Leh Wi Lan
Sierra Leone Secondary Grade Learning Assessment 2018

This document provides detailed information on the unit-record data generated by the second Sierra Leone Secondary Grade Learning Assessment (SGLA II), 2018. This includes a detailed description of the contents of each data file. Variables may contain the recorded results of a direct question asked, or be derived by analysts. The number of variables and the number of data points (cases) are summarised below for each data file.

Table 1. Data dictionary

FILE	DESCRIPTION	CASES	VARIABLES
ml18_ti	This file contains data at the teacher level and corresponds to the Teacher Interview instrument. It also contains sampling weight variables, and three constructed indicators prefixed by n_ are included to save data users' time (but could be generated by data users if preferred).. Names and contact numbers of teachers have been removed in the anonymisation process.	2023	291
ml18_pi	This file contains data at the school Principal level and corresponds to the Principal Interview instrument. It also contains the sampling weight variables, and eighteen constructed indicators prefixed by n_ are included to save data users' time (but could be generated by data users if preferred). Names of schools and Principals have been removed in the anonymisation process.	694	367
ml18_student	This file contains data at the pupil/student level. This file also records any disabilities reported. The file also records pupil item responses, which are recoded to identify correct responses and these constructs appear with a suffix _n. Please refer to a detailed explanation of these indicators in the Final Technical Report/Annexes. The data also include basic variables on pupil background such as age, sex and language spoken at home, as well as household ownership of various assets Based on these, an asset index was created using principal component analysis (PCA), the lowest 20% were categorised as "poor" and the top 20% as the "rich" quintile. Indicators for both the	5371	498

FILE	DESCRIPTION	CASES	VARIABLES
	asset index and asset index quintiles are included in the data (prefixed by n_). All other constructed variables are likewise labelled with a prefix n_ (altogether 27) and are included to save data users' time (but could be generated by data users if preferred). Names of schools, and students have been removed in the anonymisation process.		
ml18_so	This file contains data from the school observation instrument. This contains information on school breaks, opening time and number of classes with students and / or teacher in them. It also contains sampling weight variables. Three constructed indicators prefixed by n_ are included to save data users' time (but could be generated by data users if preferred).	695	28
ml18_weights	This do-file gives the survey settings for the weights that can be used when conducting any weighted analyses on SGLA II data.	-----	----

Overview of SGLA II

The section provides a detailed description of the study (i.e. the metadata). Topics covered relate to the survey methodology, sampling methods, data collection, funding, dates of collection, geographical coverage and the access policy for the data from this study.

Title

Leh-Wi-Learn/Sierra Leone Secondary Education Improvement Programme (SSEIP)

Subtitle

Secondary Grade Learning Assessment (SGLA) Survey 2018

Series Information

The quantitative midline survey for data collection took place in May – June 2018. It is the second of an annual series of secondary grade learning assessments in Sierra Leone, starting in 2017. At the time of writing, the third follow-up survey is planned to take place at the same time in May – June 2019.

Version Description

Edited, anonymous dataset for public distribution – 2nd version (2018)

Production Date

October 2018

Abstract

Leh wi Learn/Sierra Leone Secondary Education Improvement Programme (SSEIP) is a five-year (2016-2021) UKaid-funded programme aimed at improving English and mathematics learning achievement in all secondary schools, especially for girls. The program is run under a two-partner managing-agent consortium led by Mott MacDonald and Oxford Policy Management (OPM). UNICEF is also involved in implementing parts of the programme related to girls' education (output-1) under the 'Girls' Access to Education' (GATE).

The programme supports the Sierra Leone Ministry of Education, Sciences and Technology (MEST) in the following five areas:

- **Output 1** Support girls to be in school and safe;
- **Output 2** Improve learning conditions in JSS and SSS schools;
- **Output 3** Strengthen MEST's capacity to plan, manage and monitor service deliver;
- **Output 4** Strengthen district capacity to hold schools and teachers to account;
- **Output 5** Improve understanding through monitoring, research and learning.

The quantitative survey described in this documentation forms part of the monitoring, research and evidence generation activities conducted under output-5.

Kind of Data

Sample survey data [SSD]

Units of Analysis

The main units of analysis are:

- Junior and senior secondary schools in Sierra Leone
- Principals or any other administrative head of these JSS and SSS schools
- Teachers (teaching grades JSS and SSS in any of the two subjects: English or maths)
- Pupils (in JSS2 and SSS2 levels).

Please refer to the 'Sampling Procedure' section for more details.

Scope

The survey administered four different instruments covering principal and teacher interviews, pupil assessment and a school observation instrument. Both the Principal and Teacher interviews covered:

- Background (including gender, age, years of experience, academic qualifications);

- School activities, meetings and supervision;
- Current teaching activities/practices;
- Use of teaching guides and teaching aids.

The Principal interview included questions on teacher attendance from school records, while the Teacher interview included self-reported absenteeism. The Principal interview also included questions on:

- Number of pupils registered and teachers employed;
- Lesson observation practice

The pupil instrument covered:
- Pupil gender, age, language and household assets;
- Pupil scores based on the learning assessments administered

Further data analysis on the pupil instrument included adding information on:

- Distance of the school a pupil is enrolled in from the district headquarter town (based on GPS coordinates)
- Pupil performance bands for English and Maths, based on the learning assessments administered and the test scores

Performance in the test is categorised into six grade-appropriate performance bands, which are indicative of skills that pupils at the end of those grades should master. The six bands correspond to the skillset that is typically expected from a student below Primary 6 (p6) grade, at P6, J1, J2, J3 and S1 grade respectively. Each item from the test form was assigned to a specific grade by a panel of experts during a workshop in Sierra Leone.

The school observation instrument complemented the Principal interview with information on:
- Observed school opening time;
- Timetable;
- Break time; and
- Presence or absence of students and teachers.

Keywords

Education inclusiveness, Pupil learning, Student learning, Pupil learning assessment, Teaching practices, Student disability, Instructional time, Girls' safety, Sierra Leone

Geographic Coverage

The survey was carried out across all of the Sierra Leone's five provinces (East, West, North, North West and South) and 16 districts.

Primary Investigator(s)

Sourovi De - Oxford Policy Management Limited

Funding

Sampling scheme

A stratified two-stage sample design was used for the 2018 survey, with a sample of JS and SS schools selected within each district at the first stage, and a sample of pupils and teachers in these schools selected at the second stage to be tested. The pupils were selected from the enrolled pupils who were present at the time of the survey in the two specific classes of the sample schools, while the teachers were selected from all of the teachers present in the schools on the day of the survey and teaching English and/or maths in JS and SS grades in the sample schools.

Construction of sampling frame and stratification

An updated database with all JS and SS schools in Sierra Leone in 2017 was obtained from the Education Management Information System (EMIS) of the Ministry of Education, Science and Technology (MEST). This frame contained information on the name of the school; province, district, local council, chiefdom and town; education level (JSS or SSS); school gender composition (co-ed, all-girls, all-boys); management of school (community, government, mission, private and other); and the number of students by grade (1 to 4) and gender. This database was used to examine the distribution of JS and SS schools by district and stratum. Given that student indicators will be tabulated by gender, an equal number of female and male students were selected for all the tests. In Sierra Leone most of the JS and SS schools are co-ed, but there are also all-girls and all-boys schools which were assigned to individual strata within each province.

The stratification of the frame of JSS and SSS schools was based on the objectives of the survey in terms of the domains of analysis (district, education level, gender), as well as considerations for sampling effectiveness. Within each district, the schools in the frame were divided into the following six strata:

- JSS Co-ed
- JSS All-Boys
- JSS All-Girls
- SSS Co-ed
- SSS All-Boys
- SSS All-Girls

The distribution of the sampling frame of secondary schools in Sierra Leone by district and stratum is shown in
Table 2 below. It can be seen that the number of schools varies considerably by district, from 18 in Falaba to 323 in Western Urban.

Table 2. Distribution of individual schools by district and stratum in sampling

Province	District	Stratum						Total
		JSS coed	JSS all-boys	JSS all-girls	SSS coed	SSS all-boys	SSS all-girls	
Eastern	Kailahun	44	0	0	16	0	0	60
	Kenema	88	2	1	19	2	1	113
	Kono	86	3	3	29	1	3	125
Northern	Bombali	97	1	1	23	0	0	122
	Koinadugu	33	0	1	8	0	0	42
	Tonkolili	67	1	3	15	1	1	88
	Falaba	15	0	0	3	0	0	18
Southern	Bo	99	4	6	31	3	1	144
	Bonthe	29	0	0	11	0	0	40
	Moyamba	62	2	5	8	2	2	81
	Pujehun	19	1	1	3	1	1	26
Western	Western Rural	100	0	3	47	0	0	150
	Western Urban	186	5	9	111	5	7	323
North Western	Kambia	66	0	3	9	0	0	78
	Port Loko	134	1	2	29	0	2	168
	Karene	32	0	0	6	0	0	38
Total		1,157	20	38	368	15	18	1,616

Based on logistical and statistical considerations, it was decided to test 8 students per school for each level (JSS2 and SSS2). Based on similar considerations, it was decided to select 4 teachers per JSS or SSS sample school. This is consistent with the sampling approach used for the baseline survey. It was decided to have a target of 24 JS and 24 SS sample schools for the smaller districts, and 30 sample schools each for the larger districts. In the case of the largest district of Western Urban, given the large number and variability of schools, the target number of sample schools was increased to 36 JSS and 36 SSS. This sampling strategy resulted in an intended total sample size of 700 schools, 5600 students and 2800 teachers.

Sample selection strategy

Since the schools within each stratum vary considerably in size (number of teachers and students), at the first sampling stage the schools within each stratum were selected with probability proportional to size (PPS), where the measure of size was based on the number of JSS2 or SSS2 students in each school. In the case of the SSEIP baseline survey the measure of size for the PPS selection was based on the number of teachers. We note that the number of teachers and the number of students are highly correlated, and the measure of size is only used to determine the first stage probability of selection for the schools. Therefore this use of different measures of size for the selection of schools in the baseline and second round of the SSEIP Survey does not present a problem of comparability of the results from each round. Given the relatively small size

of the frame, most strata had schools with a measure of size that is larger than the sampling interval for the stratum, in which case these large schools were selected with a probability of 1. All these self-representing schools were treated as separate strata for a one-stage selection of students and teachers. The remaining sample schools in each stratum were selected from the smaller non-self-representing schools in the frame.

Selection of pupils

On the day of the survey, within each sample school, a list of all of the eligible enrolled female and male students for the relevant grade (JSS2 and SSS2) who are present on the day of the tests was compiled. Then a random systematic sample of 4 female and 4 male students was selected from the corresponding lists. For each sample all-girls and all-boys school, 8 students of the same gender were selected.

Selection of teachers

In the case of teachers, a list of all the JSS or SSS teachers who teach English and maths present on the day of the tests was used to select a random systematic sample of 4 teachers. If less than 4 teachers are present, then all were selected to be interviewed.

Replacement strategies

Survey schools were considered for replacement if one or more of the following conditions arose.
- The school does not exist on the ground, or there is no school with the name given in the area.
- The school is closed for the duration of the survey team's stay in the district for whatever reason
- The school does not have the required grade (JSS2/SSS2)
- There are security concerns about visiting the school

Enumerators informed the province coordinator if any of these situations arose. The province coordinator then contacted the core survey-management team requesting for a school replacement. No school replacements were carried out on the field by supervisors, or coordinators or enumerators themselves.

Response Rate

Principal (interview)

Final sample = 694 (Intended sample = 700)

Student Interview

Final sample = 5371 (Intended sample = 5600)

Teacher (interview)

Final sample = 2023 (Intended sample = 2800)

Weighting scheme

Appropriate weights were assigned to each sampled school, principal, teacher and pupil. The weights were equal to the inverse of the overall sampling probabilities, taking into account each stage of selection. The weights to be used for any weighted analyses have also been supplied along with the data, and as shown in the table below.

Table 3. Variables for sampling parameters for Stata SVY analysis of SGLA 2018 data

Level of indicator	Type of school	Stratum code	PSU code	FPC value
School & principal	SR schools	999	School ID	1
	NSR schools	Sampling_stratum2 + '0'	School ID	Average first stage (school) probability for stratum
Pupils	SR schools	Boys: School ID + '1'	Boy ID	Boys within-school probability
		Girls: School ID + '2'	Girl ID	Girls within-school probability
	NSR schools	Sampling_stratum2 + '0'	School ID	Average first stage (school) probability for stratum
Teachers	SR schools	School ID + '0'	Teacher ID	Teachers within-school probability
	NSR schools	Sampling_stratum2 + '0'	School ID	Average first stage (school) probability for stratum

For more on the weighting scheme, see Midline Technical Report/Annexes.

Stata weight specifications for analysis

Principal (interview) – Separate indicators for JSS and SSS head teachers
Name of weight variable = head_teacher_wt1
Stata SVY settings:
svyset [pw=head_teacher_wt1], psu(ml18_school_id) strata(strata_principal) singleunit(certainty) fpc(fpc_principal)

Principal (interview) – Combined indicators for JSS and SSS head teachers
Name of weight variable = head_teacher_wt2
Stata SVY settings:
svyset [pw=head_teacher_wt2], psu(ml18_school_id) strata(strata_principal) singleunit(certainty) fpc(fpc_principal)

Teacher (interview)
Name of weight variable = teacher_wt
Stata SVY settings:

svyset [pw=teacher_wt], psu(psu_teacher) strata(strata_teacher) singleunit(certainty) fpc(fpc_teacher) || _n

Pupil (interview)
Name of weight variable = student_weight
Stata SVY settings:
svyset [pw=student_weight],   psu(psu_student) strata(strata_student) singleunit(certainty) fpc(fpc_student) || _n

School observation
Name of weight variable = school_wt
Stata SVY settings:
svyset [pw=school_wt], psu(ml18_school_id) strata(strata_principal) singleunit(certainty) fpc(fpc_principal)

Data Collection Dates

Start: 15 May 2018
End: 22 June 2018
Cycle: SGLA II 2018

Data Collection Mode

Computer-Assisted Personal Interview [CAPI]

Data Collection Notes

Pre-fieldwork requirements

Each province had one provincial coordinator, and 5-6 field teams. Each field team consisted of one supervisor and two enumerators. The field team conducted 1 principal interview, 4 teacher interviews, 1 school observation and 8 pupil assessments per school. The table below summarises the fieldwork model.

Table 4: Summary of fieldwork model

Sample/respondents/field team	Summary
Sample	
Provinces	East, West, North, South, North West
Districts	All 16 districts
Schools (Total: 700)	48 schools for small districts, 60 for large districts, 72 schools for Western Urban
Respondents	
Principal	1 interview
Teacher	4 teachers are interviewed
Pupils	8 pupils per school complete the pupil assessment
School observation	1 observation questionnaire
Field Team	
Province Coordinators (Total: 5)	1 Provincial Coordinators (PC) per province
Field teams (Total: 28)	5-6 teams per province
Supervisors (Total: 28)	1 Supervisor per field team
Enumerators (Total: 56)	2 Enumerators per field team

Timetable for field activities

A timetable giving the time frame for each field activity was made available to all team members prior to commencement of field work. The allocation of time in the timetable was sufficient, with adequate time for re-visits and contingencies if required.

Fieldwork training

To ensure consistency in administering various interviews, tests and observations, rigorous and uniform training for all enumerators and their supervisors were conducted using the enumerator manuals as reference material. This training also included sessions on duty-of-care and security, CAPI and how to upload daily data to the server (supervisors only).

Three field pilots took place in Western Urban, Western Rural, Port Loko, Bo, Kenema and Pujehun preceding the start of data collection.

Fieldwork implementation (data collection)

OPM arranged shared transportation for field teams. Each field team was allotted one vehicle daily. Each vehicle was expected to take one team to their school each day. The five Province Coordinators had one vehicle each as well, for their reconnaissance and monitoring. Each field team (one supervisor + two enumerators) stayed in a district until they covered all the sample schools in the district.

Quality control and monitoring was carried out by fieldwork managers, province coordinators, and supervisors visited teams of data collectors. Checks on data quality were carried out at the province and national levels, as soon as data is received, and

problems with data collection were addressed immediately through the data manager, fieldwork manager and province coordinators.

Data Collectors

Name	Abbreviation
Oxford Policy Management Ltd.	OPM
Centre for Economic and Social Policy Analysis	CESPA

Supervision

Please see section on notes on data collection above

Data Processing and Editing

Data cleaning and analysis were conducted from June 2018 through September 2018 by a small team based in the OPM office in Oxford, Nigeria and Pakistan. All statistical analyses were performed with Stata, using its 'svy' facilities for survey data analysis to account for the sampling design.

Contact(s)

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Access Conditions

The data files have been anonymised and are available as a Public Use Dataset. They are accessible to all for statistical and research purposes only, under the following terms and conditions:

- The data and other materials will not be redistributed or sold to other individuals, institutions, or organisations without the written agreement of the contact persons named above.
- The data will be used for statistical and research purposes only. They will be used solely for reporting of aggregated information, and not for investigation of specific individuals or organisations.
- No attempt will be made to re-identify respondents, and no use will be made of the identity of any person or establishment discovered inadvertently. Any such discovery would immediately be reported to the contact persons named above.
- No attempt will be made to produce links among datasets provided and other datasets that could identify individuals or organisations.
- Any books, articles, conference papers, theses, dissertations, reports, or other publications that employ data obtained from the SGLA will cite the source of data in accordance with the Citation Requirement provided below.
- An electronic copy of all reports and publications based on the requested data will be sent to the contact persons named above.

The original collector of the data, Oxford Policy Management Ltd, and the relevant funding agencies bear no responsibility for use of the data or for interpretations or inferences based upon such uses.

Citation Requirements

Use of the dataset must be acknowledged using a citation which should include:
- the Identification of the Primary Investigator
- the title of the survey (including country, acronym and year of implementation)
- the survey reference number (e.g. SGLA 2018)
- the source and date of download.

Disclaimer

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