German Ageing Survey (DEAS): User Manual SUF DEAS2017, Version 2.0

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Version 2.0

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PRELIMINARY REMARK: CHANGES IN SUF-VERSION 2.0

Apart from minor label editions, SUF 2.0 of DEAS 2017 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 1.1

Compared to the previous version, SUF-version 1.1 of the DEAS 2017 wave has minor value corrections in the variables partner_17, ic2_3, and ic203_y. Additionally, some value labels have been corrected.

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

The German Ageing Survey (DEAS), funded by the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth (BMFSFJ), is a nationwide representative cross-sectional and longitudinal survey of the German middle-aged and older population. 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 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 over 40 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.

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 6th wave in 2017 considered a cross-

sectional sample as well as a panel sample of study participants who had entered the DEAS earlier. Sampling and fieldwork for all waves (1996-2017) have been carried out by the Bonn-based Institute for Applied Social Sciences (infas), scanning and coding of the additional questionnaires by the DB Profi-Kontor GMBH in Butzbach.

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.

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[1] are tracked. After the 3rd wave in the year 2008, panel members are interviewed again after three years already. Therefore, in 2011 there was only a panel sample.

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 2017, size of the baseline sample (1996-2014) is 6,626 respondents born 1929 to 1974.

Baseline participants who gave written consent were re-contacted for further waves of data collection in 2002, 2008, 2011, 2014 and 2017. Panel attrition is high in the first re-interview but attenuates in subsequent follow-ups. Up to 2014, a total of 6,623 individuals had participated at least twice. In wave 5 (2014) 4,322 panel respondents could be re-interviewed. In 2017, a total of 6.626 panel respondents could be re-interviewed.

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 - with information on 40.032 valid interviews of 20,715 participants. The Scientific Use File DEAS 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:

Sample by baseline year	n
Panel respondents, B1996	712
Panel respondents, B2002	704
Panel respondents B2008	2.109
Baseline respondents, B2014	3.101
Total	6.626

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[1] Participants of the foreigner sample in 2002 were excluded from the panel

The sampling design of the German Ageing Survey (DEAS) allows for different perspectives of research, f.e. the option for analysis of the individual living situations and the living conditions over a period of 21 years (see Klaus et al. 2017). Furthermore 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). Another perspective arises from the comparison of individual changes over six, respectively three years, in the time spans of 1996 to 2002, 2002 to 2008 and 2008 to 2014. This makes cohort analysis 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 2017

As in previous waves, respondents were asked in detail about their living situation. 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
– sociodemographic 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 with an average duration of about 90 minutes, 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 changes in personal relationships more efficiently (preloads). New in 2017 was the possibility of proxy-interviews: panel respondents who are no longer able to conduct an interview themselves for health reasons could determine a trusted person who undertook the task. In 21 valid proxy-interviews on the

one hand questions about individual settings were omitted, on the other hand single questions from the drop-off-instrument were transferred into the face-to-face interview.

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 (proxy-interviews excluded).

Furthermore respondents were also given a questionnaire to fill out ("drop-off"). People unable to fill out the questionnaire on their own had the opportunity of doing so with the help of the interviewer. In this second part of the 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. Moreover most items of the psychological scales are placed in the drop-off.

The option of using an online questionnaire was additionally provided in 2017. 1001 of 5608 made use of it.

Compared to former waves, only a few extra questions were introduced to go more into details when covering the retirement age ("Rente mit 63", pension reduced by deductions), partnership maintaining separate households (prefer to live together), care degree ("Pflegegrad") and items for external activities

More information about the design, content and the process of the 2017-survey are given in Klaus et al. (2019). The report on methods and results of the 6th DEAS wave can be read in infas report (2018) respectively open access at Springer VS: https://doi.org/10.1007/978-3-658-25079-9. 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

Response rate

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. Furthermore proxy-interviews were cleared if the panel participant died shortly before. In the end, there were 6.626 valid cases left for analysis. The response rate of the panel sample reaches 65,4 percent of the adjusted gross sample (Klaus et al. 2019). 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 correspondents to the familiar methods of all panel studies (for details, see Hammon et all (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 probability 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 2017 concludes exclusively the both weighting variables with the integrated post-stratification cross-sectional weightings for the face-to-face interview (*qsps_17*) and the drop-off (*qspsdrop_17*). The integrated cross-sectional weightings without post-stratification are retrieved in a separate file.[2]

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 *qspsdrop_17* (cross-sectional weightings), otherwise the variable *qsps_17*.

3   DATAFORMATS

The Scientific Use File (SUF) 2017 as well as the SUF Meta (see chapter 6) are available in SPSS (version 22) and Stata (version 14) data format. If problems occur, please contact FDZ-DZA (fdz@dza.de) for advice.

4   CLASSIFICATION OF VARIABLE NAMES AND MISSING CODES IN DEAS 2017

The new statistical classification of naming variables, introduced in 2008 (wave 3), has been maintained for further waves, so for the 2017 survey as well. In the first two waves the variables were coded in the logic of a card scheme[3]. Since wave three, 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 2017 start with the character "i" as wave marker. Variables from the CAPI interview are followed by the character "c". That means all variables from the oral interview start with "ic". Variables from the drop- off questionnaire are labeled with "id". The following number is then the question number. For example, variable ic101 is question

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[2] The cross-sectional weighting for the DEAS wave 2002, 2008, 2014 and 2017 are only available for registered users.

[3] 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*).

101 from the CAPI questionnaire, variable id7 is the drop-off question 7. Open item lists are coded with the ending "o", characterized by "ic1060". Multiple answers or answering options are differentiated using a serial numeric ending, for example ic423_1, ic423_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 (ic3011, ic3012, etc.)

As already mentioned before, the 2017-DEAS survey offered the possibility of proxy-interviews for the first time. Thus questions only addressed to the proxy-panel-respondents are labeled with "px", for example ic350px_1.

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 2017 including all labels and missing values can be found on the same web page in the codebook 2017.

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.[4]

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) *[if question is either posed to panel respondents or baseline sample respondents]*
-5	.e	no drop-off
-6	.f	no answer *[without closer differentiation]*
-7	.g	deleted
-8	.h	double entry *[if not deleted before]*

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[4] 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.

Generally the missing-codes were valued as missing values. It is recommended to carry out a frequency count for the values before using them for further analyses.

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 that 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 1996-2014	Shows in which survey year respondent was interviewed
lastpart	Last participation	Year of last participation
n_obs	Number of participation	Number of individual participation (1-6)
entry	Year of entry	Year of first interview
yob	Year of birth	Year of birth (possibly updated after plausibility check)
gender	Gender	Male; female

Variable	Label	Description
natdeutsch	German citizenship	Feature of the first interview: German, non-German
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_kreistyp17	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)
rlc2017_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 form registration offices)

Variable	Label	Description
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. Furthermore information on drop-outs and on participation in panel questionnaires make the mortality and failure analyses possible. 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 surveys. All respondents get a six decimal places: 111111 for example shows that this person participated in all DEAS waves, respondents with the number 010011 were firstly asked in 2002, declined to participate in 2008 and in 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 somebody wants to conduct a longitudinal analysis for example, it can be made by means of the variable *n_obs*. The personal information from the SUFs 1996, 2002, 2008, 2011, 2014 and/or 2017 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 .

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* 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 2017 AS IN CONTRAST TO DEAS 2014

Because in 2017 panel respondents were only re-interviewed and no fresh baseline sample was drawn and surveyed, all questions were used in the interview, which were filtered and asked in the starting questionnaire. This includes especially questions about family and migration background, schooling and occupational training and former employment patterns.

6.1 New topics and questions

There are only a few new questions in the DEAS survey of 2017 due to the decision, not to extend the interview length. Following topics are new or covered more in detail in the oral interview (CAPI) of wave 6:

- Entitled to a pension with permanent deductions because of an early retirement pension, inclusive the amount deducted (percentage or number of months upon occurrence of the insured event)
- Entitled deduction-free old-age pension for those insured with exceptionally long ("Rente mit 63")
- Possibility and desire for living with the partner (do not yet cohabiting couples, "LAT")
- Time, spend away from home on workdays (resumption)
- Care degree of a participant (resumption)

Thus in proxy-interviews no additional questionnaire (drop-off) were used, several questions of the drop-off have been transferred to the face-to-face interview:

- Scale for barrier-free apartments (CAPI 350px, Drop-off 54)

- Scale for using (technical) aids for hearing, visual and mobility impairments (CAPI 507px, Drop-off 35)

- Inheritance issues (CAPI 809px-811px, Drop-off 48-50)

- Real estate holdings and –value (CAPI 812px-815px, Drop-off 51-52)

- Financial assets, liabilities, old-age provision (CAPI 812px-823px, Drop-off 51, 52, 62-67)

Furthermore some variables of the proxy-person have been collected (gender, age, relationship to the panel participants). No additional questions have been added in the drop-off questionnaire.

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 6 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. New filtering components have been resulted from the accepted proxy-interviews.

In contrast to the face-to-face interviews some questions have been deleted in the drop-offs:

- Attitudes towards governmental responsibilities for the social protection

- Views to the relationship between old and young in society

- Participation in the previous parliamentary elections

6.3   Changes on phrasing of questions

There are only minor changes in the phrasing of questions, items and answer categories in the DEAS 2017. 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 2017. 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 answer option 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 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) 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 neighborhood for example.

8 GENERATED VARIABLES

There are various generated variables added to the Scientific Use File (SUF) DEAS 2017. 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 and get registered.

Overview of generated variables in the SUF DEAS 2017 (date: May 2019)

| Variable | Label | Available for the years | | | | |
		1996	2002	2008	2011	2014
fallnum	Case number (first digit for initial interview wave)	x	x	x	x	x
stich	Sample identification	x	x	x	x	x
qsps_17	Cross-sectional weight – baseline sample, oral interview	x[1]	x	x	x	x
qspsdrop_17	Cross-sectional weight – baseline sample, drop-off	x[1]	x	x	x	x

Variable	Label	Available for the years				
		1996	2002	2008	2011	2014
part_96	Participation 1996	x	x	x	x	x
part_02	Participation 2002	-	x	x	x	x
part_08	Participation 2008	-	-	x	x	x
part_11	Participation 2011	-	-	-	x	
part_14	Participation 2014	-	-	-	-	-
natdeutsch_17	Nationality in initial interview[3]	x[1]	x	x	x	x
migrat_17	Migratory background[3]	-	x	x	x	x
westost_17	Western or eastern part of Germany	x	x	x	x	x
bland_17	Federal state	x	x	x	x	x
polgk_17	Community size	x	x	x	x	x
bikgk10_17	BIK region size	x	x	x	x	x
bbsr_kreistyp_17	Type of district	x	x	x	x	x
alter_17	Age (year of interview minus year of birth)	x	x	x	x	x
altervoll_17	Consummate age at interview	x	x	x	x	x
bildung4_17	Level of education, 4 categories[3]	x	x	x	x	x
isced_17	Level of education by ISCED, 3 categories[3]	x	x	x	x	x
erw_17	Labour force participation 2017	x	x	x	x	x
isco08zp_17	ISCO08 code of (last) occupation of respondent	(x)[2]	(x)[2]	(x)[2]	(x)[2]	x
isco08p_17	ISCO08 code of (last) occupation of present or last partner	(x)[2]	(x)[2]	(x)[2]	(x)[2]	x
siops_17	SIOPS – occupational prestige score – based on couple (Treiman)	x	x	x	x	x
siops_kat_17	SIOPS – occupational prestige – categorized	x	x	x	x	x
isei_17	ISEI occupational status score – based on couple (Ganzeboom)	x	x	x	x	x
schicht_17	Social class – based on couple (Mayer/Wagner)	x	x	x	x	x
eseczp_17	Individual socio-economic classification (Rose/Harrison)	-	-	-	x	x
esecpartner_17	Socio-economic classification of present or last partner (Rose/Harrison)	-	-	-	x	x
exklusion_17	Perceived social exclusion scale	-	-	-	-	x
hheink_17	Monthly net household income, from CAPI and drop-off	x	x	x	x	x
aee_oecd17	Monthly equivalence income (new OECD equivalence scale)	x	x	x	x	x

Variable	Label	Available for the years				
		1996	2002	2008	2011	2014
einkpos_17	Income position (% of mean of equivalised income of population)	x	x	x	x	x
einkarm_17	Income poverty (< 60 % of median equivalent income of population)	x	x	x	x	x
einkreich_17	Income wealth (>200 % of mean equivalent income)	x	x	x	x	x
famstand_17	Marital status	-	-	-	-	x
partner_17	Existence and type of partnership	x	x	x	x	
exkind_17	Existence of living children	x	x	x	x	x
anzkind_17	Number of living children	x	x	x	x	x
wekind_17	Geographical distance to home of nearest child	x	x	x	x	x
exenk_17	Existence of living grandchildren	x	x	x	x	x
anzenk_17	Number of living grandchildren	x	x	x	x	x
enkelbetreu_17	Care of grandchildren	x	x	x	x	x
nwgroesse_17	Size of personal network: Number of important people in regular contact	x	x	x	x	x
ehramt_17	Voluntary work in groups and organizations	x	x	x	x	x
ehramt_weit_17	Voluntary work in general	x	x	-	x	x
bmi_17	Body-Mass-Index	x	x	x	x	x
sf36_17	Physical functioning	x	x	x	x	x
anzphy_17	Total number of physical diseases	x	x	x	x	x
lft_17	Pulmonary function test (peak flow from both measurements? in l/m?)	-	x	x	x	x
zzbearb_17	Handling of the digit symbol test (ZZT)	-	x	x	x	x
zzgscore_17	ZZT: total score of recorded digits	-	x	x	x	x
zzfscore_17	ZZT: total score of wrong recorded digits	-	x	x	x	x
zzrscore_17	ZZT: total score of correct recorded digits	-	x	x	x	x
depressiv_17	Depression Scale CES-D (CES-D, Radloff, 1977)	x	x	x	x	x
lone6_17	Scale for Loneliness (De Jong Gierveld, & Van Tilburg, 2006)	x	x	x	x	x
optimismus_17	Optimism Scale (Brandstädter/Wentura)	-	x	x	x	x
selbstwirk_17	Generalized Self-Efficacy Scale (Schwarzer & Jerusalem 1995)	-	-	x	x	x
selbstwert_17	Self Esteem Scale (Rosenberg 1965)	-	x	x	x	x
stress_17	Perceived stress Scale (Cohen et al.)	-	-	-	-	x

Variable	Label	Available for the years				
		1996	2002	2008	2011	2014
autonomie_17	WAA Scale of noticed autonomy in older age (Schwarzer)	-	-	-	-	x
sok_17	SOK self-regulation Scale (Freund/Baltes)	-	-	-	-	x
lz_17	Life satisfaction Scale (SWLS, Pavot & Diener)	x	x	x	x	x
pa_17	Positive affect (PANAS, Watson, Clark & Tellegen)	x	x	x	x	x
na_17	Negative affect (PANAS, Watson, Clark & Tellegen)	x	x	x	x	x
pa_low_17	Scale of positive affect with low arousal	-	-	-	-	x
na_low_17	Scale of negative affect with low arousal	-	-	-	-	x

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_17* 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_17* 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_17 has to be used, otherwise the variable *qsps_17* is recommended. The use of cross-sectional weightings are provided 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 2017 has also participated in an interview in 1996, 2002, 2008, 2011 and/or 2017 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_17* informs about the nationality of interviewees of the baseline sample; it shows whether the person owns the German nationality. The information dated back 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 their first measuring time. Up to baseline 2008 information about the citizenships were given by the registration office.

8.6   Migration background

The DEAS-generated variable *migrat_17* covers the migration background of interviewees of the baseline sample. Three different groups are distinguished: People without migration background, people with migration background and an own migration experience (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 or the migration experience 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_17*.

The variable *bland_17* shows in which federal state the respondent's place of residence is located.

8.8   Size of municipality and region

The variable *polgk_17* contains the categorized population size of the respondent's municipality of residence. The variable *bikgk10_17*, 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: https://www.bik-gmbh.de/produkte/regionen/index.html.

8.9   District types

Variable *bbsr_kreistyp_17* contains the urban-rural type of district, the interviewees live at the time of the interview. 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 (see BBSR 2012 and https://www.inkar.de/).

8.10 Age

The variable *alter_17* 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_17*). In addition, a 3-stage educational construct is made (*isced_17*), 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_17* 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)

3-stage level of education following the ISCED-Scale

The allocation to variable *isced_17* occurs following this systematic:

Level 1 (low)	ISCED 0-2; Respondents without completed vocational qualification and up to a maximum of a graduation degree, which qualifies for an professional qualification
Level 2 (medium)	ISCED 3-4; Respondents with vocational qualifications (including professional upgrading training) or qualifications for university or university of applied science entrance
Level 3 (high)	ISCED 5-6; Respondents with completed university studies (university or university of applied science)

8.12 Occupational status

Variable *erw_17* 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_17* 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[5]. These four-digit codes replace the open answers and are positioned in the appropriate interview parts (e.g. hc132*isco08*). ISCO codes exist for the respondent as well as for his/her current partner or the last spouse. To easier use the variables *isco08zp_17* and *isco88p_17* 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 in the 2017-survey. 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 2017 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 previous waves. The open data for the occupational activities, collected in 2014, have been coded according to the ISCO08-Classification. However, in previous DEAS waves coding of the ISCO codes used former ILO system ISCO88 (for 2002-2011) or ISCO68 (for 1996).

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.

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

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_17* 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_17* with the differentiated metrical scale values the variable *siops_17_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, variable *isei_17* is constructed using information on the target person as well as from the partner. The higher value from both partners was taken as household or partner related level of status. That means if the status score of the current partner or former spouse (for interviewees without a partner) is higher than the score of the target person, the value of the partner is used in constructing *isei_17*. 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 are type and 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_17* contains the class allocation of the target persons, 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_17* was constructed using the information on current or last occupation of the target person and the present partner. 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_17*:

Social strata:	Codes of occupational position:
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, when required.

8.15 Perceived social exclusion

Based on a scale developed by Bude & Lantermann (2006) the variable *exklusion_17* measures the degree of perceived social exclusion. It uses four items newly introduced to the drop-off (question 9). 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). The mean value of each income category is taken. Detailed information about the individual sources of income is gathered for both the target person and her/his partner within the drop-off questionnaire (questions 68 to 70). 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. The key precondition was that the income data are completed in the drop-off questionnaire, i.e. if the questionnaire states further household income (additional to the target person's and his partner's) of unspecified height. If nominal household income has to be shown we recommend to use variable *hheink_17*.

Equivalent income

Variable *aee_oecd_17* 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_17*.

8.16.2 Income position, income poverty and income wealth

Variable *einkpos_17* 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 2017 amounting of 1.829,80 Euro serves as reference value.[6]

The dummy variable *einkarm_17* 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 2017 is 990 Euro (equivalent net income based on GSOEP data).

Dummy variable *einkreich_17* 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 3,660 Euro in the year 2017.

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[6] We thank Peter Krause, German Institute of Economic Research, Berlin, for providing the reference values for calculating income position, poverty and income wealth.

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_17*.

Variable *partner_17* 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_17, anzkind_17, exenk_17* and *anzenk_17*. 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 or stepchildren can be mentioned. Deceased children are not included in these derived variables. Variable *anzkind_17* characterizes the sum of currently living children.

The proceeding for generating the indicators on the existence (*exenk_17*) and number of grandchildren (*anzenk_17*) is alike that for the children. Only living grandchildren are taken into account.

8.19 Distance to the closest child

Variable *wekind_17* 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_17* 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_17* 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 variable *nmgroesse_17* 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_17* 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_17*.

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^2. The variable *bmi_17* 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^2. For women normal BMI weight is between 19 and 24 kg/m^2. 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_17* indicate a better physical functioning.

8.25 Number of physical diseases

Variable *anzphy_17* contains the number of physical diseases based on a list of widespread diseases (see drop-off question 28).

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_17* 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-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_17* 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_17*. The number of wrong characters is stored in variable *zzfscore_17* and finally *zzrscore_17* 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[7] : 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_17* indicate higher depressive symptoms

8.29 Loneliness

We use the short version with 6 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. High values of variable *lone6_17* indicate a high level of loneliness.

8.30 Optimism

The scale *optimismus_17* 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 13, item 1; question 18, items 3 and 4. 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 of the items. For the scale at least three items has to have valid values.

8.31 Self-efficacy

The scale *selbstwirk_17* 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 13, items 3 and 7; question 18, item 3 and 4. If, necessary, the items were reversed that high values correspond to a high level of self-efficacy. The individual scale value

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[7] 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.

with a possible range of 1 to 4 is the mean value of the items. At least three items have to have valid values.

8.32 Self-esteem

The scale *selbstwert_17* measures self-esteem (Rosenberg 1965). To calculate it the following ten drop-off items were used: question 2, items 1, 3, 4 and 6; question 13, items 2, 4, 5 and 6; question 18, items 2 and 5. If, necessary, the items were reversed that high values correspond to high level of self-esteem. The individual scale value with a possible range of 1 to 4 is the mean of the items. At least three items have to have valid values.

8.33 Perceived stress

The scale *stress_17* measures the subjectively experienced stress (Cohen et al. 1983). It is based on four drop-off items in the new question 27. 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 have to have valid values.

8.34 Autonomy in older age (WAA)

The scale *autonomie_17* measures the perceived degree of autonomy according to Schwarzer (2008). It is based on four drop-off items in the new question 44. 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 have to contain valid values.

8.35 SOK-Self-regulation

The scale *sok_17* 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 high self-regulation. The scale value with a possible range of 1 to 4 is the mean 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_17* indicate a high level of life satisfaction.

8.37 Positive and negative affect

Basis for both constructs of positive (*pa_17*) and negative (*na_17*) 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, items to positive and negative feelings with rather low arousal were introduced. These are six items of the drop-off question 192, which were developed by the DEAS-team. The scale *pa_low_17* contains the mean value to three items to measure positive feelings (satisfied, relaxed, balanced). The scale *na_low_17* contains the mean value of three items of negative feelings (sad, subdued, disappointed). At least two items have 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 ici1i_1 to ici3i in the SUF DEAS 2017. The documentation of the questions is to be found directly after the CAPI presentation in the instruments.

Variable	Label	Categories
ici1i_1	Present at interview: no other person	Not mentioned; mentioned
ici1i_2	Present at interview: spouse/partner	Not mentioned; mentioned
ici1i_3	Present at interview: children	Not mentioned; mentioned

ici1i_4	Present at interview: other family members	Not mentioned; mentioned
ici1i_5	Present at interview: other person	Not mentioned; mentioned
ici5ci	Interview was translated by third person	Yes, nearly completely; yes, sometimes; no; interviewee is native speaker
ici3i	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 2017. These variables provide the following information:

Variable	Label	Categories
ici15i	Location, 2011	Single or scattered site; attached estate; peripheral location; close to centre; central location; don't know; no answer
ici16i	Big city with at least 100,000 inhabitants	Yes, no, not assignable
ici17i	Distance to centre of the nearest big town/city	kilometres
ici9i	Location of the interview	Respondents house/room; not respondents house/room; no interview
ici10i	Accessibility of house/room	Without stairs, up to 10 steps in staircase, over 10 steps in staircase, don't know
ici11i	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 neighbors).

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 3th 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.

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 single 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). If so, a longitudinal comparison of the data, collecting in different waves, allows a statement about the relationship development of one grandparent to a specific grandchild.

10 OTHER

10.1 Codebook DEAS2017

The Codebook of the SUF DEAS 2017 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 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 350 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 collected partly directly from the target person, partly from other persons. The data comprises information on country of birth, level of education, marital status, occupational status, health status as well as subjective evaluation of central living areas and knowledge of German. Interested researchers of the short questionnaire can contact the FDZ-DZA.

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