NEPS
National Educational Panel Study

Research Data

Additional Study Baden Wuerttemberg (BW) SUF Version 3.1.0 Anonymization Procedures

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Bamberg, 2016

1 Preamble

This documentation gives an exhaustive explanation of all disclosure risk minimization techniques applied before dissemination to the Scientific Use File (SUF) of Starting Cohort (SC) BW, version 3-1-0 (doi:10.5157/NEPS:BW:3.1.0). For a quick reference to all variables and datafiles which are affected in detail and on which level you will find the full information, please skip forward to appendix section A.1. If you have inquiries or need further information not covered in this document please feel free to contact the research data center at fdz@lifbi.de. Please note the following general remarks:

- in all tables, the anonymization suffix (`_O, _R, _D`) was removed from the variable name to enhance readability and remove duplicates. To find a specific variable in the data file, add the corresponding suffix or use a wildcard.
- to ensure a data-consistent documentation, all tables in this document have been produced on basis of the SUF data. Variable labels in the data have been cut off at 80 characters, which inherits to this documentation.
- as additional documentation, a *Semantic Data Structure File* is available. This is the complete SUF where all cases have been removed. Feel free to use this as a first overview to the data in cases you do not have access to the real data (e.g. you are interested in data files which are available OnSite only). You are well advised to use this preparing your syntax *before* initiating your travel to our OnSite facility. You find it freely available on the documentation page to this SUF:

  `www.neps-data.de > Data Center > Data and Documentation > BW > Documentation`

1.1 Specifications

To ensure the best possible confidentiality protection of individuals and individual micro data, the National Educational Panel Study complies with strict international standards. To achieve this, a *portfolio approach*, based on the ideas of Lane, Heus, and Mulcahy, 2008, has been established. This approach interlocks data security mechanism on five different levels, while the actual data modification (i.e. anonymization) is one of them. For further information, see the oncoming publication Koberg, 2016. Operationalizing this modification procedure, it can be abstracted to the following two criteria:

- the disseminated data was transferred to so called *de facto anonymous data*. Identifiable information is coarsened or cut off and kept securely to minimize the risk of statistical disclosure.
- the use of data is strictly confidential and for statistical purposes only. The closed contract only grants access to members of the scientific community. This contract has a vast amount

of legal stipulations, one of them being a large fine which applies for the realization of re-identification on purpose. Therefore, the disseminated data is highly protected by law and allows a more flexible range of available data.

To pick up the latter, the NEPS has made a huge effort regarding legal regulations to offer as much analysis power of data as possible. This *paradigm of information esteem* reveals the fact that conducted measures of statistical disclosure control are few. Also, if there really was a need for modification, only non-perturbative methods were used.

1.2 Onion-shaped model

The NEPS grants the user three different modes of data access: (1) *OnSite*, which stands for the opportunity to use the secured infrastructure made available at the LIfBi in Bamberg, (2) *RemoteNEPS*, which is a progressive remote access technology providing a virtual desktop, and finally (3) *Download*, indicating the possibility to fetch data via a secure web portal.

These given access modes have been originated to allow anonymization routines for a subtle differentiation of information. The three resulting levels of anonymization define as follows:

- data provided OnSite is generally not further anonymized. However, even those data was rendered *de facto anonymous*, for no disclosure risk to persist. All information contained remains completely sane. Although users have to deal with limited possibilities of data access (i.e. supervised import and export of their results), they are free to work with all data available in a secure environment.
- access via RemoteNEPS is considered equivalent to OnSite, hence most of the data stays complete.
- as Download is assumed to be the most hazardous access mode[1], some more anonymization techniques are done to the dataset.

Obviously this approach results in three different versions of all involved datasets. To enable a consistent structure, these data files always contain the entire set of variables; it is their content which differs through the three levels.

As normally there is no need to resign aggregated variables in the higher levels (i.e. OnSite or RemoteNEPS), those are already defined as a surplus to the original variable in the OnSite-version. Stepping down to RemoteNEPS, the content of related variables too sensitive for this level is overwritten with an exclusive missing code – an operation which we define as *purging*. Note that system missing values are not affected, allowing the user to differ between value existence and nonexistence. This still is a valuable additional information. The same logic applies to the transition from RemoteNEPS to Download.

1 'hazardous' in terms of: the downloaded content is no longer under physical control of the LIfBi

While there is no explicit documentation to this fact, it should remain clear that this procedure accumulates, i.e. purged content under RemoteNEPS is therefore neither included in RemoteNEPS nor in Download.

This *onion-shaped model* provides both ease of (1) use of different sensitivity models (e.g. preparing an analysis using the Download dataset and conducting it afterwards using the OnSite-data) and (2) documentation, for the subject of documentation is the most sensitive level (OnSite), with RemoteNEPS and Download levels being a subset of these data.

The fourth layer *master* depicted below contains every material which is needed during data processing by the NEPS, but is not meant for the scientific community to be usable.

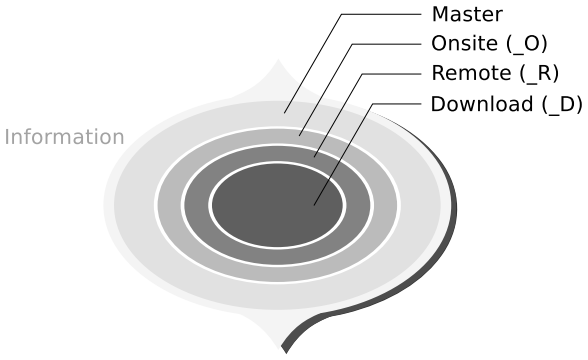

Figure 1: Onion-shaped model defining the different anonymization levels

Technically, this model realizes in a single letter suffixed to dataset and variable names. All datasets available OnSite only are marked with an additional **_O**, those available via RemoteNEPS with **_R** and Download files with **_D**. The same procedure applies when it comes to variable differentiation. A variable which is available unaltered OnSite only is suffixed with **_O**. In RemoteNEPS-access or Download, this variable is still present but purged. If there is an alternate version (e.g. with coarsened content) for RemoteNEPS (suffix **_R**) or Download (suffix **_D**), those can be used. As said before, these are already integrated in the OnSite version. See section 3 for some examples (especially for a practical explanation what is meant by *purging* here).

2 Conducted measures

Keeping the usability and the paradigm of information esteem in mind, only very few alterations are actually done to the dataset. Please note that all information is still available somewhere and that only RemoteNEPS and (mainly) the Download version are constraint in this matter. In fact, in this SUF, only 74 out of 1549 variables are modified in some way.

The following table gives an explanatory overview of all measures conducted. The remainder of this section gives a more detailed description of those topics.

Table 1: Availability of sensitive data

Topic	OnSite	RemoteNEPS	Download
String variables	anonymized	n/a	n/a
International[1]	full data	full data	collapsed
Regional (National)	restricted	restricted	restricted
Institutional context	full data	anonymized	n/a
Macro indicators	accessible	n/a	n/a
Others	full data	full data	aggregated

[1] international geographical information (e.g., nation states, national languages)

2.1 String variables

All variables containing actual text and whose type is therefore string are purged in the RemoteNEPS version. The information remains accessible OnSite. However, you should be aware that in the majority of cases, text entries have been recoded into derived variables (usually suffixed with `_g1`, `_g2`, etc.), which contain the information collected. Those variables are available in all three levels, only the actual text entry is available OnSite only. The text entries have been reviewed by staff to ensure that absolutely no reidentificational material is included. To indicate the availability of those variables OnSite only, the variable names have been suffixed with an additional `_0`.

Table 2: All string variables; those are only available onsite

file	variable	label
xInstitution	e16a	Estimation further aspects of the educational reform 1
xInstitution	e16b	Estimation further aspects of the educational reform 2
xInstitution	e16c	Estimation further aspects of the educational reform 3
xInstitution	g16a	Estimation further aspects of the educational reform 1
xInstitution	g16b	Estimation further aspects of the educational reform 2
xInstitution	g16c	Estimation further aspects of the educational reform 3
xInstitution	h14a	Estimation further aspects of the educational reform 1
xInstitution	h14b	Estimation further aspects of the educational reform 2
xInstitution	h14c	Estimation further aspects of the educational reform 3
xInstitution	h28d	G9 school trial - Decision - text field Other
xInstitution	h34b	G9 school trial - Model - Other
xInstitution	h7e	Decision G8-old curricula - other, specifically

(...)

Table 2: (continued)

file	variable	label
xInstitution	m16a	Estimation further aspects of the educational reform 1
xInstitution	m16b	Estimation further aspects of the educational reform 2
xInstitution	m16c	Estimation further aspects of the educational reform 3
xTarget	t40i	Reasons for G8-old/G9 switch - open entry
xTarget	t61a	Professional training - subject 1
xTarget	t61b	Professional training - subject 2
xTarget	t61c	Professional training - subject 3
xTarget	t62aa	Teaching post - other - filter question

2.2 International: countries, languages, and nationalities

All information corresponding to international localization, nationality or languages is completely available only OnSite or via RemoteNEPS. Variables comprised in the Download SUF are aggregated into larger categories – mainly allocating continents and, in detail, states in Europe. For a complete recoding map of all countries/languages/nationalities, see appendix section A.2. This recoding rule was initially based on the methods used for the IAB ALWA study (Antoni et al., 2010) and the recommendations given by Müller, Blien, and Knoche, 1991. It has been updated and adjusted to better serve the data user's needs. Please note that this aggregated version is generated not during the anonymization process, but as an additional derived variable. Therefore, you do not find a variable suffixed `_D`, but two derived variables (suffixed `_g1` and `_g2`), where only the first has an anonymization suffix (i.e. `_g1R`), indicating that the full information is available in RemoteNEPS only.

Table 3: All variables which are affected by country/language/nationality aggregation

file	variable	label
xTarget	t80a_g1	Country of own birth
xTarget	t80a_g2	Country of birth itself (categorized)
xTarget	t84a_g1	Country of birth - mother
xTarget	t84a_g2	country of birth mother (categorized)
xTarget	t84b_g1	Country of birth - father
xTarget	t84b_g2	country of birth - father (categorized)
xTarget	t85a_g1	Country of birth of your maternal grandparents - maternal grandmother
xTarget	t85a_g2	country of birth of your maternal grandparents - the mother (categorized)
xTarget	t85b_g1	country of birth of your maternal grandparents - the father
xTarget	t85b_g2	country of birth of your maternal grandparents - the father (categorized)

(...)

Table 3: (continued)

file	variable	label
xTarget	t86a_g1	Country of birth of your paternal grandparents - paternal grandmother
xTarget	t86a_g2	country of birth of your paternal grandparents - the mother (categorized)
xTarget	t86b_g1	Country of birth of your paternal grandparents - paternal grandfather
xTarget	t86b_g2	country of birth of your paternal grandparents - the father (categorized)
xTarget	t83a_g2	mother tongue 1
xTarget	t83a_g3	mother tongue 2
xTarget	t83a_g4	mother tongue 3
xTarget	t89a_g2	mother tongue of mother 1
xTarget	t89a_g3	mother tongue of mother 2
xTarget	t89a_g4	mother tongue of mother 3
xTarget	t90a_g2	mother tongue of father 1
xTarget	t90a_g3	mother tongue of father 2
xTarget	t90a_g4	mother tongue of father 3
xTarget	t91_g2	other language 1
xTarget	t91_g3	other language 2
xTarget	t91_g4	other language 3
xTarget	t82a_g2	country of citizenship 1
xTarget	t82a_g3	country of citizenship 2
xTarget	t82a_g4	country of citizenship 3

2.3 Regional localization

For all variables which register a regional position – such as places of birth, work, school, or residence – the following variables have been generated (if possible):

- an indicator for West Germany and East Germany (including Berlin)
- the federal state for this location,
- the administrative region, and
- the administrative district,

the latter two only available in RemoteNEPS. Regional localization below this level is not directly available. If you have need to merge data using a regional key below those levels, please contact the LIfBi RDC (fdz@lifbi.de), which may deal with this matter for you.

Table 4: All regional variables which are only available in RemoteNEPS

file	variable	label
xTarget	t97_g3	Probable place of study (RS region)
xTarget	t97_g4	Probable place of study (RS administrative district)

2.4 Institutional characteristics

In this Starting Cohort, also information about institutions is available. A special focus of anonymization was directed to protection of institutional data, i.e. information about kindergarten, schools, and universities, but also educators and teachers. To minimize the risk of re-identification, this data is only available in RemoteNEPS. This includes the complete datafile(s)

`xInstitution`,

but may also affect basic structural details about the group or class (e.g. size of class) in other datafiles. Furthermore, personal information about educators and teachers is treated more securely. You will find detailed information about these subjects from RemoteNEPS onward. Refer to section 2.5 to see the affected variables.

2.5 Other variables

All other variables affected by anonymization and not classifiable in the previous groups are listed below. In the first table (table 5), you find all variables which were aggregated in the Download-SUF. An additional table below each entry displays the values of the variable, both as found in RemoteNEPS (if table column is empty, the variable is numeric and does not have a value label scheme) and in Download.

The second table (table 6) contains all variables which are not aggregated, but purged completely in the Download-version, that is, there is no aggregated version.

Table 5: Other variables which were aggregated in the Download-SUF (aggregation is also stated)

[file] `variable`: label

Table 6: Other variables which were purged in the Download-SUF

file	variable	label
xTarget	t39	Grade in which you switched to the G9 curriculum

3 Examples

The following examples compare variables from some selected topics. On the left side, you see these variables as they can be found in the RemoteNEPS-SUF (i.e., this is the variant of the variable which contains the full information). On the right side, you find the same variables, but from the Download-version of the SUF, that is, the aggregated or purged variant of the variable. This illustrates the anonymization applied.

3.1 Number of employees

The first example is a variable collected during the interview of Starting Cohort 6 (Adults). The question further investigates the occupational periphery of employers, while here, this employer is the mother of the respondent. On the left, you see the complete information as found in the RemoteNEPS-SUF. This variable is collected using seven classes, where the last four are sparsely filled (variable `t731406_R`, table on the lower left). Because of this, those four codes have been recoded into one category (»*20 and more*«) and a new variable is generated (`t731406_D`, upper left). In the Download-SUF, you find this aggregated variable unaltered (upper right). The variable `t731406_R` rich in content was purged, though. You see that all meaningful codes have been recoded to »*-53 Anonymized*«. Note that the missing code »*-54 Missing by design*« is transported to the Download-SUF unmodified, so you already can derive the actual *statistical power* of this variable.

RemoteNEPS

```
SC6_pTarget_R_5-1-0.dta
(NEPS SUF, SC6 5.1.0 (remote); doi:10.5157/NEPS:SC6:5.1.0)

t731406_D -- Number of mother's employees (categorized)
-----------------------------------------
                              |      Freq.
------------------------------+----------
Valid   -98 Don't know        |          7
        -97 Refused           |          1
        -54 Missing by design |      36700
        0   none              |        423
        1   1 to 4            |        330
        2   5 to 9            |         64
        3   10 to 19          |         22
        4   20 and more       |         28
        Total                 |      37575
Missing .                     |      15982
Total                         |      53557
-----------------------------------------

t731406_R -- Number of mother's employees
-----------------------------------------
                              |      Freq.
------------------------------+----------
Valid   -98 Don't know        |          7
        -97 Refused           |          1
        -54 Missing by design |      36700
        0   None              |        423
        1   1 to 4            |        330
        2   5 to 9            |         64
        3   10 to 19          |         22
        4   20 to 49          |         21
        5   50 to 99          |          3
        6   100 to 199        |          3
        7   200 to 249        |          1
        Total                 |      37575
Missing .                     |      15982
Total                         |      53557
-----------------------------------------
```

Download

```
SC6_pTarget_D_5-1-0.dta
(NEPS SUF, SC6 5.1.0 (download); doi:10.5157/NEPS:SC6:5.1.0)

t731406_D -- Number of mother's employees (categorized)
-----------------------------------------
                              |      Freq.
------------------------------+----------
Valid   -98 Don't know        |          7
        -97 Refused           |          1
        -54 Missing by design |      36700
        0   none              |        423
        1   1 to 4            |        330
        2   5 to 9            |         64
        3   10 to 19          |         22
        4   20 and more       |         28
        Total                 |      37575
Missing .                     |      15982
Total                         |      53557
-----------------------------------------

t731406_R -- Number of mother's employees
-----------------------------------------
                              |      Freq.
------------------------------+----------
Valid   -54 Missing by design |      36700
        -53 Anonymized        |        875
        Total                 |      37575
Missing .                     |      15982
Total                         |      53557
-----------------------------------------
```

3.2 Countries (aggregated list)

To illustrate the anonymization of countries, first have a look at this variable from Starting Cohort 6 (Adults). The information (»*respondent's country of birth*«) was surveyed during the interview. The collected information was recoded during data processing to different derived variables. The first of those is variable `t405010_g1R`, which contains the complete list of countries (lower left, output is shortened to enhance readability). Also, a second variable `t405010_g2` was generated, using a more coarse list. This is helpful if some information was collected, but it is too inaccurate to identify the country (e.g., if someone states he was born in North America, you do not know if he meant U.S. or Canada). This second variable is transported to the Download-SUF unaltered (upper right), which means it in some way represents the anonymized version. The first variable `t405010_g1R` with the full information is purged in the Download-SUF.

RemoteNEPS

```
SC6_pTarget_R_5-1-0.dta
(NEPS SUF, SC6 5.1.0 (remote); doi:10.5157/NEPS:SC6:5.1.0)

t405010_g2 -- Country of birthplace (categorized)
-------------------------------------------------------------
                                            |      Freq.
--------------------------------------------+------------
Valid   -97 Refused                         |           2
        -54 Missing by design               |       36417
        -20 Foreign, but not codeable       |           5
        1   Germany                         |       15388
        2   Italy                           |          52
        3   Poland                          |         244
        4   Romania                         |          98
        5   Turkey                          |         182
        6   Former Yugoslavia               |         113
        7   Former Soviet Union             |         522
        8   Central and South America, Caribbean |      42
        9   Northern and Western Europe     |         154
        10  North America                   |          33
        12  Other Middle East and North Africa |        73
        13  Other Africa                    |          30
        14  Other Asia                      |          74
        15  Other Central and Eastern Europe |         84
        16  Other Southern Europe           |          44
        Total                               |       53557
-------------------------------------------------------------

t405010_g1R -- Country of place of birth
-------------------------------------------------------------
                                            |      Freq.
--------------------------------------------+------------
Valid   -97 Refused                         |           2
        -54 Missing by design               |       36417
        -20 Foreign, but not codeable       |           5
        0   germany                         |       15388
        120 yugoslavia                      |          30
        121 albania                         |           4
        122 bosnia and herzegovina          |          22
        124 belgium                         |           5
        :                                   |           :
        477 uzbekistan                      |           6
        479 china                           |           7
        482 malaysia                        |           2
        499 other asia                      |           1
        Total                               |       53557
-------------------------------------------------------------
```

Download

```
SC6_pTarget_D_5-1-0.dta
(NEPS SUF, SC6 5.1.0 (download); doi:10.5157/NEPS:SC6:5.1.0)

t405010_g2 -- Country of birthplace (categorized)
-------------------------------------------------------------
                                            |      Freq.
--------------------------------------------+------------
Valid   -97 Refused                         |           2
        -54 Missing by design               |       36417
        -20 Foreign, but not codeable       |           5
        1   Germany                         |       15388
        2   Italy                           |          52
        3   Poland                          |         244
        4   Romania                         |          98
        5   Turkey                          |         182
        6   Former Yugoslavia               |         113
        7   Former Soviet Union             |         522
        8   Central and South America, Caribbean |      42
        9   Northern and Western Europe     |         154
        10  North America                   |          33
        12  Other Middle East and North Africa |        73
        13  Other Africa                    |          30
        14  Other Asia                      |          74
        15  Other Central and Eastern Europe |         84
        16  Other Southern Europe           |          44
        Total                               |       53557
-------------------------------------------------------------

t405010_g1R -- Country of place of birth
-------------------------------------------
                              |      Freq.
------------------------------+------------
Valid   -54 Missing by design |       36417
        -53 Anonymized        |       17140
        Total                 |       53557
-------------------------------------------
```

3.3 Countries (binary variable)

In school cohorts, an aggregation of countries is coarsened to the binary information German/Non-German. To illustrate this, have a look at variables from Starting Cohort 2 (Kindergarten). The information (»*country of birth target child*«) was surveyed during the interview using a two-step procedure: first, the respondent is asked if the child was born in Germany or abroad (variable `p406000`, top left). This variable is not subject to anonymization and therefore does not have a suffix and is equally existent in both SUF-versions. If the child was born abroad, a second question regarding the specific country followed (variable `p406010_g1R`, lower left, output is reduced to enhance readability). This second question is purged in the Download-SUF (lower right). There is no need to generate an additional anonymized version of this second question, as the information is already present in the first shown variable (`p406000`).

RemoteNEPS

```
SC2_pParent_R_3-0-0.dta
(NEPS SUF, SC2 3.0.0 (remote); doi:10.5157/NEPS:SC2:3.0.0)

p406000 -- Target child born in Germany?
-------------------------------------
                      |      Freq.
----------------------+-------------
Valid   -98 Don't know |          1
        1   Yes        |       7658
        2   No         |        173
        Total          |       7832
Missing .              |       3545
Total                  |      11377
-------------------------------------

p406010_g1R -- Country of birth target child
-------------------------------------------------------------
                                           |      Freq.
-------------------------------------------+-------------
Valid   -98 Don't know                     |          1
        -20 Abroad, but not codeable       |          1
        0   germany                        |       7658
        124 belgium                        |          2
        125 bulgaria                       |          5
        :                                  |          :
        475 syrian arab republic           |          2
        476 thailand                       |          2
        479 china                          |          4
        536 new zealand                    |          1
        Total                              |       7832
Missing .                                  |       3545
Total                                      |      11377
-------------------------------------------------------------
```

Download

```
SC2_pParent_D_3-0-0.dta
(NEPS SUF, SC2 3.0.0 (download); doi:10.5157/NEPS:SC2:3.0.0)

p406000 -- Target child born in Germany?
-------------------------------------
                      |      Freq.
----------------------+-------------
Valid   -98 Don't know |          1
        1   Yes        |       7658
        2   No         |        173
        Total          |       7832
Missing .              |       3545
Total                  |      11377
-------------------------------------

p406010_g1R -- Country of birth target child
-------------------------------------
                      |      Freq.
----------------------+-------------
Valid   -53 Anonymized |       7832
Missing .              |       3545
Total                  |      11377
-------------------------------------
```

3.4 Federal states

Regional locations are usually recoded to different derived variables (see section 2.3). In this example, we focus on the region of the school in Starting Cohort 3 (5th graders). The first derived variable is a binary variable for Western and Eastern Germany (`tx80109_g1`), present in both SUF-versions (upper left and upper right). The second variable `tx80109_g2R`, containing the federal states, is only complete in the RemoteNEPS-SUF (lower left), and is purged in the Download-SUF (lower right).

RemoteNEPS

```
SC3_CohortProfile_R_3-1-0.dta
(NEPS SUF, SC3 3.1.0 (remote); doi:10.5157/NEPS:SC3:3.1.0)

tx80109_g1 -- Sample: Federal state school (west/east)
-------------------------------------------------------
                                      |      Freq.
--------------------------------------+------------
Valid   -55 Not determinable          |        458
        1   Western Germany          |      16299
        2   Eastern Germany incl. Berlin |    3784
        Total                         |      20541
-------------------------------------------------------

tx80109_g2R -- Sample: Federal state school
-------------------------------------------------------
                                      |      Freq.
--------------------------------------+------------
Valid   -55 Not determinable          |        458
        1   Schleswig-Holstein        |        784
        2   Hamburg                   |        377
        3   Lower Saxony              |       2209
        4   Bremen                    |        158
        5   North Rhine-Westphalia    |       4398
        6   Hesse                     |       1308
        7   Rhineland-Palatinate      |        971
        8   Baden-Wuerttemberg        |       3265
        9   Bavaria                   |       2677
        10  Saarland                  |        152
        11  Berlin (Complete)         |        404
        12  Brandenburg               |       1143
        13  Mecklenburg-Western Pomerania |    619
        14  Saxony                    |        617
        15  Saxony-Anhalt             |        401
        16  Thuringia                 |        600
        Total                         |      20541
-------------------------------------------------------
```

Download

```
SC3_CohortProfile_D_3-1-0.dta
(NEPS SUF, SC3 3.1.0 (download); doi:10.5157/NEPS:SC3:3.1.0)

tx80109_g1 -- Sample: Federal state school (west/east)
-------------------------------------------------------
                                      |      Freq.
--------------------------------------+------------
Valid   -55 Not determinable          |        458
        1   Western Germany          |      16299
        2   Eastern Germany incl. Berlin |    3784
        Total                         |      20541
-------------------------------------------------------

tx80109_g2R -- Sample: Federal state school
-------------------------------------------------------
                                      |      Freq.
--------------------------------------+------------
Valid   -53 Anonymized                |      20541
-------------------------------------------------------
```

3.5 Class size

Sometimes, variables are collected numerical. In the example below, the number of students in class was surveyed from the educator in Starting Cohort 2 (Kindergarten) without any further regulations. Thus, the resulting variable `e227400_g1R` (lower left) does not have a coding scheme. This variable is aggregated to the variable `e227400_g1D` containing six different class-sizes (upper left). You find this aggregated version in both SUF-versions, the full numerical variable is purged in the Download-SUF, though (lower right).

RemoteNEPS

SC2_pEducator_R_3-0-0.dta
(NEPS SUF, SC2 3.0.0 (remote); doi:10.5157/NEPS:SC2:3.0.0)

e227400_g1D -- Class: number of students, total (coarsed)

		Freq.
Valid	-90	Unspecific missing	10
	-54	Missing by design	1803
	1	Below 10	3
	2	10 to 14	26
	3	15 to 19	203
	4	20 to 24	450
	5	25 to 29	169
	6	30 to 34	4
	Total		2668

e227400_g1R -- Class: number of students total

		Freq.
Valid	-90	Unspecific missing	10
	-54	Missing by design	1803
	8		3
	10		1
	11		1
	12		4
	13		8
	14		12
	15		21
	16		22
	17		34
	18		58
	19		68
	20		75
	21		89
	22		98
	23		88
	24		100
	25		83
	26		39
	27		27
	28		14
	29		6
	30		3
	31		1
	Total		2668

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SC2_pEducator_D_3-0-0.dta
(NEPS SUF, SC2 3.0.0 (download); doi:10.5157/NEPS:SC2:3.0.0)

e227400_g1D -- Class: number of students, total (coarsed)

		Freq.
Valid	-90	Unspecific missing	10
	-54	Missing by design	1803
	1	Below 10	3
	2	10 to 14	26
	3	15 to 19	203
	4	20 to 24	450
	5	25 to 29	169
	6	30 to 34	4
	Total		2668

e227400_g1R -- Class: number of students total

		Freq.
Valid	-54	Missing by design	1803
	-53	Anonymized	865
	Total		2668

A Appendix

A.1 Complete overview

The following table lists all variables which are affected by anonymization methods. For all variables, full information is available OnSite, although for many of them, you already find this complete information in the RemoteNEPS-version. Only for those variables marked with an asterisk, the full information is only present OnSite. For most of the variables, an aggregated or generated version is available, which still transports some information to the Download-version. Please see the previous chapters for more information.

Table 7: Complete overview of all restricted variables

file	variable	label (*only available OnSite)
xTarget	t80a_g1	Country of own birth
xTarget	t80a_g2	Country of birth itself (categorized)
xTarget	t84a_g1	Country of birth - mother
xTarget	t84a_g2	country of birth mother (categorized)
xTarget	t84b_g1	Country of birth - father
xTarget	t84b_g2	country of birth - father (categorized)
xTarget	t85a_g1	Country of birth of your maternal grandparents - maternal grandmother
xTarget	t85a_g2	country of birth of your maternal grandparents - the mother (categorized)
xTarget	t85b_g1	country of birth of your maternal grandparents - the father
xTarget	t85b_g2	country of birth of your maternal grandparents - the father (categorized)
xTarget	t86a_g1	Country of birth of your paternal grandparents - paternal grandmother
xTarget	t86a_g2	country of birth of your paternal grandparents - the mother (categorized)
xTarget	t86b_g1	Country of birth of your paternal grandparents - paternal grandfather
xTarget	t86b_g2	country of birth of your paternal grandparents - the father (categorized)
xTarget	t83a_g2	mother tongue 1
xTarget	t83a_g3	mother tongue 2
xTarget	t83a_g4	mother tongue 3
xTarget	t89a_g2	mother tongue of mother 1
xTarget	t89a_g3	mother tongue of mother 2
xTarget	t89a_g4	mother tongue of mother 3
xTarget	t90a_g2	mother tongue of father 1
xTarget	t90a_g3	mother tongue of father 2
xTarget	t90a_g4	mother tongue of father 3
xTarget	t91_g2	other language 1

(...)

Table 7: (continued)

file	variable	label (*only available OnSite)	
xTarget	t91_g3	other language 2	
xTarget	t91_g4	other language 3	
xTarget	t82a_g2	country of citizenship 1	
xTarget	t82a_g3	country of citizenship 2	
xTarget	t82a_g4	country of citizenship 3	
xInstitution	e16a	Estimation further aspects of the educational reform 1	*
xInstitution	e16b	Estimation further aspects of the educational reform 2	*
xInstitution	e16c	Estimation further aspects of the educational reform 3	*
xInstitution	g16a	Estimation further aspects of the educational reform 1	*
xInstitution	g16b	Estimation further aspects of the educational reform 2	*
xInstitution	g16c	Estimation further aspects of the educational reform 3	*
xInstitution	h14a	Estimation further aspects of the educational reform 1	*
xInstitution	h14b	Estimation further aspects of the educational reform 2	*
xInstitution	h14c	Estimation further aspects of the educational reform 3	*
xInstitution	h28d	G9 school trial - Decision - text field Other	*
xInstitution	h34b	G9 school trial - Model - Other	*
xInstitution	h7e	Decision G8-old curricula - other, specifically	*
xInstitution	m16a	Estimation further aspects of the educational reform 1	*
xInstitution	m16b	Estimation further aspects of the educational reform 2	*
xInstitution	m16c	Estimation further aspects of the educational reform 3	*
xTarget	t40i	Reasons for G8-old/G9 switch - open entry	*
xTarget	t61a	Professional training - subject 1	*
xTarget	t61b	Professional training - subject 2	*
xTarget	t61c	Professional training - subject 3	*
xTarget	t62aa	Teaching post - other - filter question	*
xTarget	t97_g3	Probable place of study (RS region)	
xTarget	t97_g4	Probable place of study (RS administrative district)	
xTarget	t39	Grade in which you switched to the G9 curriculum	
xInstitution			

A.2 Recoding of countries/languages/nationalities

The following tables summarize the complete recoding procedure of countries and languages/-nationalities. Each category of the aggregated version (bold) is followed by all entries which have been subsumed to it. All entries are sorted according to their numeric code.

Table 8: Complete recoding map of all countries

	country
-23	**parent not known**
-21	**Germany and foreign country, not codeable**
-20	**Foreign country, but not codeable** [9005] Kurdish areas, [9991] German-speaking country abroad, [9992] English-speaking country abroad, [9993] Spanish-speaking country abroad
1	**Germany** [0] Germany
2	**Italy** [137] Italy
3	**Poland** [152] Poland
4	**Romania** [154] Romania
5	**Turkey** [163] Turkey
6	**Former Yugoslavia** [120] Yugoslavia, [122] Bosnia and Herzegovina, [130] Croatia, [131] Slovenia, [132] Serbia and Montenegro, [138] Yugoslavia, Federal Republic of, [140] Montenegro, [144] Macedonia, [150] Kosovo, [170] Serbia
7	**Former Soviet Union** [127] Estonia, [139] Latvia, [142] Lithuania, [146] Moldova, Republic of, [159] Soviet Union, [160] Russian Federation, [166] Ukraine, [169] Belarus, [422] Armenia, [425] Azerbaijan, [430] Georgia, [444] Kazakhstan, [450] Kyrgyzstan, [470] Tajikistan, [471] Turkmenistan, [477] Uzbekistan
8	**Central and South America, Caribbean** [320] Antigua and Barbuda, [322] Barbados, [323] Argentina, [324] Bahamas, [326] Bolivia, Plurinational State of, [327] Brazil, [328] Guyana, [330] Belize, [332] Chile, [333] Dominica, [334] Costa Rica, [335] Dominican Republic, [336] Ecuador, [337] El Salvador, [340] Grenada, [345] Guatemala, [346] Haiti, [347] Honduras, [349] Colombia, [351] Cuba, [353] Mexico, [354] Nicaragua, [355] Jamaica, [357] Panama, [359] Paraguay, [361] Peru, [364] Suriname, [365] Uruguay, [366] Saint Lucia, [367] Venezuela, Bolivarian Republic of, [369] Saint Vincent and the Grenadines, [370] Saint Kitts and Nevis, [371] Trinidad and Tobago
9	**Northern and Western Europe** [124] Belgium, [126] Denmark, [128] Finland, [129] France, [135] Ireland, [136] Iceland, [141] Liechtenstein, [143] Luxembourg, [147] Monaco, [148] Netherlands, [149] Norway, [151] Austria, [157] Sweden, [158] Switzerland, [168] United Kingdom, [193] Norwegian dependent territories in Europe, [195] British dependent territories in Europe, [196] Danish dependent territories in Europe, [295] British dependent territories in Africa, [298] French dependent territories in Africa, [392] Dutch dependent territories in America, [395] British dependent territories in America, [396] Danish dependent territories in America, [398] French dependent territories in America, [495] British dependent territories in Asia, [593] Norwegian dependent territories in Australia, Oceania, Antarctica, [595] British dependent territories in Australia, Oceania, Antarctica, [598] French dependent territories in Australia, Oceania, Antarctica

(...)

Table 8: (continued)

	country
10	**North America** [348] Canada, [368] United States, [391] US dependent territories in America, [591] US dependent territories in Australia, Oceania, Antarctica
11	**Oceania/Polynesia** [523] Australia, [524] Solomon Islands, [526] Fiji, [527] Cook Islands, [530] Kiribati, [531] Nauru, [532] Vanuatu, [533] Niue, [536] New Zealand, [537] Palau, [538] Papua New Guinea, [540] Tuvalu, [541] Tonga, [543] Samoa, [544] Marshall Islands, [545] Micronesia, Federated States of, [590] New Zealand's dependent territories in Australia, Oceania, Antarctica, [594] Australian dependent territories in Australia, Oceania, Antarctica
12	**Other Middle East and North Africa** [221] Algeria, [248] Libya, [252] Morocco, [285] Tunisia, [287] Egypt, [421] Yemen, [424] Bahrain, [438] Iraq, [439] Iran, Islamic Republic of, [441] Israel, [445] Jordan, [447] Qatar, [448] Kuwait, [451] Lebanon, [456] Oman, [469] United Arab Emirates, [472] Saudi Arabia, [475] Syrian Arab Republic, [499] other Asia
13	**Other Africa** [223] Angola, [224] Eritrea, [225] Ethiopia, [226] Lesotho, [227] Botswana, [229] Benin, [230] Djibouti, [231] Côte d'Ivoire, [232] Nigeria, [233] Zimbabwe, [236] Gabon, [237] Gambia, [238] Ghana, [239] Mauritania, [242] Cape Verde, [243] Kenya, [244] Comoros, [245] Congo, [246] Congo, the Democratic Republic of the, [247] Liberia, [249] Madagascar, [251] Mali, [253] Mauritius, [254] Mozambique, [255] Niger, [256] Malawi, [257] Zambia, [258] Burkina Faso, [259] Guinea-Bissau, [261] Guinea, [262] Cameroon, [263] South Africa, [265] Rwanda, [267] Namibia, [268] Sao Tome and Principe, [269] Senegal, [271] Seychelles, [272] Sierra Leone, [273] Somalia, [274] Equatorial Guinea, [276] Sudan, [281] Swaziland, [282] Tanzania, United Republic of, [283] Togo, [284] Chad, [286] Uganda, [289] Central African Republic, [291] Burundi
14	**Other Asia** [423] Afghanistan, [426] Bhutan, [427] Myanmar, [429] Brunei Darussalam, [431] Sri Lanka, [432] Vietnam, [434] Korea, Democratic People's Republic of, [436] India, [437] Indonesia, [442] Japan, [446] Cambodia, [449] Lao People's Democratic Republic of, [454] Maldives, [457] Mongolia, [458] Nepal, [460] Bangladesh, [461] Pakistan, [462] Philippines, [465] Taiwan, Province of China, [467] Korea, Republic of, [474] Singapore, [476] Thailand, [479] China, [482] Malaysia, [483] Timor-Leste, Democratic Republic of
15	**Other Central and Eastern Europe** [125] Bulgaria, [155] Slovakia, [162] Czechoslovakia, [164] Czech Republic, [165] Hungary
16	**Other Southern Europe** [121] Albania, [123] Andorra, [134] Greece, [145] Malta, [153] Portugal, [156] San Marino, [161] Spain, [167] Holy See (Vatican City State), [181] Cyprus, [297] Spanish dependent territories in Africa
17	**Other** [996] unknown foreign countries

Table 9: Complete recoding map of all languages/nationalities

	language/nationality
1	**Arabic** [1011801] Arabic
2	**Bosnian** [1021519] Bosnian
3	**Bulgarian** [1022112] Bulgarian
4	**German** [1070518] German, [1140419] Low German; Low Saxon; German, Low; Saxon, Low
5	**English** [1051407] English
6	**French** [1061805] French
7	**Greek** [1071803] Greek, Ancient (to 1453), [1071805] Greek, Modern (1453-)
8	**Italian** [1092001] Italian
9	**Croatian** [1081822] Croatian
10	**Kurdish** [1112118] Kurdish
11	**Polish** [1161512] Polish
12	**Portuguese** [1161518] Portuguese
13	**Russian** [1182119] Russian
14	**Romanian** [1182113] Romanian; Moldavian; Moldovan
15	**Serbian** [1191816] Serbian
16	**Spanish** [1191601] Spanish; Castilian
17	**Turkish** [1202118] Turkish
18	**Vietnamese** [1220905] Vietnamese
19	**Asian languages** [1010305] Achinese, [1011111] Akkadian, [1011803] Official Aramaic (700-300 BCE); Imperial Aramaic (700-300 BCE), [1011913] Assamese, [1012205] Avestan, [1012301] Awadhi, [1020112] Baluchi, [1020114] Balinese, [1020514] Bengali, [1020815] Bhojpuri, [1020908] Bihari languages, [1020911] Bikol, [1021801] Braj, [1022011] Batak languages, [1022101] Buriat, [1022107] Buginese, [1022118] Burmese

(...)

Table 9: (continued)

	language/nationality
	, [1030502] Cebuano, [1030807] Chagatai, [1030809] Chinese, [1030811] Chuukese, [1031303] Chamic languages, [1040125] Land Dayak languages, [1040922] Divehi; Dhivehi; Maldivian, [1041509] Dogri, [1042615] Dzongkha, [1051224] Elamite, [1060912] Filipino; Pilipino, [1070125] Gayo, [1071514] Gondi, [1072110] Gujarati, [1080502] Hebrew, [1080912] Hiligaynon, [1080913] Himachali languages; Western Pahari languages, [1080914] Hindi, [1080920] Hittite, [1081314] Hmong; Mong, [1090201] Iban, [1091215] Iloko, [1091404] Indonesian, [1100122] Javanese, [1101614] Japanese, [1101618] Judeo-Persian, [1101802] Judeo-Arabic, [1110101] Kara-Kalpak, [1110103] Kachin; Jingpho, [1110114] Kannada, [1110118] Karen languages, [1110119] Kashmiri, [1110123] Kawi, [1110126] Kazakh, [1110801] Khasi, [1110813] Central Khmer, [1110815] Khotanese; Sakan, [1110918] Kirghiz; Kyrgyz, [1111511] Konkani, [1111518] Korean, [1111821] Kurukh, [1112113] Kumyk, [1120108] Lahnda, [1120115] Lao, [1120526] Lezghian, [1122119] Lushai, [1130104] Madurese, [1130107] Magahi, [1130109] Maithili, [1130111] Makasar, [1130112] Malayalam, [1130118] Marathi, [1130125] Malay, [1130418] Mandar, [1130914] Minangkabau, [1131403] Manchu, [1131409] Manipuri, [1131415] Manobo languages, [1131514] Mongolian, [1132114] Munda languages, [1132318] Marwari, [1140516] Nepali, [1140523] Nepal Bhasa; Newari, [1140901] Nias, [1151809] Oriya, [1151919] Ossetian; Ossetic, [1152001] Turkish, Ottoman (1500-1928), [1160107] Pangasinan, [1160113] Pampanga; Kapampangan, [1160114] Panjabi; Punjabi, [1160515] Persian, Old (ca.600-400 B.C.), [1160518] Persian, [1160814] Phoenician, [1161209] Pali, [1161514] Pohnpeian, [1161801] Prakrit languages, [1162119] Pushto; Pashto, [1180110] Rajasthani, [1190108] Yakut, [1190113] Samaritan Aramaic, [1190114] Sanskrit, [1190119] Sasak, [1190120] Santali, [1190512] Selkup, [1190814] Shan, [1190914] Sinhala; Sinhalese, [1191404] Sindhi, [1191507] Sogdian, [1192114] Sundanese, [1192124] Sumerian, [1192503] Classical Syriac, [1200113] Tamil, [1200120] Tatar, [1200512] Telugu, [1200520] Tetum, [1200711] Tajik, [1200712] Tagalog, [1200801] Thai, [1200902] Tibetan, [1202111] Turkmen, [1202522] Tuvinian, [1210701] Ugaritic, [1210907] Uighur; Uyghur, [1211804] Urdu, [1212602] Uzbek, [1230118] Waray, [1250116] Yapese, [1260801] Zhuang; Chuang
20	**African languages** [1010118] Afar, [1010308] Acoli, [1010401] Adangme, [1010608] Afrihili, [1010618] Afrikaans, [1011101] Akan, [1011308] Amharic, [1020104] Banda languages, [1020109] Bamileke languages, [1020113] Bambara, [1020119] Basa, [1020510] Beja; Bedawiyet, [1020513] Bemba, [1020518] Berber languages, [1020914] Bini; Edo, [1021420] Bantu (Other), [1031516] Coptic, [1040914] Dinka, [1042101] Duala, [1042521] Dyula, [1050609] Efik, [1050725] Egyptian (Ancient), [1051101] Ekajuk, [1052305] Ewe, [1052315] Ewondo, [1060114] Fang, [1060120] Fanti, [1061514] Fon, [1062112] Fulah, [1070101] Ga, [1070201] Gbaya, [1070526] Geez, [1071802] Grebo, [1080121] Hausa, [1080518] Herero, [1090215] Igbo, [1091015] Ijo languages, [1091405] Indo-European languages, [1110102] Kabyle, [1110113] Kamba, [1110121] Kanuri, [1110911] Kikuyu; Gikuyu, [1110914] Kinyarwanda, [1111302] Kimbundu, [1111514] Kongo, [1111605] Kpelle, [1111815] Kru languages, [1112101] Kuanyama; Kwanyama, [1120113] Lamba, [1120914] Lingala, [1121512] Mongo, [1121526] Lozi, [1122101] Luba-Lulua, [1122102] Luba-Katanga, [1122107] Ganda, [1122114] Lunda, [1122115] Luo (Kenya and Tanzania), [1130114] Mandingo, [1130119] Masai, [1130514] Mende, [1131207] Malagasy, [1131519] Mossi, [1140212] Ndebele, South; South Ndebele, [1140405] Ndebele, North; North Ndebele, [1140415] Ndonga, [1141915] Pedi; Sepedi; Northern Sotho, [1142501] Chichewa; Chewa; Nyanja, [1142513] Nyamwezi, [1142514] Nyankole, [1142515] Nyoro, [1142609] Nzima, [1151813] Oromo, [1182114] Rundi, [1190104] Sandawe, [1190107] Sango, [1190904] Sidamo, [1191201] Slavic languages, [1191401] Shona, [1191411] Soninke, [1191513] Somali, [1191514] Songhai languages, [1191520] Sotho, Southern, [1191818] Serer, [1191923] Swati, [1192111] Sukuma, [1192119] Susu, [1192301] Swahili, [1200513] Timne, [1200907] Tigre, [1200918] Tigrinya, [1200922] Tiv, [1201308] Tamashek, [1201507] Tonga (Nyasa), [1201914] Tswana, [1201915] Tsonga, [1202113] Tumbuka, [1202309] Twi, [1211302] Umbundu, [1220109] Vai, [1220514] Venda, [1230112] Walamo, [1231512] Wolof, [1240815] Xhosa, [1250115] Yao, [1251518] Yoruba, [1260514] Zenaga, [1261404] Zande languages, [1262112] Zulu

(...)

Table 9: (continued)

	language/nationality
21	**Other languages** [1010211] Abkhazian, [1011202] Albanian, [1011205] Aleut, [1011207] Algonquian languages, [1011407] English, Old (ca.450-1100), [1011601] Apache languages, [1011807] Aragonese, [1011813] Armenian, [1011814] Mapudungun; Mapuche, [1011816] Arapaho, [1011823] Arawak, [1012008] Athapascan languages, [1012119] Australian languages, [1012201] Avaric, [1012513] Aymara, [1012605] Azerbaijani, [1020111] Bashkir, [1020117] Basque, [1020512] Belarusian, [1020919] Bislama, [1021201] Siksika, [1021805] Breton, [1030104] Caddo, [1030118] Galibi Carib, [1030120] Catalan; Valencian, [1030121] Caucasian languages, [1030801] Chamorro, [1030802] Chibcha, [1030805] Chechen, [1030813] Mari, [1030814] Chinook jargon, [1030815] Choctaw, [1030816] Chipewyan; Dene Suline, [1030818] Cherokee, [1030821] Church Slavic; Old Slavonic; Church Slavonic; Old Bulgarian; Old Church Slavonic, [1030822] Chuvash, [1030825] Cheyenne, [1031518] Cornish, [1031519] Corsican, [1031605] Creoles and pidgins, English based, [1031805] Cree, [1031816] Creoles and pidgins, [1032605] Czech, [1040111] Dakota, [1040114] Danish, [1040512] Delaware, [1040718] Dogrib, [1042113] Dutch, Middle (ca.1050-1350), [1042120] Dutch; Flemish, [1051413] English, Middle (1100-1500), [1051615] Esperanto, [1051920] Estonian, [1060115] Faroese, [1060910] Fijian, [1060914] Finnish, [1061813] French, Middle (ca.1400-1600), [1061815] French, Old (842-ca.1400), [1061825] Western Frisian, [1062118] Friulian, [1070515] Georgian, [1070912] Gilbertese, [1071201] Gaelic; Scottish Gaelic, [1071205] Irish, [1071207] Galician, [1071222] Manx, [1071308] German, Middle High (ca.1050-1500), [1071508] German, Old High (ca.750-1050), [1071518] Gorontalo, [1071520] Gothic, [1071814] Guarani, [1072309] Gwich'in, [1080109] Haida, [1080120] Haitian; Haitian Creole, [1080123] Hawaiian, [1081315] Hiri Motu, [1082114] Hungarian, [1082116] Hupa, [1090305] Icelandic, [1090415] Ido, [1091121] Inuktitut, [1091205] Interlingue; Occidental, [1091401] Interlingua (International Auxiliary Language Association), [1091611] Inupiaq, [1091815] Iroquoian languages, [1110112] Kalaallisut; Greenlandic, [1111513] Komi, [1111519] Kosraean, [1112120] Kutenai, [1120104] Ladino, [1120120] Latin, [1120122] Latvian, [1120913] Limburgan; Limburger; Limburgish, [1120920] Lithuanian, [1122026] Luxembourgish; Letzeburgesch, [1122109] Luiseno, [1130103] Macedonian, [1130108] Marshallese, [1130115] Maori, [1130701] Irish, Middle (900-1200), [1130903] Mi'kmaq; Micmac, [1131220] Maltese, [1131508] Mohawk, [1132119] Creek, [1132514] Mayan languages, [1140108] Nahuatl languages, [1140121] Nauru, [1140122] Navajo; Navaho, [1140903] Niger-Kordofanian languages, [1140921] Niuean, [1141415] Norwegian Nynorsk; Nynorsk, Norwegian, [1141502] Bokmål, Norwegian; Norwegian Bokmål, [1141514] Norse, Old, [1141518] Norwegian, [1150309] Occitan (post 1500); Provençal, [1151009] Ojibwa, [1151901] Osage, [1152015] Otomian languages, [1160112] Pahlavi, [1160116] Papiamento, [1160121] Palauan, [1161815] Provençal, Old (to 1500), [1172105] Quechua, [1180116] Rapanui, [1180118] Rarotongan; Cook Islands Maori, [1181508] Romansh, [1181513] Romany, [1190112] Salishan languages, [1190315] Scots, [1190701] Irish, Old (to 900), [1190915] Siouan languages, [1191215] Slovak, [1191222] Slovenian, [1191305] Northern Sami, [1191309] Sami languages, [1191315] Samoan, [1191804] Sardinian, [1192305] Swedish, [1200108] Tahitian, [1200518] Tereno, [1201112] Tokelau, [1201209] Tlingit, [1201514] Tonga (Tonga Islands), [1201609] Tok Pisin, [1201909] Tsimshian, [1202120] Altaic languages, [1202212] Tuvalu, [1211118] Ukrainian, [1221512] Volapük, [1221520] Votic, [1230111] Wakashan languages, [1230119] Washo, [1230512] Welsh, [1230514] Sorbian languages, [1231214] Walloon, [1250904] Yiddish, [1251611] Yupik languages, [1260116] Zapotec, [1262114] Zuni, [1262601] Zaza; Dimili; Dimli; Kirdki; Kirmanjki; Zazaki

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