



3 of 3 Supplements
to PIRLS 2021
User Guide for
the International
Database

PIRLS 2021

USER GUIDE FOR THE INTERNATIONAL DATABASE

SUPPLEMENT 3

*Variables Derived from the Student, Home,
School, and Teacher Context Data*

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Variables Derived from the Student, Home, School, and Teacher Context Data

Overview

The PIRLS 2021 International Database includes data for additional measures derived from the context item variables collected with the PIRLS 2021 Context Questionnaires. Some of these derived variables were reported in [*PIRLS 2021 International Results in Reading*](#). This supplement describes how each of these variables were derived, organized in the following sections corresponding to the PIRLS 2021 Context Questionnaires administered to collect the data:

- Section 1:** Student Questionnaire
- Section 2:** Home Questionnaire (Early Learning Survey)
- Section 3:** School Questionnaire
- Section 4:** Teacher Questionnaire

These sections also correspond to the PIRLS 2021 International Database files that contain the international context variables containing the questionnaire data (see Chapter 2 of User Guide).

The following information is provided for each derived variable:

- Derived variable name and variable label
- Procedures for computing the derived variable, including descriptions of source variables and missing data rules
- Information about whether a comparable (trend) variable was available in PIRLS 2016
- International report exhibit where variable is reported (if applicable)

SECTION 1

Variables Derived from the Student Context Data

Derived Variable Name:

ASDG05S

Variable Label:

Number of Home Study Supports

Procedure

Based on responses to the following questions in the Student Questionnaire:

SQG-05c,d: Do you have any of these things at your home?

"Your own room" (ASBG05C)

"Access to the internet" (ASBG05D)

Response options: 1 = "Yes"

2 = "No"

Derive ASDG05S:

1 = "Neither Own Room nor Internet Access" = IF (ASBG05C = 2 AND ASBG05D = 2)

2 = "Either Own Room or Internet Access" = IF ((ASBG05C = 1 AND ASBG05D = 2) OR (ASBG05C = 2 AND ASBG05D = 1))

3 = "Both Own Room and Internet Access" = IF (ASBG05C = 1 AND ASBG05D = 1)

Set ASDG05S to missing if either source variable is missing.

1 = "Neither Own Room nor Internet Access"

2 = "Either Own Room or Internet Access"

3 = "Both Own Room and Internet Access"

Trend Comments

See ASDG05S in PIRLS 2016. Modifications made to source variable ASBG05D in 2021.

SECTION 2

Variables Derived from the Home Context Data

Derived Variable Name:

ASDHAPS

Variable Label:

Student Attended Preprimary Education

Procedure

Based on responses to the following questions in the Home Questionnaire:

HQ-05Aa,Ab: Did your child attend the following before <first grade>?

"Early childhood educational program or center for children under age 3" (ASBH05AA)

"Pre-primary educational program for children age 3 or older, including <Kindergarten>" (ASBH05AB)

Response options: 1 = "Yes"

2 = "No"

HQ-05B: Approximately, how long was your child in these programs altogether? (ASBH05B)

Response options: 1 = "Less than 1 year"

2 = "1 year"

3 = "2 years"

4 = "3 years"

5 = "4 years or more"

Derive ASDHAPS:

1 = "Did Not Attend" = IF (ASBH05AA = 2 AND ASBH05AB = 2)

2 = "1 Year or Less" = IF (ASBH05B = 1 OR 2)

3 = "2 Years" = IF (ASBH05B = 3)

4 = "3 Years or More" = IF (ASBH05B = 4 OR 5)

Set ASDHAPS to missing if any source variable is missing.

1 = "Did Not Attend"

2 = "1 Year or Less"

3 = "2 Years"

4 = "3 Years or More"

Trend Comments

See ASDHAPS in PIRLS 2016. Modifications made to source variable ASBH05B in 2021.

Derived Variable Name:

ASDHEDUP

Variable Label:

Parents' Highest Education Level

Procedure

Based on responses to the following questions in the Home Questionnaire:

HQ-15: What is the highest level of education completed by the child's <parents/guardians>?

"<Parent/Guardian A>" (ASBH15A)

"<Parent/Guardian B>" (ASBH15B)

Response options: 1 = "Did not go to school"

2 = "Some <Primary education—ISCED Level 1 or Lower secondary education—ISCED Level 2>"

3 = "<Lower secondary education—ISCED Level 2>"

4 = "<Upper secondary education—ISCED Level 3>"

5 = "<Post-secondary, non-tertiary education—ISCED Level 4>"

6 = "<Short-cycle tertiary education—ISCED Level 5>"

7 = "<Bachelor's or equivalent level—ISCED Level 6>"

8 = "<Postgraduate degree: Master's—ISCED Level 7>"

9 = "Doctor or equivalent level—ISCED Level 8>"

10 = "Not applicable"

Recode ASBH15A as follows:

IF ASBH15A = 7, 8, or 9: Recode to 1 ("University or Higher")

IF ASBH15A = 5 or 6: Recode to 2 ("Post-Secondary Education but not University")

IF ASBH15A = 4: Recode to 3 ("Upper Secondary")

IF ASBH15A = 3: Recode to 4 ("Lower Secondary")

IF ASBH15A = 1 or 2: Recode to 5 ("Some Primary or Lower Secondary or Did not go to School")

IF ASBH15A = 10: Recode to 6 ("Not Applicable")

Recode ASBH15B in the same way.

Derive ASDHEDUP:

Using these categories, the smaller value of the recoded ASBH15A and ASBH15B becomes ASDHEDUP.

Set ASDHEDUP to missing if both source variables are missing.

1 = "University or Higher"

2 = "Post-Secondary Education but not University"

3 = "Upper Secondary"

4 = "Lower Secondary"

5 = "Some Primary or Lower Secondary or Did not go to School"

6 = "Not Applicable"

Trend Comments

See ASDHEDUP in PIRLS 2016. Modifications made to source variables ASBH15A, ASBH15B in 2021.

International Report Exhibit

[Exhibit 5.1: Home Socioeconomic Status](#) (used to derive context questionnaire scale)

Derived Variable Name:

ASDHOCCP

Variable Label:

Parents' Occupation

Procedure

Based on responses to the following question in the Home Questionnaire:

HQ-17: What kind of work do the child's <parents/guardians> do for their main jobs?

"<Parent/Guardian A>" (ASBH17A)

"<Parent/Guardian B>" (ASBH17B)

Response options: 1 = "Has never worked for pay"

2 = "Small Business Owner"

3 = "Clerical Worker"

4 = "Service or Sales Worker"

5 = "Skilled Agricultural or Fishery Worker"

6 = "Craft or Trade Worker"

7 = "Plant or Machine Operator"

8 = "General Laborers"

9 = "Corporate Manager or Senior Official"

10 = "Professional"

11 = "Technician or Associate Professional"

12 = "Not applicable"

Recode ASBH17A as follows:

IF ASBH17A = 9, 10, or 11: Recode to 1 ("Professional")

IF ASBH17A = 2: Recode to 2 ("Small Business Owner")

IF ASBH17A = 3 or 4: Recode to 3 ("Clerical")

IF ASBH17A = 5, 6, or 7: Recode to 4 ("Skilled Worker")

IF ASBH17A = 8: Recode to 5 ("General Laborer")

IF ASBH17A = 1: Recode to 6 ("Never Worked for Pay")

IF ASBH17A = 12: Recode to 7 ("Not Applicable")

Recode ASBH17B in the same way.

Derive ASDHOCCP:

Using these categories, the smaller value of the recoded ASBH17A and ASBH17B becomes ASDHOCCP.

Set ASDHOCCP to missing if both source variables are missing.

1 = "Professional"

2 = "Small Business Owner"

3 = "Clerical"

4 = "Skilled Worker"

5 = "General Laborer"

6 = "Never Worked for Pay"

7 = "Not Applicable"

Trend Comments

See ASDHOCCP in PIRLS 2016. Modifications made to source variables ASBH17A, ASBH17B in 2021.

International Report Exhibit

[Exhibit 5.1: Home Socioeconomic Status](#) (used to derive context questionnaire scale)

SECTION 3

Variables Derived from the School Context Data

Derived Variable Name:

ACDGSBC

Variable Label:

School Composition by Socioeconomic Background

Procedure

Based on responses to the following questions in the School Questionnaire:

ScQ-03: Approximately what percentage of students in your school have the following backgrounds?

"Come from economically disadvantaged homes" (ACBG03A)

"Come from economically affluent homes" (ACBG03B)

Response options: 1 = "0 to 10%"

2 = "11 to 25%"

3 = "26 to 50%"

4 = "More than 50%"

Derive ACDGSBC:

1 = "More Affluent" = IF (ACBG03A <= 2 AND ACBG03B >= 3)

3 = "More Disadvantaged" = IF (ACBG03A >= 3 AND ACBG03B <= 2)

2 = "Neither More Affluent nor More Disadvantaged" = IF (All other combinations of ACBG03A and ACBG03B)

Set ACDGSBC to missing if either source variable is missing.

1 = "More Affluent"

2 = "Neither More Affluent nor More Disadvantaged"

3 = "More Disadvantaged"

Trend Comments

See ACDG03 in PIRLS 2016

International Report Exhibit

[Exhibit 6.1: School Composition by Socioeconomic Background of the Student Body](#)

Derived Variable Name:

ACDGTIHY

Variable Label:

Total Instructional Hours per Year

Procedure

Based on responses to the following questions in the School Questionnaire:

ScQ-06A: How many days per year is your school open for instruction? (ACBG06A)

(Open-response item)

ScQ-06B: What is the total instructional time, excluding breaks, in a typical day? (ACBG06B)

(Open-response item; response in terms of minutes)

Derive ACDGTIHY:

Step 1: Compute instructional hours per day:

Divide ACBG06B by 60.

Step 2: Compute hours of school per year:

Multiply the result of Step 1 by ACBG06A.

Set ACDGTIHY to missing if either source variable is missing.

Trend Comments

See ACDGTIHY in PIRLS 2016

SECTION 4

Variables Derived from the Teacher Context Data

Derived Variable Name:

ATDGLIHY

Variable Label:

Language Instructional Hours per Year

Procedure

Based on responses to the following questions in the Teacher Questionnaire (TQR) and School Questionnaire (SCQ):

TQR-04: In a typical week, how much time do you spend on <language of test> language instruction and/or activities with the students? (ATBR04)

(Open-response item; response in terms of minutes)

ScQ-06a: For the <fourth grade> students in your school: How many days per year is your school open for instruction? (ACBG06A)

(Open-response item)

ScQ-06c: In one calendar week, how many days is the school open for instruction? (ACBG06C)

Response options: 1 = "6 days"

2 = "5 1/2 days"

3 = "5 days"

4 = "4 1/2 days"

5 = "4 days"

6 = "Other"

Recode ACBG06C as follows:

IF ACBG06C = 1: Recode to 6

IF ACBG06C = 2: Recode to 5.5

IF ACBG06C = 3: Recode to 5

IF ACBG06C = 4: Recode to 4.5

IF ACBG06C = 5: Recode to 4

IF ACBG06C = 6: Recode to 3

Derive ATDGLIHY:

Step 1: Compute language instructional hours per week:

Divide ATBR04 by 60.

Step 2: Compute language instructional hours per day:

Divide results of step 1 by the recoded ACBG06C.

Step 3: Compute language instructional hours per year:

Multiply results from step 2 by ACBG06A.

Set ATDGLIHY to missing if any source variable is missing.

Trend Comments

See ATDGLIHY in PIRLS 2016

Derived Variable Name:

ATDGRIHY

Variable Label:

Reading Instructional Hours per Year

Procedure

Based on responses to the following questions in the Teacher Questionnaire (TQR) and School Questionnaire (SCQ):

TQR-05: Regardless of whether or not you have formally scheduled time for reading instruction, in a typical week about how much time do you spend on reading instruction and/or activities with the students?

(ATBR05)

(Open-response item; response in terms of minutes)

ScQ-06a: For the <fourth grade> students in your school: How many days per year is your school open for instruction? (ACBG06A)

(Open-response item)

ScQ-06c: In one calendar week, how many days is the school open for instruction? (ACBG06C)

Response options: 1 = "6 days"

2 = "5 1/2 days"

3 = "5 days"

4 = "4 1/2 days"

5 = "4 days"

6 = "Other"

Recode ACBG06C as follows:

IF ACBG06C = 1: Recode to 6

IF ACBG06C = 2: Recode to 5.5

IF ACBG06C = 3: Recode to 5

IF ACBG06C = 4: Recode to 4.5

IF ACBG06C = 5: Recode to 4

IF ACBG06C = 6: Recode to 3

Derive ATDGRIHY:

Step 1: Compute reading instructional hours per week:

Divide ATBR05 by 60.

Step 2: Compute language instructional hours per day:

Divide results of step 1 by the recoded ACBG06C.

Step 3: Compute language instructional hours per year:

Multiply results from step 2 by ACBG06A.

Set ATDGRIHY to missing if any source variable is missing.

Trend Comments

See ATDGRIHY in PIRLS 2016