

### German Ageing Survey (DEAS): User Manual SUF DEAS2014, Version 3.0

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**German Ageing Survey (DEAS):  
User Manual SUF DEAS2014, Version 3.0**

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### **PRELIMINARY REMARK: CHANGES IN SUF-VERSION 3.0**

Apart from minor label editions, SUF 3.0 of DEAS 2014 contains one major change in the variables to question 425 (Frequency of activities in the last twelve months): in previous versions, values of items C (“Social Networks”) and D (“Work with computers”) had been interchanged. This error has been corrected in the new versions of DEAS 2014 and 2017.

### **PRELIMINARY REMARK: CHANGES IN SUF-VERSION 2.0**

The following shows you the most important changes in the SUF-Version 2.0 of the Scientific Use File (DEAS-Survey 2014) in comparison to the previous version:

- 88 cases in the drop-off-data of 2014, deleted concerning doubts of the respondents' identity, could be reactivated because of additional information in the 2017-Survey. Thus the sample – with drop-off-data - increases to 8.040 persons
- The original “European Socio-economic Classification” (ESeC-classification) was developed for the occupational division to ISCO88. At the time of the publication of the first version of the SUF DEAS 2014 no official operationalisation was given for the occupational division ISCO08 (see chapter 8.14)
- The variables to the relative income position, to the income poverty and to the income wealth have been upgraded, based on new reference-numbers (see chapter 8.16)
- The generated variables to nationality, migration background and education contain data for all samples (baseline and panel respondents). For panel respondents the characteristics have been adopted from the first measuring time now
- The data collection has been changed. From now on the Scientific Use File (SUF) contains an integrated cross-sectional weighting for all interviewees up to the age of 90 (see chapter 2).

## **1. THE GERMAN AGEING SURVEY (DEAS) – CROSS-SECTIONAL AND LONGITUDINAL DATA ON THE SECOND HALF OF LIFE**

The German Ageing Survey (DEAS) is a nationwide representative cross-sectional and longitudinal survey of the German population aged over 40. It is funded by the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth (BMFSFJ). The German Centre of Gerontology in Berlin (DZA) is responsible for the conduct and ongoing development of the study. The primary goal of the DEAS-Survey program is to provide a representative national database containing information describing the living conditions of the country's middle-aged and older population and to study the diversity within the older section of the population, the process of ageing as it affects individuals and processes of social change as they relate to old age and ageing. The DEAS covers a wide range of topics. The data obtained provide information on socioeconomic and demographic attributes as well as household composition, housing, family structure, social networks, psychological resources, attitudes as well as and physical and mental health. The comprehensive examination of people in mid- and older adulthood provides micro data for use both in social and behavioral scientific research and in reporting on social developments. The data thus provides a source of information for decision-makers, the general public and for scientific research.

Microdata of the German Ageing Survey (DEAS) are available free of charge to scientific researchers for non-profitable purposes. The Research Data Centre (FDZ-DZA) provides access and support to scholars interested in using DEAS data for their research. Data and documentations from completed DEAS waves are available by the FDZ-DZA (<https://www.dza.de/en/fdz.html>). However, for reasons of data protection, signing a data distribution contract is required before data can be obtained.

The DEAS applies a cohort-sequential design, which allows the users to analyze societal trends and individual trajectories (embedded inside societal trends) and to disentangle age effects from cohort effects. The first DEAS survey wave took place in 1996, further waves followed in 2002, 2008, 2011, 2014 and 2017. The 5th wave in 2014 considered a panel sample of study participants who had entered the DEAS earlier as well as a new sample of adults, aged 40 to 85 years. Sampling, fieldwork and data collection for all waves have been carried out by the Bonn-based Institute for Applied Social Sciences (infas). Infas also took over scanning, coding of the open references to the occupational status and the new data weighting.

## 1.1 Design and sampling

The DEAS uses a combination of cross-sectional and longitudinal samples. Since 1996 every six years a new baseline sample of community dwelling 40- to 85 year-olds is drawn up. The baseline samples are stratified by age group, sex, and place of residence (East- or West-Germany) and drawn from the registration office. Using cross-sectional weights to correct for this the DEAS baseline samples are nationally representative for adults aged from 40 to 85 years. Participants are interviewed personally by interviewers. Since wave 2 (2002), all panel-willing participants from the baseline samples are tracked. After the 3<sup>rd</sup> wave in the year 2008, panel members are interviewed again after three years already.

The target population in 1996 was defined as German citizens residing in the community. In 2002, a comparable sample of German citizens was drawn up; in addition, a separate random sample of non-German citizens residing in Germany was set up. Since 2008, German and non-German citizens have been drawn up together from the population residing in the community in Germany. In 2014 (wave 5), size of the baseline sample is 10.324 respondents born 1929 to 1974.

Information of a single DEAS wave is put together in a Scientific Use File (SUF) of that wave. Up to now there are six Scientific Use Files – one for each wave. Together they gather information on 40.032 valid interviews of 20.715 participants. The Scientific Use File DEAS 2014 provides data on all respondents of the baseline sample 2014 and the longitudinal sample 2014. Panel respondents can be distinguished by the year they started to be part of the DEAS:

<b>Sample by baseline year</b>	<b>Wave 2014</b>
Panel respondents, B1996	887
Panel respondents, B2002	866
Panel respondents, B2008	2.569
Baseline respondents, B2014	6.002
Total	10.324

The sampling design of the German Ageing Survey allows for different perspectives of research, for example the option for analysis of the individual living situations and the living conditions over a period of 21 years (see Klaus et al. 2017). First of all the analysis documents social changes in a particular year of sampling over this period, starting from 1996 to 2017 (see Mahne et al. 2017), as well as estimating individual trends over three to 21 years with the panel data are possible (see Vogel et al.

2019). Secondly, the analysis of social change over 21 years starting from 1996 to 2014 as time series analysis as well as estimating individual trends over three to 18 years with the panel data are possible. Another perspective arises from the comparison of individual change over six, respectively three years in the time spans of 1996 to 2002, 2002 to 2008 and 2008 to 2014. This makes cohort analyses possible that studies the comparison of trends in constant age groups for different birth cohorts. One example is the prospective comparison of the transition from work to retirement or the health change in individuals for different cohorts.

## **1.2 Topics and instruments of DEAS 2014**

As in previous waves, respondents were asked in detail about their living situation in wave 5. Information about the following subject areas was surveyed:

- employment and retirement
- partnership, family and intergenerational relationship
- social networks and support
- leisure activities and voluntary work
- housing situation and mobility
- financial situation and economic behavior
- subjective well-being
- health and health behavior
- need of assistance and need of care
- attitudes, norms and values
- socio-demographic characteristics.

As in previous waves, the questionnaire is divided into two parts. The main part of information is collected by a face-to-face interview usually conducted in the respondent's home. The interview method applied is a Computer Assisted Personal Interview (CAPI) using a standardized questionnaire. In this oral interview the main large thematic fields of the DEAS are covered. A complex filtering allows for a pinpointed group specific inquiry of differentiated information. Basically questions were posed as in the previous wave. Some questions could be omitted because they record permanent characteristics of the respondents, for example the highest degree of education or the childhood history. Moreover, some former answers of panel participants could be used for controlling the interview-process and to recognize individual change in personal relationships more efficiently (preloads).

Additionally, a pulmonary function test to measure the lung capacity was conducted. Directly after the interview, the cognitive capacity of the participants was tested using a digit number test.

In addition, respondents were also given a questionnaire to fill out (“drop-off”). In this questionnaire subjective beliefs – as opinions, values, images of old age, wellbeing -, more sensitive areas (for example details of the financial situation and health) and topics that do not need a differentiated filtering were asked. Thus most items of the psychological scales are placed in the drop-off.

Compared to former waves, additional questions were introduced to go more into details when covering the topics of conjugal history, family relationships and social networks, employment of retirees, health behavior, social support and social exclusion. Items for additional psychological scales were introduced, too.

More information about the design, content and the process of the surveying can be found in Klaus & Engstler (2017) as well as in the methodological report to wave 5 (infas 2015). Instruments and methodological reports of all waves of the DEAS can be downloaded via the webpages of the Research Data Centre (FDZ-DZA): <http://www.dza.de/en/fdz.html>

## 2. CROSS-SECTIONAL AND LONGITUDINAL WEIGHTS

After fieldwork was finished, the first data check done by infas as well as a detailed check and data cleaning by the DZA resulted in removing some interviews. This happened when there was evidence that the respondent was the target person or interviewer did not interview face-to-face. In the end, there were 10,324 valid cases left for analysis. The response rate of the baseline sample (first interviewee) amounts to 27 percent of the gross sample of eligible people, the response rate of the panel sample reaches 63 percent of the adjusted gross sample (Klaus & Engstler, 2017). It is comparable with the response rate of other longitudinal studies on similar age groups (Blom & Schröder, 2011: 57).

### *Data weighting*

In 2018 infas calculated completely new data weightings for the cross-sectional and longitudinal waves of the survey since 2002, replacing all previous weightings. This took place in close coordination with the DEAS-team. The chosen procedure corresponds to the familiar methods of all panel studies (for details, see Hammon et al (2016), Trappman (2013), European Central Bank (2016)).

Basis of the *longitudinal weighting* were statistical default models (logistical regression) for the determination of the probability participation for the present and the future survey (excluded panel respondents who died meanwhile), using a small range of Boolean predictors (see infas 2018: chapter 7.1).

To construct the longitudinal weights of the face-to-interviews the multiplying of the cross-sectional weighting of the first wave is calculated by the reciprocal of the participation probability in the next wave. For the weighting of the drop-offs statistical default models were calculated, based on the participation in the face-to-face interviews. The longitudinal weighting for the drop-offs is calculated by multiplying the longitudinal weights for the face-to-face interviews by the reciprocal of the probability participation to the drop-offs. This method has been done for all waves since 2002, thus for each wave two longitudinal weighting variables (CAPI, drop-off) and two variables with the reciprocal of the probability participation exist (CAPI, drop-off). Combining the wave-specific probability participation longitudinal comparisons are possible (for details, see infas 2018: chapter 7.1). The Scientific Use Files of the survey waves do not include neither the longitudinal weighting variables nor the variables of the reciprocal values. The variables are retrieved in a separate file which is only available for registered users.

Since 2002 an *integrated cross-sectional weight* has been done. To achieve this, each of the subsamples of a wave has been integrated to a collective cross-sectional sample. The subsamples represent (a) returnees (“Wiederteilnehmende”), (b) respondents with nonresponse in the wave before (“Rückkehrer nach temporärerem Ausfall) und (c) new respondents (“Erstbefragte”). Weighting for the integration is the real cross-sectional weighting of the base sample (see Engstler & Hameister 2016; chapter 2) and for returnees of the previous wave the longitudinal weighting of the present wave. For the returnees with temporary nonresponse two default models have been calculated on the base of auxiliary module: statistical default model and statistical model of return (for details see infas 2018: chapter 7.2). The weighting of the three subsamples have been combined by composite weighting (“Konvexkombination”) to an integrated cross-sectional weighting (“Querschnittsgewicht”) by multiplication the individual initial weight and the relative share of the subsample in the sample. Furthermore the probability to drop-off for all face-to-face-interviewees has been calculated on the base of a default model. The cross-sectional weighting of the drop-off is calculated by multiplication the cross-sectional weighting for the face-to-face-interview and the reciprocal participation probability of the drop-off.

The both integrated cross-sectional weightings of a wave are the basic distributions reveals in the micro-census of a particular year. The post-stratification is reported with iterative proportional fitting according to the indicators \*age\*gender\*federal states, excluding the very small number of respondents, aged 91 and over. The Scientific Use File DEAS 2014 concludes exclusively the both weighting variables with the integrated post-stratification cross-sectional weightings for the face-to-face

interview (qsps\_14) and the drop-off (qpsdrop\_14). The integrated cross-sectional weightings without post-stratification are retrieved in a separate file.<sup>1</sup>

Using the panel weights is the responsibility of the individual user. The data weighting shows one of different possibilities for solving the problem of selective panel mortality. The cross-sectional representations is recommended to use descriptive presentation and statements. In the case of drop-of-respondents, please use the variable qpsdrop\_14 (cross-sectional weightings), otherwise the variable qsps\_14.

### **3. DATA FORMATS**

The Scientific Use File (SUF) 2014 as well as the SUF Meta (see chapter 5) are available in SPSS (version 22) and Stata (version 14) data format. If problems occur, please contact FDZ-DZA ([fdz@dza.de](mailto:fdz@dza.de)) for advice.

### **4. CLASSIFICATION OF VARIABLE NAMES AND MISSING CODES IN THE DEAS 2014**

In 2008 (wave 3) a new classification of naming variables was introduced that is also used for further waves. In the first two waves the variables were coded in the logic of a card scheme.<sup>2</sup> Since wave 3, the variables are coded on the basis of the question number. The question number is concurrently thematically grouped (for example all questions regarding the family situation are coded with 300) which makes it easier for the user to get along with the data as well as writing the analysis syntax.

The original variables in the survey year 2014 start with the character “h” as wave marker. Variables from the CAPI interview are followed by the character “c”. That means all variables from the oral interview start with “hc”. Variables from the drop-off questionnaire are labeled with “hd”. The following number is then the question number. For example, variable hc101 is question 101 from the CAPI questionnaire, variable hd7 is the drop-off question 7. Open item lists are coded with the ending

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<sup>1</sup> The cross-sectional weighting for the DEAS wave 2002, 2008 and 2014 are only available for registered users by the Research Data Centre (FDZ-DZA).

<sup>2</sup> For example: question 101 in the oral interview of wave 2 in 2002 (asking for the occupational status; code “w”) was placed on the second position at card 14 (labeled as w14\_12).

“o” (hc106o). Multiple answers or answering options are differentiated using a serial numeric ending, for example hc423\_1, hc423\_2, etc.). Is there a fixed sequence of questions, for example as in the surveying on information for every child, there is a serial number at the end of every loop (hc3011, hc3012, etc.).

An entire overview of all variable names ever used in DEAS data can be found in the variable correspondence list on the web page on [documentation](#) of the FDZ-DZA. Basic values of all variables of the SUF DEAS 2014 including all labels and missing values can be found on the same web page in the codebook 2014.

The labeling of missing codes was basically altered in the DEAS wave 4 compared to previous waves. The new coding facilitates the automatic definition of missing values and harmonizes the reasons and specification for non-valid information.<sup>3</sup>

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<sup>3</sup> Missing values in previous waves were coded as 0, -1, -2 or as 7, 8, 9 or 97, 98, 99 respectively. A consistent definition of missing values for all variables in one data set was therefore not possible.

In the following table all codes for missing values are described:

Value in SPSS	Value in Stata	Label [description]
-1	.a	declined
-2	.b	don't know
-3	.c	filtered
-4	.d	not asked (sample) <i>[if question is either posed to panel respondents or baseline sample respondents]</i>
-5	.e	no drop-off
-6	.f	no answer <i>[without closer differentiation]</i>
-7	.g	deleted
-8	.h	double entry <i>[if not deleted before]</i>

Generally the missing codes are formatted as missing labels. Before using them for deeper analyses, a frequency count is recommended.

## 5. META-DATA ON PARTICIPATION HISTORY, DROP-OUT REASONS AND MORTALITY OF DEAS RESPONDENTS

For easier using and overview the research data center provides sets of meta-data as an overview of the participation history of the respondents. The meta-data file contains information about all persons who have ever participated in any of the survey questionnaires. It is easier to merge data sets and to analyse continuance. The following table shows all variables contained in the data set:

Variable	Label	Description
fallnum	Case number (first digit for initial interview wave)	To merge information from all SUFs (1996-2014)
stich	Sample ID	Baseline sample of respondent
part_96	Participation 1996	Yes; no

part_02	Participation 2002	Yes – baseline sample 2002; yes – foreigner sample 2002; yes – panel; no
part_08	Participation 2008	Yes – baseline sample 2008; yes – panel; no
part_11	Participation 2011	Yes – panel; no
part_14	Participation 2014	Yes – baseline sample 2014; yes – panel; no
part_17	Participation 2017	Yes – panel; no
part	Participation 1996-2017	Shows in which survey years respondent was interviewed
lastpart	Last participation	Year of last participation
n_obs	Number of participation	Number of individual panel participations
entry	Year of entry	Year of first interview
job	Year of birth	Year of birth (possibly updated after plausibility check)
gender	Gender	Male; female
natdeutsch	German citizenship	Feature of the first interview: German, non-German
bildung 4	Level of education, 4-categories	Based on highest level of qualification in school and vocational college: low, medium, sophisticated, high
isced	Level of education, 3-categories (ISCED)	Low (ISCED 0-2), medium (ISCED 3-4), high (ISCED 5-6)
fiktiv_kreis_96	Fictional number of district, 1996	The real district numbers (since 31.12.2013) were replaced with a fictional number; this number can be used for multilevel analysis
fiktiv_kreis_02	Fictional number of district, 2002	Ditto.
fiktiv_kreis_08	Fictional number of district, 2008	Ditto.
fiktiv_kreis_11	Fictional number of district, 2011	Ditto.
fiktiv_kreis_14	Fictional number of district, 2014	Ditto.
fiktiv_kreis_17	Fictional number of district, 2017	Ditto
bbsr_kreistyp96	Type of district, 1996	Urban-rural typology (4 categories)

bbsr_kreistyp02	Type of district, 2002	Urban-rural typology (4 categories)
bbsr_kreistyp08	Type of district, 2008	Urban-rural typology (4 categories)
bbsr_kreistyp11	Type of district, 2011	Urban-rural typology (4 categories)
bbsr_kreistyp14	Type of district, 2014	Urban-rural typology (4 categories)
bbsr_kreistyp 17	Type of district, 2017	Urban-rural typology (4 categories)
rlc2002_kat	Return code 2002	Reasons for not participating in wave 2 (or code for participation)
rlc2008_kat	Return code 2008	Reasons for not participating in wave 3 (or code for participation)
rlc2011_kat	Return code 2011	Reasons for not participating in wave 4 (or code for participation)
rlc2014_kat	Return code 2014	Reasons for not participating in wave 5 (or code for participation)
ric2017_kat	Return code 2017	Reasons for not participating in wave 6 (or code for participation)
vitalstatus_last	Last known vital status	Notes if person is dead (0) or alive (1)
vitalstatus_source	Year of last information on vital status	Either year of survey field work or year of address update (including information from registration offices)
surv_birth	Survival period in months	Months since birth until death or end of observation
surv1996	Survival period since interview 1996	Months since interview 1996 until death or end of observation
surv2002	Survival period since interview 2002	Months since interview 2002 until death or end of observation
surv2008	Survival period since interview 2008	Months since interview 2008 until death or end of observation
surv2011	Survival period since interview 2011	Months since interview 2011 until death or end of observation
surv2014	Survival period since interview 2014	Months since interview 2014 until death or end of observation

Especially the development of a longitudinal data set is facilitated by using the Meta dataset. Information on drop-outs and on participation in panel questionnaires opens up the possibility of mortality and drop-out analyses. Data users who want to analyse reasons of panel attrition may contact the Research Data Centre (FDZ-DZA) to get more details about return codes.

## 5.1 Profile of participation

The variable *part* combines information on all six DEAS survey years. All respondents get a 6 digit value: 111111 for example shows that this person participated in all six DEAS waves, respondents with the number 010011 were firstly asked in 2002, declined to participate in 2008 and 2011 and then answered the questionnaire again in 2014 and 2017.

The sample to be analysed can be easily compiled with the help of variable *part*. If one wants to conduct a longitudinal analysis for example, respondents can be chosen on the basis of the participation profile (variable *n\_obs*). The personal information from the SUFs can be added to the selected cases with the help of the personal identifier *fallnum*. If you have any questions in using this Meta dataset please consult the FDZ: [fdz@dza.de](mailto:fdz@dza.de)

## 5.2 Data on survival of respondents

All respondents were contacted by the field research institute before the next panel questionnaire as well as in panel maintenance or in a special survey of whereabouts of previous respondents. This was done to record the recent vital status. In case of death the exact date of death was detected by the registration office. The variable *vitalstatus\_last* indicates the last known vital status of all DEAS respondents (0=alive, 1=dead). Respondents that were only interviewed once and were not willing to participate again, maintain the status they had at the first interview. Otherwise the last information booth is used. Variable *vitalstatus\_source* contains the calendar year from which we know the last known vital status. Variable *surv\_birth* contains the number of months since birth until death or last known survival status. Variables *surv\_birth*, *surv1996*, *surv2002*, *surv2008*, *surv2011* and *surv2014* (survival since the respective date of interview) – together with the variable *vitalstatus\_last* (death or censoring indicator) - enable to do survival analysis of the risk of death.

Variables *rlc2002\_kat* up to *rlc2017\_kat* give the return codes of all respondents who were selected to be part of the panel samples for the DEAS surveys in 2002 up to 2017. The return codes are categorized and provide information if the target person could be interviewed or not. If there was no interview possible, reasons for that are listed. Interviews that were deleted later in the process of data cleaning get code 6.

## **6. CHANGES IN DEAS 2014 AS IN CONTRAST TO DEAS 2011**

In 2014, not only panel respondents were re-interviewed, a fresh baseline sample was drawn and surveyed, too. Thus, lots of questions were used in the interview, which were filtered and not asked in the panel wave in 2011. This includes especially questions about family and migration background, schooling and occupational training and former employment patterns.

### **6.1 New topics and questions**

Besides the resumed questions for respondents of the baseline sample there are only a few new questions in the DEAS survey of 2014 due to the decision, not to extend the interview length. Partially these additional questions come from the first wave of DEAS.

Following topics are new or covered more in detail in the oral interview (CAPI) of wave 5:

- Employment characteristics of retired people (occupation, position, working hours, duration, employer)
- Intimate relationships, closeness to partner, health of partner, dating
- Negative emotions (anger, rage) towards family members (partner, children, parents, grandchildren) or persons in social network
- Knowledge and usage of information and consultation services
- Chronic diseases, disabilities, noticeable weight loss
- Frequency of given and received support
- Subjective poverty level.

Following topics are new in the additive questionnaire (drop-off):

- Scales for perceived stress, autonomy while ageing, positive and negative affects with low arousal-level and for self-regulation (see chapter 8)
- Scale for experienced social exclusion (chapter 8)
- Items for social support
- Desired age
- Thoughts about death and dying
- Falling and fear

- Amount of fluid intake
- Inclusion to neighbourhood
- Own pets
- Interest in politics
- Content of web usage.

## 6.2 Changes in filtering and other omitted questions

Filtering for the control of the sequence of the questions serve particularly the reduction of the temporal load by skipping single supplementary questions. This filtering was mainly done for characteristics that are assumed to be stable since previous waves. Before preparing the data set for analysis one should check if missing values are due to filtering, data revision or answering behavior of respondents. If time invariant characteristics are filtered at one point of time, they can be taken from SUFs of previous waves.

For panel participants of wave 5 a new module was developed to record changes in civil status and partnership relationship since the last interview. Preloads with information from the last interview were used to steer the filtering. In case of missing or non-confirmed preload-information, the panel participants have to use the module of the first inquiry again.

The questions to nationality and migration background were shifted away from the section of the household questions into the section family background, whereas the questions on brothers, sisters and other relatives were transferred from the background section to the section of family questions. Single questions were shifted from the oral interview into the drop-off (visual and hearing aids). The recording of personal goal orientations and life investments in question 500 was rearranged to a separate query for the importance of ten areas of life and the investment in this. The capturing of sports activities in the drop-off was rearranged to the query of physical activities of different strain degree.

During the verbal interview as well as in the drop-off, single questions were stroked. This happened on the one hand for the balance of new questions and not to extend the questioning duration. On the other hand, questions were cancelled whose answer showed in last waves rarely variance or with a very high proportion of filter or could be substitute with other questions.

Following questions were removed from the oral interview:

- General evaluation of past development of different areas of life as well as future expectations specific for area

- Satisfaction with timing of pre-retirement, retrospective reasons for doing part-time work before retirement
- Chewing on the accident suffered and satisfaction with the development since that time
- Personal codes of the people who cause grief or worry, annoy, from which one feels patronised, who give big pleasure or with which one spends most time
- Long-term care insurance benefits to respondents living in a nursing home
- Migrant residence permits, emigration plans, temporary stay abroad

Following questions were removed from the drop-off:

- HOPE scale items; replaced by items of a self-efficacy scale (see chapter 8)
- Flexible goal adjustment scale; replaced by items of a self-regulation scale (see chapter 8)
- Views on the provision for the old age and state responsibility (in 2011: questions 7 and 8)
- Satisfaction with sexual life
- Equipment of the respondents' household with different goods and devices
- Time spent at home and outside home
- Sleeping duration per night
- Reading of newspapers and magazines

### **6.3 Changes on phrasing of questions**

There are only minor changes in the phrasing of questions, items and answer categories in the DEAS 2014. They are documented not individually here. With the help of variables labels and questionnaires users should check if questions or items have changed when comparing variables of different DEAS waves.

## **7 APPLIED MEASURES TO ANONYMIZE DATA IN THE SUF**

To ensure the factual anonymity of respondents, some variables are not included in the SUF 2014. Other variables are oversimplified in some characteristics.

- Some variables with information on the regional context are deleted because in some cases it might be possible to determine the living area of the respondent. Also deleted are information on birthday and month of birth of respondents.
- Some variables with open answers are deleted or specific answers were generalized. Such changes at open answers were marked with the sign #.
- Rare demographic characteristics of family formations were oversimplified. The few people with the attribute “civil union” are assigned to the category “married, living together with spouse”.
- Rare year specifications were merged to categories. This was done by generating a new categorical variable (identified by variable names with the ending “\_kat”) or by recoding this value in an existing numerical variable to the next value (with the appropriate designation of the value labels).
- Top-coding of maximum values (for example number of siblings, household size)

There are secured PC workplaces available for guest researchers within the DZA. Please contact the consulting of the FDZ ([fdz@dza.de](mailto:fdz@dza.de)) if you want to conduct research using the full DEAS data to do research on the level of districts or including some context characteristics of the immediate neighbourhood for example.

## 8 GENERATED VARIABLES

There are various generated variables added to the Scientific Use File (SUF) DEAS 2014. This helps to compare constructs over time and with other data sources and simplifies the entry into the data analysis. If you need the syntax files for the generated variables, please contact the FDZ: [fdz@dza.de](mailto:fdz@dza.de) and get registered.

Overview on generated variables in the SUF DEAS 2014 (date: May 2019)

Variable	Label	Available for the years			
		1996	2002	2008	2011
fallnum	Case number (first digit for initial interview wave)	x	x	x	x
stich	Sample identification	x	x	x	x
qsps_14	Cross-sectional weight – baseline sample, oral interview	x <sup>1</sup>	x	x	x
qspsdrop_14	Cross-sectional weight – baseline sample, drop-off	x <sup>1</sup>	x	x	x
part_96	Participation 1996	x	x	x	x

Variable	Label	Available for the years			
		1996	2002	2008	2011
part_02	Participation 2002	-	x	x	x
part_08	Participation 2008	-	-	x	x
part_11	Participation 2011	-	-	-	x
zelle_14	Cell of baseline sample (region, gender, birth cohort)	x	x	x	-
natdeutsch_14	German nationality <sup>3</sup>	x <sup>1</sup>	x	x	x
migrat_14	Migratory background <sup>3</sup>	-	x	x	x
westost_14	Western or eastern part of Germany	x	x	x	x
bland_14	Federal state	x	x	x	x
polgk_14	Community size	x <sup>1</sup>	x <sup>1</sup>	x <sup>1</sup>	x <sup>1</sup>
bikgk10_14	BIK region size	x <sup>1</sup>	x <sup>1</sup>	x <sup>1</sup>	x <sup>1</sup>
bbsr_kreistyp_14	Type of district				
alter_14	Age (year of interview minus year of birth)	x	x	x	x
altervoll_14	Consummate age at interview	x	x	x	x
bildung4_14	Level of education, 4 categories	x	x	x	x
iscd_14	Level of education by ISCED, 3 categories <sup>3</sup>	x	x	x	x
erw_14	Occupational status	x	x	x	x
isco08zp_14	ISCO08 code of (last) occupation of respondent	(x) <sup>2</sup>	(x) <sup>2</sup>	(x) <sup>2</sup>	(x) <sup>2</sup>
isco08p_14	ISCO08 code of (last) occupation of present or last partner	(x) <sup>2</sup>	(x) <sup>2</sup>	(x) <sup>2</sup>	(x) <sup>2</sup>
siops_14	SIOPS – occupational prestige score – based on couple	x	x	x	x
siops_kat_14	SIOPS – occupational prestige – categorized	x	x	x	x
isei_14	ISEI occupational status score – based on couple	x	x	x	x
schicht_14	Social class – based on couple	x	x	x	x
eseczp_14	Individual socio-economic classification (Rose/Harrison)				
esecpartner_14	Socio-economic classification of present or last partner (Rose/Harrison)				
exklusion_14	Perceived social exclusion scale	-	-	-	-
hheink_14	Monthly net household income, from CAPI and drop-off	x	x	x	x
aee_oecd14	Monthly equivalence income (new OECD equivalence scale)	x	x	x	x

Variable	Label	Available for the years			
		1996	2002	2008	2011
einkpos_14	Income position (% of mean of equivalised income of population)	x	x	x	x
einkarm_14	Income poverty (< 60 % of median equivalent income of population)	x	x	x	x
einkreich_14	Income wealth (>200 % of mean equivalent income)	x	x	x	x
famstand_14	Marital status	-	-	-	-
partner_14	Existence and type of partnership	x	x	x	x
exkind_14	Existence of living children	x	x	x	x
anzkind_14	Number of living children	x	x	x	x
wekind_14	Geographical distance to nearest living child	x	x	x	x
exenk_14	Existence of living grandchildren	x	x	x	x
anzenk_14	Number of living grandchildren	x	x	x	x
enkelbetreu_14	Care of grandchildren	x	x	x	x
nwgroesse_14	Size of personal network: Number of important people in regular contact	x	x	x	x
ehramt_14	Voluntary work in groups and organizations	x	x	x	x
ehramt_weit_14	Voluntary work in general	x	x	x	x
bmi_14	Body-Mass-Index	x	x	x	x
sf36_14	Physical functioning	x	x	x	x
anzphy_14	Total number of physical diseases	x	x	x	x
lft_14	Pulmonary function test (peak flow in l/min)	-	x	x	x
zzbearb_14	Handling of the digit symbol test (ZZT)	-	x	x	x
zzgscore_14	ZZT: total score of recorded digits	-	x	x	x
zzfscore_14	ZZT: total score of wrong recorded digits	-	x	x	x
zzrscore_14	ZZT: total score of correct recorded digits	-	x	x	x
depressiv_14	Depression Scale CES-D (CES-D, Radloff, 1977)	x	x	x	x
lone6_14	Scale for Loneliness (De Jong & Gierveld)	x	x	x	x
optimismus_14	Optimism Scale (Brandtstädter/Wentura)	-	x	x	x
selbstwirk_14	Generalized Self-Efficacy Scale (Schwarzer & Jerusalem 1995)	-	-	x	x
selbstwert_14	Self Esteem Scale, 2014 (Rosenberg 1965)	-	x	x	x
stress_14	Perceived Stress Scale (Cohen et al.)	-	-	-	-

Variable	Label	Available for the years			
		1996	2002	2008	2011
autonomie_14	WAA Scale of Noticed Autonomy in Older Age (Schwarzer)	-	-	-	-
sok_14	SOK Self-Regulation Scale (Freund/Baltes)	-	-	-	-
lz_14	Life satisfactionScale (SWLS, Pavot & Diener))	x	x	x	x
pa_14	Positive affect (Watson, Clark & Tellegen)	x	x	x	x
na_14	Negative affect (PANAS, Watson, Clark & Tellegen)	x	x	x	x
pa_low_14	Scale of positive affect with low arousal	-	-	-	-
na_low_14	Scale of negative affect with low arousal	-	-	-	-

1. In previous waves a differently named variable keeps information on German nationality.
2. 1996: ISCO68 codes; 2002-2011: ISCO88 codes.
3. Information given in the starter interview

The generated variables are described in the following:

### 8.1 Identification number

The variable *fallnum* contains a respondent's code number, which differs from the original ID of the interviewed person. It is a seven-digit number: the first three digits show the wave on which the person participated the first time (B1996: 100, B2002 and A2002: 200, B2008: 300, B2014: 400). The last four digits are the actual respondent's code numbers. All respondents keep their code number from the first survey for all upcoming surveys. By using the ID-variable *fallnum* the different datasets of a person can be combined longitudinally.

### 8.2 Sample

The variable *stich* marks the sample's origin and the year of the first interview. Possible values are 1 to 4 (1 = person origins in baseline survey 1996; 2 = from baseline 2002; 3 = from baseline 2008; 4 = from baseline 2014).

### 8.3 Weighting

The variable *qsps\_14* contains the post-stratification cross-sectional weighting for all interviewees up to the age of 90. The weighting is normed by the number of

cases (arithmetic mean=1). The variable *qspsdrop\_14* contains the cross-sectional weighting for the drop-off information of this baseline sample. The weighting is normed by the number of cases (arithmetic mean=1). If the countings are limited to drop-off participants, the variable *qspsdrop\_14* is recommended, otherwise the variable *qsps\_14*. The use of cross-sectional weightings are provides for descriptive analysis.

More information on constructing the panel weights is available in chapter 2.

#### **8.4 Longitudinal participation**

The variables *part\_96*, *part\_02*, *part\_08*, *part\_11* and *part\_14* show if a respondent of the year 2014 has also participated in an interview in 1996, 2002, 2008 and/or 2011 and if the participation in a previous wave has been the first interview (code 1) or a follow-up survey (code 2).

#### **8.5 Nationality**

The variable *natdeutsch\_14* informs about the nationality of interviewees of the baseline sample 2014. It shows whether the person owns the German nationality. The information dated back to from the self-reported data of the interviewees to their nationality which is recorded only for the baseline sample. The nationality of the panel participants, if required, is to be taken from the first measuring time. Up to baseline 2008 information about the citizenship were given by the registration office.

#### **8.6 Migration background**

The DEAS-generated variable *migrat\_14* covers the migration background of the interviewees of the baseline sample. It follows the concept the Federal Statistical Office uses in the microcensus. Three different groups are distinguished: People without migration background, people with migration background (i.e. migration to Germany) as well as people with migration background but without an own migration experience (i.e. born and grew up in Germany). Therefore the details of the first interview about nationality, place of birth, year of immigration, possession and year of acquisition of the German or a foreign nationality was used. Immigration before 1950 does not count as migration background. Those, who are born in the former eastern regions or the 'German Reich', immigrating to the FRG or GDR after 1949 are counted as people with migration background.

## 8.7 East-West allocation and Federal States

Based on the current residential address infas carried out an assignment to the region of the former federal territory (before German re-unification including the western parts of Berlin) or the former East Germany (including the eastern parts of Berlin) in variable *westost\_14*.

The variable *bland\_14* shows in which federal state the respondent's place of residence is located.

## 8.8 Size of municipality and region

The variable *polgk\_14* contains the categorized population size of the respondent's municipality of residence. The variable *bikgk10\_14*, also created by infas, includes the categorized population size of the BIK-region to which the municipality of residence belongs. The BIK-regions are an area of interdependence, which show the relationships between cities and their surrounding areas for conurbations, middle- and local sub-centres. For more information visit: <http://www.bik-gmbh.de/produkte/regionen/index.html>.

## 8.9 District types

Variable *bbsr\_kreistyp\_14* contains the urban-rural type of district, the interviewees live at the time of birth and year of the survey. The typology is provided by the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR 2012). Based on several structural characteristics of the settlements four district types are distinguished and <https://www.inkar.de>.

## 8.10 Age

The variable *alter\_14* contains the age reached in the year of data collection as a difference between year of birth and year of the survey. The variable *altervoll\_14* derived from the date of birth indicates the completed year of age on the day of interview.

## 8.11 Education

The Scientific Use File contains two variables to the educational level. Based on information to the general and professional education at school and vocational training, especially for the achieved level, a 4-stage variable about the educational

level are offered (*bildung4\_14*). In addition, a 3-stage educational construct is made (*isced\_14*), referring to the ISCED categories (Internationally Standard Classification of Education). Kind of educational information collected depends on the place of education (in Germany or abroad).

#### *4-stage level of education*

The allocation to variable *bildung4\_14* follows this systematic:

Level 1 (low)	Respondents without completed vocational qualification and up to a maximum of a graduation degree, which qualifies for a professional qualification
Level 2 (medium)	Respondents with vocational qualifications or qualifications for university or university of applied science entrance
Level 3 (sophisticated)	Respondents with finished upgrading training (professional, master craftman or technical school, university of cooperative educations or academies)
Level 4 (high)	Respondents with completed university studies (university or university of applied science)

#### *Level of education according to the ISCED scale*

The allocation to variable *isced\_14* occurs following this systematic:

Level 1 (low)	ISCED 0-2; respondents without formal vocational qualification
Level 2 (medium)	ISCED 3-4; respondents with vocational training (at work or at school), including respondents with higher general school certificate without professional training
Level 3 (high)	ISCED 5-6; respondents with completed university studies (university or university of applied science) or with completed professional development training (professional, master craftman or technical school, university of cooperative educations or academies)

## 8.12 Occupational status

Variable *erw\_14* distinguishes three groups:

(1) Employed persons; these are persons who answer in question 101 that they are employed full-time or part-time or irregular, marginally employed or working in a secondary job.

(2) In retirement; these are persons aged 60 or older, who receive own old-age pension (question 100) or who are in early retirement (question 101). The classification to this category took place regardless of a possible employment of retirees, as *erw\_14* questions the main status.

(3) Others not employed persons; these are persons with other valid codes in question 101 and persons never working full-time in accordance with question 32a. Also employees in the release phase of semi-retirement with zero working hours (question 101) are added to this category.

## 8.13 Classification of occupation, prestige and status

### 8.13.1 ISCO08-Codes

On the basis of the open answers to the actual or last occupational activity the ISCO08 codes (International Standard Classification of Occupations, version 2008) were allocated<sup>4</sup>. These four-digit codes replace the open answers and are positioned in the appropriate interview parts (e.g. *hc132isco08*). ISCO codes exist for the respondent as well as for his/her current partner or the last spouse. To easier use the variables *isco08zp\_14* and *isco88p\_14* with the summarized ISCO88 information about the current or last occupation of the respondent and the current partner (or the last spouse) were generated.

If there was no change of the occupational situation since the last interview (e.g. constantly retired), the open question asking for the exact occupation was filtered. The same is true for the occupational status of the present partner or – for divorced or widowed persons with no partner – the former spouse. Hence, for these people the SUF 2014 contains also no ISCO codes and no prestige or status scores derived of it. These can be taken – if required - from the suitable variables of the

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<sup>4</sup> The ISCO-coding to the actual or last occupational activity (wave 5) and the providing of the single variables for the professional prestige (SIOPS) and the socio-economic status (ISEI) have been carried out by infas, Institute for Applied Social Sciences, under the authority of the DZA (German Centre of Gerontology).

previous waves. However, in previous DEAS waves coding of the ISCO codes used former ILO system ISCO88.

### 8.13.2 SIOPS-occupational prestige

The „SIOPS - Standard International Occupation Prestige-Scale“ was introduced by Treiman (1977) and further developed by Ganzeboom & Treiman (1996, 2003). Every single ISCO08 code is allocated a specific value of prestige, that measures mean social reputation of that occupation in the society. The scale is based on research to evaluate the occupations in the society in various countries. The scale lasts from 13 to 78 in the DEAS survey data.

On the basis of the ISCO08-Codes of the current or last occupation, a value of prestige was allotted to every target person. This was also done for the current partner or – for divorced, separated or widowed persons without partner – the last spouse. Relevant was the current or last occupation of the partner during marriage. Following, both values of prestige were transformed into one single household or partner-related level of prestige. In variable *siops\_14* the higher value of both persons were taken. That means, if the present or former partner (for respondents without a partner) has a higher value of prestige, this was taken to generate the variable. With filtered panel participants the SIOPS values can be taken from the previous wave, if required.

In addition to variable *siops\_14* with the differentiated metrical scale values the variable *siops\_14\_kat* was derived. The scale values were collapsed to five categories from 1 (low) to 5 (high) (see Hoffmeyer-Zlotnik 2003).

### 8.13.3 ISEI-Status-Score

The „ISEI – International Socio-Economic Index of Occupational Status“ is a scale constructed by Ganzeboom et al. (1992) to measure socio-economic status. It is based on the assumption that every occupation needs a mean educational background and enables a specific level of income. Basis for the construction of the scale was a study conducted in 16 different countries. Educational as well as income values for various occupational representatives were identified. Every occupation within the ISCO classification is allotted a status score.

On the basis of the ISCO08-codes of the current or last occupation a status score was identified for every target person. This was also done for the current partner or last spouse if the interviewee is separated, divorced or widowed. The current or last occupation of the partner respectively last occupation during marriage with the former spouse was decisive for the construction of the partner variable. Finally the variable *isei\_14* combines both status scores, the household and the partner characteristics. Assigned is the highest strata value within the couple. With filtered panel participants the ISEI values can be taken from the previous wave, if required.

## 8.14 Social strata and class

### 8.14.1 ESeC-class scheme

The 'European Socio-economic Classification (ESeC)' is a further development of the EGP scheme. It was developed by David Rose and Eric Harrison and commissioned by Eurostat to harmonize the European statistics for comparative analysis in the field of social inequality (Rose & Harrison 2010). Essential basis for the classification is again the kind of regulation of the employment in combination with the job-related human capital and the possibility of performance monitoring. There are nine different ESeC classes. They are operationalised using the ISCO-codes, the occupational status, the number of employees of self-employed and the oversight capacity.

The variable *eseczp\_14* contains the class allocation of the target person, characterized by the present or last occupations, the variable *esecpartner\_17* the class allocation of the current partner or last spouse if the interviewee is separated, divorced or widowed, characterized by the professional features. The official English terminologies are used (see Rose et al. 2010). A German translation is to be found in Wirth & Fischer (2008). With filtered panel participants the ESeC values can be taken from the previous wave, if required.

### 8.14.2 Social strata

The social strata variable *schicht\_14* was constructed using the information on current or last occupation of the target person and the present partner (see Mayer & Wagner (1999) and Kohli et al. (2000)). If widowed or divorced interviewees have no partner, information of the last spouse was taken to construct the variables. Assigned is the highest strata value within the couple. According to the following table, five different categories are differentiated in the variable *schicht\_14*.

<b>Social strata:</b>	<b>Codes of occupational position:</b>
Lower class	10, 11, 60, 61, 62
Lower middle class	12, 25, 40, 41, 50, 51, 63, 64
Middle class	13, 14, 30, 35, 36, 42, 52, 55, 65
Upper middle class	31, 32, 43, 53
Upper class	20, 21, 22, 23, 33, 34, 44, 54

As in Mayer & Wagner (1999) one could hesitate to label the highest category as upperclass because the societal elite (top manager, top-ranking politicians, large scale manufacturer) are only limited represented in the sample. With filtered panel participants the values can be taken from the previous wave, if required.

## 8.15 Perceived social exclusion

Based on a scale developed by Bude & Lantermann (2006) the variable *exklusion\_14* measures the degree of perceived social exclusion. It uses four items newly introduced to the drop-off (question 12). The scale with a possible range of 1 to 4 gives the average of the item values. At least two items had to contain valid values. The higher the scale value the more pronounced is the subjective feeling of social exclusion.

## 8.16 Income

### 8.16.1 Monthly net household income

The income of the target person and household is queried both in interview and drop-off. During the interview target persons are asked to provide the household net income (question 802). If they are unwilling or unable to do so they can choose from a list of income categories (question 803). Detailed information about the individual sources of income is gathered for both the target person and his/her partner within the drop-off questionnaire (questions 71 to 73). In case of significant deviation between the interview's monthly income statement and the drop-off questionnaire's summed income, the plausibility was checked looking at various other characteristics of the target person and household, and adjusted accordingly for plausibility. Therefore, the final data set includes some new variables, firstly the variable *hc802neu*. It contains either the actual answer given to question 802 or, if unavailable, the income category's mean average of question 803 or, if unavailable or not plausible, no value.

The second new variable is *hheink14*. Its value is the household net income of variable *hc802neu* if available; else it contains the summed income based on the answers from the drop-off questionnaire. However, this is suppressed if the drop-off questionnaire states further household income (additional to the target person's and his/her partner's) of unspecified height. If nominal household income has to be shown we recommend to use variable *hheink14*.

### Equivalent income

Variable *aeo\_oecd\_14* contains the needs-adjusted monthly per head income of the household. Weighting of household size uses the modified OECD equivalent scale that is used by Eurostat and the Federal Statistical Office. In this scale the first or single household member older than or 15 years old gets the weighting factor 1.0. Any other household members from the age of 15 get the factor 0.5 and household members younger than 15 years get the factor 0.3. The sum of these weighting factors is the divisor for calculating net household income into equivalent income. Monthly household net income is taken from variable *hheink\_14*.

### 8.16.2 Income position, income poverty and income wealth

Variable *einkpos\_14* shows the individual income position in percentage points of the mean equivalent income of the whole population. Mean equivalent income from the GSOEP for the year 2014 amounting of 1.704,20 Euro serves as reference value.<sup>5</sup>

The dummy variable *einkarm\_14* has value 1 if the equivalent income is below the poverty line. 60 percent of the national median of the equivalent income is used as poverty line in the German and European social statistic. Following this definition, the poverty line for the year 2014 is 900 Euro (equivalent net income based on GSOEP data).

Dummy variable *einkreich\_14* provides information about income wealth. We use the same threshold that is used in the Poverty and Wealth Report of the Federal Government: having more than twice of the mean equivalent household net income is considered being wealthy. Using the GSOEP, the monthly equivalent income threshold is 3.408 Euro in the year 2014.

## 8.17 Marital status and partnership

Due to changed filtering of questions on the development of partnership and conjugal relations of panel respondents the recording of marital status occurred at different positions in the CAPI depending on conjugal dynamics. For better use this information is brought together in the variable *famstand\_14*.

Variable *partner\_14* informs about the type of household and partnership. Categories are having no partner, living with a partner in the same household and having a partner who does not live in the respondent's household (living apart together).

## 8.18 Existence and number of children and grandchildren

Information on the existence and number of currently living children or grandchildren of the target person are stored in variables *exkind\_14*, *anzkind\_14*, *exenk\_14* and *anzenk\_14*. Information on children 1 to 8 form the basis of the calculations.

Interviewees telling the interviewer in question 300 about all children who grew up or still grow up with interviewee. Besides biological children, also adopted children

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<sup>5</sup> We thank Peter Krause, German Institute of Economic Research, Berlin, for providing the reference values for calculating income position, poverty and income wealth.

or stepchildren can be mentioned. Deceased children are not included in these derived variables.

Variable *anzkind\_14* is the sum of all living children. Persons with children but refusing to give more information if the child is still alive are set on the value “-6”. Persons with more than 8 children are only asked for more information of the first 8 children. There is no information from the ninth child on. The maximum value of variable *anzkind\_14* is therefore 8+.

The proceeding for generating the indicators on the existence (*exenk\_14*) and number of grandchildren (*anzenk\_14*) is alike that for the children. Only living grandchildren are taken into account.

### **8.19 Distance to the closest child**

Variable *wekind\_14* contains information about the distance to the closest living child. This variable has seven categories, ranging from „living in the same household” to „living abroad”. Persons without children are filtered.

### **8.20 Caring for grandchildren**

The construct *enkelbetreu\_14* contains only information about persons with grandchildren. Grandparents who share in caring for grandchildren get the code 1, grandparents who do not participate in caring for a grandchild get the code 0. Persons without grandchildren are filtered.

### **8.21 Size of network**

Questions 600 to 607 of the oral interview serve as basis for constructing the network size. Variable *nwgroesse\_14* contains the number of persons that are named as important persons with regular contact to the target person. If the target persons wanted to name more than 8 persons (question 607), the network size was set to 9+.

The approach taken here is just one possibility to measure network size. Often persons that are mentioned in the children and household matrix, are not named again. This gives a hint that the variable *nwgroesse\_14* only measures the minimum value of important persons with regular contact.

## 8.22 Volunteering, honorary posts

Based on questions 408 and 414 in the oral interview, the variable *ehramt\_14* specifies if a person executes an honorary office in the groups or organizations in which he or she is a member. Other voluntary offices outside these groups and organizations (question 416) are included in variable *ehramt\_weit\_14*.

## 8.23 Body-Mass-Index

The body mass index is calculated as division of body weight (in kg) and square of body height (in meters). The unit of the formula is therefore kg/m<sup>2</sup>. The variable *bmi\_14* is a rough indicator for the evaluation of the weight of a person. For interpretation age as well as sex (and typically also amputated extremities) should be taken into account. Generally the normal weight calculated as BMI for men is between 20 and 25 kg/m<sup>2</sup>. For women normal BMI weight is between 19 and 24 kg/m<sup>2</sup>. A BMI value lower than 16 indicates heavy underweight whereas a BMI higher than 40 indicates adiposity of the third degree.

## 8.24 Physical functioning

The SF-36 subscale (Bullinger & Kirchberger, 1998) is used to measure physical functioning. The degree of physical impairment is measured using an evaluation of ten daily activities on a scale from 1 (yes, limited a lot) to 3 (no, not limited at all). The sum of the items is then transferred into the standard 0-100 range. Higher values of variable *sf36\_14* indicate a better physical functioning.

## 8.25 Number of physical diseases

Variable *anzphy\_14* contains the number of physical diseases based on a list of widespread diseases (see drop-off question 31).

## 8.26 Pulmonary function test

The pulmonary function test is based on the peak flow method (recording of the maximum breath out capacity). The peak flow value represents a useful approximation of the vital capacity of people. Variable *lft\_14* is consistent with the maximum value of two measurements during the interview. If there was only one measurement this value was taken for constructing the variable. The method is in accordance with the standard method described at Nunn & Gregg (1989) (besides

the measurement of two instead of three values). The data corresponds to liter of exhaled air per minute. The measurement is accurate to +/- 10l/min when conducted correctly (according to manufacturers' instructions).

### **8.27 Digit-Symbol-Substitution-Test**

In accordance to the "Digit Symbol Substitution Test" (Wechsler 1955; Tewes 1994) used in intelligence tests, a digit symbol test is carried out with all interviewees. The interviewee is shown a table with codes of Arabic figures 1-9 that correspond to simple geometric signs. Then they have 90 seconds to fill out a table with four rows of figures with the corresponding geometric sign. The number of figures exceeds the number of possible entries in the given time. The interviewer notes problems while conducting the test. The digit symbol test is easy to execute and is therefore used more often in surveys (Hoyer et al. 2004: 211).

There are four generated variables that contain information on process and results of the digit symbol test. Variable *zzbearb\_14* indicates if the test was conducted at all and if yes, is there a problem noted. Very high numbers of correct entries that are impossible to achieve as well as interviews with problems recorded by the interviewer are excluded and counted as invalid. The total number of characters is contained in variable *zzgscore\_14*. The number of wrong characters is stored in variable *zzfscore\_14* and finally *zzrscore\_14* contains the deviation of all mentioned and wrong characters and therefore specifies all correct characters.

The test values are a good measurement for the cognitive performance of adults<sup>6</sup>: typically correlations of about -.46 to -.77 between age and test result are reported (Hoyer et al. 2004: 211).

### **8.28 Depressiveness**

We use the short form of the German translation of the CES-D (Center for Epidemiologic Studies Depression) Scale (15 items, questions 504 of the interview) (Hautzinger & Bailer, 1993). It measures the depressive symptoms. The value of the scale is the sum over all 15 items that must be available. High values of variable *depressiv\_14* indicate a high level of depressive symptoms.

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<sup>6</sup> The test result is a global indicator of the cognitive performance that measures the speed of visual perception and information processing on the one hand. But besides that it also measures the pace in which the results are either written down or typed into the computer.

### 8.29 Loneliness

We use the short version with six items (question 29 of the drop-off) of the original scale to measure loneliness (De Jong Gierveld & Van Tilburg, 2006). The value of the scale is the mean value of the six items. At least three of the six items must contain valid values to calculate the mean. High values of variable *lone6\_14* indicate a high level of loneliness.

### 8.30 Optimism

The scale *optimismus\_14* grasps the degree in optimism also called the affective valence of future perspective (Brandtstädter/Wentura 1994). It uses the following five items of the drop-off: Question 2, items 2 and 5; question 16, item 1; question 21, items 1 and 6. If necessary, the items were reversed that high values correspond to a high level of optimism. The individual scale value with a possible range of 1 to 4 is the mean value of the items. For the scale at least three items had to have valid values. The scale *optimismus\_14* was also developed for the SUF-versions of DEAS waves 2002, 2008 and 2011.

### 8.31 Self-Efficacy

The scale *selbstwirk\_14* shows a person's degree of the self-efficacy according to Schwarzer & Jerusalem (1995, 1999). To calculate it the following five drop-off items are used: question 2, item 7; question 16, items 3 and 7 question 21, items 3 and 4. If, necessary, the items were reversed that high values correspond to a high level of self-efficacy. The individual scale value with a possible range of 1 to 4 is the mean value of the items. At least three items had to have valid values.

The self-efficacy scale was also provided for the new SUF-versions of DEAS waves 2008 and 2011. Summarized with the optimism scale the self-efficacy scale replaces the former HOPE Scale of Snyder et al. (1991).

### 8.32 Self-Esteem

The scale *selbstwert\_14* measures self-esteem (Rosenberg (1965)). To calculate it the following ten drop-off items are used: question 2, items 1, 3, 4 and 6; question 16: items 2, 4, 5 and 6; question 21: items 2 and 5. If, necessary, the items were reversed that high values correspond to a high level of self-esteem. The individual scale value with a possible range of 1 to 4 is the mean value of the items. At least three items had to have valid values. The self-esteem scale was also provided for the new SUF-versions of DEAS waves 2002, 2008 and 2011.

### **8.33 Perceived stress**

The scale *stress\_14* measures the subjectively experienced stress (Cohen et al. 1983). It is based on four drop-off items in the new question 30. Item values were reversed that high values correspond to a high level of perceived stress. The scale value with a possible range of 1 to 4 is the mean value of the items. At least two items had to have valid values.

### **8.34 Autonomy in older age (WAA)**

The scale *autonomie\_14* measures the perceived degree of autonomy according to Schwarzer (2008). It is based on four drop-off items in the new question 47. All item scales were reversed that high values correspond to a high level of perceived autonomy. The scale value with a possible range of 1 to 4 is the mean value of the items. At least two items had to contain valid values.

### **8.35 SOK Self-regulation**

The scale *sok\_14* measures the degree of the self-regulation according to the coping strategy by the SOK concept (selection, optimization, compensation). A adjusted version of Ziegelmann & Lippke (2006), based on Freund & Baltes (2002), was used. Four drop-off items of the new question 50 were included. All original item values were reversed that high values correspond to a high level of self-regulation. The scale value with a possible range of 1 to 4 is the mean value of the items. At least two items had to have valid values.

### **8.36 Life satisfaction**

The scale to measure life satisfaction is based on five items of question 3 of the drop-off questionnaire (Pavot & Diener, 1993). At least three of the five items require valid values to calculate the mean value. High values of variable *lz\_14* indicate a high level of life satisfaction.

### **8.37 Positive and negative affect**

Basis for both constructs of positive (*pa\_14*) and negative (*na\_14*) affect are the information of question 4 of the drop-off (scale by Watson, Clark & Tellegen, 1988). The mean value of the positive and negative affect are constituted by the requested

adjectives. At least answers to three of the items are required to calculate the index. High values indicate higher level of negative or positive affect.

Additionally, in 2014 for the first time items to positive and negative feelings with rather low arousal were introduced. These are six items of the drop-off question 22, which were developed by the DEAS-team. The scale *pa\_low\_14* contains the mean value to three items to measure positive feelings (satisfied, relaxed, balanced). The scale *na\_low\_14* contains the mean value of three items of negative feelings (sad, subdued, disappointed). At least two items had to have valid values. High scale values correspond to a high positive or negative affect with low degree of arousal.

## 9 ADDITIONAL VARIABLES

### 9.1 Interviewer's information on the interview situation

Following the personal interview, the interviewer gives information to the course of the interview. Some selected information is stored in the variables *hci1i\_1* to *hci3i* in the SUF DEAS 2014. The documentation of the questions is to be found directly after the CAPI presentation in the instruments

Variable	Label	Categories
hci1i_1	Present at interview: no other person	Not mentioned; mentioned
hci1i_2	Present at interview: spouse / partner	Not mentioned; mentioned
hci1i_3	Present at interview: children	Not mentioned; mentioned
hci1i_4	Present at interview: other family members	Not mentioned; mentioned
hci1i_5	Present at interview: other person	Not mentioned; mentioned
hci5ci	Interview was translated by third person	Yes, nearly completely; yes, sometimes; no; interviewee is native speaker
hci3i	A present person intervened into the interview	Yes, sometimes; yes, often; no

## 9.2 Interviewer's information on the residential environment

The interviewer captures some additional information to the residential environment besides the personal interview. A selection is stored in the SUF DEAS 2014. These variables provide the following information:

Variable	Label	Categories
hci15i	Location, 2011	Single or scattered site; attached estate; peripheral location; close to centre; central location; don't know; no answer
hci16i	Big city with at least 100.000 inhabitants	Yes, no, not assignable
hci17i	Distance to centre of the nearest big town/city	Kilometers
hci9i	Location of the interview	Respondents house/room; not respondents house/room; no interview
hci10i	Accessibility of house/room	Without stairs, up to 10 steps in staircase, over 10 steps in staircase, don't know
hci11i	Elevator on site	Yes; no; don't know

## 9.3 Documenting social relations of respondents

### 9.3.1 Personal codes

The social relations of the interviewees to other persons are listed with the help of person codes and a corresponding person card. Person codes are three-digit codes and different for each group of persons. Normally, these are individual codes (for children, partner, grandchildren, friends), but there are also collective codes (e.g. for neighbours).

Example: If the interviewee has children, the interviewer transfers code number 201 (that is the code for the first child) together with the name of the child to the person card. Further children get the codes number 202, 203 etc. and are noted together with their names on the respective person card. With the help of these person cards (that are filled during the interview), the interviewee and the interviewer can agree to which person information is currently collected at any time during the interview.

On the basis of these person codes further attributes of the various social relations (e.g. the second child) can be clearly assigned.

### 9.3.2 Grandchildren

In the 3rd wave of the DEAS a second person card was introduced. It contains a separate code for each grandchild. In previous waves, only the collective code 301 was noted for all grandchildren. In the survey as well as in the data there are information for the *sole grandchild*, the *basic grandchild* and the *random grandchild*. This identification is derived from the procedure during the interview. When asked about their children, also information on the grandchildren of the interviewee are collected. The number of grandchildren determines the process of collection of further information of that grandchild.

If the child of the interviewee has only one child, it is called the *sole grandchild*. All information according to the filtering rules are collected for this grandchild now.

If the child of the interviewee has more than one child, some basic information (year of birth, sex, place of residence) for all *basic grandchildren* are collected.

The CAPI-program then randomly chooses one *random grandchild* out of the pool of all children of this child and collects further information only on this grandchild. It serves as representative for his siblings. A random grandchild is always a basic grandchild but never a sole grandchild.

It allows a broad but also time saving collection of information on grandchildren and an unbiased selection of that grandchild with more and detailed information.

*Random grandchildren* are only sampled for the first four children of an interviewee. From the fifth child on, only year of birth and sex of the grandchildren are collected.

With panel participants with grandchildren it was paid attention to the fact that the deepening information are collected in the follow-up exactly for those grandchildren who were grasped by the last questioning as a *sole grandchild* (if it was at that time the only child of a child of the interviewees) or as a *random grandchild* (if it was one of several children of a child of the interviewees). This happened with the help of the preload information about the suitable grandchildren. Per questioned panel participants up to four grandchildren (a grandchild first-born to fourth-born child of the interviewees) can be selected and followed this way.

The variables *hcenkreid1*, *hcenkreid2*, *hcenkreid3* and *hcenkreid4* provide information on whether we were successful in addressing the deepening questions in the year 2014 really on these previously selected grandchildren (up to four sole or random grandchildren of the interviewee).

## 10 OTHER

### 10.1 Codebook DEAS2014

The Codebook of the SUF DEAS 2014 containing all specifications, labels and frequencies of all variables as well as further documentation is available on the [website](#) of the FDZ-DZA.

### 10.2 DEAS-Indicators online

The online information system GeroStat of the DZA (<http://www.gerostat.de/en/index.html>) provides statistics on the distribution of main characteristics of the baseline samples of the years 1996, 2002, 2008 and 2014 by age group, sex and place of residence (east/west).

### 10.3 Regional data

Information and characteristics on the level of countries and independent cities can be merged to the data. The Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR) provides information on indicators of the regional level via its system called INKAR. An overview of all available characteristics is provided by the list of indicators of the [BBSR](#).

Registered users can get some selected indicators as data file that can be merged to the survey data after consulting the FDZ-DZA. Full indicators can only be merged to the data at a specifically protected computer workplace at the DZA. Please contact the [FDZ-DZA](#) for more information.

### 10.4 Data on non-participants

There are information for about 2,500 target persons who were not able or did not want to take part in the questionnaire of the DEAS wave 2014. Some of this information are directly collected from the target person, other information are proxy information given by other persons. The data comprises information on the living conditions, activity status, health status as well as subjective evaluation of central living areas. Interested researches of the short questionnaire can contact the FDZ-DZA.

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