Centraal Bureau voor de Statistiek

NATIONAAL KENNISINSTITUUT ONDERWIJS NCO

INTERGENERATIONAL TRANSMISSION OF SKILLS DATASET

Background Documentation and Codebook

Version 1.0

2026

Originally created by: Babs Jacobs & Rolf van der Velden
Updated by: Lynn van Vugt, Per Bles & Michel van Klundert

Preface

This documentation describes the content of the Intergenerational Transmission of Skills (ITS) dataset. The aim of this dataset is to gain a deeper understanding of the role of intergenerational transmission of (basic) skills in various life domains (i.e., education, health, crime, etc.). The foundation of the ITS dataset is provided by linking data from educational cohorts, who were followed throughout their educational careers in the 1970s and 1980s in the Netherlands and who were, among other things, tested on their basic skills, to register information from Statistics Netherlands on the educational careers and basic skills of their child(ren). The unique aspect of the dataset is that basic skills in language and mathematics are available for parents and their children measured at approximately the same age (12 years) with the same type of test. To our knowledge, there is no other dataset with these unique elements. The ITS dataset is further enriched with registry information in several areas, namely: household composition, background characteristics, education, income and wealth data. This documentation provides a detailed overview of the construction of the ITS dataset and the available variables.

The ITS dataset is available in the highly secure environment of Statistics Netherlands and the data is pseudonymised. To gain access, a number of steps must be completed. In the first step of application, your institution must submit a request to Statistics Netherlands in order to get authorisation, in case your institution has not yet been authorised to access CBS microdata. If your institution has been authorised, you can submit a project application by sending a description of the intended research to NCO and CBS Microdata Services. Your project application is assessed on a number of criteria, the most important of which are the admissibility and feasibility of your research. You will then be invited for a meeting with experts. Statistics Netherlands draws up a cost overview for the project. If you agree, the final administrative steps will be taken and a project agreement (contract) and confidentiality statements will be drawn up. For more information about the procedure at Statistics Netherlands, please visit the CBS Microdata Services website. For other questions, please visit the ITS-page on the NCO website or send an email to: info@nationaalcohortonderzoek.nl.

Finally, we gratefully acknowledge a data grant received from the Dutch Ministry of Education, Culture and Science and the Netherlands Initiative for Education Research (NRO: grant 405-00-860-173) to make this dataset and documentation publicly available in the secured environment of Statistics Netherlands.

Contents

Preface 2

1 Introduction 6

2 Education cohorts 7

2.1 Sampling 7

2.2 Content of the education cohort studies 9

3 Register information 11

3.1 Linking cohort respondents to their offspring 11

3.2 Other register information 12

3.2.1 Cito-test child 13

3.2.2 Other information on education child 13

3.2.3 Highest educational attainment 14

3.2.4 Financial situation 14

3.2.5 Household composition 14

3.2.6 Parental death and divorce 15

3.2.7 Background information 15

4 Descriptives and Representativeness 16

4.1 Descriptive statistics 16

4.2 Representativeness 22

5 Creation of core ITS dataset 27

6 Variables 29

6.1 List of variables 29

6.2 Description of variables 35

6.2.1 Identifiers 35

6.2.2 Skill measures 38

6.2.3 Background characteristics of child 48

6.2.4 Background characteristics of skill parent 52

6.2.5 Background characteristics of other parent 56

6.2.6 Education variables of the child 58

6.2.7 Education variables of parents 75

6.2.8 Income variables 81

6.2.9 Household composition 100

6.2.10 Grandparental characteristics 112

6.2.11 Cultural capital indicators (grand)parents 117

7 References 122

8 Appendix 124

8.1 Dutch education system 124

8.2 The inclusion of Dutch education in ISCED 2011 labels 125

1 Introduction

The Intergenerational Transmission of Skills (ITS) dataset combines information on basic skills and education of parents and their offspring. With this dataset, researchers can get a better understanding of the intergenerational transmission of skills, and link this to other outcomes. The foundation of the ITS dataset is provided by linking data from several educational cohorts, who were followed throughout their educational careers in the 1970s and 1980s in the Netherlands and who were tested on their basic skills, to register information from Statistics Netherlands on their child(ren). The unique aspect of the dataset is that basic skills in language and mathematics are available for parents and their offspring measured at approximately the same age (12 years) with the same type of test. Due to the nature of the dataset, basic skills are usually only available for one of the parents. To our knowledge, there is no other dataset with these unique elements. The ITS dataset is further enriched with registry information in several areas, namely: household composition, background characteristics, education, income, and wealth.

This documentation provides a detailed overview of the construction of the ITS dataset and the available variables. First, information is provided on the education cohorts that started in the 1970s and 1980s. This description includes the sampling of the cohorts and a brief overview of the content of the survey. Then, the register information, which is linked to the education cohort studies, is discussed. This includes a description of the linking process of the parents with their child(ren). This is followed by an outline of the used register information. Next, the construction of the dataset is further explained. We have included descriptive statistics on the dataset to demonstrate the representativeness of the data. The creation of the core ITS dataset is then described. Finally, a list of the available variables is given as well as their operationalizations.

2 Education cohorts

Since the mid-1970s, education cohort studies were undertaken by Statistics Netherlands on a regular basis. For the creation of the ITS dataset, three education cohorts that started in the 1970s and 1980s were used. The data from these education cohorts is linked to register data on original respondents as well as their offspring. In the following, the sampling procedure and the most important content of the education cohorts is discussed.

2.1 Sampling

In 1977, Statistics Netherlands started the cohort study, called "Sociaal Milieu Voortgezet Onderwijs" (SMVO) (English translation: 'social origin and secondary education'). This cohort study is a national representative panel study of children that entered secondary education for the first time, around the age of 12, in school year 1977/1978. In this longitudinal survey, students were followed throughout their educational career. A stratified two-stage cluster sample was drawn. Six strata[1] were distinguished to avoid underrepresentation of certain tracks. Within each track, the aim was to draw at least 700 students per social origin group and gender (CBS, 1982). A sample of school classes was then drawn per stratum. The total sample consists of 37,280 students from 1,275 schools. This is about 15 percent of the total student population (N=247,119) at the time. Analyses on the overall non-response showed that the distribution of students across tracks was representative. The non-response across regions was not entirely random. Partial non-response was more likely among underachievers, dropouts as well as among students with a relatively low teacher advice or with low-educated parents (CBS, 1982, 1991b).

The second cohort study "Schoolkeuze Lager Voorgezet Onderwijs" (SLVO) ('school choice primary and secondary education') started in school year 1982/1983 in the last year of primary education. A random sample was drawn from a population of 8,745 regular schools with a probability of one in nine. From the 977 schools selected, 669 schools were willing to

[1] Distinguished as strata are: 1) vwo, havo, mavo; 2) lts lno, las, ilo; 3) lhno; 4) leao, lavo, lmo; 5) ito; 6) ihno.

participate. In total, 16,813 students were included in the study. This amounts to 7.4 per cent of the primary school student population (N=226,109) at that time. Again, the regional non-response was not random: schools in the four biggest cities in the Netherlands were less willing to participate (CBS, 1991b). As in the 1977 cohort, the partial non-response occurred for variables that negatively affect school careers (i.e., disadvantaged background, low performance scores or low teacher advice).

The third cohort study "Voortgezet Onderwijs Cohort Leerlingen" (VOCL) ('secondary education cohort study students') is a nationally representative panel of children who entered secondary education for the first time in the school year 1989/1990. A stepwise sample was chosen. This involved drawing schools in regular secondary education in the first stage and then drawing classes from these schools in the second stage (CBS, 1991). In small schools all classes were included, and in bigger schools a random selection of classes was sampled (Kuyper & Van der Werf, 2007). The survey comprises 19,524 students from 381 schools, amounting to 10.5% of the entire student population in the first year of secondary school at the time. The sample deviates only slightly from the total population of schools. There are small deviations present in the distribution of urbanization (large cities are slightly underrepresented) and school types (Driessen & van der Werf, 1992). In Table 1, a summary of the sample characteristics per education cohort is provided.

Table 1. Summary sample characteristics per education cohort

	Education cohort 1977	**Education cohort 1982**	**Education cohort 1989**
School year start	1977/1978	1982/1983	1989/1990
Starting class	1st year secondary education	Last year primary education	1st year secondary education
Sample type	Systematic within strata	Random	Random
Student population	247,119	226,109	circa 185,000
Number of students	37,280	16,813	19,524
Percentage of population	15,1%	7,4%	10,5%

2.2 Content of the education cohort studies

In all education cohort studies, the position of the students in education was determined annually (i.e., track and grade) until the person left education. Within the cohort students' school careers, exam results and attained diplomas were also tracked per year. A departure code has been added to students who have left education.

In the first year, participating schools received for each participating student: a parent questionnaire and several tests for the students. In the parent questionnaire, additional information was gathered, among other things, on parents' level of schooling and socio-economic status. The exact content of these questionnaires differs between the education cohorts. In the more recent cohorts, more attention is paid to gathering information on the home environment, parental motivation, and behaviours and attitudes toward the school environment, while the questionnaire in the oldest education cohort focuses on the socio-economic background only. In the ITS dataset, we refer to the parents of the cohort respondent as grandparents because these are the grandparents of the respondents' offspring.

In general, only variables that could be harmonized across the education cohorts were included in the ITS dataset. In some cases, as indicated in Chapter 5, cohort-specific variables were included.

Performance scores in math, language, and nonverbal intelligence were gathered via tests among the cohort respondents. To test the performance in math and language, test developer Cito (in English 'Central Institute for Test Development') developed a short performance test. The test was conducted in the classroom and administered by the teacher. It was constructed with existing test items from the nation-wide Cito-test[2]. In the 1989 education cohort, additional information on the background and performance was not only collected in the first year, but also in the third and fifth year of the survey. As in the first year, students in the third year of secondary education had to do performance tests and an intelligence test. Moreover, in the fourth cohort year the same information was collected among children who were delayed (i.e., repeated a year). These additional test scores are not included in the ITS dataset.

For more detailed and cohort-specific information, which is not directly relevant to the ITS dataset, we refer to the following documents: Blommers (1983); CBS (1988, 1991a, 1991b); Driessen and van der Werf (1992); Hustinx, Kuyper, van der Werf, and Zijsling (2005); Kuyper and Van der Werf (2007). More information on the operationalization of the variables can be found in Chapter 5.

[2] The Cito-test is a test used in Dutch schools since 1968 to gain objective insight into a child's abilities. It is normally administered in the final grade of primary education. Since the introduction of the Cito-test in 1970, a large majority (around 85%) of the schools in primary education have used it. However, the use of a national test was not mandatory before the 2014/2015 school year. Nowadays, the Cito-test is a high-stakes test measuring school performance in math and the Dutch language, as schools are obligated to use a national test.

3 Register information

Data from the education cohorts is linked to register data available at Statistics Netherlands on various domains. This is possible because the data of the education cohorts include unique identifiers for every individual that can be used to link the data to other datasets. For the latest cohort we could rely on an existing unique personal identifier, which made the linking process successful in 98 percent of the cases. For the 1977 and 1982 cohorts the identifying information was based on name, address, place of residence, gender, and birth date of the respondents. This information allowed us to link 81 percent (1977 cohort) and 88 percent (1982 cohort), respectively, of the original students to existing identifiers in the registers.

3.1 Linking cohort respondents to their offspring

The key feature of the ITS dataset is that these identifiers make it possible to link the original cohort data to the data of their legal children. Using a database available at Statistics Netherlands containing all individuals in the municipal personal records database as of January 1, 1995 for whom at least one of the legal parents is known[3], the offspring of the education cohort respondents are identified. Two remarks can be made about the parent-child database. First, legal parents are legally related to the child, but they do not have to be biologically related to the child. For example, in case of adoption. Second, legal parents do not necessarily live in the same household as their children. For example, in case of parental divorce, it could be that the offspring do not live with both legal parents.

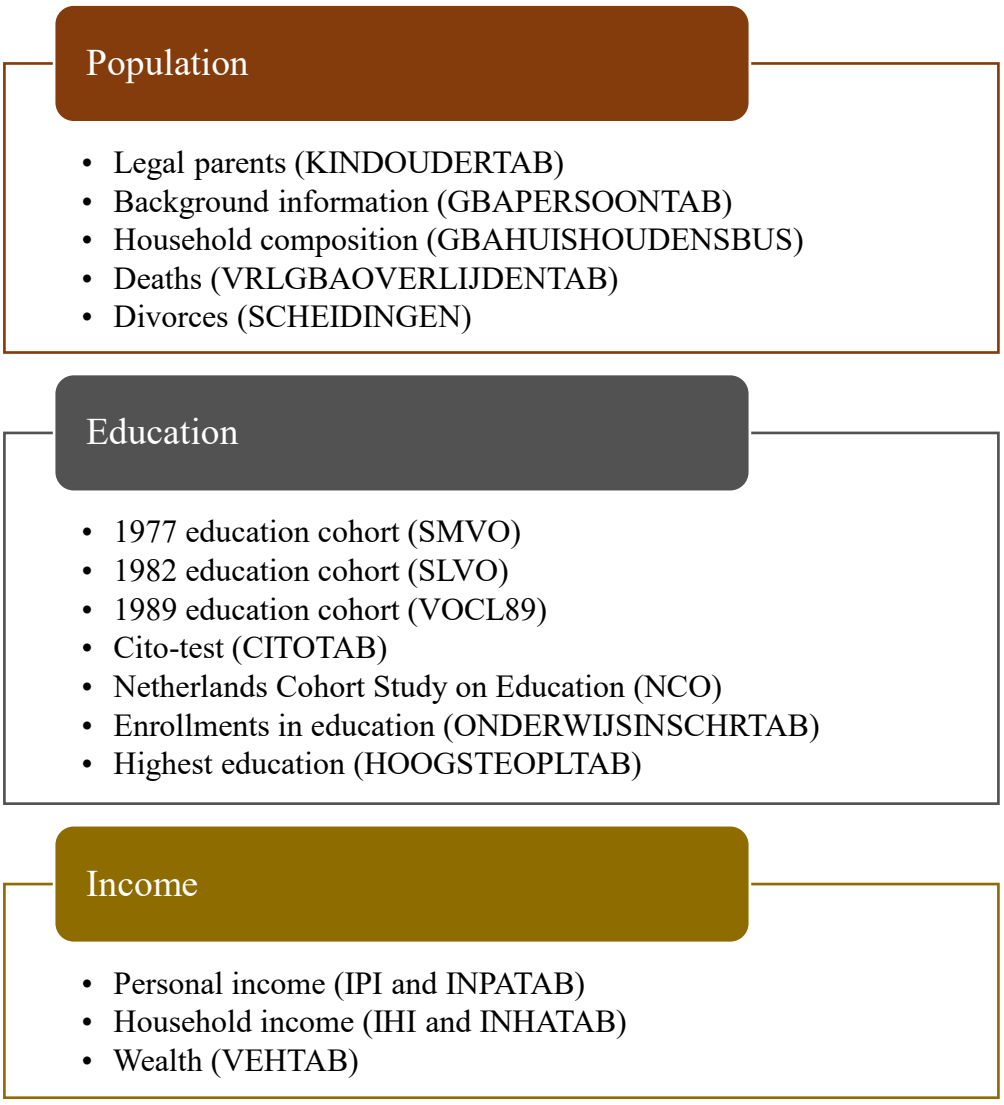
For most children, either their legal mother or father participated in the education cohort surveys. For a small number of children (N=379), both parents were present in one of the education cohort surveys. This is because a number of respondents from the education cohorts had children together.

[3] This micro dataset is called 'KINDOUDERTAB'.

3.2 Other register information

The identified parent-child combinations are merged to various other register databases. In the following, an overview is given of the register information which is linked to the parents and children. A detailed overview of the available variables in the ITS dataset and their operationalizations is included in Chapter 5. Figure 1 provides an overview of the used micro datasets available at Statistics Netherlands.

Figure 1. Data overview



3.2.1 Cito-test child

The unique aspect of the ITS dataset is that it includes measures of school performance in math and language of both the parent and child administered around age 12 with a similar test. For the children, information on school performance is retrieved from the Cito-test register. Statistics Netherlands has this information from school year 2005/2006 until 2020/2021. However, the CITO-test was not conducted in 2019/2020 due to the COVID-19 pandemic. The identified children are linked to this dataset. The test is a nation-wide standardized skills test. It measures what a student has learned in comparison to other students in eight years of primary education. The content of the test is closely related to the curriculum for the basic skills of language and arithmetic and is constructed on the expectation that these are highly predictive for a successful completion of tracks in secondary education. Although the test is updated annually and occasionally cover other domains as well, the core principle behind the test and its aims have not changed over the years, namely, to provide an objective indication of students' performance in the key domains of language and math. These domains are considered crucial for the successful completion of secondary education. The use of a national test was not mandatory before the school year 2014/2015, but since the introduction of the Cito-test in 1970, a large majority (around 85%) of the schools in primary education have used it. Separate scores for language and math are available as well as the total score on the test.

3.2.2 Other information on education child

Additional information on the educational pathways of the children was added from the Netherlands Cohort Study on Education [in Dutch abbreviated as NCO (Nationaal Cohortonderzoek Onderwijs)] (for more information see Haelermans et al., 2020) and register information on enrolments in education. These datasets include annual information on the student's track placement, grade, and diploma. The NCO dataset also includes detailed information on the attended school and background information on the individual and their parents. The NCO data is available from school year 2007/08 onwards, the register information

on enrolments in education from school year 2000/01 onwards. For more information on the Dutch education system, see the Appendix 8.1.

3.2.3 Highest educational attainment

Information on the highest educational attainment (so far) has been added for both parents and children. Although the coverage rate in this dataset is high (about 65% in 2018), the file does not include all persons who were registered in the municipal basis administration at reference time October 1 of the year YYYY. While information on enrolment in higher education has been kept from 1983 (academic education) and 1986 (higher professional education) onwards, information concerning secondary and vocational education has only been recorded since the beginning of this century (respectively from school year 2003/2004 and school year 2004/2005 onwards). Since 2004, education data in the register have been supplemented by education data from the Survey of Occupational Population (EBB). Moreover, education obtained abroad, education at private institutions that do not receive government funding and long corporate training and courses is usually not measured. For more information on the Dutch education system, see the Appendix.

3.2.4 Financial situation

Information on the parents' and the child's household financial situation several years before and after the child took the Cito-test was added. Specifically, we have information on parents' personal income, parents' benefit dependency, household income, and household wealth from the administrative data of Statistics Netherlands.

3.2.5 Household composition

As previously mentioned, children and parent that are linked in the ITS dataset do not necessarily live together. In order to get insights in the household composition, we added annual information on whether the child lives with both legal parents, only their skill parent (i.e. the original education cohort respondent), only their other parent or with no parents.

3.2.6 Parental death and divorce

For legal parents, it was also determined whether and on what date their death occurred. For legal parents, we additionally determined whether an official divorce had occurred. In some cases, parents divorced more than once.

3.2.7 Background information

Basic background information on the children and their parents was added including information such as sex, birth date, country of origin, and migration background. It includes all people who were in the municipal personal records database from 1 October 1994 onwards.

4 Descriptives and Representativeness

4.1 Descriptive statistics

The ITS dataset combines all aforementioned data from the education cohorts and the registers. Since our source data are survey data, and we link this to registry information, one might wonder how representative the final dataset is. In this chapter, we describe our ITS dataset and discuss the representativeness.

Table 2. Overview of the sample selection process

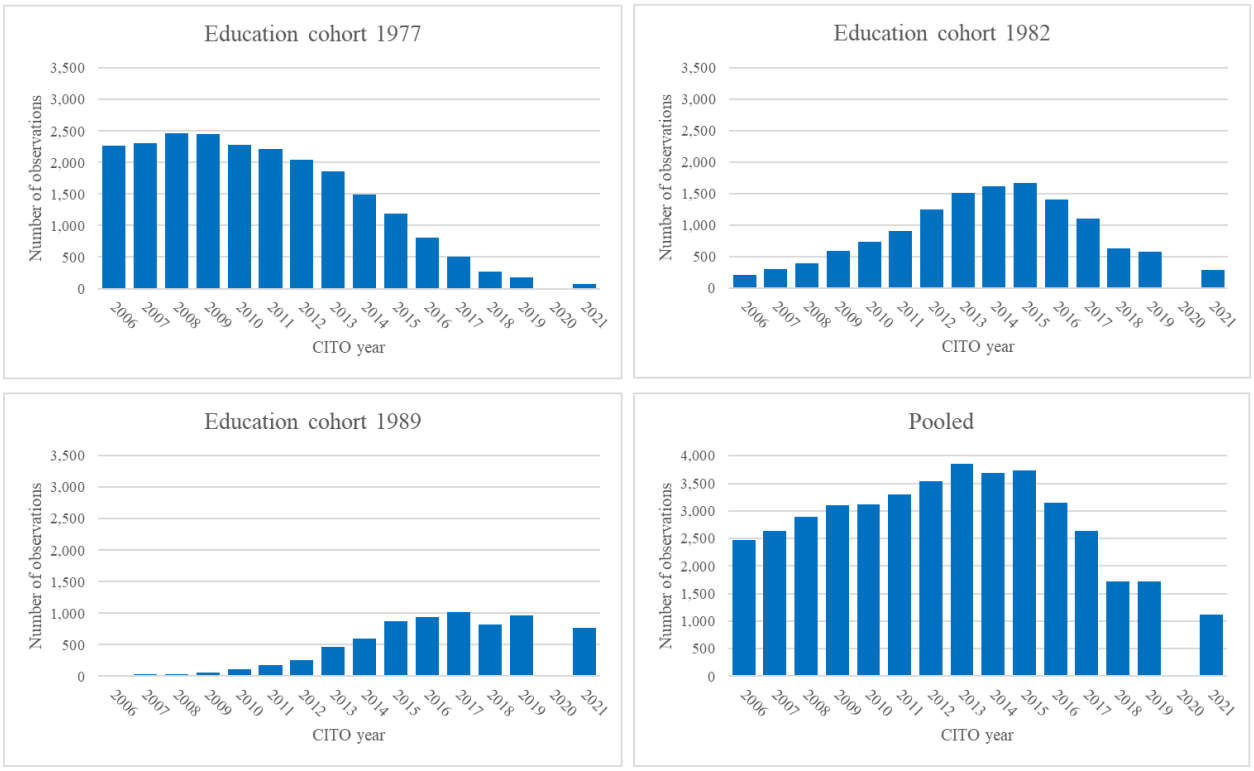
	Pooled		**1977 Cohort**		**1982 Cohort**		**1989 Cohort**	
	Parents	Children	Parents	Children	Parents	Children	Parents	Children
Original file	73,617		37,280		16,813		19,524	
Observations with linkable ID	64,046		30,171		14,764		19,111	
Observations with test data	58,090		25,462		14,613		18,015	
Observations with children*	44,837	97,972	19,653	43,137	11,353	24,679	13,831	30,156
Observations with children with test scores	25,892	42,664	13,219	22,412	7,701	13,137	4,972	7,115
Observations with non-missing household income information*	25,783	42,481	13,171	22,327	7,667	13,080	4,945	7,074
Observations with non-missing personal income information*	24,275	39,993	12,393	21,068	7,228	12,294	4,654	6,631
Observations with non-missing household wealth information*	25,727	42,398	13,156	22,308	7,664	13,070	4,907	7,020
Observations with household composition information*	25,851	42,594	13,203	22,386	7,686	13,108	4,962	7,100

Data sources: Administrative data; ITS survey dataset.
* only the children of parents with valid test scores were considered ;
** the number of observations is determined for to, which is the year in which the child took the Cito-test.

Table 2 provides an overview of the merging process per education cohort and the pooled group. Sample sizes vary across cohorts, mainly due to differences in the original sample sizes

and differences in the possibility of linking the original respondents to the register data. In addition, we are missing information on the test data of some parents, specifically those in the 1977 cohort (N = 4,709). The reason for this is that in the 1977 education cohort, it was impossible for Statistics Netherlands to link part of the Cito-test data because the necessary identifiers were missing or incorrect (CBS, 1982). For most parents and children, personal and household information on income is available. This also holds for information about the household composition. Note that only those parents are included in our parent sample whose children took the Cito-test between school years 2005/2006 and 2020/2021. This implies that for the 1977 education cohort, we observe parents who are relatively old when they had children, while for the 1989 education cohort we observe relatively young parents. Further, the distribution of children by education cohort in terms of the year they took the Cito-test is not uniform.

Figure 2. Distribution of children by test year and by cohort



Notes: Due to the COVID-19 pandemic, there are no test scores available for the year 2020.
Data sources: Administrative data; ITS survey dataset.

As can be seen from Figure 2, which shows the distribution of children by test year, most children of cohort 1977 took their test in 2006-2012, while most children in cohort 1989 took their test in 2016-2021. The distribution of the pooled sample is more evenly spread over the test years.

The selectivity of the sample with respect to age also has implications for parents' education and skills. Because high educated people tend to enter parenthood at a later age, the parents from the 1977 cohort whose children we observe in the ITS data are positively selected in terms of their education and basic skills. The parents from the third cohort entered parenthood relatively young and therefore tend to have slightly lower educational attainment and cognitive skills, while the parents from the second cohort (around age 12 in 1982) fall somewhere in between. This can be seen in Tables 3, 4 and 5 where the descriptive statistics

for the ITS sample are shown at the child and parent level, and at the *child*parent* observation level, respectively.

Table 3. Descriptive Statistics – Child sample

Variables		Pooled	Cohort		
			1977	1982	1989
		(1)	(2)	(3)	(4)
Child Characteristics					
Math skills (std)	Mean	0.064	0.147	0.019	-0.114
	SD	0.952	0.923	0.961	0.997
Language skills (std)	Mean	0.047	0.117	0.009	-0.106
	SD	0.963	0.945	0.970	0.985
Gender	Female	0.503	0.500	0.504	0.510
Non-western migration background	Yes	0.042	0.028	0.039	0.094
Cito-year	2006	0.058	0.101	0.016	0.001
	2007	0.062	0.103	0.022	0.004
	2008	0.068	0.110	0.030	0.004
	2009	0.073	0.109	0.045	0.008
	2010	0.073	0.102	0.056	0.016
	2011	0.077	0.099	0.069	0.024
	2012	0.083	0.091	0.095	0.035
	2013	0.090	0.083	0.115	0.066
	2014	0.087	0.067	0.123	0.083
	2015	0.088	0.053	0.127	0.124
	2016	0.074	0.036	0.107	0.131
	2017	0.062	0.023	0.084	0.143
	2018	0.040	0.012	0.048	0.116
	2019	0.040	0.008	0.044	0.136
	2020	-	-	-	-
	2021	0.026	0.003	0.021	0.108
Observations		42,664	22,412	13,137	7,115

Notes: Table reports means, SD, and shares for the variables indicated in column (1) for the pooled sample as well as the three education cohorts separately. The type of statistic reported is indicated in column (2). Children's skills are standardized with mean zero and SD one in the full sample of children taking the test in the particular Cito-test year. Children's gender, non-western migration background and the year in which they did the Cito-test are taken from administrative data. *Due to the COVID-19 pandemic, there are no test scores available for the year 2020.*

Data sources: Administrative data; pooled ITS survey dataset.

Both parents and their children from the 1977 cohort have on average higher math and language skills than the parents and children from the 1989 cohort. Parents from the 1977 cohort are more highly educated, and score higher on their non-verbal intelligence test. The parents and children from the 1982 cohort fall somewhere in the middle. In terms of their

financial situation, the parents from the 1977 cohort are better off than those of the other cohorts. This is partly due to the returns to their higher cognitive skills and partly due to their older age. Further, it is noticeable that in the 1989 cohort, the share of parents and children with a non-western migration background is higher than in the earlier cohorts. This is likely due to increased migration to the Netherlands over the years.

Table 4. Descriptive Statistics – Parent sample (one observation per parent)

Variables			Cohort		
		Pooled	1977	1982	1989
		(1)	(2)	(3)	(4)
Parent Characteristics					
Math skills (std)	Mean	0.056	0.159	-0.007	-0.122
	SD	0.981	0.970	0.985	0.970
Language skills (std)	Mean	0.065	0.147	0.008	-0.064
	SD	0.968	0.947	0.987	0.978
Non-verbal intelligence scores	Mean	0.001	0.137	-0.053	-0.123
	SD	0.786	0.957	0.689	0.583
Gender	Female	0.531	0.492	0.553	0.598
Education	Low	0.212	0.186	0.227	0.256
	Medium	0.434	0.445	0.412	0.440
	High	0.354	0.369	0.361	0.305
Non-western migration background	Yes	0.031	0.012	0.028	0.084
Grandparent Characteristics					
Education	Primary education	0.201	0.156	0.281	0.200
	Lower secondary education	0.328	0.320	0.370	0.286
	Higher secondary education	0.301	0.340	0.198	0.353
	Tertiary education	0.170	0.184	0.151	0.161
Social status	Blue collar worker	0.302	0.294	0.321	0.297
	Employer – without staff	0.072	0.082	0.070	0.047
	Employer – with staff	0.053	0.058	0.050	0.043
	Lower white-collar worker	0.113	0.116	0.121	0.092
	Middle white-collar worker	0.192	0.204	0.176	0.184
	Professionals	0.123	0.125	0.114	0.130
	Other	0.145	0.121	0.147	0.207
Age of grandfather at birth cohort parent	<28	0.316	0.220	0.464	0.367
	Between 28-32 years	0.378	0.404	0.307	0.414
	Between 33-37 years	0.186	0.225	0.139	0.144
	38 and older	0.120	0.151	0.090	0.075

Age of grandmother at birth cohort parent	<28	0.498	0.391	0.635	0.595
	Between 28-32 years	0.315	0.368	0.226	0.301
	Between 33-37 years	0.131	0.165	0.101	0.077
	38 and older	0.056	0.076	0.038	0.027
Observations		25,892	13,219	7,701	4,972

Notes: Table reports means, SD, and shares for the variables indicated in column (1) for the pooled sample as well as the three education cohorts separately. The type of statistic reported is indicated in column (2). Parental skills are standardized with mean zero and SD one in the full sample of participants from each education cohort. Parental education is measured as the highest educational degree obtained by the parent observed in the survey data. In parental education, "low" denotes maximum lower secondary education (ISCED 1 or 2); "medium" denotes higher secondary or upper secondary vocational education (ISCED 3 or 4); "high" denotes tertiary education, consisting of higher vocational education and university (ISCED 5 and above). Grandparental education is measured based on the highest level of education of both grandparents. Social background is based on the occupation type of the main breadwinner in the parent household at the time of the parents' skill assessment. All (grand-)parental characteristics stem from the survey datasets. (Grand-)parental characteristics are reported at the parent level. *Data sources:* Administrative data; pooled ITS survey dataset.

*Table 5. Descriptive Statistics – Parent sample (one observation per child*parent combination)*

Variables			Cohort		
		Pooled	1977	1982	1989
		(1)	(2)	(3)	(4)
Parent Characteristics					
Math skills	Mean	0.107	0.222	0.035	-0.126
	SD	0.982	0.964	0.988	0.973
Language skills	Mean	0.110	0.203	0.042	-0.054
	SD	0.965	0.932	0.989	0.985
IQ scores	Mean	0.025	0.177	-0.043	-0.123
	SD	0.787	0.942	0.680	0.598
Personal income percentile to	Mean	64.148	67.100	62.564	57.691
	SD	28.603	28.425	28.536	27.999
Household income percentile to	Mean	57.812	60.557	56.942	50.737
	SD	25.969	25.713	25.860	25.528
Household wealth percentile	Mean	59.538	63.763	58.064	48.825
	SD	25.710	24.844	25.568	25.275
Gender	Female	0.525	0.475	0.562	0.612
Education	Low	0.195	0.164	0.216	0.258
	Medium	0.428	0.433	0.412	0.437
	High	0.377	0.403	0.372	0.304
Non-western migration background	Yes	0.029	0.011	0.027	0.088
Number of siblings	0 siblings	0.060	0.063	0.056	0.056
	1 sibling	0.400	0.357	0.443	0.463
	2 siblings	0.297	0.318	0.278	0.266
	>2 siblings	0.243	0.262	0.224	0.215
Age at time of birth child	Mean	31.320	33.168	30.404	27.181
Grandparent Characteristics					
Education	Primary education	0.193	0.145	0.275	0.197
	Lower secondary education	0.328	0.317	0.368	0.289

	Higher secondary education	0.302	0.343	0.202	0.352
	Tertiary education	0.178	0.195	0.155	0.162
Social background	Blue collar worker	0.293	0.280	0.318	0.293
	Employer – without staff	0.077	0.087	0.075	0.050
	Employer – with staff	0.057	0.062	0.054	0.045
	Lower white-collar worker	0.112	0.116	0.117	0.092
	Middle white-collar worker	0.195	0.207	0.180	0.182
	Professionals	0.128	0.133	0.117	0.132
	Other	0.137	0.115	0.139	0.206
Age of grandfather at birth cohort parent	<28	0.308	0.209	0.458	0.373
	Between 28-32 years	0.381	0.411	0.309	0.410
	Between 33-37 years	0.188	0.226	0.142	0.140
	38 and older	0.123	0.154	0.090	0.076
Age of grandmother at birth cohort parent	<28	0.487	0.378	0.626	0.604
	Between 28-32 years	0.321	0.377	0.233	0.293
	Between 33-37 years	0.134	0.168	0.100	0.077
	38 and older	0.058	0.077	0.040	0.027
Observations		42,285	22,212	13,043	7,030

Notes: Table reports means, SD, and shares for the variables indicated in column (1) for the pooled sample as well as the three education cohorts separately. The type of statistic reported is indicated in column (2). Parental skills are standardized with mean zero and SD one in the full sample of participants from each education cohort. Household income is based on the percentile of the household in the Dutch distribution in terms of yearly spendable income. Parent personal income is based on the percentile of the parent in the Dutch income distribution (sources include: labor income, owned companies, unemployment benefits and social security). Household wealth is based on the percentile of the household in the Dutch distribution in terms of the household's total wealth, determined by assets minus debts. Income and wealth data are taken from the administrative data in the child's test-taking year. Parental education is measured as the highest educational degree obtained by the parent observed in the survey data. In parent education, "low" denotes maximum lower secondary education (ISCED 1 or 2); "medium" denotes higher secondary or upper secondary vocational education (ISCED 3 or 4); "high" denotes tertiary education, consisting of higher vocational education and university (ISCED 5 and above). Grandparental education is measured based on the highest level of education of both grandparents. Social background is based on the occupation type of the main breadwinner in the parent household at the time of the parents' skill assessment. Apart from income and wealth, which are taken from administrative data, all (grand-)parental characteristics stem from the survey datasets. (Grand-)parental characteristics are reported at the child level. *Data sources:* Administrative data; pooled ITS survey dataset.

4.2 Representativeness

As the three education cohort studies were conducted to be representative of the Dutch student population at the time of the surveys, it is worth showing how much the subsample of parents observed in the ITS dataset differs from the rest of the surveyed individuals. Therefore, Table 6 compares the characteristics of the parent subsample of the education cohorts included in the ITS dataset to the characteristics of the other respondents of the education cohorts.

Table 6. Representativeness of the parent sample for the education cohort studies

Variables		Pooled		Cohort 1977		Cohort 1982		Cohort 1989	
		Parents	Others	Parents	Others	Parents	Others	Parents	Others
Parent characteristics									
Math skills	Mean	0.056	-0.036	0.159	-0.118	-0.007	0.006	-0.122	0.045
	SD	0.981	1.010	0.970	1.005	0.985	1.013	0.970	1.007
Language skills	Mean	0.065	-0.042	0.147	-0.109	0.008	-0.007	-0.064	0.024
	SD	0.968	1.017	0.947	1.024	0.987	1.011	0.978	1.007
Non-verbal intelligence scores	Mean	0.001	-0.001	0.137	-0.081	-0.053	0.045	-0.123	0.042
	SD	0.786	1.101	0.957	1.016	0.689	1.200	0.583	1.104
Gender	Female	0.531	0.478	0.492	0.524	0.553	0.447	0.598	0.438
Education	Low	0.212	0.243	0.186	0.267	0.227	0.235	0.256	0.218
	Medium	0.434	0.393	0.445	0.421	0.412	0.377	0.440	0.367
	High	0.354	0.363	0.369	0.312	0.361	0.387	0.305	0.415
Migration background	Yes	0.031	0.040	0.012	0.019	0.028	0.035	0.084	0.069
Number of siblings	0 siblings	0.064	0.080	0.067	0.086	0.061	0.078	0.062	0.074
	1 sibling	0.414	0.447	0.365	0.372	0.461	0.496	0.478	0.520
	2 siblings	0.294	0.282	0.316	0.303	0.271	0.243	0.267	0.276
	3 or more siblings	0.228	0.191	0.252	0.240	0.207	0.183	0.194	0.130
Grandparent characteristics									
Grandparental education	Primary education	0.201	0.222	0.156	0.233	0.281	0.286	0.200	0.164
	Lower sec. education	0.328	0.308	0.320	0.322	0.370	0.348	0.286	0.263
	Higher sec. education	0.301	0.297	0.340	0.299	0.198	0.198	0.353	0.356
	Tertiary education	0.170	0.173	0.184	0.146	0.151	0.168	0.161	0.217
Social status	Blue collar worker	0.302	0.299	0.294	0.314	0.321	0.317	0.297	0.272
	Employer – without staff	0.072	0.059	0.082	0.070	0.070	0.057	0.047	0.048
	Employer – with staff	0.053	0.047	0.058	0.052	0.050	0.045	0.043	0.042
	Lower white-collar worker	0.113	0.110	0.116	0.123	0.121	0.120	0.092	0.091
	Middle white-collar worker	0.192	0.192	0.204	0.189	0.176	0.189	0.184	0.197
	Professionals	0.123	0.128	0.125	0.107	0.114	0.121	0.130	0.158
	Other	0.145	0.164	0.121	0.145	0.147	0.152	0.207	0.192
	<28	0.316	0.294	0.220	0.236	0.464	0.441	0.367	0.298

Age of grandfather at birth cohort parent	Between 28-32 years	0.378	0.385	0.404	0.379	0.307	0.297	0.414	0.455
	Between 33-37 years	0.186	0.189	0.225	0.213	0.139	0.153	0.144	0.169
	38 and older	0.120	0.132	0.151	0.172	0.090	0.109	0.075	0.078
Age of grandmother at birth cohort parent	<28	0.498	0.484	0.391	0.412	0.635	0.618	0.595	0.522
	Between 28-32 years	0.315	0.321	0.368	0.334	0.226	0.236	0.301	0.356
	Between 33-37 years	0.131	0.130	0.165	0.164	0.101	0.098	0.077	0.092
	38 and older	0.056	0.065	0.076	0.090	0.038	0.048	0.027	0.031
Observations		25,892	47,725	13,219	24,061	7,701	9,112	4,972	14,552

Notes: Table reports means, standard deviations, and shares for the variables indicated in the first column for the pooled sample as well as the three education cohorts separately. The type of statistic reported is indicated in the second column. For each cohort, the left column summarizes the characteristics of the parents in our main estimation sample, the right column describes the same characteristics for the other participants in the education surveys. Parental cognitive skills are standardized with mean zero and standard deviation one in the full sample of participants from each education cohort. Grandparental education is measured by four categories of the highest level of education of both grandparents. Social background is measured by seven categories of occupational status of the main breadwinner in the parent household. Grandparent education and social background refer to time when parents took the skill test. All (grand)parental characteristics are taken from the survey datasets. (Grand)parental characteristics are reported at the parent level. *Data sources:* Pooled ITS survey dataset.

As expected, a positively (negatively) selected subsample of the 1977 (1989) respondents in terms of math and language skills, non-verbal intelligence, and highest obtained level of education, is included in the ITS dataset. The 1982 cohort is, again, highly representative of the overall student population in the cohort data. The same pattern is visible for the education level of the parents of the cohort respondents (i.e., the grandparental generation in the ITS dataset) as well as their social background (based on the social status of the grandparent). In the 1982 and (especially) the 1989 cohorts, female respondents are more likely to be included in the ITS dataset, as women tend to have children at an earlier age than men. For the 1977 cohort, the reverse is observed. It is further worth noting that because of the opposite direction of selectivity in the 1977 and 1989 cohorts, the pooled ITS dataset is fairly representative of the three pooled cohort studies. However, since the 1977 education cohort was larger than the other two, a somewhat positively selected sample of parents remains.

Table 7. Representativeness of the child sample for the total Cito sample

Variables		Pooled	1977	1982	1989	Children not in sample
Child characteristics						
Math skills (std)	Mean	0.064	0.147	0.019	-0.114	-0.068
	SD	0.952	0.923	0.961	0.997	1.016
Language skills (std)	Mean	0.047	0.117	0.009	-0.106	-0.074
	SD	0.963	0.945	0.970	0.985	1.018
Gender	Female	0.503	0.500	0.504	0.510	0.501
Non-western migration background	Yes	0.042	0.028	0.039	0.094	0.160
Cito-year	2006	0.058	0.101	0.016	0.001	0.073
	2007	0.062	0.103	0.022	0.004	0.072
	2008	0.068	0.110	0.030	0.004	0.071
	2009	0.073	0.109	0.045	0.008	0.071
	2010	0.073	0.102	0.056	0.016	0.070
	2011	0.077	0.099	0.069	0.024	0.073
	2012	0.083	0.091	0.095	0.035	0.075
	2013	0.090	0.083	0.115	0.066	0.077
	2014	0.087	0.067	0.123	0.083	0.076
	2015	0.088	0.053	0.127	0.124	0.080
	2016	0.074	0.036	0.107	0.131	0.069
	2017	0.062	0.023	0.084	0.143	0.058
	2018	0.040	0.012	0.048	0.116	0.051
	2019	0.040	0.008	0.044	0.136	0.043
	2020	-	-	-	-	-
	2021	0.026	0.003	0.021	0.108	0.041

Observations	42,664	22,412	13,137	7,115	2,004,841

Notes: Table reports means, SD, and shares for the variables indicated in column (1) for the pooled sample as well as the three education cohorts separately. The type of statistic reported is indicated in column (2). If neither Mean, SD, or Total number is specified, the reported statistic refers to the share with in the sample indicated in the top row. Children's cognitive skills are standardized with mean zero and SD one in the full sample of children taking the test in their cohort based on administrative data. Children's gender, secondary education track, Cito year and migration background are taken from administrative data. Due to the COVID-19 pandemic, there are no test scores available for the year 2020.
Data sources: Administrative data; pooled ITS survey dataset.

Table 7 shows the representativeness of the children in the ITS dataset for the student population taking the Cito-test over the period 2005/2006 to 2018/2019 and for 2020/2021. On average, the children observed in the ITS dataset score slightly above average on the math and language subscales of the Cito-test. This is driven by higher scores of children from the (larger) 1977 parental cohort, with children from the (smaller) 1989 parental cohort scoring well below average. The most striking difference between the children of the ITS dataset and the general Cito-test taking student population is the relatively low share of children with a non-western migration background present in the ITS dataset. This difference is most likely due to the fact that we only include children in the ITS dataset whose parents were resident in the Netherlands around age 12 in 1977, 1982, and 1989. All students with parents that migrated to the Netherlands at a later age, are not in our dataset. Nevertheless, the increasing amount of students with a migration background over time can already be seen from the differences in the share of children with a migration background in the ITS dataset between the 1977 cohort (0.3), the 1982 cohort (0.04) and the 1989 cohort (0.10).

5 Creation of core ITS dataset

Table 8 lists the different datasets that were made in the process of creating the core ITS dataset. This overview includes the names of the SPSS syntax or Stata do-file that are used for particular data files, and a brief description of the data file's content.

Table 8. Overview datasets and syntax/do-files

File name	Prepared in syntax/do-files	Brief description of content
educationcohort1977	0. Preparing education cohort files	This is the original data file of the 1977 education cohort plus the education and cohort variables.
educationcohort1982	0. Preparing education cohort files	This is the original data file of the 1982 education cohort plus the education and cohort variables.
educationcohort1989	0. Preparing education cohort files	This is the original data file of the 1989 education cohort plus the education and cohort variables.
educationcohorts_parentfile	1. Data preparation education cohort respondents	This file includes the education cohort respondents with Cito-test scores. All data preparations for the skill parent variables are done in this file. Note that cohort respondents without children are still included in this file.
educationcohorts_parentfile_nolinkableid	1. Data preparation education cohort respondents	This file includes the education cohort respondents without a linkable ID.
educationcohorts_parentfile_notest	1. Data preparation education cohort respondents	This file includes the education cohort respondents with missing Cito-test scores.
educationcohorts_childfile	2. Data preparation education cohort respondents children	This file includes the children of the education cohort respondents with Cito-test data. All data preparations for child-specific or child*parent-specific variables are done in this file.
educationcohorts_childfile_notest	2. Data preparation education cohort respondents children	This file includes the children of the education cohort respondents without Cito-test data. All data preparations are done in this file.
educationcohorts_otherlegalparent	3. Data preparation education cohort respondents other legal parent	This file includes information on the other legal parents who have a linkable ID. All data preparations

		for the other legal parent variables are done in this file.
educationcohorts_otherlegalparent_nolinkableid	3. Data preparation education cohort respondents other legal parent	This file includes information on the other legal parents who do not have a linkable ID.
intergenerationaltransmissionofskills	4. Core ITS dataset	This file includes all education cohort parents and children with Cito-test scores.

The final dataset that was created, is the core ITS dataset including only parents and their children with Cito-test scores. There are conceivable reasons for which data users might want to use the information of the entire education cohorts (for example, in the case of standardization using the whole cohort), or the information of all legal children independently of having valid Cito-test scores. Therefore, the original cohort respondents are available in separate datasets containing: 1) cohort respondents with valid Cito-test scores (including respondents without children), 2) cohort respondents without linkable ID, and 3) cohort respondents without Cito-test scores. For children, there are separate data files including 1) all legal children with Cito-test scores and 2) all legal children without Cito-test data. Finally, the other legal parents are included in either the data file with 1) all other legal parents with linkable IDs or 2) in the data file with all other legal parents without linkable IDs. Note that the original education cohort data files are *not* available, but can be requested from Statistics Netherlands.

In the core ITS dataset, the education cohort parents, children and other legal parents are included with all (background) information. Note that in this core file, only skills parents and children are included with Cito-test information. An overview of the included variables is given in Chapter 6.

6 Variables

6.1 List of variables

In the list of variables below, an overview of the variables included in the core ITS dataset is given.

Variable name	Variable label
rinpersoons_child	The source from which a person identifying number is derived.
rinpersoon_child	Identifies, together with RINPERSOONS, a child
rinpersoons_skillparent	The source from which a person identifying number is derived.
rinpersoon_skillparent	Identifies, together with rinpersoons_skillparent, the original education cohort respondent.
rinpersoons_otherparent	The source from which a person identifying number is derived.
rinpersoon_otherparent	Identifies, together with rinpersoons_otherparent, the other legal parent of the child.
math_child	Standardized score for math on Cito-test of child
originalmath_child	Original score for math on Cito-test of child
math_2nd_child	Standardized score for math on Cito-test of child (second time)
originalmath_2nd_child	Original score for math on Cito-test of child (second time)
language_child	Standardized score for language on Cito-test of child
originallanguage_child	Original score for language on Cito-test of child
language_2nd_child	Standardized score for language on Cito-test of child (second time)
originallanguage_2nd_child	Original score for language on Cito-test of child (second time)
totaltestscore_child	Total Cito-test score of child
citoyear_child	The school year in which the child took the Cito-test
totaltestscore_2nd_child	Total Cito-test score of child (second time)
citoyear_2nd_child	The school year in which the child took the Cito-test (second time)
math_skillparent	Standardized score for math on short version of Cito-test of skill parent
originalmath_skillparent	Original score for math on Cito-test of skill parent
language_skillparent	Standardized language skills on short version Cito-test of skill parent

originallanguage_skillparent	Original score for language on Cito-test of skill parent
intelligence_skillparent	Standardized intelligence skill parent
motivation_skillparent	Standardized achievement motivation test score of skill parent
female_child	Sex of child
birthyear_child	Birth year of child
birthmonth_child	Birth month of child
migrationbackground_child	Migration background of child
generation_child	Generation of migration background child
nonwestern_child	Non-western background of child
birthorder_child	Birth order child
firstborn_child	First born child
numberofsiblings_child	Number of siblings of child
twins_child	Possible twin status of child
skillparent	Legal parenthood of original education cohort respondent
bothskillparents	Both legal parents participated in education cohort
female_skillparent	Sex of skill parent
birthyear_skillparent	Birth year of skill parent
birthmonth_skillparent	Birth month of skill parent
age_skillparent	Age of the skill parent at birth of the child
migrationbackground_skillparent	Migration background of skill parent
generation_skillparent	Generation of migration background skill parent
nonwestern_skillparent	Non-western background of skill parent
numberofsiblings_skillparent	Number of siblings skill parent
female_otherparent	Sex of other parent
birthyear_otherparent	Birth year of other parent
birthmonth_otherparent	Birth month of other parent
age_otherparent	Age of other parent at birth of the child
teacherrecommendation_child	Teacher's recommendation for track placement in secondary education of child
initialtrack_child_cat	Initial track in secondary education in categories child
initialtrack_child_yrs	Initial track in secondary education in years child
gradechild_tplus1	Child's grade one year after the Cito-test (t+1)
gradechild_tplus2	Child's grade two years after the Cito-test (t+2)
gradechild_tplus3	Child's grade three years after the Cito-test (t+3)
gradechild_tplus4	Child's grade four years after the Cito-test (t+4)
gradechild_tplus5	Child's grade five years after the Cito-test (t+5)
gradechild_tplus6	Child's grade six years after the Cito-test (t+6)
trackchild_tplus1	Child's track one year after the Cito-test (t+1)
trackchild_tplus2	Child's track two years after the Cito-test (t+2)
trackchild_tplus3	Child's track three years after the Cito-test (t+3)

trackchild_tplus4	Child's track four years after the Cito-test (t+4)
trackchild_tplus5	Child's track five years after the Cito-test (t+5)
trackchild_tplus6	Child's track six years after the Cito-test (t+6)
firstdiploma_cat_child	First diploma in secondary education (in categories)
firstdiploma_yrs_child	First diploma in secondary education (in years)
higheducat_reg_child	Highest education in categories child (retrieved from education register)
firstdiploma_stemprofile_child	STEM course profile first diploma in secondary education of child
firstdiploma_stemprofile_strict_child	STEM course profile first diploma in secondary education of child (strict definition)
highedu_stem_child	STEM field of study highest education child (based on register)
cohort_skillparent	Education cohort of skill parent
teachrecom_skillparent	Schoolhead's recommendation for track placement in secondary education of skill parent
higheducat_reg_skillparent	Highest education in categories skill parent (based on register)
higheducat_cohort_skillparent	Highest education in categories skill parent (based on education cohort data)
higheduyrs_reg_skillparent	Highest education in years skill parent (based on register)
higheduyrs_cohort_skillparent	Highest education in years skill parent (based on education cohort data)
highedu_stem_skillparent	STEM field highest education skill parent
tertedu_otherparent	Tertiary education other parent
hhincomeperc_child_tminus3	Household income in percentiles of child's household (t-3)
hhincomeperc_child_tminus2	Household income in percentiles of child's household (t-2)
hhincomeperc_child_tminus1	Household income in percentiles of child's household (t-1)
hhincomeperc_child_to	Household income in percentiles of child's household (t0)
hhincomeperc_child_tplus1	Household income in percentiles of child's household (t+1)
hhincomeperc_child_tplus2	Household income in percentiles of child's household (t+2)
hhincomeperc_child_tplus3	Household income in percentiles of child's household (t+3)
hhincomeperc_child_tplus4	Household income in percentiles of child's household (t+4)
hhincomeperc_child_tplus5	Household income in percentiles of child's household (t+5)

hhincomeperc_child_tplus6	Household income in percentiles of child's household (t+6)
persincomeperc_skillparent_tminus3	Personal income in percentiles of skill parent (t-3)
persincomeperc_skillparent_tminus2	Personal income in percentiles of skill parent (t-2)
persincomeperc_skillparent_tminus1	Personal income in percentiles of skill parent (t-1)
persincomeperc_skillparent_to	Personal income in percentiles of skill parent (t0)
persincomeperc_skillparent_tplus1	Personal income in percentiles of skill parent (t+1)
persincomeperc_skillparent_tplus2	Personal income in percentiles of skill parent (t+2)
persincomeperc_skillparent_tplus3	Personal income in percentiles of skill parent (t+3)
persincomeperc_skillparent_tplus4	Personal income in percentiles of skill parent (t+4)
persincomeperc_skillparent_tplus5	Personal income in percentiles of skill parent (t+5)
persincomeperc_skillparent_tplus6	Personal income in percentiles of skill parent (t+6)
hhwealthperc_child_tminus3	Household wealth in percentiles of child's household (t-3)
hhwealthperc_child_tminus2	Household wealth in percentiles of child's household (t-2)
hhwealthperc_child_tminus1	Household wealth in percentiles of child's household (t-1)
hhwealthperc_child_to	Household wealth in percentiles of child's household (t0)
hhwealthperc_child_tplus1	Household wealth in percentiles of child's household (t+1)
hhwealthperc_child_tplus2	Household wealth in percentiles of child's household (t+2)
hhwealthperc_child_tplus3	Household wealth in percentiles of child's household (t+3)
hhwealthperc_child_tplus4	Household wealth in percentiles of child's household (t+4)
hhwealthperc_child_tplus5	Household wealth in percentiles of child's household (t+5)
hhwealthperc_child_tplus6	Household wealth in percentiles of child's household (t+6)
benefits_skillparent_tminus3	Skill parent received benefits (t-3)
benefits_skillparent_tminus2	Skill parent received benefits (t-2)
benefits_skillparent_tminus1	Skill parent received benefits (t-1)
benefits_skillparent_to	Skill parent received benefits (t0)
benefits_skillparent_tplus1	Skill parent received benefits (t+1)
benefits_skillparent_tplus2	Skill parent received benefits (t+2)
benefits_skillparent_tplus3	Skill parent received benefits (t+3)
benefits_skillparent_tplus4	Skill parent received benefits (t+4)
benefits_skillparent_tplus5	Skill parent received benefits (t+5)
benefits_skillparent_tplus6	Skill parent received benefits (t+6)
benefits_hh_tminus3	Main income child's household is benefits (t-3)

benefits_hh_tminus2	Main income child's household is benefits (t-2)
benefits_hh_tminus1	Main income child's household is benefits (t-1)
benefits_hh_to	Main income child's household is benefits (t0)
benefits_hh_tplus1	Main income child's household is benefits (t+1)
benefits_hh_tplus2	Main income child's household is benefits (t+2)
benefits_hh_tplus3	Main income child's household is benefits (t+3)
benefits_hh_tplus4	Main income child's household is benefits (t+4)
benefits_hh_tplus5	Main income child's household is benefits (t+5)
benefits_hh_tplus6	Main income child's household is benefits (t+6)
divorcedate_first	First divorce date of legal parents
divorcedate_second	Second divorce date of legal parents
divorcedate_third	Third divorce date of legal parents
primaryhh_child_tminus12	Which parents in primary household (t-12)
primaryhh_child_tminus11	Which parents in primary household (t-11)
primaryhh_child_tminus10	Which parents in primary household (t-10)
primaryhh_child_tminus9	Which parents in primary household (t-9)
primaryhh_child_tminus8	Which parents in primary household (t-8)
primaryhh_child_tminus7	Which parents in primary household (t-7)
primaryhh_child_tminus6	Which parents in primary household (t-6)
primaryhh_child_tminus5	Which parents in primary household (t-5)
primaryhh_child_tminus4	Which parents in primary household (t-4)
primaryhh_child_tminus3	Which parents in primary household (t-3)
primaryhh_child_tminus2	Which parents in primary household (t-2)
primaryhh_child_tminus1	Which parents in primary household (t-1)
primaryhh_child_to	Which parents in primary household (t0)
primaryhh_child_tplus1	Which parents in primary household (t+1)
primaryhh_child_tplus2	Which parents in primary household (t+2)
primaryhh_child_tplus3	Which parents in primary household (t+3)
primaryhh_child_tplus4	Which parents in primary household (t+4)
primaryhh_child_tplus5	Which parents in primary household (t+5)
primaryhh_child_tplus6	Which parents in primary household (t+6)
dateofdeath_skillparent	Date of death skill parent
dateofdeath_ otherparent	Date of death other legal parent
highesteducationgrandmother	Highest education grandmother
highesteducationgrandfather	Highest education grandfather
highesteducationgrandparents	Highest education grandparents
socialstatusgrandmother	Social status grandmother
socialstatusgrandfather	Social status grandfather
socialstatusgrandparents	Social status of grandparents
ageatbirthgrandmother	Age at time of birth of the skill parent (grandmother)
ageatbirthgrandfather	Age at time of birth of skill parent (grandfather)
library_edu82_skillparent	Library membership of skill parent around age 12 (only education cohort 1982)

reading_edu82_skillparent	Average time per week the skill parent spends reading books and newspapers around age 12 (only education cohort 1982)
readbooks_edu89_grandmoth	Average number of books grandmother reads per month when parent was aged 12 (only education cohort 1989)
readbooks_edu89_grandfath	Average number of books grandfather reads per month when skill parent was aged 12 (only education cohort 1989)
buybooks_edu89_grandmoth	Average number of books grandmother bought per year when skill parent was aged 12 (only education cohort 1989)
buybooks_edu89_grandfath	Average number of books grandfather bought per year when skill parent was aged 12 (only education cohort 1989)
numberofbookhh_edu89	Number of books at home when skill parent was aged 12 (only education cohort 1989)

6.2 Description of variables

6.2.1 Identifiers

rinpersoons_child - The source from which a person identifying number is derived.

Format: string

R Rinpersoon in BRP

Together with the rinpersoon_child number, this code identifies a natural person anonymised using a unique ID. In this case, it identifies a legal child of an original education cohort respondent. In all cases, the source is the Municipal Personal Records Database (in Dutch 'Basisregistratie Personen, (BRP)'), i.e. category 'R = Rinpersoon in BRP'.

Available from 1995 onwards

Source: Kindoudertab

rinpersoon_child - Identifies, together with rinpersoons_child, a child.

Format: string

This number identifies a natural person. In this case, it identifies a legal child of an original education cohort respondent. It is a meaningless and dimensionless 9-digit number. RIN is short for Record Identification Number and is the encrypted version of the 'A number' from the BRP. Since individuals can be identified on the basis of their A number, it is replaced by rinpersoon_child.

Available from 1995 onwards

Source: Kindoudertab

rinpersoons_skillparent - The source from which a person identifying number is derived.

Format: string

R Rinpersoon in BRP

G Rinpersoon not in BRP

Together with the rinpersoon_skillparent number, this code identifies a natural person anonymised using a unique ID. In this case, it identifies an original education cohort respondent. In most cases, the source is the Municipal Personal Records Database (Basisregistratie Personen, BRP), i.e. category 'R = Rinpersoon in BRP'.

Since the 1977 and 1982 education cohorts started before Statistics Netherlands introduced the record identification numbers, basic identifying information such as name and address at the time of the survey, was used to find back the person in the Municipal Personal Records Database (see Chapter 4 for the sample selection). Original cohort respondents, who cannot be linked to other register information, are included in a separate data file (see Chapter 5).

All original education cohort respondents are identifiable with this variable in the education cohort parent file (see Chapter 5), regardless of whether they are a legal parent or not.

Available for the 1977, 1982 and 1989 education cohorts
Sources: SMVO, SLVO and VOCL

rinpersoon_skillparent - Identifies, together with rinpersoons_skillparent, the original education cohort respondent.

Format: string

This number identifies a natural person. In this case, it identifies an original education cohort respondent. It is a meaningless and dimensionless 9-digit number. RIN is short for Record Identification Number and is the encrypted version of the 'A number' from the BRP. Since individuals can be identified on the basis of their A number, it is replaced by rinpersoon_skillparent.

For original education cohort respondents that are not linkable, this variable is blank.
Available for the 1977, 1982 and 1989 education cohorts
Sources: SMVO, SLVO and VOCL

rinpersoons_otherparent - The source from which a person identifying number is derived.

Format: string

R	Rinpersoon in BRP
G	Rinpersoon not in BRP
F	Rinpersoon not in BRP

Together with the rinpersoon_otherparent number, this code identifies a natural person anonymised using a unique ID. In this case, it identifies the other legal parent of the child (identifiable through: rinpersoons_child, rinpersoon_child, rinpersoons_skillparent and rinpersoon_skillparent) of an original education cohort respondent. In most cases, the source is the Municipal Personal Records Database (Basisregistratie Personen, BRP), i.e. category 'R = RINPERSOON in BRP'.

Other legal parents who do not have a valid BRP record are coded as 'G= Rinpersoon not in BRP' or 'F=Rinpersoon not in BRP', and included in a separate other parent data file (see Chapter 5).

Available from 1995 onwards
Source: Kindoudertab

rinpersoon_otherparent - Identifies, together with rinpersoons_otherparent, the other legal parent of the child.

Format: string

This number identifies a natural person. In this case, it identifies the other legal parent of the child of the original education cohort respondent. It is a meaningless and dimensionless 9-digit number. RIN is short for Record Identification Number and is the encrypted version of the 'A number' from the BRP. Since individuals can be identified on the basis of their A number, it is replaced by rinpersoon_otherparent.

For other legal parents who do not have a valid BRP or in case there is no other legal parent, this variable is blank.

Available from 1995 onwards
Source: Kindoudertab

6.2.2 Skill measures

math_child - Standardized score for math on Cito-test of child

---

Format: numeric

The standardized math score on the Cito-test of the child measured at the end of primary education. Depending on the test year, the test consists of 60 to 85 math items. For children who have taken the Cito-test multiple times, the first score is included in this measure. The number of correctly answered math questions is standardized within each school year using the original Cito-test data.

From school year 2014/2015, it is compulsory for pupils to make a final test. The government makes the Cito-test available to all schools, but schools can also choose another final test developed by another test developer that is approved by the minister. Note that most of the schools use the final test developed by Cito (Jacobs, van der Velden, & van Vugt, 2021).

Because schools that switched to a different test supplier might be selective on population characteristics (Jacobs et al., 2021), the standardization is done based on the schools that participated in the Cito-test every year.

Available from school year 2005/2006 to school year 2020/2021 (in the school year 2019/2020 no Cito-test was administered due to COVID-19).
Source: Citotab

originalmath_child - Original score for math on Cito-test of child

---

Format: numeric

The number of correctly answered math questions by the child on the Cito-test at the end of primary education. Depending on the test year, the test consists of 60 to 85 math items. For children who have taken the Cito-test multiple times, the first score is included.

Available from school year 2005/2006 to school year 2020/2021 (in the school year 2019/2020 no Cito-test was administered due to COVID-19).

Source: Citotab

math_2nd_child - Standardized score for math on Cito-test of child (second time)

Format: numeric

The standardized math score on the Cito-test of the child (second time) measured at the end of primary education. Depending on the test year, the test consists of 60 to 85 math items. This variable is only available for children who have taken the Cito-test twice. Note that this does not happen often. The number of correctly answered math questions is standardized within each school year using the original Cito-test data.

From school year 2014/2015, it is compulsory for pupils to make a final test. The government makes the Cito-test available to all schools, but schools can also choose another final test developed by another test developer that is approved by the minister. Note that most of the schools use the final test developed by Cito (Jacobs et al., 2021).

Because schools that switched to a different test supplier might be selective on population characteristics (Jacobs et al., 2021), the standardization is done based on the schools that participated in the Cito-test every year.

Available from school year 2005/2006 to school year 2020/2021 (in the school year 2019/2020 no test was taken due to COVID-19).

Source: Citotab

originalmath_2nd_child - Original score for math on Cito-test of child (second time)

Format: numeric

The number of correctly answered math questions by the child on the Cito-test (second time) at the end of primary education. Depending on the test year, the test consists of 60 to 85 math items. This variable is only available for children who have taken the Cito-test twice. Note that this does not happen often.

Available from school year 2005/2006 to school year 2020/2021 (in the school year 2019/2020 no Cito-test was administered due to COVID-19).

Source: Citotab

language_child - Standardized score for language on Cito-test of child

---

Format: numeric

The standardized language score on the Cito-test of the child measured at the end of primary education. Depending on the test year, the test consists of 100 to 135 language items. For children who have taken the Cito-test multiple times, the first score is included in this measure. The number of correctly answered language questions is standardized within each school year using the original Cito-test data.

From school year 2014/2015, it is compulsory for pupils to make a final test. The government makes the Cito-test available to all schools, but schools can also choose another final test developed by another test developer that is approved by the minister. Note that most of the schools use the final test developed by Cito (Jacobs et al., 2021).

Because schools that switched to a different test supplier might be selective on population characteristics (Jacobs et al., 2021), the standardization is done based on the schools that participated in the Cito-test every year.

Available from school year 2005/2006 to school year 2020/2021 (in the school year 2019/2020 no Cito-test was administered due to COVID-19).

Source: Citotab

originallanguage_child - Original score for language on Cito-test of child

---

Format: numeric

The number of correctly answered language questions by the child on the Cito-test at the end of primary education. Depending on the test year, the test consists of 100 to 135 language items. For children who have taken the Cito-test multiple times, the first score is included.

Available from school year 2005/2006 to school year 2020/2021 (in the school year 2019/2020 no Cito-test was administered due to COVID-19).

Source: Citotab

language_2nd_child - Standardized score for language on Cito-test of child (second time)

Format: numeric

The standardized language score on the Cito-test of the child (second time) measured at the end of primary education. Depending on the test year, the test consists of 100 to 135 language items. This variable is only available for children who have taken the Cito-test twice. Note that this does not happen often. The number of correctly answered language questions is standardized within each school year using the original Cito-test data.

From school year 2014/2015, it is compulsory for pupils to make a final test. The government makes the Cito-test available to all schools, but schools can also choose another final test developed by another test developer that is approved by the minister. Note that most of the schools use the final test developed by Cito (Jacobs et al., 2021).

Because schools that switched to a different test supplier might be selective on population characteristics (Jacobs et al., 2021), the standardization is done based on the schools that participated in the Cito-test every year.

Available from school year 2005/2006 to school year 2020/2021 (in the school year 2019/2020 no Cito-test was administered due to COVID-19).

Source: Citotab

originallanguage_2nd_child - Original score for language on Cito-test of child (second time)

Format: numeric

The number of correctly answered language questions by the child (second time) on the Cito-test at the end of primary education. Depending on the test year, the test consists of 100 to

135 language items. This variable is only available for children who have taken the Cito-test twice. Note that this does not happen often.

Available from school year 2005/2006 to school year 2020/2021 (in the school year 2019/2020 no Cito-test was administered due to COVID-19).

Source: Citotab

totaltestscore_child – Total Cito-test score of child

Format: numeric

The total score on the Cito-test of the child (first time). The compulsory domains consist together of 200 to 220 assignments (depending on the school year). The score on these assignments form the base of the calculation of the standard total score. Each correct assignment gives the pupil 1 point. The calculation of the standard score is done with the following three steps (CvTE, 2015; van Boxtel, Engelen, & de Wijs, 2011):

1. The rough score is multiplied by a number (A) and then a fixed number (B) is added. The values of A and B are determined annually by means of an IRT analysis that provides the data for a subsequent equivalence study.
2. Non-rounded scores are rounded to the closest round number.
3. In case the rounded score is greater than 550, the standard score becomes 550. In case it is less than 501, the standard score is 501.

The total score ranges between 501 and 550 (mean around 535 and standard deviation around 9).

Available from school year 2005/2006 to school year 2020/2021 (in the school year 2019/2020 no Cito-test was administered due to COVID-19).
Source: Citotab

citoyear_child - The school year in which the child took the Cito-test

---

Format: numeric

2006	School year 2005/2006
2007	School year 2006/2007
2008	School year 2007/2008
2009	School year 2008/2009
2010	School year 2009/2010
2011	School year 2010/2011
2012	School year 2011/2012
2013	School year 2012/2013
2014	School year 2013/2014
2015	School year 2014/2015
2016	School year 2015/2016
2017	School year 2016/2017
2018	School year 2017/2018
2019	School year 2018/2019
2021	School year 2020/2021

The school year in which the Cito-test is administered (first time). The Cito-test was before school year 2014/2015 conducted in February. Since school year 2014/2015, the test is administered between 15 April and 15 May. It takes in total three consecutive days. For children who have taken the Cito-test multiple times, this refers to the first Cito year.

Available from school year 2005/2006 to school year 2020/2021 (in the school year 2019/2020 no Cito-test was administered due to COVID-19).
Source: Citotab

totaltestscore_2nd_child – Total Cito-test score of child (second time)

Format: numeric

The total score on the Cito-test of the child (second time). The compulsory domains consist together of 200 to 220 assignments (depending on the school year). The score on these assignments form the base of the calculation of the standard total score. Each correct

assignment gives the pupil 1 point. The calculation of the standard score is done with the following three steps (CvTE, 2015; van Boxtel et al., 2011):

1. The rough score is multiplied by a number (A) and then a fixed number (B) is added. The values of A and B are determined annually by means of an IRT analysis that provides the data for a subsequent equivalence study.
2. Non-rounded scores are rounded to the closest round number.
3. In case the rounded score is greater than 550, the standard score becomes 550. In case it is less than 501, the standard score is 501.

The total score ranges between 501 and 550 (mean around 535 and standard deviation around 9). This variable is only available for children who have taken the Cito-test twice. Note that this does not happen often.

Available from school year 2005/2006 to school year 2020/2021 (in the school year 2019/2020 no Cito-test was administered due to COVID-19).
Source: Citotab

citoyear_2nd_child - The school year in which the child took the Cito-test (second time)

Format: numeric

The school year in which the Cito-test is administered (second time). The Cito-test was before school year 2014/2015 conducted in February. Since school year 2014/2015, the test is administered between 15 April and 15 May. It takes in total three consecutive days. For children who have taken the Cito-test multiple times, this refers to the second Cito year. This variable is only available for children who have taken the Cito-test twice. Note that this does not happen often.

Available from school year 2005/2006 to school year 2020/2021 (in the school year 2019/2020 no Cito-test was administered due to COVID-19).
Source: Citotab

math_skillparent - Standardized score for math on Cito-test of parent

---

Format: numeric

The standardized math score of the skill parent measured with a short version of the Cito-test. This version includes 25 math items in the 1977 education cohort, and 20 items in the 1982 and 1989 education cohorts. The test was conducted in classroom and administered by the teacher. It was constructed with existing test items from the nation-wide Cito-test. The number of correctly answered math questions is standardized within the complete original education cohort.

Even though all participating schools took part in the testing in the 1977 education cohort, in some cases it was impossible to link the test scores to individual students due to missing or incorrect information for identification on the test forms (CBS, 1982). The share of non-linkable data ranges from 15 percent in the higher track to 36 percent in the lower track. This illustrates that the sample might not be representative for the lowest performance group (specifically for students in special education).

Available for the 1977, 1982 and 1989 education cohorts
Source: SMVO, SLVO and VOCL

originalmath_skillparent - Original score for math on Cito-test of child

---

Format: numeric

The number of correctly answered math questions by the skill parent on the short version of the Cito-test. This version includes 25 math items in the 1977 education cohort, and 20 items in the 1982 and 1989 education cohorts.

Available for the 1977, 1982 and 1989 education cohorts
Source: SMVO, SLVO and VOCL

language_skillparent - Standardized score for language on Cito-test of child

---

Format: numeric

The standardized language score of the skill parent measured with a short version of the Cito-test. This version includes 45 language items in the 1977 education cohort and 20 items in the 1982 and 1989 education cohorts. The test was conducted in classroom and administered by the teacher. It was constructed with existing test items from the nation-wide Cito-test. The number of correctly answered language questions is standardized within the complete original education cohort.

Even though all participating schools took part in the testing in the 1977 education cohort, in some cases it was impossible to link the test scores to individual students due to missing or incorrect information for identification on the test forms (CBS, 1982). The share of non-linkable data ranges from 15 percent in the higher track to 36 percent in the lower track. This illustrates that the sample might not be representative for the lowest performance group (specifically for students in special education).

Available for the 1977, 1982 and 1989 education cohorts
Source: SMVO, SLVO and VOCL

originallanguage_skillparent - Original score for language on Cito-test of child

---

Format: numeric

The number of correctly answered language questions by the skill parent on the short version of the Cito-test. This version includes 45 language items in the 1977 education cohort, and 20 items in the 1982 and 1989 education cohorts.

Available for the 1977, 1982 and 1989 education cohorts
Source: SMVO, SLVO and VOCL

intelligence_skillparent - Standardized score on intelligence test of skill parent

---

Format: numeric

The standardized score on the intelligence test of the skill parent. The so-called TIB-test ('Test di Intelligenza Breve') was administered for the 1977 education cohort. This test consists of 33 items including five figures per item. For each item, the respondent had to

choose the figure that was different from the other four. Linking the intelligence test scores was in some cases problematic due to missing or incorrect information for identification on the test forms (CBS, 1982). The share of non-linkable data ranges from 15 percent in the higher track to 36 percent in the lower track. This illustrates that the sample might not be representative for the lowest performance group (specifically for students in special education). The number of correctly answered questions was used and the measure was standardized within the complete 1977 education cohort.

Two elements of the German PSB test ('Prüfsystem fur Schul- und Bildungsberatung') were administered among the 1982 and 1989 cohorts. It concerns two non-verbal subtests of the PSB, namely PSB-3 (reasoning) and PSB-8 (abstraction). Both subtests consist of 40 items and the students had to finish as many items as possible in a certain time slot.

In order to maximize comparability between education cohorts, the scores on the reasoning subtest for the 1982 and 1989 were used as our measure of intelligence. Again, the score was standardized separately within the 1982 and 1989 cohort.

Available for the 1977, 1982 and 1989 education cohorts.
Source: SMVO, SLVO and VOCL

motivation_skillparent - Standardized achievement motivation test score of skill parent

---

Format: numeric

The standardized achievement motivation score of the skill parent. In the 1977 education cohort, the so-called Performance-Motive Test (PMT-k) for children is administered. From this test, the score on performance motivation is available which refers to the person's intrinsic motivation to perform (Hermans, 1967). Using a scoring form, scale scores are calculated. For each question, one or two response options are assigned a point to the corresponding subscale. The max score of the performance motivation subscale is 34.

For the 1982 education cohort, no information on performance motivation is available.

In the 1989 education cohort, performance motivation was measured with following four statements:

1. I like to do my schoolwork well, even if it takes me effort.
2. I don't try very hard in school.
3. I often find myself thinking about something else during class.
4. The teachers are satisfied with my school performance.

All items had the same four response options, namely 1= strongly agree, 2 = mostly agree, 3 = mostly disagree, 4 = strongly disagree. The scale score was calculated as the mean of the items, where one item was allowed to be missing.

Available for the 1977 and 1989 education cohorts.

Source: SMVO and VOCL

6.2.3 Background characteristics of child

female_child – Sex of child

Format: numeric

0	Male
1	Female

The child's sex as recorded in the Municipal Personal Records Database (in Dutch 'BRP'). In case of sex change, the last registered sex is recorded.

Available from 1995 onwards

Source: Gbapersoontab

birthyear_child– Birth year of child

Format: numeric

The child's year of birth as recorded in the Municipal Personal Records Database (in Dutch 'BRP').

Available from 1995 onwards

Source: Gbapersoontab

birthmonth_child– Birth month of child

Format: numeric

1	January
2	February
3	March
4	April
5	May
6	June
7	July
8	August
9	September
10	October
11	November
12	December

The child's month of birth as recorded in the Municipal Personal Records Database (in Dutch 'BRP').

Available from 1995 onwards

Source: Gbapersoontab

migrationbackground_child – Migration background of child

Format: numeric

0	Netherlands
1	Europe (except the Netherlands)
2	Turkey
3	Morocco

4	Suriname
5	Dutch Caribbean
6	Indonesia
7	Other Africa, Asia, America and Oceania

The child's migration background is divided into seven categories. It is based on the child's country of birth.

Available from 1995 onwards

Source: Gbapersoontab

generation_child – Generation of migration background of child

---

Format: numeric

0	Dutch background
1	First generation migration background
2	Second generation migration background
3	Unknown

The child's migration background is divided into: having a Dutch background, being a first- or second-generation immigrant. If the child was born outside the Netherlands, the person is defined as having a first-generation migrant background. If the child was born in the Netherlands to at least one non-Dutch parent, the person is defined as having a second-generation migrant background.

Available from 1995 onwards

Source: Gbapersoontab

nonwestern_child – Non-western background child

Format: numeric

0	Not non-western background

1 Non-western background

In case the child or one of the parents was born in one of the countries in Africa, Latin America and Asia (excluding Indonesia and Japan) or Turkey, it is coded as "non-western background". In all other cases (born in Europe (excluding Turkey), North America, Oceania, Indonesia or Japan), it is coded as "not non-western background".

Available from 1995 onwards

Source: Gbapersoontab

birthorder_child – Birth order child

Format: numeric

Birth order is based on the legal children of the skill-parent. The birth order is determined regardless of the year in which the child took the Cito-test.

Available from 1995 onwards

Source: Gbapersoontab and Kindoudertab

firstborn_child – First born child

Format: numeric

0 Not first-born child

1 First-born child

The first-born child is based on the legal children of the skill-parent. Whether the child was first born in the family is determined, regardless of the year in which the child took the Cito-test.

Available from 1995 onwards

Source: Gbapersoontab and Kindoudertab

numberofsiblings_child – Number of siblings of child

Format: numeric

The number of siblings with the same skill-parent. Note that the other legal parent may be different. The number of siblings is determined regardless of the year in which the child took the Cito-test.

Available from 1995 onwards
Source: Gbapersoontab and Kindoudertab

twins_child – Possible twin status of child

Format: numeric

0	Not a twin
1	Twins
2	Triplets

Based on the birth year and month, it is determined whether the child is possible part of a twin or triplet. If the birth year and month of children within the same skill parent is the same, these children are, depending on the number of children with the same birth year and month, coded as twin or triplet.

Available from 1995 onwards
Source: Gbapersoontab and Kindoudertab

6.2.4 Background characteristics of skill parent

skillparent – Legal parenthood of original education cohort respondent

---

Format: numeric

0	Not a legal parent
1	Legal parent

This variable indicates whether the original education cohort respondent has (a) legal child(ren).

Available from 1995 onwards

Source: Kindoudertab

bothskillparents – Both legal parents participated in education cohorts

---

Format: numeric

0	One legal skill parent
1	Two legal skill parents

As discussed before, for a small number of children, both parents participated in the education cohort surveys and these parents had a child or children together. This variable indicates whether both legal parents participated in education cohort study.

Available from 1995 onwards

Source: Kindoudertab

female_skillparent – Sex of skill parent

Format: numeric

0	Male
1	Female

The skill parent's sex as recorded in the Municipal Personal Records Database (in Dutch 'BRP'). In case of sex change, the last registered sex is recorded.

Available from 1995 onwards

Source: Gbapersoontab

birthyear_skillparent– Birth year of skill parent

Format: numeric

The skill parent's year of birth as recorded in the Municipal Personal Records Database (in Dutch 'BRP').

Available from 1995 onwards

Source: Gbapersoontab

birthmonth_skillparent– Birth month of skill parent

Format: numeric

1	January
2	February
3	March
4	April
5	May
6	June
7	July
8	August
9	September
10	October
11	November
12	December

The skill parent's month of birth as recorded in the Municipal Personal Records Database (in Dutch 'BRP').

Available from 1995 onwards

Source: Gbapersoontab

age_skillparent– Age of the skill parent at birth of the child

---

Format: numeric

Age of the skill parent at the birth of the child. Ages at the birth of the child that are highly unlikely (i.e., 15 year old or younger) are coded to missing.

Available from 1995 onwards

Source: Gbapersoontab

migrationbackground_skillparent – Migration background of skill parent

Format: numeric

0	Netherlands
1	Europe (except the Netherlands)
2	Turkey
3	Morocco
4	Suriname
5	Dutch Caribbean
6	Indonesia
7	Other Africa, Asia, America and Oceania

The skill parent's migration background is divided into seven categories. It is based on the skill parent's country of birth.

Available from 1995 onwards

Source: Gbapersoontab

generation_skillparent – Generation of migration background of skill parent

Format: numeric

0	Dutch background
1	First generation migration background
2	Second generation migration background
3	Unknown

The skill parent's migration background is divided into: having a Dutch background, being a first- or second-generation immigrant. If the skill parent was born outside the Netherlands, the person is defined as having a first-generation migrant background. If the skill parent was born in the Netherlands to at least one non-Dutch parent, the person is defined as having a second-generation migrant background.

Available from 1995 onwards

Source: Gbapersoontab

nonwestern_skillparent – Non-western background skill parent

Format: numeric

0	Not non-western background
1	Non-western background

In case the skill parent or one of the parents was born in one of the countries in Africa, Latin America and Asia (excluding Indonesia and Japan) or Turkey, it is coded as "non-western background". In all other cases (born in Europe (excluding Turkey), North America, Oceania, Indonesia or Japan), it is coded as "not non-western background".

Available from 1995 onwards

Source: Gbapersoontab

numberofsiblings_skillparent – Number of siblings of skill parent

---

Format: numeric

0	0 siblings
1	1 sibling
2	2 siblings
3	3 or more siblings

The number of siblings of the skill parent at the start of the education cohort. This information comes from the parent questionnaire.

Available for the 1977, 1982 and 1989 education cohorts.

Source: SMVO, SLVO and VOCL

6.2.5 Background characteristics of other parent

female_otherparent – Sex of other parent

Format: numeric

0	Male
1	Female

The other parent's sex as recorded in the Municipal Personal Records Database (in Dutch 'BRP'). In case of sex change, the last registered sex is recorded.

Available from 1995 onwards

Source: Gbapersoontab

birthyear_otherparent– Birth year of other parent

Format: numeric

The other parent's year of birth as recorded in the Municipal Personal Records Database (in Dutch 'BRP').

Available from 1995 onwards

Source: Gbapersoontab

birthmoth_otherparent– Birth month of other parent

Format: numeric

1	January
2	February
3	March
4	April
5	May
6	June
7	July
8	August
9	September
10	October
11	November

12	December

The other parent's month of birth as recorded in the Municipal Personal Records Database (in Dutch 'BRP').

Available from 1995 onwards

Source: Gbapersoontab

age_otherparent– Age of the other parent at birth of the child

---

Format: numeric

Age of the other parent at the birth of the child.

Available from 1995 onwards

Source: Gbapersoontab

6.2.6 Education variables of the child

An overview of the Dutch education system, the different qualifications and corresponding ISCED 2011 labels is provided in the Appendix.

teacherrecommendation_child – Teacher's recommendation for track placement in secondary education of child

---

Format: numeric

0	Pupil has not received an advice
1	VSO
10	Practical education
20	VMBO BL
21	VMBO BL with LWOO
22	VMBO BL through VMBO KL
23	VMBO BL through VMBO KL with LWOO
24	VMBO BL through VMBO GL

25 VMBO BL through VMBO GL with LWOO
26 VMBO BL through VMBO TL
27 VMBO BL through VMBO TL with LWOO
28 VMBO BL through HAVO
29 VMBO BL through VWO
30 VMBO KL
31 VMBO KL with LWOO
32 VMBO KL through VMBO GL
33 VMBO KL through VMBO GL with LWOO
34 VMBO KL through VMBO TL
35 VMBO KL through VMBO TL with LWOO
36 VMBO KL through HAVO
37 VMBO KL through VWO
40 VMBO GL
41 VMBO GL with LWOO
42 VMBO GL through VMBO TL
43 VMBO GL through VMBO TL with LWOO
44 VMBO GL through HAVO
45 VMBO GL through VWO
50 VMBO TL
51 VMBO TL with LWOO
52 VMBO TL through HAVO
53 VMBO TL through VWO
60 HAVO
61 HAVO through VWO
70 VWO
80 No specific advice available

This variable includes the teacher recommendation for track placement of the child in secondary education. From school year 2014/2015 onwards, the primary school teacher gives a recommendation for the track placement in secondary education before the final test is administered. In case the track placement based on the Cito-test score is higher than the

teacher's recommendation, the school needs to reconsider the advice. The school is responsible for doing this in consultation with the parents or legal guardians. This variable concerns the recommendation made by the teacher prior to the final test. Note that information on the teacher's recommendation on track placement in secondary education is only available from schoolyear 2010/2011 onwards Children who did their Cito-test before school year 2010/2011, are coded as missing.

Available from schoolyear 2010/2011 onwards

Source: NCO

initialtrack_child_cat – Initial track in secondary education in categories for the child

---

Format: numeric

1	vmbo gt/havo/vwo
2	vmbo/havo/vwo
3	vmbo-b/kb
4	vmbo g/t
5	vmbo-b
6	vmbo-k
7	vmbo-g
8	vmbo-t
9	havo
10	vwo
11	vavo
12	practical education
13	vbo

The initial track in secondary education of the child. It concerns the first single track in secondary education. Children who are not yet in a single track, because they have not yet progressed far enough into the education system, are included in a mixed track category.

Available from 2006 onwards

Source: NCO and Onderwijsinschrtab

initialtrack_child_yrs – Initial track in secondary education in years for the child

---

Format: numeric

The initial track in secondary education in categories was converted into years of schooling using the so-called educational ladder by Bosker and van der Velden (1989). The following years are assigned: 6 years for university preparatory education (in Dutch 'voorbereidend wetenschappelijk onderwijs' (vwo)), 5 years for senior general secondary education (in Dutch 'hoger algemeen vormend onderwijs' (havo)), 4 years for the highest track within preparatory vocational secondary education (in Dutch 'vmbo gemengde en theoretische leerweg' (vmbo gl/tl)), 3 years for second highest track within preparatory vocational secondary education (in Dutch 'vmbo kaderberoepsgerichte leerweg' (vmbo kb), 2 years for lowest track within preparatory vocational secondary education (In Dutch 'vmbo basisberoepsgerichte leerweg' (vmbo bb) and 1 year for practical education (in Dutch 'praktijkonderwijs').

For the children who are not yet in a single track, because they are still in a mixed track in secondary education, the average years of schooling is assigned of the tracks they still have direct access to, given the mixed track they are in. For example, children within the mixed track havo/vwo get 5,5 years of schooling.

Available from 2006 onwards
Source: NCO and Onderwijsinschrtab

gradechild_tplus1 – Child's grade one year after the Cito-test (t+1)

Format: numeric

0	Group 8 in primary education
1	Year 1 in secondary education
2	Year 2 in secondary education
3	Year 3 in secondary education

4	Year 4 in secondary education
5	Year 5 in secondary education
6	Year 6 in secondary education

Child's grade in (secondary) education one year after the Cito-test (t+1). Missing values are those who are not in subsidized education in the Netherlands, or those who have not yet progressed far enough into the education system. Note that because NCO started in primary education from school year 2010/2011 onwards, code 0 'Group 8 in primary education' is only available from that school year onwards. Also note that for the children who have taken their Cito-test in school year 2005/2006 we only have information on enrolments in secondary education.

Available from 2006 onwards

Source: NCO and Onderwijsinschrtab

gradechild_tplus2 – Child's grade two years after the Cito-test (t+2)

Format: numeric

0	Group 8 in primary education
1	Year 1 in secondary education
2	Year 2 in secondary education
3	Year 3 in secondary education
4	Year 4 in secondary education
5	Year 5 in secondary education
6	Year 6 in secondary education

Child's grade in (secondary) education two years after the Cito-test (t+2). Missing values are those who are not in subsidized education in the Netherlands, or those who have not yet progressed far enough into the education system. Note that because NCO started in primary education from school year 2010/2011 onwards, code 0 'Group 8 in primary education' is only available from that school year onwards. Also note that for the children who have taken their Cito-test in school year 2005/2006 we only have information on enrolments in secondary education.

Available from 2006 onwards

Source: NCO and Onderwijsinschrtab

gradechild_tplus3 – Child's grade three years after the Cito-test (t+3)

Format: numeric

1	Year 1 in secondary education
2	Year 2 in secondary education
3	Year 3 in secondary education
4	Year 4 in secondary education
5	Year 5 in secondary education
6	Year 6 in secondary education

Child's grade in (secondary) education three years after the Cito-test (t+3). Missing values are those who are not in subsidized education in the Netherlands, or those who have not yet progressed far enough into the education system. Note that for the children who have taken their Cito-test in school year 2005/2006 we only have information on enrolments in secondary education.

Available from 2006 onwards

Source: NCO and Onderwijsinschrtab

gradechild_tplus4 – Child's grade four years after the Cito-test (t+4)

Format: numeric

1	Year 1 in secondary education
2	Year 2 in secondary education
3	Year 3 in secondary education
4	Year 4 in secondary education
5	Year 5 in secondary education
6	Year 6 in secondary education
7	In upper secondary or tertiary education

Child's grade in (secondary) education four years after the Cito-test (t+4). Missing values are those who are not in subsidized education in the Netherlands, or those who have not yet progressed far enough into the education system. Note that for the children who have taken their Cito-test in school year 2005/2006 we only have information on enrolments in secondary education.

Available from 2006 onwards

Source: NCO and Onderwijsinschrtab

gradechild_tplus5 – Child's grade five years after the Cito-test (t+5)

Format: numeric

1	Year 1 in secondary education
2	Year 2 in secondary education
3	Year 3 in secondary education
4	Year 4 in secondary education
5	Year 5 in secondary education
6	Year 6 in secondary education
7	In upper secondary or tertiary education

Child's grade in (secondary) education five years after the Cito-test (t+5). Missing values are those who are not in subsidized education in the Netherlands, or those who have not yet progressed far enough into the education system. Note that for the children who have taken their Cito-test in school year 2005/2006 we only have information on enrolments in secondary education.

Available from 2006 onwards

Source: NCO and Onderwijsinschrtab

gradechild_tplus6 – Child's grade six years after the Cito-test (t+6)

Format: numeric

1	Year 1 in secondary education
2	Year 2 in secondary education
3	Year 3 in secondary education
4	Year 4 in secondary education
5	Year 5 in secondary education
6	Year 6 in secondary education
7	In upper secondary or tertiary education

Child's grade in (secondary) education six years after the Cito-test (t+6). Missing values are those who are not in subsidized education in the Netherlands, or those who have not yet progressed far enough into the education system. Note that for the children who have taken their Cito-test in school year 2005/2006 we only have information on enrolments in secondary education.

Available from 2006 onwards

Source: NCO and Onderwijsinschrtab

trackchild_tplus1 – Child's track one year after the Cito-test (t+1)

Format: numeric

0	Primary education
1	Vmbo-g/t,havo,vwo
2	Vmbo,havo,vwo
3	Vmbo-b/k
4	Vmbo-g/t
5	Vmbo-b
6	Vmbo-k
7	Vmbo-g
8	Vmbo-t
9	Havo
10	Vwo
11	Vavo

12	Practical education
13	Vbo

Child's track in (secondary) education one year after the Cito-test (t+1). Missing values are those who are not in subsidized education in the Netherlands, or those who have not yet progressed far enough into the education system. Note that because NCO started in primary education from school year 2010/2011 onwards, information about the being in primary education is on only available from that school year onwards. Note that for the children who have taken their Cito-test in school year 2005/2006 we only have information on enrolments in secondary education.

Available from 2006 onwards

Source: NCO and Onderwijsinschrtab

trackchild_tplus2 – Child's track two years after the Cito-test (t+2)

Format: numeric

0	Primary education
1	Vmbo-g/t,havo,vwo
2	Vmbo,havo,vwo
3	Vmbo-b/k
4	Vmbo-g/t
5	Vmbo-b
6	Vmbo-k
7	Vmbo-g
8	Vmbo-t
9	Havo
10	Vwo
11	Vavo
12	Practical education
13	Vbo

Child's track in (secondary) education two years after the Cito-test (t+2). Missing values are those who are not in subsidized education in the Netherlands, or those who have not yet progressed far enough into the education system. Note that for the children who have taken their Cito-test in school year 2005/2006 we only have information on enrolments in secondary education.

Available from 2006 onwards

Source: NCO and Onderwijsinschrtab

trackchild_tplus3 – Child's track three years after the Cito-test (t+3)

Format: numeric

1	Vmbo-g/t,havo,vwo
2	Vmbo,havo,vwo
3	Vmbo-b/k
4	Vmbo-g/t
5	Vmbo-b
6	Vmbo-k
7	Vmbo-g
8	Vmbo-t
9	Havo
10	Vwo
11	Vavo
12	Practical education
13	Vbo

Child's track in (secondary) education three years after the Cito-test (t+3). Missing values are those who are not in subsidized education in the Netherlands, or those who have not yet progressed far enough into the education system. Note that for the children who have taken their Cito-test in school year 2005/2006 we only have information on enrolments in secondary education.

Available from 2006 onwards

Source: NCO and Onderwijsinschrtab

trackchild_tplus4 – Child's track four years after the Cito-test (t+4)

Format: numeric

1	Vmbo-g/t,havo,vwo
2	Vmbo,havo,vwo
3	Vmbo-b/k
4	Vmbo-g/t
5	Vmbo-b
6	Vmbo-k
7	Vmbo-g
8	Vmbo-t
9	Havo
10	Vwo
11	Vavo
12	Practical education
13	Vbo
20	MBO voltijd (bol-vt)
21	MBO deeltijd (bol-dt)
22	MBO (bbl)
23	MBO extranei
30	HBO bachelor
31	HBO master
36	HBO associate degree
40	WO bachelor
41	WO master

Child's track in (secondary) education four years after the Cito-test (t+4). Missing values are those who are not in subsidized education in the Netherlands, or those who have not yet progressed far enough into the education system. Note that for the children who have taken

their Cito-test in school year 2005/2006 we only have information on enrolments in secondary education.

Available from 2006 onwards

Source: NCO and Onderwijsinschrtab

trackchild_tplus5 – Child's track five years after the Cito-test (t+5)

Format: numeric

1	Vmbo-g/t,havo,vwo
2	Vmbo,havo,vwo
3	Vmbo-b/k
4	Vmbo-g/t
5	Vmbo-b
6	Vmbo-k
7	Vmbo-g
8	Vmbo-t
9	Havo
10	Vwo
11	Vavo
12	Practical education
13	Vbo
20	MBO voltijd (bol-vt)
21	MBO deeltijd (bol-dt)
22	MBO (bbl)
23	MBO extranei
30	HBO bachelor
31	HBO master
36	HBO associate degree
40	WO bachelor
41	WO master

Child's track in (secondary) education five years after the Cito-test (t+5). Missing values are those who are not in subsidized education in the Netherlands, or those who have not yet progressed far enough into the education system. Note that for the children who have taken their Cito-test in school year 2005/2006 we only have information on enrolments in secondary education.

Available from 2006 onwards

Source: NCO and Onderwijsinschrtab

trackchild_tplus6 – Child's track six years after the Cito-test (t+6)

Format: numeric

1	Vmbo-g/t,havo,vwo
2	Vmbo,havo,vwo
3	Vmbo-b/k
4	Vmbo-g/t
5	Vmbo-b
6	Vmbo-k
7	Vmbo-g
8	Vmbo-t
9	Havo
10	Vwo
11	Vavo
12	Practical education
13	Vbo
20	MBO voltijd (bol-vt)
21	MBO deeltijd (bol-dt)
22	MBO (bbl)
23	MBO extranei
30	HBO bachelor
31	HBO master
36	HBO associate degree

40	WO bachelor
41	WO master

Child's track in (secondary) education six years after the Cito-test (t+6). Missing values are those who are not in subsidized education in the Netherlands, or those who have not yet progressed far enough into the education system. Note that for the children who have taken their Cito-test in school year 2005/2006 we only have information on enrolments in secondary education.

Available from 2006 onwards

Source: NCO and Onderwijsinschrtab

firstdiploma_cat_child – Child's first diploma in secondary education (in categories)

Format: numeric

0	VMBO-B diploma
1	VMBO-K diploma
2	VMBO-GT diploma
3	HAVO diploma
4	VWO diploma

The child's first diploma in secondary education in categories. Missing values are those who are not in subsidized education in the Netherlands, or those who have not yet progressed far enough into the education system to have obtained a diploma. Note that because NCO starts in secondary education in school year 2007/2008, there is no information available for children who did the Cito-test in school year 2005/2006. If these children have not repeated a year, this variable is coded as missing.

Available from 2007 onwards

Source: NCO

firstdiploma_yrs_child – Child's first diploma in secondary education (in years)

Format: numeric

The child's first diploma in secondary education in categories is converted into years of schooling using the so-called educational ladder by Bosker and van der Velden (1989). The following years are assigned: 12 years for university preparatory education (in Dutch 'voorbereidend wetenschappelijk onderwijs' (vwo)), 10 years for senior general secondary education (in Dutch 'hoger algemeen vormend onderwijs' (havo)), 8 years for the highest track within preparatory vocational secondary education (in Dutch 'vmbo gemengde en theoretische leerweg' (vmbo gl/tl)), 7 years for second highest track within preparatory vocational secondary education (in Dutch 'vmbo kaderberoepsgerichte leerweg' (vmbo kb), 7 years for lowest track within preparatory vocational secondary education (In Dutch 'vmbo basisberoepsgerichte leerweg' (vmbo bb).

Missing values are those who are not in subsidized education in the Netherlands, or those who have not yet progressed far enough into the education system to have obtained a diploma. Note that because NCO starts in secondary education in school year 2007/2008, there is no information available for children who did the Cito-test in school year 2005/2006. If these children have not repeated a year, this variable is coded as missing.

Available from 2007 onwards
Source: NCO

higheducat_reg_child – Highest education in categories child (retrieved from education register)

Format: numeric

1111	Basisonderwijs gr1-2
1112	Basisonderwijs gr3-8
1211	Praktijkonderwijs
1212	Vmbo-b/k
1213	Mbo1
1221	Vmbo-g/t
1222	Havo-, vwo-onderbouw
2111	Mbo2

2112	Mbo3
2121	Mbo4
2131	Havo-bovenbouw
2132	Vwo-bovenbouw
3111	Hbo-associate degree
3112	Hbo-bachelor
3113	Wo-bachelor
3211	Hbo-master
3212	Wo-master
3213	Doctor

Highest obtained level of education in 18 categories according to the CBS publication classification (SOI 2021) (CBS, 2022). This variable is based on the education register.

Available from 1999 onwards

Source: Hoogsteopltab

firstdiploma_stemprofile_child – STEM course profile first diploma in secondary education of child

---

Format: numeric

0	Non-STEM
1	STEM

A STEM course profile of the first diploma in secondary education is defined as having a Technical or Agriculture profile (low vocational or low academic track) or the Nature & Technical or Nature & Health profile (middle/high academic track). Students who chose a 'combination' course profile, where its' STEM-component is unknown, have been coded as non-STEM. Not all students can be assigned a STEM/non-STEM course profile as they have not progressed far enough into the education system (coded as missing value).

Available from 2000 onwards

Source: Onderwijsinschrtab

firstdiploma_stemprofile_strict_child – STEM course profile first diploma in secondary education of child (strict definition)

Format: numeric

0	Non-STEM
1	STEM

A STEM course profile of the first diploma in secondary education is defined as having a Technical or Agriculture profile (low vocational or low academic track) or the Nature & Technical or Nature & Health profile (middle/high academic track). Students who chose a 'combination' course profile, where its' STEM-component is unknown, have been coded as non-STEM. Not all students can be assigned a STEM/non-STEM course profile as they have not progressed far enough into the education system (coded as missing value).

Available from 2000 onwards

Source: Onderwijsinschrtab

highedu_stem_child – STEM field of study highest education child (based on register)

Format: numeric

0	Non-STEM
1	STEM

The child's STEM field of study of the highest education is determined based on the 1-digit ISCED97 fields of education classification (UNESCO, 2006). Study programs in the Science, Mathematics and Computing, Engineering, Manufacturing and Construction, Agriculture, and Medicine and Nursery were classified as a STEM choice of study. Students who chose a 'combination' course profile, where its' STEM-component is unknown, have been coded as non-STEM. Not all children can be assigned a STEM/non-STEM field of study as they have not progressed far enough into the education system (coded as missing value).

Available from 1999 onwards

Source: Hoogsteopltab

6.2.7 Education variables of parents

An overview of the Dutch education system, the different qualifications and corresponding ISCED 2011 labels is provided in the Appendix.

cohort_skillparent – Education cohort of skill parent

Format: numeric

1	Education cohort 1977
2	Education cohort 1982
3	Education cohort 1989

Since the mid-1970s, education cohort studies were undertaken by Statistics Netherlands on a regular basis. In 1977, Statistics Netherlands started the cohort study, called "Sociaal Milieu Voortgezet Onderwijs" (SMVO) (English translation: 'social origin and secondary education'). This cohort study is a national representative panel of children that entered secondary education for the first time, around the age of 12, in school year 1977/1978. A sample of school classes was then drawn per stratum. The total sample consists of 37,280 students from 1,275 schools. This is about 15 percent of the total student population at the time.

The second cohort study "Schoolkeuze Lager Voorgezet Onderwijs" (SLVO) ('school choice primary and secondary education') started in school year 1982/1983 in the last year of primary education. A random sample was drawn from the population of 8,745 schools. From the 977 schools selected, 669 schools were willing to participate. In total, 16,813 students were included in the study. This amounts to almost 8 percent of the primary school student population at that time.

The third cohort study "Voortgezet Onderwijs Cohort Leerlingen" (VOCL) ('secondary education cohort study students') is a nationally representative panel of children who were born in 1977 and entered secondary education for the first time in the school year 1989/1990. The sampling unit were schools in regular secondary education. In small schools, all classes

were included, and in bigger schools a random selection of classes was sampled. The survey comprises 19,524 students from 381 schools, amounting to 10.5% of the entire student population in the first year of secondary school at the time.

Available for the 1977, 1982 and 1989 education cohorts
Source: SMVO, SLVO and VOCL

teacherrecom_skillparent – Schoolhead's recommendation for track placement in secondary education of skill parent

---

Format: numeric

1	ibo
2	lbo
3	Mavo
4	Havo
5	Vwo

For the 1977 education cohort, this advice reflects the opinion of the school head of primary education as to track placement in secondary education for which the pupil is most suitable. For the 1982 education cohort, the class teacher indicated what secondary education advice has been given for the pupil in question. For the 1989 education cohort, Statistics Netherlands CBS obtained administrative data from schools that included the advice for track placement in secondary education. The various cohort-specific variables are combined into one variable that measures the advice for track placement in secondary education for the skill parent.

Available for the 1977, 1982 and 1989 education cohorts
Source: SMVO, SLVO and VOCL

higheducat_reg_skillparent – Highest education in categories skill parent (based on register)

Format: numeric

1111	Basisonderwijs gr1-2
1112	Basisonderwijs gr3-8
1211	Praktijkonderwijs
1212	Vmbo-b/k
1213	Mbo1
1221	Vmbo-g/t
1222	Havo-, vwo-onderbouw
2111	Mbo2
2112	Mbo3
2121	Mbo4
2131	Havo-bovenbouw
2132	Vwo-bovenbouw
3111	Hbo-associate degree
3112	Hbo-bachelor
3113	Wo-bachelor
3211	Hbo-master
3212	Wo-master
3213	Doctor

The skill parent's highest obtained level of education in 18 categories according to the CBS publication classification (SOI 2021) (CBS, 2022). This variable is based on the education register.

Available from 1999 onwards

Source: Hoogsteopltab

higheducat_cohort_skillparent – Highest education in categories skill parent (based on education cohort data)

Format: numeric

0	exam not passed successfully
1	ibo

2	lbo
3	mavo
4	havo
5	vwo
6	kmbo
7	mbo
8	hbo
9	wo

In the education cohort studies, the position of the students in education was determined annually (i.e., track and grade). This included collecting information on obtained degrees. Based on this information in the education cohort data, the highest obtained education was determined for the skill parent.

Available for the 1977, 1982 and 1989 education cohorts
Source: SMVO, SLVO and VOCL

higheduyrs_reg_skillparent – Highest education in years skill parent (based on register)

Format: numeric

Highest education based on the education registers converted into years of schooling using the so-called educational ladder by Bosker and van der Velden (1989). In the table below, an overview of the categories and corresponding years of education is included.

Table 9. Conversion of education in categories to years

Education category	**Years of education**
Basisonderwijs gr1-2	4
Basisonderwijs gr3-8	4
Praktijkonderwijs	5
Vmbo-b/k	6.5
Mbo1	6
Vmbo-g/t	8

Havo-, vwo-onderbouw	8
Mbo2	8
Mbo3	10
Mbo4	12
Havo-bovenbouw	10
Vwo-bovenbouw	12
Hbo-associate degree	12
Hbo-bachelor	14
Wo-bachelor	15
Hbo-master	15
Wo-master	16
Doctor	18

Available from 1999 onwards

Source: Hoogsteopltab

higheduyrs_cohort_skillparent – Highest education in years skill parent (based on education cohort data)

Format: numeric

Highest education based on the education cohort data converted into years of schooling using the so-called educational ladder by Bosker and van der Velden (1989). The following years are assigned: 16 years for academic education (in Dutch 'wetenschappelijk onderwijs' (wo)), 14 year for higher professional education (in Dutch 'hoger beroepsonderwijs' (hbo)), 11 years for intermediate vocational education (in Dutch 'middelbaar beroepsonderwijs' (mbo)), 8 years for short intermediate vocational education (in Dutch 'kort middelbaar beroepsonderwijs'), 12 years university preparatory education (in Dutch 'voorbereidend wetenschappelijk onderwijs' (vwo)), 10 years for senior general secondary education (in Dutch 'hoger algemeen vormend onderwijs' (havo)), 8 years for the highest track within lower general secondary education (in Dutch 'middelbaar algemeen voortgezet onderwijs' (mavo)), 7 years for (in Dutch 'lager beroepsonderwijs' lbo) and 5 years for individual

vocational education (in Dutch 'individueel beroepsonderwijs' ibo). Skill parent who did not pass their exam according to the annual information were assigned 5 years of education.

Available for the 1977, 1982 and 1989 education cohorts

Source: SMVO, SLVO and VOCL

highedu_stem_skillparent – STEM field highest education skill parent (based on register)

Format: numeric

The parent's STEM field of study of the highest education is determined based on the 1-digit ISCED97 fields of education classification (UNESCO, 2006). Study programs in the Science, Mathematics and Computing, Engineering, Manufacturing and Construction, Agriculture, and Medicine and Nursery were classified as a STEM choice of study. Students who chose a 'combination' course profile, where its' STEM-component is unknown, have been coded as non-STEM.

Available from 1999 onwards

Source: Hoogsteopltab

tertedu_otherparent – Tertiary education other parent

Format: numeric

0	Not tertiary education
1	Tertiary education

This variable indicates whether the other legal parent has obtained tertiary education or not. Tertiary education includes Hbo-associate degree and higher. It is based on the highest obtained level of education in 18 categories according to the CBS publication classification (SOI 2021) (CBS, 2022).

Available from 1999 onwards

Source: Hoogsteopltab

6.2.8 Income variables

hhincomeperc_child_tminus3 – Household income in percentiles of child's household (t-3)

Format: numeric

The child's household income is measured as the standardized disposable private household income in percentiles three years before the Cito-test. The disposable income of the household consists of the gross income excluding transfer payments, such as alimony, income insurance contributions, health insurance premiums, and taxes on income and assets. The measure is adjusted for the size and composition of households.

Available from 2003 onwards
Source: IHI and Inhatab

hhincomeperc_child_tminus2 – Household income in percentiles of child's household (t-2)

Format: numeric

The child's household income is measured as the standardized disposable private household income in percentiles two years before the Cito-test. The disposable income of the household consists of the gross income excluding transfer payments, such as alimony, income insurance contributions, health insurance premiums, and taxes on income and assets. The measure is adjusted for the size and composition of households.

Available from 2003 onwards
Source: IHI and Inhatab

hhincomeperc_child_tminus1 – Household income in percentiles of child's household (t-1)

Format: numeric

The child's household income is measured as the standardized disposable private household income in percentiles one year before the Cito-test. The disposable income of the household consists of the gross income excluding transfer payments, such as alimony, income insurance

contributions, health insurance premiums, and taxes on income and assets. The measure is adjusted for the size and composition of households.

Available from 2003 onwards

Source: IHI and Inhatab

hhincomeperc_child_to – Household income in percentiles of child's household (to)

Format: numeric

The child's household income is measured as the standardized disposable private household income in percentiles in Cito-test year. The disposable income of the household consists of the gross income excluding transfer payments, such as alimony, income insurance contributions, health insurance premiums, and taxes on income and assets. The measure is adjusted for the size and composition of households.

Available from 2003 onwards

Source: IHI and Inhatab

hhincomeperc_child_tplus1 – Household income in percentiles of child's household (t+1)

Format: numeric

The child's household income is measured as the standardized disposable private household income in percentiles one year after the Cito-test. The disposable income of the household consists of the gross income excluding transfer payments, such as alimony, income insurance contributions, health insurance premiums, and taxes on income and assets. The measure is adjusted for the size and composition of households.

Available from 2003 onwards

Source: IHI and Inhatab

hhincomeperc_child_tplus2 – Household income in percentiles of child's household (t+2)

Format: numeric

The child's household income is measured as the standardized disposable private household income in percentiles two years after the Cito-test. The disposable income of the household consists of the gross income excluding transfer payments, such as alimony, income insurance contributions, health insurance premiums, and taxes on income and assets. The measure is adjusted for the size and composition of households.

Available from 2003 onwards
Source: IHI and Inhatab

hhincomeperc_child_tplus3 – Household income in percentiles of child's household (t+3)

Format: numeric

The child's household income is measured as the standardized disposable private household income in percentiles three years after the Cito-test. The disposable income of the household consists of the gross income excluding transfer payments, such as alimony, income insurance contributions, health insurance premiums, and taxes on income and assets. The measure is adjusted for the size and composition of households.

Available from 2003 onwards
Source: IHI and Inhatab

hhincomeperc_child_tplus4 – Household income in percentiles of child's household (t+4)

Format: numeric

The child's household income is measured as the standardized disposable private household income in percentiles four years after the Cito-test. The disposable income of the household consists of the gross income excluding transfer payments, such as alimony, income insurance contributions, health insurance premiums, and taxes on income and assets. The measure is adjusted for the size and composition of households.

Available from 2003 onwards
Source: IHI and Inhatab

hhincomeperc_child_tplus5 – Household income in percentiles of child's household (t+5)

Format: numeric

The child's household income is measured as the standardized disposable private household income in percentiles five years after the Cito-test. The disposable income of the household consists of the gross income excluding transfer payments, such as alimony, income insurance contributions, health insurance premiums, and taxes on income and assets. The measure is adjusted for the size and composition of households.

Available from 2003 onwards
Source: IHI and Inhatab

hhincomeperc_child_tplus6 – Household income in percentiles of child's household (t+6)

Format: numeric

The child's household income is measured as the standardized disposable private household income in percentiles six years after the Cito-test. The disposable income of the household consists of the gross income excluding transfer payments, such as alimony, income insurance contributions, health insurance premiums, and taxes on income and assets. The measure is adjusted for the size and composition of households.

Available from 2003 onwards
Source: IHI and Inhatab

persincome_skillparent_tminus3 – Personal income in percentiles of skill parent (t-3)

Format: numeric

Percentile personal income of the skills parents with income in private households three years before the child's Cito-test is administered. Personal income includes the following components of a person's gross income: income from work, income from own business, income insurance benefit, and social security benefit (excluding child benefit and child budget). Income insurance premiums are deducted. The whole Dutch population from

private household in the particular year is used to divide into 100 groups of equal size of persons with a certain income.

Available from 2003 onwards

Source: Inpatab and IPI

persincome_skillparent_tminus2 – Personal income in percentiles of skill parent (t-2)

Format: numeric

Percentile personal income of the skills parents with income in private households two years before the child's Cito-test is administered. Personal income includes the following components of a person's gross income: income from work, income from own business, income insurance benefit, and social security benefit (excluding child benefit and child budget). Income insurance premiums are deducted. The whole Dutch population from private household in the particular year is used to divide into 100 groups of equal size of persons with a certain income.

Available from 2003 onwards

Source: IPI and Inpatab

persincome_skillparent_tminus1 – Personal income in percentiles of skill parent (t-1)

Format: numeric

Percentile personal income of the skills parents with income in private households one year before the child's Cito-test is administered. Personal income includes the following components of a person's gross income: income from work, income from own business, income insurance benefit, and social security benefit (excluding child benefit and child budget). Income insurance premiums are deducted. The whole Dutch population from private household in the particular year is used to divide into 100 groups of equal size of persons with a certain income.

Available from 2003 onwards

Source: IPI and Inpatab

persincome_skillparent_to – Personal income in percentiles of skill parent (to)

Format: numeric

Percentile personal income of the skills parents with income in private households in the year in which the Cito-test is administered. Personal income includes the following components of a person's gross income: income from work, income from own business, income insurance benefit, and social security benefit (excluding child benefit and child budget). Income insurance premiums are deducted. The whole Dutch population from private household in the particular year is used to divide into 100 groups of equal size of persons with a certain income.

Available from 2003 onwards

Source: IPI and Inpatab

persincome_skillparent_tplus1 – Personal income in percentiles of skill parent (t+1)

Format: numeric

Percentile personal income of the skills parents with income in private households one year after the child's Cito-test is administered. Personal income includes the following components of a person's gross income: income from work, income from own business, income insurance benefit, and social security benefit (excluding child benefit and child budget). Income insurance premiums are deducted. The whole Dutch population from private household in the particular year is used to divide into 100 groups of equal size of persons with a certain income.

Available from 2003 onwards

Source: IPI and Inpatab

persincome_skillparent_tplus2 – Personal income in percentiles of skill parent (t+2)

Format: numeric

Percentile personal income of the skills parents with income in private households two years after the child's Cito-test is administered. Personal income includes the following components of a person's gross income: income from work, income from own business, income insurance benefit, and social security benefit (excluding child benefit and child budget). Income insurance premiums are deducted. The whole Dutch population from private household in the particular year is used to divide into 100 groups of equal size of persons with a certain income.

Available from 2003 onwards

Source: IPI and Inpatab

persincome_skillparent_tplus3 – Personal income in percentiles of skill parent (t+3)

Format: numeric

Percentile personal income of the skills parents with income in private households three years after the child's Cito-test is administered. Personal income includes the following components of a person's gross income: income from work, income from own business, income insurance benefit, and social security benefit (excluding child benefit and child budget). Income insurance premiums are deducted. The whole Dutch population from private household in the particular year is used to divide into 100 groups of equal size of persons with a certain income.

Available from 2003 onwards

Source: IPI and Inpatab

persincome_skillparent_tplus4 – Personal income in percentiles of skill parent (t+4)

Format: numeric

Percentile personal income of the skills parents with income in private households four years after the child's Cito-test is administered. Personal income includes the following components of a person's gross income: income from work, income from own business, income insurance benefit, and social security benefit (excluding child benefit and child

budget). Income insurance premiums are deducted. The whole Dutch population from private household in the particular year is used to divide into 100 groups of equal size of persons with a certain income.

Available from 2003 onwards

Source: IPI and Inpatab

persincome_skillparent_tplus5 – Personal income in percentiles of skill parent (t+5)

Format: numeric

Percentile personal income of the skills parents with income in private households five years after the child's Cito-test is administered. Personal income includes the following components of a person's gross income: income from work, income from own business, income insurance benefit, and social security benefit (excluding child benefit and child budget). Income insurance premiums are deducted. The whole Dutch population from private household in the particular year is used to divide into 100 groups of equal size of persons with a certain income.

Available from 2003 onwards

Source: IPI and Inpatab

persincome_skillparent_tplus6 – Personal income in percentiles of skill parent (t+6)

Format: numeric

Percentile personal income of the skills parents with income in private households six years after the child's Cito-test is administered. Personal income includes the following components of a person's gross income: income from work, income from own business, income insurance benefit, and social security benefit (excluding child benefit and child budget). Income insurance premiums are deducted. The whole Dutch population from private household in the particular year is used to divide into 100 groups of equal size of persons with a certain income.

Available from 2003 onwards

Source: IPI and Inpatab

hhwealthperc_child_tminus3 – Household wealth in percentiles of child's household (t-3)

Format: numeric

Household wealth three years before the child's Cito-test is administered, is based on the percentile of the household in the Dutch distribution of the household's total wealth. Wealth is equal to the difference between assets and debts. Institutional households and private households whose income is unknown are not included in the percentile distribution

Available from 2006 onwards

Source: Vehtab

hhwealthperc_child_tminus2 – Household wealth in percentiles of child's household (t-2)

Format: numeric

Household wealth two years before the child's Cito-test is administered, is based on the percentile of the household in the Dutch distribution of the household's total wealth. Wealth is equal to the difference between assets and debts. Institutional households and private households whose income is unknown are not included in the percentile distribution

Available from 2006 onwards

Source: Vehtab

hhwealthperc_child_tminus1 – Household wealth in percentiles of child's household (t-1)

Format: numeric

Household wealth one year before the child's Cito-test is administered, is based on the percentile of the household in the Dutch distribution of the household's total wealth. Wealth is equal to the difference between assets and debts. Institutional households and private households whose income is unknown are not included in the percentile distribution

Available from 2006 onwards

Source: Vehtab

hhwealthperc_child_to – Household wealth in percentiles of child's household (t0)

Format: numeric

Household wealth in the year the child's Cito-test is administered, is based on the percentile of the household in the Dutch distribution of the household's total wealth. Wealth is equal to the difference between assets and debts. Institutional households and private households whose income is unknown are not included in the percentile distribution

Available from 2006 onwards

Source: Vehtab

hhwealthperc_child_tplus1 – Household wealth in percentiles of child's household (t+1)

Format: numeric

Household wealth one year after the child's Cito-test is administered, is based on the percentile of the household in the Dutch distribution of the household's total wealth. Wealth is equal to the difference between assets and debts. Institutional households and private households whose income is unknown are not included in the percentile distribution

Available from 2006 onwards

Source: Vehtab

hhwealthperc_child_tplus2 – Household wealth in percentiles of child's household (t+2)

Format: numeric

Household wealth two years after the child's Cito-test is administered, is based on the percentile of the household in the Dutch distribution of the household's total wealth. Wealth is equal to the difference between assets and debts. Institutional households and private households whose income is unknown are not included in the percentile distribution

Available from 2006 onwards

Source: Vehtab

hhwealthperc_child_tplus3 – Household wealth in percentiles of child's household (t+3)

Format: numeric

Household wealth three years after the child's Cito-test is administered, is based on the percentile of the household in the Dutch distribution of the household's total wealth. Wealth is equal to the difference between assets and debts. Institutional households and private households whose income is unknown are not included in the percentile distribution

Available from 2006 onwards

Source: Vehtab

hhwealthperc_child_tplus4 – Household wealth in percentiles of child's household (t+4)

Format: numeric

Household wealth four years after the child's Cito-test is administered, is based on the percentile of the household in the Dutch distribution of the household's total wealth. Wealth is equal to the difference between assets and debts. Institutional households and private households whose income is unknown are not included in the percentile distribution

Available from 2006 onwards

Source: Vehtab

hhwealthperc_child_tplus5 – Household wealth in percentiles of child's household (t+5)

Format: numeric

Household wealth five years after the child's Cito-test is administered, is based on the percentile of the household in the Dutch distribution of the household's total wealth. Wealth is equal to the difference between assets and debts. Institutional households and private households whose income is unknown are not included in the percentile distribution

Available from 2006 onwards

Source: Vehtab

hhwealthperc_child_tplus6 – Household wealth in percentiles of child's household (t+6)

Format: numeric

Household wealth six years after the child's Cito-test is administered, is based on the percentile of the household in the Dutch distribution of the household's total wealth. Wealth is equal to the difference between assets and debts. Institutional households and private households whose income is unknown are not included in the percentile distribution

Available from 2006 onwards

Source: Vehtab

benefits_skillparent_tminus3 – Skill parent receives benefits (t-3)

Format: numeric

0	Not a benefit recipient
1	A benefit recipient

Dummy variable indicating whether the skill parent of the child received benefits three years before the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards

Source: IPI and Inpatab

benefits_skillparent_tminus2 – Skill parent receives benefits (t-2)

Format: numeric

0	Not a benefit recipient
1	A benefit recipient

Dummy variable indicating whether the skill parent of the child received benefits two years before the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards

Source: IPI and Inpatab

benefits_skillparent_tminus1 – Skill parent receives benefits (t-1)

Format: numeric

0	Not a benefit recipient
1	A benefit recipient

Dummy variable indicating whether the skill parent of the child received benefits one year before the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards

Source: IPI and Inpatab

benefits_skillparent_to – Skill parent receives benefits (to)

Format: numeric

0	Not a benefit recipient
1	A benefit recipient

Dummy variable indicating the skill parent of the child received benefits in the year the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards

Source: IPI and Inpatab

benefits_skillparent_tplus1 – Skill parent receives benefits (t+1)

Format: numeric

0 Not a benefit recipient

1 A benefit recipient

Dummy variable indicating whether the skill parent of the child received benefits one year after the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards

Source: IPI and Inpatab

benefits_parents_tplus2 – One of the parents received benefits (t+2)

Format: numeric

0 Not a benefit recipient

1 A benefit recipient

Dummy variable indicating whether skill parent of the child received benefits two years after the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards

Source: IPI and Inpatab

benefits_skillparent_tplus3 – Skill parent receives benefits (t+3)

Format: numeric

0 Not a benefit recipient

1 A benefit recipient

Dummy variable indicating whether the skill parent of the child received benefits three years after the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards

Source: IPI and Inpatab

benefits_skillparent_tplus4 – Skill parent receives benefits (t+4)

Format: numeric

0	Not a benefit recipient
1	A benefit recipient

Dummy variable indicating whether the skill parent of the child received benefits four years after the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards

Source: IPI and Inpatab

benefits_skillparent_tplus5 – Skill parent receives benefits (t+5)

Format: numeric

0	Not a benefit recipient
1	A benefit recipient

Dummy variable indicating whether the skill parent of the child received benefits five years after the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards

Source: IPI and Inpatab

benefits_skillparent_tplus6 – Skill parent receives benefits (t+6)

Format: numeric

0	Not a benefit recipient

1 A benefit recipient

Dummy variable indicating whether the skill parent of the child received benefits six years after the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards

Source: IPI and Inpatab

benefits_hh_tminus3 – Main income child's household is benefits (t-3)

Format: numeric

0 Main income not benefits

1 Main income is benefits

Dummy variable indicating whether the main income of the child's household was benefits three years before the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards

Source: IHI and Inhatab

benefits_hh_tminus2 – Main income child's household is benefits (t-2)

Format: numeric

0 Main income not benefits

1 Main income is benefits

Dummy variable indicating whether the main income of the child's household was benefits two years before the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards

Source: IHI and Inhatab

benefits_hh_tminus1 – Main income child's household is benefits (t-1)

Format: numeric

0	Main income not benefits
1	Main income is benefits

Dummy variable indicating whether the main income of the child's household was benefits one year before the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards

Source: IHI and Inhatab

benefits_hh_to – Main income child's household is benefits (to)

Format: numeric

0	Main income not benefits
1	Main income is benefits

Dummy variable indicating whether the main income of the child's household was benefits in the year in which the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards

Source: IHI and Inhatab

benefits_hh_tplus1 – Main income child's household is benefits (t+1)

Format: numeric

0	Main income not benefits
1	Main income is benefits

Dummy variable indicating whether the main income of the child's household was benefits one year after the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards

Source: IHI and Inhatab

benefits_parents_tplus2 – Main income child's household is benefits (t+2)

Format: numeric

0	Main income not benefits
1	Main income is benefits

Dummy variable indicating whether the main income of the child's household was benefits two years after the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards

Source: IHI and Inhatab

benefits_hh_tplus3 – Skill parent receives benefits (t+3)

Format: numeric

0	Not a benefit recipient
1	A benefit recipient

Dummy variable indicating whether the skill parent of the child received benefits three years after the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards

Source: IHI and Inhatab

benefits_hh_tplus4 – Main income child's household is benefits (t+4)

Format: numeric

0	Main income not benefits
1	Main income is benefits

Dummy variable indicating whether the main income of the child's household was benefits four years after the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards
Source: IHI and Inhatab

benefits_hh_tplus5 – Main income child's household is benefits (t+5)

Format: numeric

0	Main income not benefits
1	Main income is benefits

Dummy variable indicating whether the main income of the child's household was benefits five years after the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards
Source: IHI and Inhatab

benefits_hh_tplus6 – Main income child's household is benefits (t+6)

Format: numeric

0	Main income not benefits
1	Main income is benefits

Dummy variable indicating whether the main income of the child's household was benefits six years after the child's Cito-test is administered. The following benefits are included: social or other welfare benefits, unemployment benefits, pension and disability benefit.

Available from 2003 onwards

Source: IHI and Inhatab

6.2.9 Household composition

divorcedate_first – First divorce date of legal parents

Format: numeric

The first divorce date of the child's legal parents. Divorce is defined as a dissolution of a marriage or registered partnership other than by death. Divorces may have been pronounced in the Netherlands or abroad. In case there is no parental divorce, this variable is coded as missing.

Available from 1995 onwards

Source: SCHEIDINGEN

divorcedate_second – Second divorce date of legal parents

Format: numeric

The second divorce date of the child's legal parents. Divorce is defined as a dissolution of a marriage or registered partnership other than by death. Divorces may have been pronounced in the Netherlands or abroad. In case there is no parental divorce, this variable is coded as missing.

Available from 1995 onwards

Source: SCHEIDINGEN

divorcedate_third – Third divorce date of legal parents

Format: numeric

The first divorce date of the child's legal parents. Divorce is defined as a dissolution of a marriage or registered partnership other than by death. Divorces may have been pronounced

in the Netherlands or abroad. In case there is no parental divorce, this variable is coded as missing.

Available from 1995 onwards

Source: SCHEIDINGEN

primaryhh_child_tminus12 – Which parents in primary household (t-12)

Format: numeric

0	No legal parents
1	Only skill parent
2	Only other legal parent
3	Both parents

Starting from the child's birth year and month, it is annually determined which parent(s) is(/are) in the child's household or not. The reference date is the birth year and month + X. If a child was in more than one household during that month, the last household composition was chosen. In this case, the household composition is determined on child's birth month and year, i.e. in most cases about 12 years before the Cito-test. Because the oldest children of the education cohorts were born before the data were collected, for some children the composition is coded missing.

Available from 1 October 1994 onwards

Source: Gbahuishoudensbus

primaryhh_child_tminus11 – Which parents in primary household (t-11)

Format: numeric

0	No legal parents
1	Only skill parent
2	Only other legal parent
3	Both parents

Starting from the child's birth year and month, it is annually determined which parent(s) is(/are) in the child's household or not. The reference date is the birth year and month + X. If a child was in more than one household during that month, the last household composition was chosen. In this case, the household composition is determined on child's birth month and year, i.e. in most cases about 11 years before the Cito-test. Because the oldest children of the education cohorts were born before the data were collected, for some children the composition is coded missing.

Available from 1 October 1994 onwards

Source: Gbahuishoudensbus

primaryhh_child_tminus10 – Which parents in primary household (t-10)

Format: numeric

0	No legal parents
1	Only skill parent
2	Only other legal parent
3	Both parents

Starting from the child's birth year and month, it is annually determined which parent(s) is(/are) in the child's household or not. The reference date is the birth year and month + X. If a child was in more than one household during that month, the last household composition was chosen. In this case, the household composition is determined on child's birth month and year, i.e. in most cases about 10 years before the Cito-test. Because the oldest children of the education cohorts were born before the data were collected, for some children the composition is coded missing.

Available from 1 October 1994 onwards

Source: Gbahuishoudensbus

primaryhh_child_tminus9 – Which parents in primary household (t-9)

Format: numeric

0	No legal parents
1	Only skill parent
2	Only other legal parent
3	Both parents

Starting from the child's birth year and month, it is annually determined which parent(s) is(/are) in the child's household or not. The reference date is the birth year and month + X. If a child was in more than one household during that month, the last household composition was chosen. In this case, the household composition is determined on child's birth month and year, i.e. in most cases about 9 years before the Cito-test. Because the oldest children of the education cohorts were born before the data were collected, for some children the composition is coded missing.

Available from 1 October 1994 onwards
Source: Gbahuishoudensbus

primaryhh_child_tminus8 – Which parents in primary household (t-8)

Format: numeric

0	No legal parents
1	Only skill parent
2	Only other legal parent
3	Both parents

Starting from the child's birth year and month, it is annually determined which parent(s) is(/are) in the child's household or not. The reference date is the birth year and month + X. If a child was in more than one household during that month, the last household composition was chosen. In this case, the household composition is determined on child's birth month and year, i.e. in most cases about 8 years before the Cito-test. Because the oldest children of the education cohorts were born before the data were collected, for some children the composition is coded missing.

Available from 1 October 1994 onwards

Source: Gbahuishoudensbus

primaryhh_child_tminus7 – Which parents in primary household (t-7)

Format: numeric

0	No legal parents
1	Only skill parent
2	Only other legal parent
3	Both parents

Starting from the child's birth year and month, it is annually determined which parent(s) is(/are) in the child's household or not. The reference date is the birth year and month + X. If a child was in more than one household during that month, the last household composition was chosen. In this case, the household composition is determined on child's birth month and year, i.e. in most cases about 7 years before the Cito-test. Because the oldest children of the education cohorts were born before the data were collected, for some children the composition is coded missing.

Available from 1 October 1994 onwards

Source: Gbahuishoudensbus

primaryhh_child_tminus6 – Which parents in primary household (t-6)

Format: numeric

0	No legal parents
1	Only skill parent
2	Only other legal parent
3	Both parents

Starting from the child's birth year and month, it is annually determined which parent(s) is(/are) in the child's household or not. The reference date is the birth year and month + X. If a child was in more than one household during that month, the last household composition

was chosen. In this case, the household composition is determined on child's birth month and year, i.e. in most cases about 6 years before the Cito-test. Because the oldest children of the education cohorts were born before the data were collected, for some children the composition is coded missing.

Available from 1 October 1994 onwards

Source: Gbahuishoudensbus

primaryhh_child_tminus5 – Which parents in primary household (t-5)

Format: numeric

0	No legal parents
1	Only skill parent
2	Only other legal parent
3	Both parents

Starting from the child's birth year and month, it is annually determined which parent(s) is(/are) in the child's household or not. The reference date is the birth year and month + X. If a child was in more than one household during that month, the last household composition was chosen. In this case, the household composition is determined on child's birth month and year, i.e. in most cases about 5 years before the Cito-test. Because the oldest children of the education cohorts were born before the data were collected, for some children the composition is coded missing.

Available from 1 October 1994 onwards

Source: Gbahuishoudensbus

primaryhh_child_tminus4 – Which parents in primary household (t-4)

Format: numeric

0	No legal parents
1	Only skill parent

2	Only other legal parent
3	Both parents

Starting from the child's birth year and month, it is annually determined which parent(s) is(/are) in the child's household or not. The reference date is the birth year and month + X. If a child was in more than one household during that month, the last household composition was chosen. In this case, the household composition is determined on child's birth month and year, i.e. in most cases about 4 years before the Cito-test. Because the oldest children of the education cohorts were born before the data were collected, for some children the composition is coded missing.

Available from 1 October 1994 onwards

Source: Gbahuishoudensbus

primaryhh_child_tminus3 – Which parents in primary household (t-3)

Format: numeric

0	No legal parents
1	Only skill parent
2	Only other legal parent
3	Both parents

Starting from the child's birth year and month, it is annually determined which parent(s) is(/are) in the child's household or not. The reference date is the birth year and month + X. If a child was in more than one household during that month, the last household composition was chosen. In this case, the household composition is determined on child's birth month and year, i.e. in most cases about 3 years before the Cito-test. Because the oldest children of the education cohorts were born before the data were collected, for some children the composition is coded missing.

Available from 1 October 1994 onwards

Source: Gbahuishoudensbus

primaryhh_child_tminus2 – Which parents in primary household (t-2)

Format: numeric

0	No legal parents
1	Only skill parent
2	Only other legal parent
3	Both parents

Starting from the child's birth year and month, it is annually determined which parent(s) is(/are) in the child's household or not. The reference date is the birth year and month + X. If a child was in more than one household during that month, the last household composition was chosen. In this case, the household composition is determined on child's birth month and year, i.e. in most cases about 2 years before the Cito-test. Because the oldest children of the education cohorts were born before the data were collected, for some children the composition is coded missing.

Available from 1 October 1994 onwards

Source: Gbahuishoudensbus

primaryhh_child_tminus1 – Which parents in primary household (t-1)

Format: numeric

0	No legal parents
1	Only skill parent
2	Only other legal parent
3	Both parents

Starting from the child's birth year and month, it is annually determined which parent(s) is(/are) in the child's household or not. The reference date is the birth year and month + X. If a child was in more than one household during that month, the last household composition was chosen. In this case, the household composition is determined on child's birth month and year, i.e. in most cases about 1 year before the Cito-test. Because the oldest children of the education cohorts were born before the data were collected, for some children the composition is coded missing.

Available from 1 October 1994 onwards

Source: Gbahuishoudensbus

primaryhh_child_to – Which parents in primary household (to)

Format: numeric

0	No legal parents
1	Only skill parent
2	Only other legal parent
3	Both parents

Starting from the child's birth year and month, it is annually determined which parent(s) is(/are) in the child's household or not. The reference date is the birth year and month + X. If a child was in more than one household during that month, the last household composition was chosen. In this case, the household composition is determined on child's birth month and year, i.e. in most cases the year in which the Cito-test was administered. Because the oldest children of the education cohorts were born before the data were collected, for some children the composition is coded missing.

Available from 1 October 1994 onwards

Source: Gbahuishoudensbus

primaryhh_child_t1 – Which parents in primary household (t+1)

Format: numeric

0	No legal parents
1	Only skill parent
2	Only other legal parent
3	Both parents

Starting from the child's birth year and month, it is annually determined which parent(s) is(/are) in the child's household or not. The reference date is the birth year and month + X. If a child was in more than one household during that month, the last household composition

was chosen. In this case, the household composition is determined on child's birth month and year, i.e. in most cases about 1 year after the Cito-test. Because the oldest children of the education cohorts were born before the data were collected, for some children the composition is coded missing.

Available from 1 October 1994 onwards

Source: Gbahuishoudensbus

primaryhh_child_t2 – Which parents in primary household (t+2)

Format: numeric

0	No legal parents
1	Only skill parent
2	Only other legal parent
3	Both parents

Starting from the child's birth year and month, it is annually determined which parent(s) is(/are) in the child's household or not. The reference date is the birth year and month + X. If a child was in more than one household during that month, the last household composition was chosen. In this case, the household composition is determined on child's birth month and year, i.e. in most cases about 2 years after the Cito-test. Because the oldest children of the education cohorts were born before the data were collected, for some children the composition is coded missing.

Available from 1 October 1994 onwards

Source: Gbahuishoudensbus

primaryhh_child_t3 – Which parents in primary household (t+3)

Format: numeric

0	No legal parents
1	Only skill parent

2	Only other legal parent
3	Both parents

Starting from the child's birth year and month, it is annually determined which parent(s) is(/are) in the child's household or not. The reference date is the birth year and month + X. If a child was in more than one household during that month, the last household composition was chosen. In this case, the household composition is determined on child's birth month and year, i.e. in most cases about 3 years after the Cito-test. Because the oldest children of the education cohorts were born before the data were collected, for some children the composition is coded missing.

Available from 1 October 1994 onwards

Source: Gbahuishoudensbus

primaryhh_child_t4 – Which parents in primary household (t+4)

Format: numeric

0	No legal parents
1	Only skill parent
2	Only other legal parent
3	Both parents

Starting from the child's birth year and month, it is annually determined which parent(s) is(/are) in the child's household or not. The reference date is the birth year and month + X. If a child was in more than one household during that month, the last household composition was chosen. In this case, the household composition is determined on child's birth month and year, i.e. in most cases about 4 years after the Cito-test. Because the oldest children of the education cohorts were born before the data were collected, for some children the composition is coded missing.

Available from 1 October 1994 onwards

Source: Gbahuishoudensbus

primaryhh_child_t5 – Which parents in primary household (t+5)

Format: numeric

0	No legal parents
1	Only skill parent
2	Only other legal parent
3	Both parents

Starting from the child's birth year and month, it is annually determined which parent(s) is(/are) in the child's household or not. The reference date is the birth year and month + X. If a child was in more than one household during that month, the last household composition was chosen. In this case, the household composition is determined on child's birth month and year, i.e. in most cases about 5 years after the Cito-test. Because the oldest children of the education cohorts were born before the data were collected, for some children the composition is coded missing.

Available from 1 October 1994 onwards

Source: Gbahuishoudensbus

primaryhh_child_t6 – Which parents in primary household (t+6)

Format: numeric

0	No legal parents
1	Only skill parent
2	Only other legal parent
3	Both parents

Starting from the child's birth year and month, it is annually determined which parent(s) is(/are) in the child's household or not. The reference date is the birth year and month + X. If a child was in more than one household during that month, the last household composition was chosen. In this case, the household composition is determined on child's birth month and year, i.e. in most cases about 6 years after the Cito-test. Because the oldest children of the education cohorts were born before the data were collected, for some children the composition is coded missing.

Available from 1 October 1994 onwards

Source: Gbahuishoudensbus

dateofdeath_skillparent – Date of death skill parent

Format: numeric

The skill parent's date of death. If the skill parent is still alive, the variable is coded as missing value.

Available from 1995 onwards

Source: vrlgbaoverlijdentab

dateofdeath_ otherparent – Date of death other legal parent

Format: numeric

The other legal parent's date of death. If the other parent is still alive, the variable is coded as missing value.

Available from 1995 onwards

Source: vrlgbaoverlijdentab

6.2.10 Grandparental characteristics

All grandparental characteristics refer to the parents of the skill parent.

highesteducationgrandmother – Highest education of grandmother

---

Format: numeric

0	Primary education
1	Lower secondary education
2	Upper secondary education
3	Tertiary education

One of the grandparents of the skill parent was asked in the questionnaire about the highest level of education attained as well as that of the partner. This information is used to measure the highest education of the grandmother. As the answer categories differed across the education cohorts, the original categories were harmonized in the following categories: primary education, lower secondary education, upper secondary education and tertiary education. Note that in the 1983 education cohort, some qualifications at upper secondary education were not clearly included (CBS, 1991b). If there is no valid information on the grandmother's education, the variable is coded missing.

Available for the 1977, 1982 and 1989 education cohorts
Sources: SMVO, SLVO and VOCL

highesteducationgrandfather – Highest education of grandfather

Format: numeric

0	Primary education
1	Lower secondary education
2	Upper secondary education
3	Tertiary education

One of the grandparents of the skill parent was asked in the questionnaire about the highest level of education attained as well as that of the partner. This information is used to measure the highest education of the grandfather. As the answer categories differed across the education cohorts, the original categories were harmonized in the following categories: primary education, lower secondary education, upper secondary education and tertiary education. Note that in the 1983 education cohort, some qualifications at upper secondary education were not clearly included (CBS, 1991b). If there is no valid information on the grandfather's education, the variable is coded missing.

Available for the 1977, 1982 and 1989 education cohorts
Sources: SMVO, SLVO and VOCL

highesteducationgrandparents – Highest education of grandparents

Format: numeric

0	Primary education
1	Lower secondary education
2	Upper secondary education
3	Tertiary education

The highest education of the grandparents refers to the highest level of education attained by the grandmother and/or grandfather (max). The distribution of the highest obtained education of the grandparents for the 1982 education cohort differs from the distributions for the 1977 and 1989 education cohorts. This was related to a different way of observing grandparent's education in the 1983 cohort where some upper secondary educational qualifications were not clearly included (ref). If there is no valid information for the grandmother and -father, the variable is coded as missing.

Available for the 1977, 1982 and 1989 education cohorts
Sources: SMVO, SLVO and VOCL

socialstatusgrandmother – Social status of grandmother

Format: numeric

0	Blue collar workers
1	Employer without staff
2	Employer with staff
3	Lower white-collar workers
4	Middle white-collar workers
5	Professionals
6	Other (unemployed and out of labor force)

The social status of the grandmother was measured in broad categories. It was constructed using multiple questions from the questionnaire. First, there was a question on the working status. If the grandmother did not work, their main status was asked. If the grandmother

worked, the status in employment (i.e., self-employed, employed or working in family business), occupation, economic sector in employment and supervisory status was asked. The grandparent who filled in the questionnaire was asked to fill in these questions also for the partner. This variable is not available for the 1977 education cohort.

Available for the 1982 and 1989 education cohorts

Sources: SLVO and VOCL

socialstatusgrandfather – Social status of grandfather

Format: numeric

0	Blue collar workers
1	Employer without staff
2	Employer with staff
3	Lower white-collar workers
4	Middle white-collar workers
5	Professionals
6	Other (unemployed and out of labor force)

The social status of the grandfather was measured in broad categories. It was constructed using multiple questions from the questionnaire. First, there was a question on the working status. If the grandfather did not work, their main status was asked. If the grandfather worked, the status in employment (i.e., self-employed, employed or working in family business), occupation, economic sector in employment and supervisory status was asked. The grandparent who filled in the questionnaire was asked to fill in these questions also for the partner. This variable is not available for the 1977 education cohort.

Available for the 1982 and 1989 education cohorts

Sources: SLVO and VOCL

socialstatusgrandparents – Social status of grandparents

Format: numeric

0	Blue collar workers
1	Employer without staff
2	Employer with staff
3	Lower white-collar workers
4	Middle white-collar workers
5	Professionals
6	Other (unemployed and out of labor force)

The social status of the grandparents refers to the highest social status of the grandmother and/or grandfather (max). The social status is determined at the start of the education cohort studies and is based on multiple questions. First, there was a question on the working status. If the grandparent did not work, their main status was asked. If the grandparent worked, the status in employment (i.e., self-employed, employed or working in family business), occupation, economic sector in employment and supervisory status was asked. The grandparent who filled in the questionnaire was asked to fill in these questions also for the partner.

Available for the 1977, 1982 and 1989 education cohorts
Sources: SMVO, SLVO and VOCL

agebirthgrandmother – Age of the grandmother at the birth of the skill parent.

Format: numeric

0	<27
1	Between 28-32 years
2	Between 33-37 years
3	38 and older

Age group of grandmother at the birth of the skill parent.

Available for the 1977, 1982 and 1989 education cohorts

Sources: SMVO, SLVO and VOCL

ageatbirthgrandfather – Age of the grandfather at the birth of the skill parent.

Format: numeric

0	<27
1	Between 28-32 years
2	Between 33-37 years
3	38 and older

Age group of grandfather at the birth of the skill parent.

Available for the 1977, 1982 and 1989 education cohorts

Sources: SMVO, SLVO and VOCL

6.2.11 Cultural capital indicators (grand)parents

library_edu82_skillparent – Library membership of skill parent around age 12 (only for education cohort 1982).

Format: numeric

0	No
1	Yes

The grandparent who filled in the questionnaire was asked at the beginning of the 1982 cohort study whether the skill parent was a member of the library. This variable is only available for the 1982 education cohort. Child-parent pairs from the other education cohorts are coded missing.

Available for the 1982 education cohorts

Sources: SLVO

reading_edu82_skillparent – Average time per week the skill parent around age 12 spends reading books and newspapers (only for education cohort 1982).

Format: numeric

0	Almost never
1	Less than 2 hours
2	2 to 5 hours
3	5 to 10 hours
4	More than 10 hours

The grandparent who filled in the questionnaire was asked at the beginning of the 1982 cohort study how much time, on average, the skill parent reads per week (books and newspapers). The response categories range from almost never to more than 10 hours. This variable is only available for the 1982 education cohort. Child-parent pairs from the other education cohorts are coded missing.

Available for the 1982 education cohorts
Sources: SLVO

readbooks_edu89_grandmoth – Average number of books grandmother reads per month when skill parent was aged 12 (only for education cohort 1989).

Format: numeric

The grandmother was at the beginning of the 1989 cohort study asked: "On average, how many books do you read per month?" This included the following response options: none; 1 book per month; 2 books per month; more than 2 books per month, namely .... The values range from 0 to 90. In addition, there is a coding 96, which indicates that although the answer option "more than 2 books" was circled, no number was specified. This variable is only available for the 1989 education cohort. Child-parent pairs from the other education cohorts are coded missing.

Available for the 1989 education cohorts

Sources: VOCL

readbooks_edu89_grandfath – Average number of books grandfather reads per month when skill parent was aged 12 (only for education cohort 1989).

Format: numeric

The grandfather was at the beginning of the 1989 cohort study asked: "On average, how many books do you read per month?" This included the following response options: none; 1 book per month; 2 books per month; more than 2 books per month, namely .... The values range from 0 to 90. In addition, there is a coding 96, which indicates that although the answer option "more than 2 books" was circled, no number was specified. This variable is only available for the 1989 education cohort. Child-parent pairs from the other education cohorts are coded missing.

Available for the 1989 education cohorts

Sources: VOCL

buybooks_edu89_grandmoth – Average number of books grandmother bought per year when skill parent was aged 12 (only for education cohort 1989).

Format: numeric

The grandmother was at the beginning of the 1989 cohort study asked: "On average, how many books do you buy per year?" It was noted that children's books and children's textbooks should not be included. The response options were: none, 1 book per year, 2 books per year, 3 books per year, 4 books per year, more than 4 books per year, namely.... The values run from 0 to 90. In addition, there is a coding 96, which indicates that although the answer option "more than 4 books" was circled, no number was specified. This variable is only available for the 1989 education cohort. Child-parent pairs from the other education cohorts are coded missing.

Available for the 1989 education cohorts

Sources: VOCL

buybooks_edu89_grandfath – Average number of books grandfather bought per year when skill parent was aged 12 (only for education cohort 1989).

Format: numeric

The grandfather was at the beginning of the 1989 cohort study asked: "On average, how many books do you buy per year?" It was noted that children's books and children's textbooks should not be included. The response options were: none, 1 book per year, 2 books per year, 3 books per year, 4 books per year, more than 4 books per year, namely.... The values run from 0 to 90. In addition, there is a coding 96, which indicates that although the answer option "more than 4 books" was circled, no number was specified. This variable is only available for the 1989 education cohort. Child-parent pairs from the other education cohorts are coded missing.

Available for the 1989 education cohorts

Sources: VOCL

numberofbookhh_edu89 – Number of books at home when skill parent was aged 12 (only education cohort 1989).

Format: numeric

0	No books in the household
1	1-5 books
2	6-10 books
3	11-20 books
4	21-40 books
5	41-60 books
6	61-100 books
7	101-200 books
8	201-300 books

9	301-500 books
10	501-1000 books
11	More than 1000 books

The grandparent was asked, "Approximately how many books are in your home?" It was noted that children's books and textbooks should not be included. This variable is only available for the 1989 education cohort. Child-parent pairs from the other education cohorts are coded missing.

Available for the 1989 education cohorts

Sources: VOCL

7 References

Blommers, A. J. (1983). *Het onderzoek schoolloopbaan en herkomst bij het voorgezet onderwijs (SLVO-1982)*. Voorburg: CBS.

Bosker, R. J., & van der Velden, R. K. W. (1989). Schooleffecten en rendementen. In D. van Damme & J. Dronkers (Eds.), *Jongeren in school en beroep*. Amsterdam: Swets & Zeitlinger.

CBS. (1982). *Schoolloopbaan en herkomst van leerlingen bij het voortgezet onderwijs 1977. Editie 2: cohort 1977*. Voorburg/Heerlen: CBS.

CBS. (1988). *Schoolloopbaan en herkomst van leerlingen bij het voortgezet onderwijs 1982. Editie 1: Schoolkeuze*. Voorburg/Heerlen: CBS.

CBS. (1991a). *Schoolloopbaan en achtergrond van leerlingen 1989 editie. Deel 1*. Voorburg/Heerlen: CBS.

CBS. (1991b). *Schoolloopbaan en herkomst van leerlingen bij het voortgezet onderwijs: vergelijking tussen de cohorten 1977 en 1982*. Voorburg/Heerlen: CBS.

CBS. (2022). *Standaard Onderwijsindeling 2021*. Den Haag/Heerlen: CBS.

CvTE. (2015). *Verantwoording - Centrale Eindtoets PO*. Utrecht: CvTE.

Driessen, G., & van der Werf, G. (1992). *Het functioneren van het voortgezet onderwijs : de positie van leerlingen in het eerste leerjaar*. Groningen/Nijmegen: RION/ITS.

Haelermans, C., Huijgen, T., Jacobs, M., Levels, M., Van Der Velden, R., Van Vugt, L., & Van Wetten, S. (2020). Using Data to Advance Educational Research, Policy, and Practice: Design, Content, and Research Potential of the Netherlands Cohort Study on Education. *European Sociological Review, 36*(4). doi:10.1093/esr/jcaa027

Hermans, H. J. M. (1967). *Motivatie en prestatie.* Swets & Zeitlinger, Amsterdam.

Hustinx, P. W. J., Kuyper, H., van der Werf, M. P. C., & Zijsling, D. (2005). *Beschrijving leerlingbestanden VOCL'89*. Groningen: GION, Gronings Instituut voor onderzoek van onderwijs, opvoeding en ontwikkeling.

Jacobs, M., van der Velden, R., & van Vugt, L. (2021). *Does lowering the bar help? Results from a natural experiment in high-stakes testing in Dutch primary education*. Retrieved from Maastricht: https://cris.maastrichtuniversity.nl/en/publications/b41084ob-fbfo-461d-8159-e84fbbd223f6

Kuyper, H., & Van der Werf, M. P. C. (2007). *De resultaten van VOCL'89, VOCL'93 EN VOCL'99: vergelijkende analyses van prestaties en rendement*. Groningen: Rijksuniversiteit Groningen: Pedagogische Wetenschappen en Onderwijskunde.

UNESCO. (2006). *International Standard Classification of Education ISCED 1997*. Paris: UNESCO.

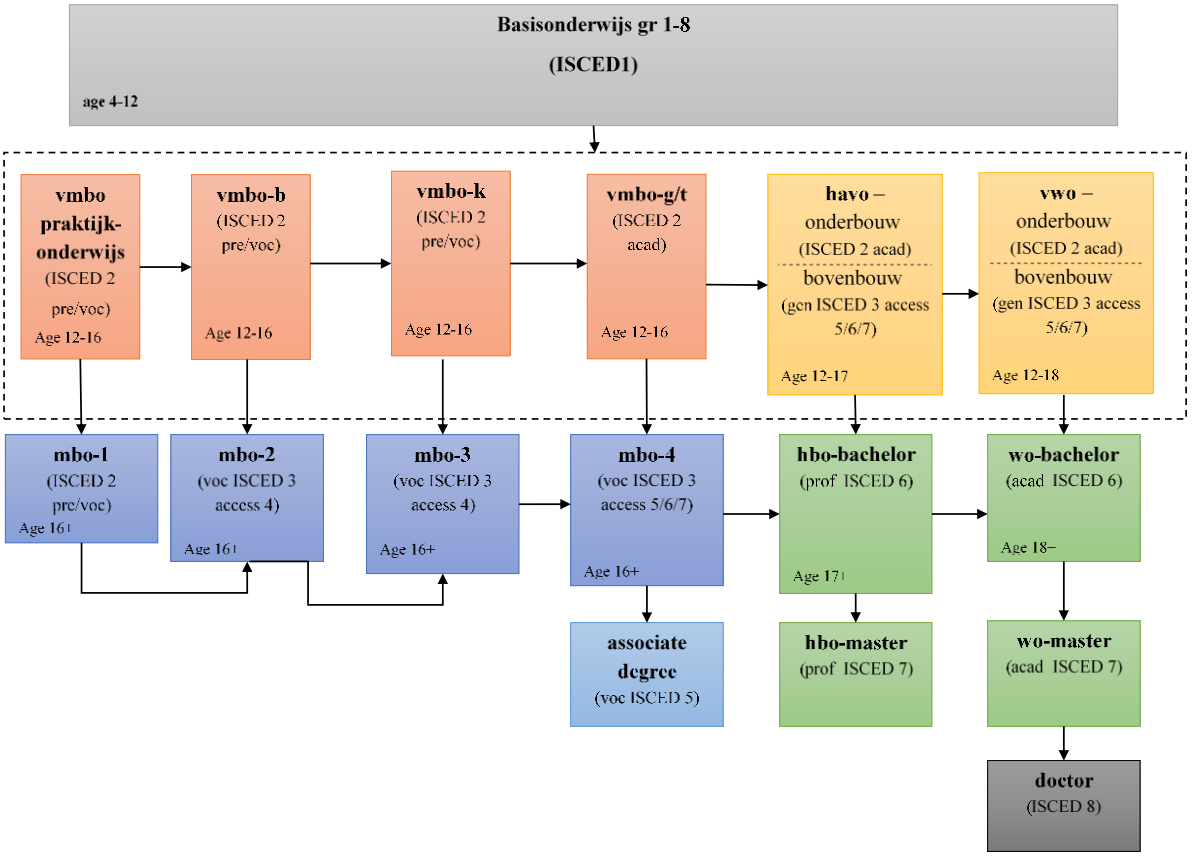
van Boxtel, H., Engelen, R., & de Wijs, A. (2011). *Wetenschappelijke verantwoording van de Eindtoets Basisonderwijs 2010*. Arnhem: Cito.

8 Appendix

8.1 Dutch education system

To interpret the education categories in the ITS dataset, it is useful for (international) researchers to have an overview of the Dutch education system. Figure 3 provides a schematic overview of the Dutch education system including the International Standard Classification of Education (ISCED) labels.

Figure 3. Schematic overview of the Dutch education system with ISCED-2011 labels between brackets



Formal education is compulsory in the Netherlands from the age of 5 to 18 years. Pupils are, however, allowed to enter primary education (in Dutch 'basisschool') from the age of 4. The Dutch education system is a so-called early stratifying system, where students are allocated to different tracks in secondary education after the final year of primary education (grade 6, at age 12). The allocation is based on two factors: the performance of students on a national test, often the so-called Central Institute for Test Development (CITO) test, and the advice of the primary school teacher.

Pupils can attend preparatory vocational secondary education (in Dutch called 'voorbereidend middelbaar beroepsonderwijs (vmbo)') which is further divided in four tracks. The lowest track in preparatory vocational education is called vmbo praktijkonderwijs, followed by vmbo basisberoepsgerichte leerweg (vmbo-b), vmbo kaderberoepsgerichte leerweg (vmbo-k), and vmbo gemengde en theoretische leerweg (vmbo-g/t). The length of these tracks is 4 years and enable access to upper secondary vocational education (in Dutch 'middelbaar beroepsonderwijs (mbo)'). The structure of upper secondary vocational education corresponds with the different tracks in preparatory vocational education (mbo-1, mbo-2, mbo-3, and mbo-4).

After primary school, pupils can also attend general secondary education (in Dutch 'hoger algemeen vormend onderwijs (havo)'). This track takes 5 years to complete and allows access to higher professional education (in Dutch 'hoger beroeps onderwijs (hbo)') offered at universities of applied sciences. The highest track of secondary education is academically preparatory education (in Dutch 'voorbereidend wetenschappelijk onderwijs (vwo)'). This track takes 6 years to complete and allows access to research-oriented higher education (in Dutch 'wetenschappelijk onderwijs (wo)') offered by academic universities. Educational programmes at applied and academic universities lead to either bachelor's or master's diplomas, albeit hbo bachelor programmes have a longer duration (4 years) than wo bachelor programmes (3 years).

A characteristic of the education system in the Netherlands is that mobility between and stacking of educational levels is allowed. This is shown in Figure 3 with the different arrows between educational levels. Note, however, that not all possible educational pathways are included in the figure, since this would not be beneficial to the clarity of the figure.

8.2 The inclusion of Dutch education in ISCED 2011 labels

In Table 10, an overview is given of all Dutch educational qualifications that are included in the ITS dataset with the corresponding (ISCED 2011) labels and broad category. The broad categories are divided in low, medium and high educated. In contrast with Figure 3, in which only the most recent qualifications are included, Table 10 also includes qualifications that no longer exist. This is necessary because the education cohort respondents were in education in the 1970s and 1980s before some major educational reforms.

Table 10. Overview of the Dutch educational qualifications in the ISCED 2011 and broad categories

Broad categories	Label	ISCED 2011 label	Qualifications in Dutch included in ITS dataset
≤ o ⌐	Primary education	ISCED 1	basisonderwijs gr 1-8

	(Pre-)Vocational or non-academic general lower secondary	ISCED 2 pre/voc	vmbo praktijkonderwijs, ibo
			vmbo-b (basis), vmbo-k (kader), lbo, vbo
			mbo-1
Medium	Academic/higher track general lower secondary	ISCED 2 acad	mavo, vmbo-g (gemengde leerweg), vmbo-t (theoretisch), havo-onderbouw, vwo-onderbouw
	Vocational upper secondary, access to 4 only	voc ISCED 3 access 4	mbo-2, kort mbo 2-jarig (kmbo)
			mbo-3
	Vocational upper secondary, access to 5/6/7	voc ISCED 3 access 5/6/7	mbo-4
	General upper secondary, access to 5/6/7	gen ISCED 3 access 5/6/7	havo-bovenbouw
			vwo-bovenbouw
High	Vocational sub-degree level	voc ISCED 5	hbo associate degree
	Professional Bachelor's level	prof ISCED 6	hbo, hbo-bachelor
	Academic Bachelor's level	acad ISCED 6	wo, wo-bachelor
	Professional Master's level	prof ISCED 7	hbo-master
	Academic Master's level	acad ISCED 7	wo-master
	Doctorate	ISCED 8	doctor, doctoraat

