User Guide for the TIMSS International Database

International Database

Final Year of Secondary School – 1995 Assessment

Supplement 3
Variables Derived from the Student Questionnaires – Population 3

Overview

This supplement contains documentation on all of the derived variables contained in the international background data files that are based on the student background questionnaire variables. These variables were used to report contextual data in the TIMSS international report, and may also be used in secondary analyses. Table S3.1 lists all of the derived variables published in *Mathematics and Science Achievement in the Final Year of Secondary School* (Mullis et al., 1998).[1]

Following Table S3.1 is specific documentation for each derived variable. The documentation section is organized in alphabetical order by derived variable name[2] and contains the following information about each of the derived contextual variables:

- Derived Variable Name

- Derived Variable Label

- Description

- Table Reference

- Source Variable(s) Used from the Background Questionnaire Items
  (Listed by both Questionnaire Item Location and International Background Variable Name)

- Analysis Notes
  (Descriptions of how the derived variables were computed based on associated source variables)

- Table of National Exclusion or Adaptation Documentation
  (List of countries that are either excluded from derived variables or for which some documentation is provided regarding country-specific options or national adaptations of background questionnaire items)

For most derived variables, the documentation reflects general analysis rules applied on the basis of the internationally-defined background questions. Due to national adaptations of the background questionnaires, some countries are omitted or handled somewhat differently for certain report variables. In addition, for a few derived variables the background questions used are country-specific, and the analysis procedures differ across countries. Documentation describing how country-specific or nationally-adapted background data were handled in the international derived variables is provided for all variables where any

---

---

adaptation of background questionnaire items resulted in some modification to either the general analysis method or the interpretation of the derived variable.
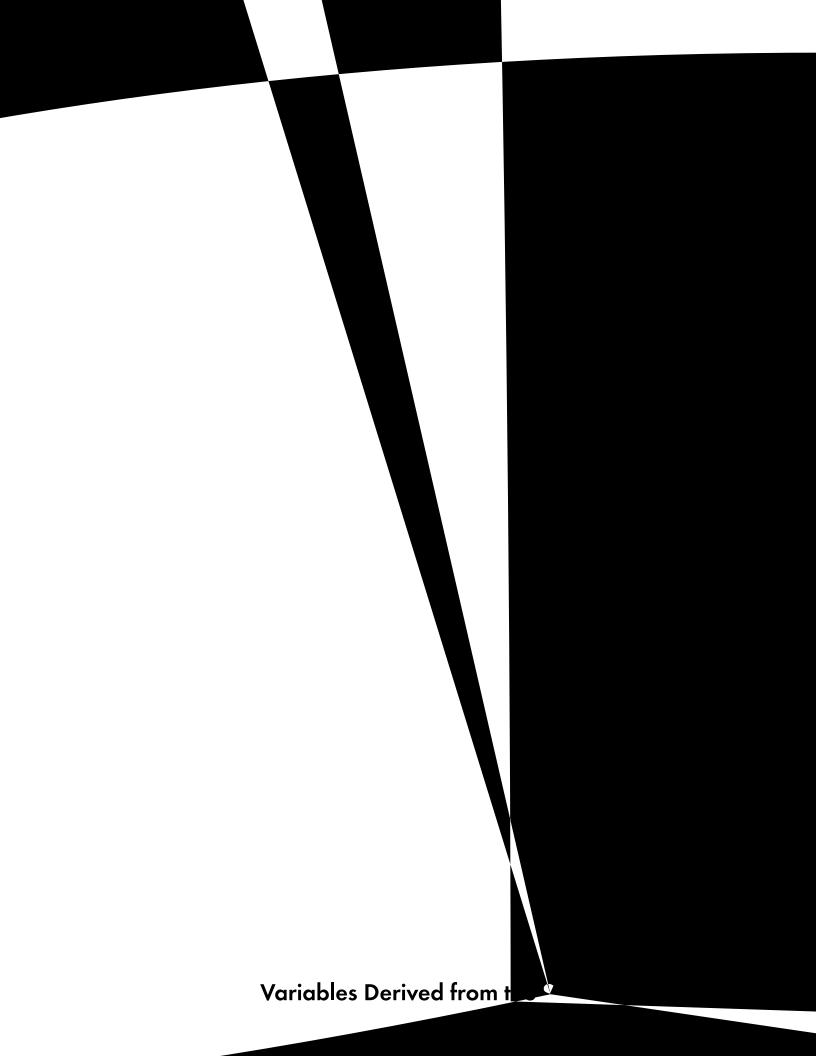
In the Tables of National Exclusion or Adaptation Documentation, countries are given one of two different data codes with the following definitions:

Code D: Data for country are included in the derived variable but with documentation.

The comment lines clarify any differences between the national data and what is expected based on the international definition of the derived and/or source variables. This code also applies to all countries for any derived variables where country-specific analysis rules are required.

Code X: Data for country are NOT included in the derived variable.

In general, these codes are given as a result of source variable(s) that are not available for the country. There are some variables where data are excluded for other reasons; these cases are indicated in the comment line.

Variables Derived from t

Derived Variable Name:	CSDAGE	**Label:**	GEN\STUDENT'S AGE

Description: Student's age in years

Table Reference: CLRT1.1c

Source Variables: SQ3-1/2, 1/3

(CSBGBIRM,CSBGBIRY)

Notes: Derived from date-of-birth variables (month = CSBGBIRM; year = CSBGBIRY) and date-of-testing variables (ITDATEY, ITDATEM) according to the following formula:
CSDAGE = (ITDATEY - CSBGBIRY) + (ITDATEM - CSBGBIRM)/12
If the month of testing was not known, the expected month of testing for the particular country was substituted.
If the month of birth was not know, the value of 6.5 was substituted.
If the year of birth was not known, CSDAGE was set to missing.

Country	**Code**	**Comment**
ALL		Data considered internationally comparable for reporting.

Label:	BIO\LIKE BIOLOGICAL SCIENCE

Description: Students' reports on how much they like biological science

Table Reference: CLRT4.9a

Source Variables: SQ3-19B

(CSBBLIKE)

Notes: Coded into 4 collapsed categories based on students' response to SQ3-19B:

Label:

Derived Variable Name:	CSDGCALC	**Label:**	GEN\USE CALCULATOR\DURING TEST

Description: Students' reports on frequency of calculator use during TIMSS test

Table Reference: CLRT4.13; CMRT7.9; CPRT10.8

Source Variables: SQ3-CS1; SQ3-CS3

(CSBGCAL1; CSBGCAL3)

Notes: Coded into 4 categories based on students' response to CSBGCAL1 and CSBGCAL3:
1 = Did Not Use A Calculator (CSBGCAL1=No);
2 = Used A Calculator Very Little (< 5 questions) - (CSBGCAL1 = Yes and CSBGCAL3 = A);
3 = Used A Calculator Somewhat (5 - 10 questions) - (CSBGCAL1 = Yes and CSBGCAL3 = B);
4 = Used A Calculator Quite A Lot (> 10 questions) - (CSBGCAL1 = Yes and CSBGCAL3 = C).

Coded as missing if both CSBGCAL1 and CSBGCAL3 are missing or if CSBGCAL1=Yes and CSBGCAL3 is missing.

Country	**Code**	**Comment**
ALL		Data considered internationally comparable for reporting.

	Label:	GEN\USE DESKTOP COMPUTER\TERMINAL

Description:

Derived Variable Name:	CSDGDAY1	**Label:**	GEN\OUTSIDE SCHL\WATCH TV OR VIDEOS

Description: Students' reports on hours each day spent watching television or videos

Table Reference: CLRT4.18a

Source Variables: SQ3-16A

(CSBGDAY1)

Notes: Hours based on SQ3-16A response categories recoded to numerical values:
No time = 0; Less Than 1 Hour = .5; 1-2 Hours = 1.5; 3-5 Hours = 4; More Than 5 Hours = 7.

Country	Code	Comment
Germany	D	Data included only for students in gymnasia, comprehensive, or higher technical schools (GS, IGS, FG); source variable question not administered in applied science/vocational versions of questionnaire (FOS/BFS, BS).

Derived Variable Name:	CSDGDAY2	**Label:**	GEN\OUTSIDE SCHL\PLAY COMPUTER GAMES

Description: Students' reports on hours each day spent playing computer games

Table Reference: CLRT4.18b

Source Variables: SQ3-16B

(CSBGDAY2)

Notes: Hours based on SQ3-16B response categories recoded to numerical values:
No time = 0; Less Than 1 Hour = .5; 1-2 Hours = 1.5; 3-5 Hours = 4; More Than 5 Hours = 7.

Country	Code	Comment
Germany	D	Data included only for students in gymnasia, comprehensive, or higher technical schools (GS, IGS, FG); source variable question not administered in applied science/vocational versions of questionnaire (FOS/BFS, BS).

Description: Students' reports on hours each day spending time with friends outside of school

Table Reference: CLRT4.18c

 Source Variables: SQ3-16C

                                   (CSBGDAY3)

Notes:

Derived Variable Name:	CSDGDAY5	**Label:**	GEN\OUTSIDE SCHL\WORKING AT A PAID JOB

Description: Students' reports on hours each day spent working at a paid job

Table Reference: CLRT4.18e

Source Variables: SQ3-16E

(CSBGDAY5)

Notes: Hours based on SQ3-16E response categories recoded to numerical values:
No time = 0; Less Than 1 Hour = .5; 1-2 Hours = 1.5; 3-5 Hours = 4; More Than 5 Hours = 7.

Country	Code	Comment
Germany	D	Data included only for students in gymnasia, comprehensive, or higher technical schools (GS, IGS, FG);

Description: Students' reports on hours each day spent reading a book for enjoyment

Table Reference: CLRT4.18g

Source Variables: SQ3-16G

(CSBGDAY7)

Notes:

Derived Variable Name: CSDGEDUP   **Label:** GEN\HIGHEST EDUC LEVEL\PARENT

Czech Republic   D

Derived Variable Name: CSDGEDUP   **Label:**

Derived Variable Name: CSDGFED   **Label:** GEN\STUDENTS PLAN\FUTURE EDUCATION

Description:

Derived Variable Name: CSDGFED   **Label:** GEN\STUDENTS PLAN\FUTURE EDUCATION

Czech Republic   D   Option 1 = Comparable to international version;
                        Option 2 = 'University study (at least 4 years)' (A4) or 'Bachelor or higher in humanities or

| **Derived Variable Name:** | | CSDGFED | **Label:** | GEN\STUDENTS PLAN\FUTURE EDUCATION |

Netherlands	D	Option 1 = Comparable to international version; Option 2 = 'University' (A4); Option 3 = 'Senior secondary vocational program' (A1) or 'Higher post-secondary vocational program' (A3); Option 4 = 'Other' (A5). [No national option included in A2.]
New Zealand	D	Option 1 = Comparable to international version; Option 2 = 'University or teachers college' (A4) or 'academic courses at polytechnic' (A2); Option 3 = 'Technical/vocational courses at trade or business school' (A1) or 'Vocational/technical subjects at polytechnic' (A3); Option 4 = 'Other' (A5).
Norway	D	Option 1 = Comparable to international version; Option 2 = '4 or more years study at university' (A4) or 'up to 3 years study at university or college' (A2); Option 3 = 'Vocational/technical study at vocational school, 1-3 years' (A3) or 'short post-secondary vocational training' (A1); Option 4 = 'Other' (A5).
Russia	D	Option 1 = Comparable to international version; Option 2 = 'University or other higher education institute' (A4); Option 3 = 'Vocational/technical school or courses' (A1) or short vocational program at college, 2 years' (A3); Option 4 = 'Special courses to prepare for university exam' (A2) or 'other' (A5).
Slovenia	D	Option 1 = Comparable to international version; Option 2 = 'Higher university study, >4 years' (A4) or '4-year or shorter university study' (A2); Option 3 = 'Vocational/technical courses at trade or business school' (A1) or 'vocational/technical program at vocational schools' (A3); Option 4 = 'Other' (A5).
South Africa	D	Option 1 = Comparable to international version; Option 2 = 'Attend technikon or university' (A4); Option 3 = 'Vocational/technical courses at trade or business school' (A1) or ''vocational/technical subject at technical college, 3 years' (A3); Option 4 = 'Academic course at private or community college' (A2) or 'other' (A5).
Sweden	D	Option 1 = Comparable to international version; Option 2 = 'University study for 3 years or longer' (A4) or 'university study for up to 3 years' (A3); Option 3 = 'Short vocationally-oriented courses, up to 1 year' (A1); Option 4 = 'Continuing adult education' (A2) or 'other' (A5).
Switzerland	D	Option 1 = Comparable to international version; Option 2 = 'University or technical university' (A4) or 'higher specialized vocational education' (A3); Option 3 = 'Further upper-secondary level vocational training' (A1) or 'post-secondary vocational education' (A3); Option 4 = 'Other' (A5).
United States	D	Options 1,2,3,4 = Comparable to international definitions.

Derived Variable Name: CSDGPGRM   **Label:**

Derived Variable Name:	CSDGPGRM	**Label:** GEN\<PROGRAM /TRACK> STUDENT IS IN

France   D   Academic = 'Lycees Serie S (scientific), L (literacy) or ES (economic and social)' (Option 1 or 2);
Technical = 'Lycees technical serie STT or other technical serie' (Option 3 or 4);
Vocational = 'Baccalaureat Professionals (BAC)' or 'Brevet d'etudes professionals (BEP)' (Option 5 or 6);
General = Not included.

Germany   D   Academic = 'Gymnasia (GS) and comprehensive schools (IGS)' (Option 1);

Academic = 'Gymnasia, matura program' (Option 1);
Technical = 'Technical/professional schools' (Option 2);
Vocational = '4-year or 3-year vocational programs' (Options 3 or 4);
General = Not included.

South Africa   D   Academic = 'Programs in general academic/comprehensive schools, with or without advanced study in
                                        math/physics' (Options 1, 2, 3, 4, 5, or 6);
                               Technical = Not included;
                               Vocational = Not included;
                               General = Not included.

Sweden   D   Academic = 'Academic programs with specialization in: math/physics (NT/NV), social

Derived Variable Name:	CSDGPS	**Label:**	GEN\NUMBER OF ITEMS AT STUDENT'S HOME

Description: Students' reports of the total number of items in the home

Table Reference: (Not reported)

Source Variables: SQ3-9A-P

(CSBGPS01-CSBGPS16)

Notes: Included as an indicator of socioeconomic status based on a set of nationally-defined variables related to possessions contained in students' homes. CSDGPS is an integer value computed as the total number of Yes (1) responses to the set of questions regarding possessions in the home (SQ3-9a-p), with a maximum value of 16. In some countries, less than 16 items were included, so the maximum value is not comparable across countries. The possessions in SQ3-9a-d are comparable across countries (calculator, computer, study desk/table, dictionary).

Country	Code	Comment
ALL		Documentation regarding national options for source variables included in Supplement 2.

Derived Variable Name:	CSDGSHRT	**Label:**	GEN\STUDENT THREATENED BY ANOTHER STUDENT

Description: Students' reports on how often they had been threatened in school

Table Reference: CLRT4.21b

Source Variables: SQ3-17C

(CSBGSHRT)

Notes: Coded into 3 collapsed categories based on students' responses to SQ3-17C:
1 = Never (option 1);
2 = Once or twice a month (option 2);
3 = Three times or more a month (3-4 times or 5 times or more; option 3 or 4).

Country	Code	Comment
France	X	Data not available for source variable(s).
Germany	D	Data included only for students in gymnasia, comprehensive, or higher technical schools (GS, IGS, FG); source variable question not administered in applied science/vocational versions of questionnaire (FOS/BFS, BS).
Hungary	X	Data not available for source variable(s).
Netherlands	X	Data not available for source variable(s).

| **Derived Variable Name:** | CSDGSSTL | **Label:** | GEN\STUDENT HAD SOMETHING STOLEN |

Description: Students' reports on how often they had something stolen in school

Table Reference: CLRT4.21a

Source Variables: SQ3-17B

(CSBGSSTL)

Notes: Coded into 3 collapsed categories based on students' responses to SQ3-17B:
1 = Never (option 1);
2 = Once or twice a month (option 2);
3 = Three times or more a month (3-4 times or 5 times or more; option 3 or 4).

Country	Code	Comment
France	X	

Label: GEN\OUTSIDE SCHL\TOTAL HOURS STUDY

Description:

Derived Variable Name:	CSDMGOOD	**Label:**	MAT\USUALLY DONE WELL IN MATH

Description: Students' reports on their self-perceptions about usually doing well in mathematics

Table Reference: CLRT4.7a

Source Variables: SQ3-22A

(CSBMGOOD)

Notes: Coded into 2 collapsed categories based on students' responses to SQ3-22A:
1 = Strongly Agree or Agree (option 1 or 2);
2 = Disagree or Strongly Disagree (option 3 or 4).

Country	Code	Comment
Germany	D	Data included only for students in gymnasia, comprehensive, or higher technical schools (GS, IGS, FG); source variable question not administered in applied science/vocational versions of questionnaire (FOS/BFS, BS).

	Label:	MAT\FREQUENCY MATH HOMEWORK IS ASSIGNED

Description:	3	0	0

Description: Students' reports on the amount of mathematics instruction they receive each week

Derived Variable Name:	CSDMREAS	**Label:**	MAT\HOW OFTEN\USE REASONING IN TASKS

Description: Students' reports on how often they are asked to do reasoning tasks in their mathematics lessons

Table Reference: CMRT7.3

Source Variables: SQ3-31A-D

(CSBMDO01- CSBMDO04)

Notes: Coded into 4 categories based on students' highest response value (most frequent occurrence) to SQ3-31A-D:
1 = Never or Almost Never (highest value = 1);
2 = Some Lessons (highest value = 2);
3 = Most Lessons (highest value = 3);
4 = Every Lesson (highest value = 4).

Coded as missing if all of 31A-D are missing.

Country	Code	Comment
Austria	D	Data included only for those students reporting that they are currently taking mathematics.
Germany	D	Data included only for students in gymnasia, comprehensive, or higher technical schools (GS, IGS, FG); source variable question not administered in applied science/vocational versions of questionnaire (FOS/BFS, BS).
Netherlands	X	Data not available for source variable(s).
Switzerland	D	Data included only for those students reporting that they are currently taking mathematics.

Derived Variable Name:	CSDMSTDC	**Label:**	MAT\OUTSIDE SCHL\HOURS STUDY MATH(CAT)

Description: Students' reports on hours per day studying or doing mathematics homework - categories

Table Reference: CLRT4.16a-d

Source Variables: SQ3-30A; SQ3-16H

(CSBMTAKE; CSBMDAY8)

Notes: Hours reported studying or doing mathematics homework (16H) coded into four categories based on students' responses to SQ3-30A and 16H:
1 = Not Taking Mathematics (30A = No);
2 = <1 Hour (30A = Yes and 16H = No Time or <1 Hour; option1 or 2);
3 = 1 - 2 Hours (30A = Yes and 16H = option 3);
4 = 3 or More Hours (30A = Yes and 16H = 3-5 Hours or >5 Hours; option 4 or 5).

Coded as missing if 30A or 16H is missing.

Country	Code	Comment
Germany	X	Data not available for source variable(s).

| **Derived Variable Name:** | CSDMSTUD | **Label:** MAT\OUTSIDE SCHL\STUDYING MATH |

Description: Students' reports on hours per day studying or doing mathematics homework

Table Reference: CLRT4.16e

Source Variables: SQ3-30A; SQ3-16H

(CSBMTAKE; CSBMDAY8)

Notes: Hours based on SQ3-16H recoded to numerical values, included only for those students currently taking mathematics (30A=Yes):
No time = 0; Less Than 1 Hour = .5; 1-2 Hours = 1.5; 3-5 Hours = 4; More Than 5 Hours = 7.

Coded as missing if 30A = No or if 30A = Yes and 16H is missing.

Country	Code	Comment
Germany	X	Data not available for source variable(s).

| **Derived Variable Name:** | CSDPAREA | **Label:** PHY\AREA STUDENTS INTEND TO STUDY MOST |

Description: Students' reports on the area they intend to study after secondary school - physics reporting categories

Table Reference: CPRT10.11

Source Variables: SQ3-14B

(CSBGAREA)

Notes: Coded into 7 collapsed categories based on students' responses to SQ3-14B.
1 = Physics or Chemistry (14B option 10 or 3);
2 = Biological or Earth Sciences (14B option 1 or 5);
3 = Health Sciences or Related Occupations (14B option 8 or 7);
4 = Mathematics or Computer/Information Sciences (14B option 9 or 4);
5 = Engineering (14B option 6);
6 = Business (14B option 2);
7 = Other (14B option 11).

Students not intending to continue education after secondary school (14A = No) coded as 'Not Applicable'.

Country	Code	Comment
Austria	D	Source variable questions asked only of students intending to go to university or higher technical institutes (Fachhochschule); other students coded as 'Not Applicable'.
Germany	D	Data included only for students in gymnasia, comprehensive, or higher technical schools (GS, IGS, FG); source variable question not administered in applied science/vocational versions of questionnaire (FOS/BFS, BS).

Derived Variable Name:		**Label:** SCI\USE COMPUTERS TO SOLVE PROBLEMS

Description: Students' reports on how often in physics lessons they are asked to use computers to solve exercises or problems

Table Reference: CPRT10.6

Source Variables: SQ3-34A; SQ3-35A; SQ3-36L

   (CSBSCOU1; CSBSQUES; CSBSDO12)

Notes: Coded into 4 categories based on students' responses to SQ3-36L, 35A, 34A.
   1 = Never or Almost Never;
   2 = Some Lessons;
   3 = Most Lessons;
   4 = Every Lesson.

   Included only for students reporting about a current physics class (34A = Yes and 35A = 1, Physics). Coded as missing if: (a) 34A is missing; (b) 34A = Yes and 36L is missing; or (c) 34A = Yes and 35A = 2, 3, 4, or 5.

Country   **Code Comment**

Description: Students' reports on the amount of physics instruction they receive each week

Table Reference: CPRT10.1

Source Variables: SQ3-34A; SQ3-35A,B,C

(CSBSCOU1; CSBSQUES; CSBSCLAS; CSBSTIME)

Notes: Computed based on responses to open-ended questions regarding physics classes per week (35B) and minutes per class (35C) for those students reporting about a current physics class (34A = Yes and 35A = 1, Physics). Instructional hours per week computed by multiplying 35B by 35C and dividing by 60 minutes. Coded into 5 categories:
1 = Not Currently Taking Physics (34A = No);
2 = < 3 Hours;
3 = 3 to <4 Hours;

Label: PHY\LIKE PHYSICS

Description: Students' reports on how much they like physics

Table Reference: CLRT4.9d

Derived Variable Name:	CSDSGOOD	**Label:**	SCI\USUALLY DONE WELL IN SCIENCE

Description: Students' reports on their self-perceptions about usually doing well in science

Table Reference: CLRT4.7b

Source Variables: SQ3-22B

(CSBSGOOD)

Notes: Coded into 2 collapsed categories based on students' responses to SQ3-22A:
1 = Strongly Agree or Agree (option 1 or 2);
2 = Disagree or Strongly Disagree (option 3 or 4).

Country	Code	Comment
Germany	D	Data included only for students in gymnasia, comprehensive, or higher technical schools (GS, IGS, FG); source variable question not administered in applied science/vocational versions of questionnaire (FOS/BFS, BS).
Netherlands	D	Includes combined data for four separate questions about: physics, chemistry, biology, and earth science.

Description: Students' reports on how often they are asked to do reasoning tasks in their physics (science) lessons

Table Reference: CPRT10.3

 Source Variables: SQ3-34A; SQ3-35A; SQ3-36A-E

(CSBSCOU1; CSBSQUES; CSBSDO01-CSBSDO05)

Notes: Coded into 4 categories based on students' highest response value (most frequent occurrence) to 36A-E:
1 = Never or Almost Never (highest value = 1);
2 = Some Lessons (highest value = 2);
3 = Most Lessons (highest value = 3);
4 = Every Lesson (highest value = 4).

Coded as missing if all of 36A - E are missing.

Label: SCI\OUTSIDE SCHL\HOURS STUDY SCI(CAT)

Description: Students' reports on hours per day studying or doing science homework- reporting categories

Table Reference: