3 months to < 6 months 7= 6 months or longer | Who was the main provider of this training? 1= Government 2= State-owned enterprise 3= Non-governmental/non-profit organization 4= Private business/person 5= International organization 6= Other (specify) | |
| | | | | | | | | | | | | |
| 01 | <input type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 02 | <input type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 03 | <input type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 04 | <input type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 05 | <input type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 06 | <input type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 07 | <input type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 08 | <input type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 09 | <input type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 10 | <input type="checkbox"/> | <input type="checkbox"/> | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

| Subject of study codes (columns C.3 and C.6): | | |
|---|---|---|
| 010= Basic programmes | 420= Life science | 811= Hotel, restaurant and catering |
| 080= Literacy and numeracy | 440= Physical science | 812= Travel, tourism and leisure |
| 090= Personal skills development | 460= Mathematics and statistics | 813= Sports |
| 140= Teacher training and education sciences | 480= Computing | 814= Domestic services |
| 210= Arts and craft skills | 520= Engineering and engineering trades | 815= Hair and beauty services |
| 222= Foreign languages | 540= Manufacturing and processing | 840= Transport services |
| 220= Other humanities | 580= Architecture and building | 850= Environmental protection |
| 310= Social and behavioural sciences | 620= Agriculture, forestry and fishery | 861= Protection of persons and property |
| 320= Journalism and information | 640= Veterinary | 862= Occupational health and safety |
| 340= Business and administration | 720= Health | 863= Military and defence |
| 380= Law | 760= Social services | |

Source: ILO-IPEC, NIS, 2013: Cambodia Labour Force and Child Labour Survey 2012: Labour Force Report, Phnom Penh, ILO, access: https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---sro-bangkok/documents/publication/wcms_230721.pdf

The Bangladesh Bureau of Statistics conducted a Literacy Assessment Survey in 2008 and the Campaign for Popular Education (CAMPE) – an advocacy and campaign network operating in Bangladesh since 1991.

Both these surveys have provided valuable insights to the government on the status of adult literacy. A sample module from Bangladesh and an E-Net survey from the Philippines illustrates the value of having a standalone survey on literacy.

Figure 5: Bangladesh example one on questions related to literacy

Education Watch

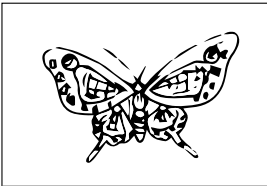
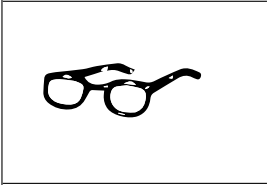
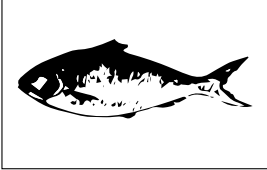
The State of Literacy in Bangladesh

Name: Code: Sex: Male = 1, Female = 2
 Cluster No.: Household No.: Line No.:

| | | | | | | |
|----------|-------------------|---|------------------|---|----------------|---|
| Stratum: | Rural Dhaka | 1 | Rural Chittagong | 2 | Rural Rajshahi | 3 |
| | Rural Khulna | 4 | Rural Barisal | 5 | Rural Sylhet | 6 |
| | Metropolitan City | 7 | Municipalities | 8 | | |

Name of Information Collector: Date:
 Name of Supervisor: Date:

1. Read the 2 words given below. Then draw a line from the words to the corresponding pictures.

| | |
|-------------|--|
| Hilsha Fish |  |
| Butterfly |  |
| |  |

2. Read the 2 sentences given below loudly.

| | |
|--------------------------------|--|
| • Birds fly in the blue sky. | Can read = 1, Can rea partly = 2, Can't read = 3 |
| • Nazrul is our favorite poet. | Can read = 1, Can rea partly = 2, Can't read = 3 |

Source: ASPABAE, 2012. Research Toolkit: Women's Education and Literacy, **access:** <http://www.aspbae.org/sites/default/files/pdf/Research%20Toolkit%20High%20Res.pdf>

Figure 6: Bangladesh example two on questions related to literacy

| LITERACY SURVEY QUESTIONNAIRE | | |
|---|---|--|
| For Female Member of Household Age 15 and Above | | |
| IDENTIFICATION # _____ | Village: _____ | |
| 1 Respondents' background | | |
| AGE | | |
| GENDER | | |
| CIVIL STATUS | | |
| RELIGION | | |
| INDIGENOUS PEOPLES' GROUP | | |
| NUMBER OF HOUSEHOLD MEMBERS | | |
| RELATIONSHIP TO HEAD OF HOUSEHOLD | | |
| LANGUAGE USED IN THE HOUSEHOLD | | |
| RESIDENCY (Duration of stay in the village) | | |
| LOCATION (Urban/Rural; Distance from town center) | | |
| COMMUNITY AND POLITICAL PARTICIPATION | | |
| EVER ATTENDED SCHOOL | | |
| EDUCATIONAL ATTAINMENT | | |
| REASONS FOR NOT ATTENDING SCHOOL | | |
| 1. High cost of education 2. Employment/Looking for work 3. Financial constraints (No money for food, transportation, uniform for school) 4. Poor performance/ Low grades 5. Housekeeping /Care giving 6. Early Marriage/Pregnancy 7. Schools are very far/No school within the village/ No regular school transportation 8. Illness/disability 9. Helps in family business 10. Psychosocial reasons/ Traumatized /Victim of bullying 11. Distractions/Peer group pressure (Drinking/Drugs) | 12. Lack of Interest 13. Lazy 14. Too Young 15. Graduated from College/Post Sec. 16. No requirements 17. Relocation/Displacement due to natural calamities 18. Peace and Order Situation 19. Parents prefer/prioritize to send boys/males to school over girls/females. 21. Others * If answer is lack of interest or cannot cope, PROBE FURTHER | |
| ATTENDANCE TO TRAINING | | |
| TYPE OF TRAINING ATTENDED | | |
| <input type="checkbox"/> Basic Literacy <input type="checkbox"/> Post and advance literacy <input type="checkbox"/> Values and Leadership development <input type="checkbox"/> Medical services and Health development <input type="checkbox"/> Livelihood/Enterprise development <input type="checkbox"/> Financial management <input type="checkbox"/> Farming and production skills | <input type="checkbox"/> Technical skills <input type="checkbox"/> Handicra s <input type="checkbox"/> Home and personal care <input type="checkbox"/> Caregiver <input type="checkbox"/> Creative Arts <input type="checkbox"/> ICT (Info & communication technology) | |

Source: ASPABAE, 2012. Research Toolkit: Women's Education and Literacy, **access:** <http://www.aspbae.org/sites/default/files/pdf/Research%20Toolkit%20High%20Res.pdf>

The other example of a literacy survey is the Functional Literacy, Education and Mass Media Survey (FLEMMS) (2013), which was conducted in the Philippines¹⁷. FLEMMS aims to estimate the proportion of the population 10 years-old and over who are basically literate and it intends to estimate the proportion of the population 10-to-64 years old who are

¹⁷ FLEMMS is a survey on functional literacy conducted by the Philippine Statistics Authority (PSA). The four previous rounds were conducted in 1989, 1994, 2003 and 2008. The 2013 FLEMMS was conducted by the PSA in coordination with the Literacy Coordinating Council (LCC) and the Department of Education (DepEd). For more information, access: <https://psa.gov.ph/sites/default/files/2013%20FLEMMS%20Final%20Report.pdf>

functionally literate. It also tries to determine their socio-economic characteristics, the educational skill qualifications of the population in terms of formal schooling and the mass media exposure of the population. Figure 7 taken from the FLEMMS questionnaire illustrates the attempt to collect information on the use of literacy skills by the individual over a period of 12 months. Surveys like FLEMMS are good examples of assessing the functional literacy of individuals when the much costlier option of conducting a full-fledged literacy assessment is not possible by the country.

Figure 7: Example of the Philippines' FLEMMS questionnaire on literacy skills

| PUT A CHECK MARK <input checked="" type="checkbox"/> IN THE BOX THAT APPLIES TO YOU. | | | | | |
|--|----------|----------------------|--------|------------|--|
| In the last 12 months | Everyday | At least once a week | Seldom | Not at All | |
| | 4 | 3 | 2 | 1 | |
| 21. How often do you read the following: | | | | | |
| A. newspaper | | | | | |
| B. magazines, comics, and books | | | | | |
| C. posters, signs, brochures, and flyers | | | | | |
| 22. How often do you watch or listen to: | | | | | |
| D. television | | | | | |
| E. radio | | | | | |
| F. movies, plays, and similar shows | | | | | |
| 23. How often do you | | | | | |
| G. surf the internet for research work and e-mail? | | | | | |
| H. surf the internet through Facebook, Twitter, etc.? | | | | | |
| I. attend meetings of organizations? | | | | | |
| J. write a report or a correspondence (writing letters)? | | | | | |
| K. make calculations? | | | | | |

Source: Philippine Statistics Authority, 2015: 2013 FLEMMS. Functional Literacy, Education and Mass Media Survey. Final Report. Access: <https://psa.gov.ph/sites/default/files/2013%20FLEMMS%20Final%20Report.pdf>

2.2.3 Improving coverage on early childhood education

Early year education for children can take different forms and approaches and it can include various content. Various typologies are used in denoting early childhood education such as Early Childhood Care and Education (ECCE), Early Childhood Education, Care and Development (ECD), Early Childhood Education (ECE), Pre-primary etc. The International Standard Classification of Education (ISCED) is used as the reference to define 'early learning' for Target 4.2 indicators and to collect comparable data. ECE as defined by ISCED – has been categorized into two sub-types:

Early childhood educational development:

- Educational content designed for children aged 0-2 years;
- Learning environment: visually stimulating, language rich;
- Emphasis on use of language/meaningful communication;
- Opportunities for active play, development of motor skills;
- Excludes programmes of childcare.

Pre-primary:

- Educational content designed for children aged at least three years-old;
- Focus on improved use of language and social skills;
- Development of logic and reasoning skills;
- Introduction to alphabetical and mathematical concepts;
- Physical exercise and play used as learning opportunities.

Most of the well-known household surveys include plenty of data on children and their education, especially for age three and above. To monitor ECE, full coverage for children 0-5 years should be included in the education questionnaire to calculate the indicator *gross early childhood education enrolment ratio in (a) pre-primary education; and (b) early childhood educational development*.

In many surveys, this is not the case right now and data for their education attendance is collected only for three years and above. However, the latest MICS for children under five will capture these issues:

- Example question: Does (he/she) currently attend [INSERT MENTIONED PROGRAMME]?

Having this question in the survey will enable the users to also calculate the participation rate in organized learning (one year before the official primary entry age), by sex.

It remains to point out that Target 4.2 goes beyond participation in education programmes and monitors the home environment and whether children are – in terms of cognitive, physical and psychosocial development – ‘on track’. As these are new areas, many surveys do not include questions to collect data on them yet. However, some of the surveys, such as MICS, already include questions, as illustrated below.

Developmentally on track

There is not yet a globally-accepted definition of ‘developmentally on track’. Defining and measuring this terminology is a goal for the next development phase of this indicator.

Box 3: MICS example questions on the home environment and tracking children's development**(i) Children developmentally on track**

Based on the relevant concepts related to child development, MICS includes the following questions to collect data to track the development of a child:

Can [NAME] pick up a small object with two fingers, like a stick or a rock from the ground?

Is [NAME] sometimes too sick to play?

Does [NAME] follow simple directions on how to do something correctly?

When given something to do, is [NAME] able to do it independently?

Does [NAME] get along well with other children?

Does [NAME] kick, bite, or hit other children or adults?

(ii) Positive and stimulating home learning environments

Following the definition of the indicator on positive and stimulating home learning environment, MICS has included the following question:

In the past three days, did you or any household member aged 15 or over engage in any of the following activities with [NAME]? (Read books or looked at picture, books; Told stories; Sang songs; Took outside the home; Played together; Named, counted, or drew things)

At present, the MICS Early Childhood Development Index¹⁸ defines 'on track' in literacy-numeracy if a child can identify at least 10 letters of the alphabet, read four simple words and recognize and name all numbers from one to 10.

A child is developmentally on-track physically if it can pick up small objects easily and is generally well enough to play. A child is developmentally on track in socio-emotional development if it is able to undertake simple activities independently, get along with other children and does not usually kick, bite, or hit other children, or adults. A child is developmentally on track in learning if it participates in any type of organized learning including ECE, kindergarten, or community care. However, these definitions are not universally accepted and other measures use alternative definitions.

Home learning environment

The home learning environment is another area which most of the household surveys do not include. Within the home, caregivers are tasked with establishing a safe, stimulating and nurturing environment and providing direction and guidance in daily life.

Interactions with responsible caregivers who are sensitive and responsive to children's emerging abilities are central to social, emotional and cognitive development. This type of positive caregiving can help children feel valued and accepted, promote healthy reactions, provide a model for acceptable social relationships and contribute to later academic and employment success.

Given that they target the home, household surveys should be improved to include questions to produce

Source: UNICEF, MICS6 TOOLS, **access:** <http://mics.unicef.org/tools> (MICS6 for Children under five).

¹⁸ For more on the development of the Early Childhood Development Index, see: Loizillon, A., N. Petrowski, P. Britto and C. Cappa, 2017: Development of the Early Childhood Development Index in MICS surveys. MICS Methodological Papers, No. 6, Data and Analytics Section, Division of Data, Research and Policy. New York, UNICEF, access: <http://mics.unicef.org/files?job=W1siZiIsIjIwMTcvMDkvMTUvMjEvMTUvNDMvMzc4L01JQ1NfTWV0aG9kb2xvZ21jYWxfUGFwZXJfNi5wZGYiXV0&sha=85c096f0b2c5b0c8>

indicators for developmentally on track children and the home learning environment for these children.

MICS 6 Tools¹⁹

2.3 Challenges with education indicators from household surveys

As previously mentioned, education data from household surveys can be analysed in relation to other variables, such as poverty, location, disabilities, parents' characteristics, wealth, etc. This makes the indicators that are retrieved from household surveys valuable for policymakers and education planners. However, due to variations in the design of the survey, their frequencies, sampling techniques, sample sizes and timing of personnel, challenges in using a household survey for education monitoring may arise. These are identified below.

1. A lack of coordination with ministries (including the ministry of education) and other departments when designing the questionnaires and items in the survey leads to less useful education indicators.
2. For population censuses, this is conducted normally once every five-to-ten years and the census data may only be accessible at least two-to-three years after the completion of the census. Therefore, the usefulness of census data is more to review historic trends than for studying the present situation.
3. The phrasing of questions related to school: i) attainment; ii) enrolment; and iii) attendance influences measuring educational participation. In some cases, assumptions, or adjustments must be made to calculate common education indicators. For instance, this means that being enrolled in school, in the sense of having registered at a school, may not indicate actually attending school, in the sense of going to school every day.
4. The survey timing and duration of survey fieldwork influence the recentness of collected data. If a particular survey started just before the end of a school year and took over a month to complete, the 'grade completed' or 'current grade' may differ from the households asked earlier in time, compared to households asked later during the time of the same survey period. (This may not be a problem for surveys that have a fixed reference date like a population census.)
5. Related to timing, the survey dates rarely coincide with the beginning of the school year (data collection may take place during school vacations, or across two school years), which is the reference date for calculating common education

¹⁹ UNICEF MICS 6 Tools, access: <http://mics.unicef.org/tools>

indicators, which can lead to discrepancies between the indicators calculated from a household survey and indicators that are derived from other data, gathered periodically by schools and the ministry of education.

For instance, if the fieldwork for a survey commenced in the 2017/2018 school year continued into the 2018/2019 school year (for any kind of reason), overlapping of the school years is prevented by formulating the question to a specific school year; in this case, for the current attendance in 2017/2018, as opposed to asking for attendance 'during the previous year'.

Fieldwork timing, together with the question formulation, also matters if there is non-random variation in participation over the year (e.g. higher attendance at the beginning of the school year, lower during, or at the end of the year due to seasonal events, such as a farm harvest among other reasons). As the MICS and the DHS ask about attendance 'at any time during the school year', the timing of fieldwork should not affect the response.

6. Many household surveys conducted in developing countries do not collect the date of birth of every household member; the age at the time of the survey is usually collected in completed years. The lack of a birth date may have implications for age-related indicators, such as the attendance rates (gross and net), as the age at the beginning of an education period is not always precisely known.
7. Some surveys, especially rapid assessments and case-control studies²⁰, do not use probability sampling techniques. The findings may not, therefore, represent the entire population under study. Surveys that aim to derive estimates for common characteristics with moderate accuracy require a smaller sample size, while getting reliable estimates for a rare characteristic (or event) with higher accuracy requires a larger sample size. Similarly, estimating at the national and provincial levels only requires a small sample size while finer sub-stratification (such as at the district, or lower level) needs a larger sample size. Thus, the representativeness of the sample depends on the survey design, which is influenced by three factors: the sampling method used; the level of accuracy sought in the estimates for various indicators; and the level of data disaggregation.
8. There is a lack of awareness about the existence and accessibility of household survey data, even within the same ministry, due to bureaucratic procedures, cost and not knowing where to find, or how to request such data. It can be difficult to locate the person (or department) who has the authority to provide survey datasets.
9. Little information about education is presented in main reports of household surveys – limited to only a few paragraphs, or just a section about education. Additional and more in-depth analysis of education and literacy status are very rare.
10. Little presented information usually goes together with a lack of knowledge on, and skills to analyse education data from household surveys to support evidence-based policy formulation, implementation and monitoring.

²⁰ Case-control studies are retrospective. They clearly define two groups at the start; one with the outcome and one without the outcome. They look back to assess whether there is a statistically significant difference in the rates of exposure to a defined risk factor between the groups. The main outcome measure in case-control studies is the odds ratio (OR).

3 Institutional Mechanisms to Utilize Household Surveys for SDG 4

There is no doubt that household and census data are as important as administrative data to monitor SDG 4. However, to make it more meaningful and relevant for monitoring SDG 4, ministries of education and National Statistical Offices (NSO) should work together.

Simply claiming that it is important and requesting data from the NSO to populate indicators will not help. There should be strategic discussions with the NSO on data collection and indicator generation by means of household surveys.

3.1 Institutionalizing household surveys in SDG 4 monitoring

The following points should be kept in mind in order to set up institutional mechanisms to utilize household surveys more extensively.

Integrating household surveys in National Strategies for Development of Education Statistics

The first point to mention, instead of having ad hoc arrangements to apply a household survey to monitor education, the household survey should be established as one of the data sources and recognized in official statistics for education.

Therefore, clear strategies are required to work with household surveys to generate education indicators when developing NSDES (See Module 2 on the development of NSDES).

The NSOs should be part of all discussions on NSDES and related development processes to ensure that collaboration starts at the very beginning.

Integrating relevant questions for SDG 4 in household surveys

Many countries are revising their household questionnaires to accommodate many of the SDG indicators in their surveys. The ministry of education should be proactive in

discussions with a NSO to ensure both parties are clear on the required information for which household surveys might be used.

Both parties should agree on including different data into different surveys (not necessarily one survey to include all the education data) based on the purpose and practicability of the surveys. A clear role in data collection, analysis and dissemination for the education data in household surveys can also be designated.

The following action points should be considered in order to integrate SDG 4 relevant questions effectively:

- IV.** Setting up a clear mechanism between NSOs and ministries of education. Instead of relying upon informal discussions, it would be helpful if a formal process of discussions at pre-set intervals is established, with a clear definition of objectives, participants, agenda and roles and responsibilities for the implementation of decisions made.
- V.** Review of education modules in household surveys: The education modules proposed for household surveys should be reviewed by NSOs and ministries of education, along with other nominated experts to double check if they cover all the important questions relating to education at the household level; particularly those identified as SDG 4 indicators. Deficiencies, if any, noticed in this regard can be rectified there and then.
- VI.** Agree on the additional questions, or reformulation of the questions to align with SDG 4 indicators: The above stated review should also consider the possibility of collection of data relating to certain quality aspects of SDG 4, particularly the target SDG 4.7 relating to aspects such as cultural perceptions of what constitutes global citizenship, respect for cultural diversity, non-violence, etc. The possibility of suitable additional questions, or reformulation of already existing questions may be considered to capture data on such aspects at the local household level.
- VII.** Data collection, data release and data dissemination plan: Clear guidelines need to be agreed upon for roles and responsibilities of the collaborating organizations in the areas of data collection, data consolidation, their interpretation and release. Capacity development needs and skill exchange possibilities in the areas of training for data collection and data handling using modern technology need also to be identified and suitable action plans finalized. Similarly, a well thought-out data dissemination plan should also be finalized.

Case Study: Indonesia – Utilizing Multiple Sources of Data, including Household and Special Surveys, for Effective SDG4 Monitoring



Since the SDGs were adopted in September 2015, the Government of Indonesia has implemented a number of initiatives to ensure that the country translates the global development agenda into national plans and programmes. As part of the effort to assess Indonesia's current position in achieving SDG 4, the Bureau of Planning and International Cooperation of the Ministry of Education and Culture (MoEC), in collaboration with the Central Bureau of Statistics (BPS), produced an SDG 4 Baseline Report in 2018 with technical support from UNICEF. The report is a comprehensive analysis of key indicators for all the 10 SDG 4 targets, using multiple data sources, including administrative data (e.g. EMIS); household surveys (e.g. the National Socioeconomic Survey SUSENAS); learning assessments (e.g. PISA and an Indonesian National Assessment Programme); and thematic surveys (e.g. Global School Health Survey). The BPS played an instrumental role in calculating and validating the indicator values based on the global definitions and methodologies.

The development process of the baseline report involved intensive capacity development of a core team from the Directorate of People Welfare Statistics of BPS who are in charge of large-scale household surveys. With UNICEF's technical support, the team was first familiarized with the metadata of all SDG 4 indicators, as well as their definitions, potential data sources and calculation methods based on international comparable standards.

The key indicators included in the report were identified by examining the data availability and relevance to the Indonesian context. A crucial step that followed was a series of hands-on sessions where the BPS team directly developed syntaxes for calculating indicators; particularly those based on household surveys, while applying global methodologies. Subsequently, the core BPS team reviewed, validated and finalized the data analysis, which formed the basis of the baseline report.

This report's development was supported by education data experts from the UNICEF Indonesia Country Office and Headquarters to strengthen the capacity of key officials from both the BPS and MoEC in data processing, interpretation, visualization and narrative writing. The overall process created a stronger ownership and confidence in continuing SDG 4 monitoring and reporting among the core team. The report has been used as one of the main references for the development of the new strategic plan in education for the period 2020-to-2024.

Data quality and data standards

It is also important to assess carefully the characteristics of the household surveys to understand the quality of the education data produced from the survey before we decide on integration of education data in different household surveys. The sampling techniques, sample size, background information and other data collected etc., are based on the purpose of the survey. Most of the surveys might have some data collection for education as they need to undertake some cross-sectional analysis with the educational background of the respondent. But, such questions and its coverage will tell us whether the survey would be able to produce enough data for education. A tool can be used to assess the quality of the household surveys for the purpose of collecting education data.

Box 4: UIS Code of Practice for education statistics produced from household surveys



A data quality assessment for a household survey includes six principles covering statistical production processes and statistical outputs. The national statistics office institutional environment assessment tool includes two principles, capturing policy and legal frameworks and adequacy of resources. A set of indicators for each of the principles provides a reference for reviewing the implementation of the Code. The Code of Practice (CoP) is a technical instrument containing practical rules for ensuring the credibility of statistics using data in household surveys. It is intended to serve as a guide for improving the quality of statistics produced at national, regional and global levels and for building trust in users by encouraging the application of the best international methods and practices in statistical production and dissemination.

For more Information:

i Code of Practice for Education Statistics produced from household surveys²¹

In the end, statistics are about their comparable definitions and methodologies. Changing definitions and methodologies will change the values for the variables. Therefore, it is important to have common and standardized definitions for different data and indicators at the national level and to a large extent they need to follow international standards as well. The national statistics office, as a statistical organization of the country, should be the one who develops such standards and methodologies.

²¹ UIS, 2017: UNESCO Institute for Statistics Code of Practice for education statistics produced from household surveys, access: http://uis.unesco.org/sites/default/files/documents/code-practice-household-survey-2017-en_1.pdf

It is important that both administrative and household surveys use the same classification system while collecting data by levels of education and by types of education which in some cases may not be with the same classification. In such cases, this can bring up many data discrepancies. Metadata for all the indicators should be developed in consultation with all the stakeholders and international definitions and methodologies should be considered in this regard. Such standards should be able to clearly spell out the coverage, limitations and interpretation and use of data.

3.2 Essential computer software for utilizing household survey databases

Now, a final question may remain on what is the best way to process household survey data electronically. The truth is, there is no 'one-way fits all' method. Different household surveys result in different database formats, with different structuring.

Statistical computer software serves the purpose of navigating and shaping these databases. It goes without mention that using a statistical computer programme requires training.

Now there are also a variety of statistical computer programmes, with most requiring a license to operate them. Some of the most commonly applied software packages are:

- i. **PSPP:** PSPP is a free, open-source alternative to the proprietary statistics package SPSS. PSPP provides basic, but very useful, statistical analysis functions. It can be used to construct frequency and crosstab tables; calculate non-parametric tests, significant tests and reliability tests; supports various linear regression models; and can perform factor analysis and compute basic statistics. It also provides some database management features, such as sorting and selecting cases, computing new variables and recoding into existing and new variables. It has both a graphical user interface and a conventional command line interface. It is written in C, uses the GNU Scientific Library for its mathematical routines and Plotutils to generate graphs.

For more information, access: <http://www.gnu.org/software/pspp/>

- ii. **R:** R implements a wide variety of statistical and graphical techniques, including linear and nonlinear modelling, classical statistical tests, time-series analysis, classification, clustering, and others. R is easily extensible through functions and extensions, and the R community is noted for its active contributions in terms of packages. Many of R's standard functions are written in R itself, which makes it easy for users to follow the algorithmic choices made. R is highly extensible through the use of user-submitted packages for specific functions or specific areas of study.

For more information, access: <https://www.r-project.org>

- iii. **SAS (STATISTICAL ANALYSIS SYSTEM):** SAS enables programmers (users) to perform many different kinds of analysis, data management and functions to generate output, such as:

- Data entry, retrieval, management, and mining;
- Report writing and graphics;
- Statistical analysis;
- Business planning, forecasting, and decision support;
- Operations research and project management;
- Quality improvement;
- Applications development;
- Data warehousing (extract, transform, load);
- Platform independent and remote computing.

For more information, access: https://www.sas.com/en_th/software/stat.html

iv. STATA: This is a general-purpose statistical software package with a full range of capabilities including data management, statistical analysis, graphics, simulations and custom programming. It is used by many businesses and academic institutions around the world. Most of its users work in research, especially in the fields of economics, sociology, political science and epidemiology.

For more information, access: <https://www.stata.com>

v. SPSS (STATISTICAL PACKAGE FOR SOCIAL SCIENCES): SPSS can handle multiple data sets with an almost unlimited number of variables and cases. It allows data and outputs to be imported and exported using a variety of formats including Microsoft Excel and various text formats. Users can operate SPSS through a menu (and dialog box) driven graphical interface, as well as command line (syntax) interface. SPSS is user-friendly, even beginners can do basic statistical analysis with the software. It offers excellent on-line help, complete users' manuals and self-learning tutorials. The package supports almost all statistical methods, which allows users to perform basic to advanced analysis on data sets. SPSS also has good support for data management and data documentation.

For more information, access: <https://www.ibm.com/analytics/spss-statistics-software>

For more details on some of the above-mentioned software and SPSS exercises, visit:

 **Introduction to Data Analysis Software²²**

²² Systematic Monitoring of Education for All, Module B2: Introduction to Data Analysis Software, access: <http://www5.unescobkk.org/education/efatraining/module-b2/1-examples-of-software-for-analysing-household-survey-data-to-assist-efa-monitoring/>