

Scientific-Use-Files of the IAB/ZEW Start-up Panel - Documentation of the anonymization process

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1. KfW/ZEW Start-up Panel, the Mannheim Start-up Panel, and the IAB/ZEW Start-up Panel

Between 2008 and 2013, ZEW, the KfW Bankengruppe and Creditreform were co-operating to implement and maintain the KfW/ZEW Start-Up Panel for Germany (see e.g. Fryges et al., 2010). The panel contains annual information on young firms founded since 2005 allowing the application of panel econometric methods for an adequate modelling of firm-specific heterogeneity. In respect to the cross-sectional dimension, telephone interviews with approximately 6,000 new firms from all industries are conducted once a year (computer-aided telephone interviews, CATI).

In 2014 and 2015, the panel is continued under the name Mannheim Start-up Panel. Due to cost concerns, the sample was reduced to 5.000 firms per year. In contrast to the Kf/ZEW Start-up Panel we didn't interview trade companies. Further, the sector consumer oriented services was restricted to the small share of "creative" consumer oriented services. Since the beginning of 2016, the panel is additionally financed by the Institute for Employment Research (IAB), Nürnberg, and therefore the title change again in "IAB/ZEW Start-up Panel". Since then the sample involves retail, wholesale trade and other consumer oriented services again.

The Start-up Panel enables a profound analysis of the temporal development of newly founded firms and their probability of survival or failure. Moreover, the panel has high potential for cross-sectional analyses because of the large number of firms which are included in every wave of the survey. The scientific potential is further based on the fact that half of the firms surveyed by the Start-up Panel belong to technology- and knowledge-intensive sectors of the manufacturing and services industry. This allows for differentiated analyses of new firms which are particularly important for the dynamics and international competitiveness of the economy.

2. General Remarks

The aim of anonymization is to generate factual anonymized micro data, assuring that firms can only get re-identified with a disproportional high effort of time, money and manpower. The data quality however, should be retained as far as possible.

Since 2009, the questionnaire for those firms which are asked for a second time was partly different to the one for the new sample firms ([panel questionnaire](#)). E.g., questions regarding human capital of the founders (education and professional experience) are only posed to the firms which participate for the first time. In comparison, we take "changes within the foundation team" and "human capital of women in the foundation team" as themes in the panel questionnaire 2009 only. In the year 2010, we thematize "corporate spinoffs", in 2011, special topics were supplier credits, factoring and leasing, in 2012, a special topic was internationalisation of young firms, in 2013, a special topic was attrition of workforce and the reasons. In 2014, the importance of founders' creativity has been discussed. In 2015, the innovation part was advanced by questions regarding innovation co-operations, information sources and protection of intellectual property rights, in 2016 an additional topic was "financing of young firms by venture capital", in 2017, questions regarding digitalisation in young firms were part of the questionnaire, in 2018, these additional topics were addressed: motives for having a second job, environmental protection, and the new European General Data Protection Regulation (GDPR), in 2019, the relevance of Venture Capital for young firms was discussed. In 2021, the focus was on environmental protection and sustainability. The importance of employer platforms and public procurement contracts were addressed in 2022.

In 2020 - the year of the start of the Corona pandemic - the usual survey routine of the IAB/ZEW start-up panel was interrupted once. Instead, two special surveys were conducted on the effects of the Corona pandemic. In each case, 4,000 enterprises were surveyed - in some cases twice - the first time in spring 2020, the second time in autumn 2020. Around 900 enterprises of the start-up cohort 2019 took part in the first survey, and a good 2,500 enterprises took part in both surveys - i.e. in spring and autumn. The background to this procedure was the crisis situation in which the national economy found itself at the time. The dynamics within this year were to be examined with the two special surveys. The two samples were each prepared as separate scientific use files for external use.

Attention!

Since 2022, the questionnaire chapter 'Investment and financing' has been changed. The filter question to differentiate between internal and external financing has been removed. In addition, a distinction is no longer made between the financing of investments and operating costs. The different types of financing are now recorded directly, i.e. internal financing and the different types of external financing (owner financing and financing by external investors) are asked at the same time, not in stages. This also applies to the financing shares. The resulting share values no longer correspond to the figures from previous years and may have to be converted.

3. Applied anonymization methods

Withhold sensitive variables

Sensitive characteristics are specifications which ease and allow the re-identification of persons and enterprises, and will be erased from the Scientific-Use-Files.

- e.g. duration of unemployment of the founders before enterprise founding
- e.g. KfW-promotion-indicator
- e.g. Variables of private asset situation of interviewed founders

Variables which are not listed in the table in chapter 2 (List of variables) were deleted (cp. questionnaires)

Withhold individual sensitive information

Sensitive specific values of a variable of specific persons or firms, these are specifications which ease and allow the re-identification of persons and enterprises, will be deleted. The deletion will not be indicated – compared to the truncation (see below).

This procedure was not exercised for the data of the Start-up Panel collected 2008-2021.

Withhold individual observations

Enterprises which can be identified due to extreme values at different variables will be erased from the Scientific-Use-Files.

On the data collection 2008, enterprises with a high number of employees (full-time equivalent) (>99%-quantile: 2008 and 2009 the edge was established at the point 25 employees, in the year 2010 at 24, in 2011 at 25, 2012 at 22, 2013 at 24, 2014 at 21, 2015 at 20, employees, 2021 at 15, and 2022 at 16 employees) were erased from the Scientific-Use-Files.

Aggregation of information

Existing personalized information of the founders will be aggregated, e.g. fields of study, profession, nationality, age, former employments, and entrepreneurship-experiences. Additionally sensitive enterprise-related information will be aggregated, e.g. financial support, financing sources and the portion in the volume.

The aggregation of information will be done in different manners:

1. Aggregation to one indicator variable
 - e.g. fields of study: biology, chemistry, physics -> indicator: natural science
 - e.g. financing sources: aggregation to (partly) new generated variables: long-term loan (bank and financial support loans), venture capital (inclusive mezzanine money)
2. Aggregation of information to an ordinal variable
 - e.g. experience of the founder in a sector in years → aggregation into 4 intervals
3. Calculation of averages
 - e.g. age of the founders -> calculation to average age.

Truncation

Sensitive variables with extreme values are truncated. The truncation edge is defined as the 99%-quantile for each variable. The truncation will be marked by an indicator.

e.g.: revenue -> truncation, if

labour productivity > 657 thousand € per employee for 2008

labour productivity > 1,000 thousand € per employee for 2009

labour productivity > 900 thousand € per employee for 2010

labour productivity > 833 thousand € per employee for 2011

labour productivity > 750 thousand € per employee for 2012

labour productivity > 760 thousand € per employee for 2013

labour productivity > 800 thousand € per employee for 2014

labour productivity > 850 thousand € per employee for 2015

labour productivity > 1,100 thousand € per employee for 2016

labour productivity > 900 thousand € per employee for 2017

labour productivity > 1,000 thousand € per employee for 2018

labour productivity > 1,090 thousand € per employee for 2019

labour productivity > 1,428 thousand € per employee for spring 2020

labour productivity > 1,100 thousand € per employee for autumn 2020

labour productivity > 1,500 thousand € per employee for 2021

labour productivity > 1,200 thousand € per employee for 2022

4. List of variables (Surveys 2008-2022)

The variables are listed according topics. In the first column, the names of the variables and the survey waves are listed. Variables, which have been surveyed within the panel questionnaires are written in blue. In the second column, the variables are described and special features are mentioned (e.g. the truncation limit). In the last column the anonymization techniques are marked. Anonymization is not necessary for each variable.

1. General information about the enterprise

Name (Wave)	Description	Method of anonym. ¹
gpkey (all)	Identification number of the enterprise (the identification number does not change over the different phases of data collection for the panel participants)	
branche (all)	WZ-classification (see tables of classification of industry sectors in the annex)	
gr_jahr (all)	Foundation year of the enterprise	
Panel (all)	Panel company: participation in former surveys and in the actual (0=no, 1=yes)	
jahr (all)	Reference year	

2. Choice of legal form

Name (Wave)	Description	Method of anonym.
refo_steu (2019)	Choice of legal form due to taxable aspects (0=no, 1=yes)	-
refo_haft (2019)	Choice of legal form due to liability risks (0=non, 1=yes)	-
refo_fin (2019)	Choice of legal form due to financing possibilities (0=non, 1=yes)	-
refo_admin (2019)	Choice of legal form due to administrative aspects (0=non, 1=yes)	-
refo_sonst (2019)	Choice of legal form due to other aspects (0=non, 1=yes)	-

¹ See explanations at chapter „Methods of anonymization“.

- S: by violating “edges” (99%-quantile) a truncation will be taken
- A: aggregation of characteristics
- I: declaration of intervals
- D: declaration of an average
- L: erasure of characteristic

Name (Wave)	Description	Method of anonym.
Rechtsformwahl aufgrund steuerlicher Aspekte		
steuer_info (2019)	Information about taxable differences (0=no, 1=yes)	-
steu_berat (2019)	Professional consultation with a tax adviser (0=no, 1=yes)	-
steu_förd (2019)	Consultation or training on funding possibilities (0=no, 1=yes)	-
steu_eig (2019)	Own investigations (0=no, 1=yes)	-
steu_sonst (2019)	Others (0=no, 1=yes)	-

3. Founder/Founder teams

Name (Wave)	Description	Method of anonym.
team	Team-foundation (0 = no, 1 = yes)	
anzteam (all)	Number of founders (truncation, if anzteam > 5) (truncation 2020, if anzteam > 4)	S
anzteam_x (all)	Truncation indicator anzteam (1 = yes)	
anzfr (all)	Number of female founders of the foundation team (truncation, if anzfr > 2)	S
anzfr_x (all)	Truncation indicator anzfr (1 = yes)	
umzug (2016)	Relocation in the course of and due to the foundation process (0=no, 1=yes)	-
umzug_anzahl (2016)	Number of founders who changed their location in the course of the foundation process	-
alter_d (all)	(average)age of the founder(s)	D
h_de (all)	(one of the) founder(s) is German (0 = no, 1 = yes)	
h_nde (all)	(one of the) founder(s) is not German (0 = no, 1 = yes)	A

Name (Wave)	Description	Method of anonym.
n30 (2009)	Number of founders, who work less than 30 hours a week (truncation, if n30>7)	
n30_x (2009)	Truncation n30 (1=yes)	
abschluss (all)	Highest qualification of the founders (0 = no degree, 1 = apprenticeship/professional school, 2 = master craftsman/public servant/vocational college, 3 = college/university)	A
akadja (2014)	At least one founder is graduated (0=no, 1=yes)	-
Field of study (abschluss = 3)		
bwl (all)	Economics/ Business Science (0 = no, 1 = yes)	
natur (all)	Natural Sciences (including medical science) (0 = no, 1 = yes)	A
mathinf (all)	Mathematics/ computer sciences (0 = no, 1 = yes)	A
Ingwiss (all)	Engineering sciences (0 = no, 1 = yes)	A
fach_sonst (all)	Other fields of study (0 = no, 1 = yes)	A
Profession (abschluss = 1 or 2)		
kaufmann (all)	Mercantile professions (0 = no, 1 = yes)	A
techniker (all)	Technical professions (0 = no, 1 = yes)	A
sozial (all)	Social Professions (0 = no, 1 = yes)	A
sonst_DL (all)	Hotel and restaurant industry, other services (0 = no, 1 = yes)	A
sonst_beruf (all)	Other professions (0 = no, 1 = yes)	A
aberf (all)	General experience in years (for teams: founder with the longest general expe-	

Name (Wave)	Description	Method of anonym.
	rience) (intervals: 1: $x \leq 8$, 2: $8 < x \leq 13$, 3: $13 < x \leq 20$, 4: $20 < x \leq 28$, 5: $28 < x \leq 40$, 6: $x > 40$)	
brerf_p (2008) brerf (2009-2015)	Industry experience in years (for teams: founder with the longest experience) (Intervall 2008: 1: $x \leq 7$, 2: $7 < x \leq 13$, 3: $13 < x \leq 20$, 4: $20 < x$) (Intervall 2009-2012: 1: $x \leq 3$, 2: $3 < x \leq 7$, 3: $7 < x \leq 14$, 4: $14 < x \leq 21$, 5: $21 < x \leq 32$, 6: $x > 32$)	I
rest (all)	(one of the) founder(s) has founded an enterprise before (0 = no, 1 = yes)	
founders' second job		
neberw (2014)	Second job firm (0=no, 1=yes)	
neberw (2015-2019, 2021, 2022)	Number of founders who are working for the firm in a second job	
neberw_gr (2014)	Second job firm at start-up (0=no, 1=yes)	
neverw_gr (2015-2019)	Number of founders who were working for the firm in a second job at the date of start-up	
neberw_dauer (2016-2018)	duration of working in a second job, # month	-
neberw_startm (2016-2019, 20218)	start of second job, month	-
neberw_startj (2016-2019, 2021)	start of second job, year	-
neberw_endm (2016-2018)	end of second job, month	-
neberw_endj (2016-2018)	end of second job, year	-
haupt_dauer (2016-2017)	duration until the start of the second job, # month	-
abh_unselb (2016-2019,	second job in dependent employment (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
2021)		
abh_selb (2016-2019, 2021)	second job in independent employment (0=no, 1=yes)	-
zeit-ant_gruend (2016-2019, 2021)	share of weekly working hours spent in the firm, in percent	-
zeitant_and (2016-2019, 2021)	share of weekly working hours spent in the second job, in percent	-
uebergang (2018, 2019, 2021)	Intention to give up second job (0=no, 1=yes)	-
Motives for combining self-employment and a second job		
ne-berw_motiv_f_in_gr (2018)	A higher time exposure for my firm would be too costly. (0=no, 1=yes)	-
ne-berw_motiv_f_in_neb (2018)	It's not profitable spending more time in my second job or I cannot spend any more time in my second job. (0=no, 1=yes)	-
ne-berw_motiv_kompl_neb (2018)	The business activity in my firm is helpful for the one in my second job. (0=no, 1=yes).	-
ne-berw_motiv_kompl_gr (2018)	The activity in my second job is helpful for the one in my firm. (0=no, 1=yes)	-
ne-berw_motiv_vers (2018)	My second job helps me to maintain or take up membership in the statutory health and social insurance schemes. (0=no, 1=yes)	-
ne-berw_motiv_risk_gr (2018)	Through my second job, I would like to cushion risks in my firm. (0=no, 1=yes)	-
ne-berw_motiv_risk_neb (2018)	Through my firm, I would like to cushion risks in my second job. (0=no, 1=yes)	-
ne-berw_motiv_nonmon_gr (2018)	I don't do self-employment for the money. (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
ne-berw_motiv_nonmom_neb (2018)	I don't do my second job for the money. (0=no, 1=yes)	-
ne-berw_motiv_test (2018)	I have to test the feasibility and marketability of my business idea first. (0=no, 1=yes)	-
ne-berw_motiv_fin_sec (2018)	My second job allows me to take out personal loans. (0=no, 1=yes)	-
ne-berw_motiv_eink (2018)	The income from my self-employment is too low to support myself. (0=no, 1=yes)	-
ne-berw_motiv_size (2018)	My business can only be built up and expanded relatively slowly, so I am also still dependent on employment. (0=no, 1=yes)	-
Reasons for giving up my second job		
ne-berw_exit_kuend (2018)	My second job was terminated by my former employer (0=no, 1=yes)	-
ne-berw_exit_fin_gr (2018)	In the meantime, it is worth it for me from a financial point of view to spend more time working in my own firm. (0=no, 1=yes)	-
ne-berw_exit_fin_neb (2018)	In the meantime, my second job no longer brings financial or other benefits. (0=no, 1=yes)	-
ne-berw_exit_risk_gr (2018)	The risks in my own firm have decreased sufficiently. (0=no, 1=yes)	-
ne-berw_exit_risk_neb (2018)	The risks in my second job have become too great. (0=no, 1=yes)	-
ne-berw_exit_test (2018)	My own firm has survived the test phase. (0=no, 1=yes)	-
ne-berw_exit_fin	In the meantime, I have sufficient financial resources or borrowing is no longer	-

Name (Wave)	Description	Method of anonym.
_sec (2018)	a problem. (0=no, 1=yes)	
ne-berw_exit_size (2018)	My firm has now become sufficiently large. (0=no, 1=yes)	-
ne-berw_exit_sonst (2018)	I wanted or had to reduce my total working hours for other reasons. (0=no, 1=yes)	-
neberw_ag (2018)	Employer's reaction to foundation of my firm: 1: The company does not know about it. 2: The company initiated the start-up. 3: The company has supported the foundation. 4: The company has been neutral. 5: The company has hindered the foundation. 6: Other	-
Relationship of own products to the products of the employer of the second job		
position_ag_konkr (2018)	Products or services of both companies compete with each other. (0=no, 1=yes)	-
position_ag_kompl (2018)	Products or services of both companies complement each other. (0=no, 1=yes)	-
position_ag_nutzgr (2018)	My own company uses products or services of the other company. (0=no, 1=yes)	-
position_ag_nutzag (2018)	The other company uses my company's products or services. (0=no, 1=yes)	-
position_ag_unabh (2018)	The products or services of both companies are independent of each other. (0=no, 1=yes)	-
Employment situation immediately before founding		
sit_s (alle)	Self-employed (0 = no, 1 = yes)	
sit_ang (all)	Employed (private or public companies and services) (0 = no, 1 = yes)	A
sit_al (alle)	Unemployed (0 = no, 1 = yes)	

Name (Wave)	Description	Method of anonym.
sit_ne (alle)	Non-employed / inactive (0 = no, 1 = yes)	
leitung (all)	Employed as manager before foundation (0 = no, 1 = yes)	A
gr_motiv (all)	Intention for founding (1 = self-determined working, 2 = realisation of certain business idea, 3 = improper employment opportunities, 4 = Escape from unemployment, 5 = Encouragement by former employer, 6 = tax incentives) 2012 and 2013: additionally: 7 = higher income opportunities 2014: Intention for founding (1 = self-determined working, 2 = realisation of certain business idea, 3 = Escape from unemployment, 4 = improper employment opportunities, 5 = higher income opportunities)	
gf1_wostd gf2_wostd gf3_wostd (2013-2019, 2021, 2022)	weekly working hours of the managers (1-3)	
Previous unemployment		
algeld (2016-2019, 2021, 2022)	receipt of unemployment benefits (0=no, 1=yes)	-
aufstocker (2016-2019, 2021, 2022)	receipt of wage supplements (0=no, 1=yes)	
aufstocker_startm (2016-2019, 2021, 2022)	wage supplements – month of starting time	-
aufstocker_startj (2016-2019, 2021, 2022)	wage supplements – year of starting time	-
aufstocker_endm (2016-2019, 2021, 2022)	wage supplements – month of end point	-
aufstocker_endj (2016-2019,	wage supplements – year of end point	-

Name (Wave)	Description	Method of anonym.
2021, 2022)		

4. Start-ups from scientists and academic spinoff foundations

Name (Wave)	Description	Method of anonym.
researcher (2015-2019, 2021, 2022)	Employment as a researcher at a university or another scientific institution (1=yes, now, 2=yes, formerly, 3=no)	-
Importance of formers' research activities for the start-up process		
aspin_faeh (2014-2016)	Specific competencies which founders learnt during their employment at a scientific institution (1=essential, 2=high importance, 3=low importance, 4=unimportant)	-
aspin_meth (2014-2016)	New methods and techniques which founders learnt during their employment at a scientific institution (1=essential, 2=high importance, 3=low importance, 4=unimportant)	-
aspin_erg (2014-2016)	Results of own research which founders developed during their employment at scientific institution (1=essential, 2=high importance, 3=low importance, 4=unimportant)	-

5. Employment and labour demand

Name (Wave)	Description	Method of anonym.
besjgr (all)	Enterprise's employees at founding date (0 = no, 1 = yes)	
vollgr (all)	Number of full-time employees at founding date	
teilgr (all)	Number of part-time employees at founding date	
minigr (all)	Number of slightly employed persons at founding date	
famgr (all)	Number of family members working in the enterprise at founding date	
azubigr (all)	Number of apprentices at founding date	
freigr (all)	Number of freelancers at founding date	
prakgr	Number of trainees at founding date	

Name (Wave)	Description	Method of anonym.
(all)		
leihgr (all)	Number of leased employees at founding date	
besj (all)	Enterprise's employees in reference year (0=no, 1=yes)	
inh (2010-2015, 2021)	Number of active owners in reference year	
voll (all)	Number of full-time employees in reference year	
teil (all)	Number of part-time employees in reference year	
teil_std (2022)	Number of hours per week for part-time employees	
mini (all)	Number of slightly employed persons in reference year	
fam (all)	Number of family members working in enterprise in reference year	
azubi (all)	Number of apprentices in reference year	
frei (all)	Number of freelancers in reference year	
prak (all)	Number of trainees in reference year	
leih (all)	Number of leased employees in reference year	
bes_l (all)	Number of employees without professional education (2009: truncation, if bes_l>24) (2010: truncation, if bes_l>26) (2011/12: truncation, if bes_l>31) (2013: truncation, if bes_l>30) (2014: truncation, if bes_l>50) (2015: truncation, if bes_l>27) (2016: truncation, if bes_l>40) (2017: truncation, if bes_l>53) (2018: truncation, if bes_l>25) (2019: truncation, if bes_l>28) (2021: truncation, if bes_l>30) (2022: truncation, if bes_l>36)	S

Name (Wave)	Description	Method of anonym.
bes_l_x (all)	Truncation indicator bes_l (1=ja)	
bes_m (all)	Number of employees with vocational qualification (2009: truncation, if bes_m>28) (2010: truncation, if bes_m>27) (2011/12: truncation, if bes_m>30) (2013: truncation, if bes_m>33) (2014: truncation, if bes_m>31) (2015: truncation, if bes_m>36) (2016: truncation, if bes_m>35) (2017: truncation, if bes_m>30) (2018: truncation, if bes_m>33) (2019: truncation, if bes_m>30) (2021: truncation, if bes_m>28) (2022: truncation, if bes_m>24)	S
bes_m_x (all)	Truncation indicator bes_m (1=ja)	
bes_h (all)	Number of employees with a graduate degree (2009: truncation, if bes_h>21) (2010: truncation, if bes_h>22) (2011: truncation, if bes_h>23) (2012: truncation, if bes_h>24) (2013: truncation, if bes_h>28) (2014: truncation, if bes_h>29) (2015: truncation, if bes_h>29) (2016: truncation, if bes_h>29) (2017: truncation, if bes_h>30) (2018: truncation, if bes_h>26) (2019: truncation, if bes_h>27) (2021: truncation, if bes_h>28) (2022: truncation, if bes_h>27)	S
bes_h_x (all)	Truncation indicator bes_h(1=ja)	
planned, already ensued placements of employees, and not realized personnel plans		
bes_pl (2009, 2010)	Non-implementation of recruitments in reference year (0=no, 1=yes)	
bespl_al (2009, 2010)	Non-implementation of recruitments causing deterioration of the order situation in reference year (0=no, 1=yes)	
bespl_pk (2009, 2010)	Non-implementation of recruitments because of high staff costs in reference year (0=no, 1=yes)	
bespl_fin (2009, 2010)	Non-implementation of recruitments because of insufficient funding in reference year (0=no, 1=yes)	
bespl_org (2009, 2010)	Non-implementation of recruitments because of organizational problems in the company in reference year (0=no, 1=yes)	

Name (Wave)	Description	Method of anonym.
bespl_bew (2009, 2010)	Non-implementation of recruitment because of no suitable candidate was found in reference year (0=no, 1=yes)	
bespl_br (2009, 2010)	Non-implementation of recruitment because of bureaucratic barriers in reference year (0=no, 1=yes)	
bes_left (all)	Resigned employees in reference year (0=no, 1=yes)	
left_mitarbeiter (all)	Number of resigned employees in reference year (0 = no, 1= yes)	A
left_quit (2013-2019, 2021, 2022)	Number of resigned employees due to own dismissal	-
left_dism (2013-2019, 2021, 2022)	Number of resigned employees due to dismissal by the firm	-
left_befr (2013-2019, 2021, 2022)	Number of resigned employees due to expired temporary labor agreement	-
left_noerw (2013-2019, 2021, 2022)	Number of resigned employees due to other reasons	-
bes_planj (2016-2019, 2021, 2022)	placement of additional employees in the survey year (0=non, 1=yes)	-
bes_plan_low (2016-2019, 2021, 2022)	number of placements of additional employees in the survey year: employees without professional education	-
bes_plan_med (2016-2019, 2021, 2022)	number of placements of additional employees in the survey year: employees with vocational degree	-
bes_plan_high (2016-2019, 2021, 2022)	number of placements of additional employees in the survey year: employees with graduate degree	-
bes_plan_anzahl (2016-2019,	number of placements of additional employees in the survey year: no statement about qualification	-

Name (Wave)	Description	Method of anonym.
2021, 2022)		
bes_pl (2019, 2021)	not realized personnel plans in reporting year (0=no, 1=yes)	-
bespl_al (2019, 2021, 2022)	not realized personnel plans since foundation: due to uncertain order situation in reporting year (0=no, 1=yes)	-
bespl_pk (2019, 2021, 2022)	not realized personnel plans since foundation: due to too high loan expectations of job applicants in reporting year (0=no, 1=yes)	-
bespl_bew (2019, 2021, 2022)	not realized personnel plans since foundation: due to no suitable job applicant in reporting year (0=no, 1=yes)	-
bespl_br (2019, 2021, 2022)	not realized personnel plans since foundation: due to bureaucratic obstacles in reporting year (0=no, 1=yes)	-
bespl_sonst (2019, 2021)	not realized personnel plans since foundation: due to other obstacles in reporting year (0=no, 1=yes)	-
bes_pl_gr (2017)	not realized personnel plans since foundation (0=no, 1=yes)	-
besplgr_al (2017)	not realized personnel plans since foundation: due to uncertain order situation (0=no, 1=yes)	-
besplgr_pk (2017)	not realized personnel plans since foundation: due to too high loan expectations of job applicants (0=no, 1=yes)	-
besplgr_bew (2017)	not realized personnel plans since foundation: due to no suitable job applicant (0=no, 1=yes)	-
besplgr_br (2017)	not realized personnel plans since foundation: due to bureaucratic obstacles (0=no, 1=yes)	-
besplgr_sonst (2017)	not realized personnel plans since foundation: due to other obstacles (0=no, 1=yes)	-
wages of employees		
w_low (all)	Typical monthly wage for low qualified people in reference year (interval: 1: $x \leq 400$, 2: $400 < x \leq 1000$, 3: $1000 < x \leq 1500$, 4: $1500 < x \leq 2000$, 5: $2000 < x \leq 2500$, 6: $x > 2500$)	
wh_low (2010- 2019)	Typical hourly wage for low qualified people in reference year (interval: 1: $x \leq 6$, 2: $6 < x \leq 8$, 3: $8 < x \leq 10$, 4: $10 < x \leq 12$, 5: $12 < x \leq 20$, 6: $x > 20$)	
w_med	Typical monthly wage for middle qualified people in reference year (interval: 1: $x \leq 1000$, 2: $1000 < x \leq 1500$, 3: $1500 < x \leq 2000$, 4: $2000 < x \leq 2500$, 5:	

Name (Wave)	Description	Method of anonym.
(all)	2500<x<=3500, 6: x>3500)	
wh_med (2010- 2019)	Typical hourly wage for middle qualified people in reference year (interval: 1: x<=7, 2: 7<x<=9, 3: 9<x<=12, 4: 12<x<=17, 5: 17<x<=45, 6: x>45)	I
w_high (all)	Typical monthly wage for high qualified people in reference year (interval: 1: x<=1200, 2: 1200<x<=2500, 3: 2500<x<=3000, 4: 3000<x<=4000, 5: 4000<x<=5500, 6: x>5500)	I
wh_high (2010-2019)	Typical hourly wage for high qualified people in reference year (interval: 1: x<=9, 2: 9<x<=15, 3: 15<x<=27, 4: 27<x<=50, 5: 50<x<=90, 6: x>90)	I
Additional payment:		
w_vl (2009)	Payments to employee benefits (0=no, 1=yes)	
w_ug (2009)	Payment of vacation bonus, christmas bonus etc. in reference year (0=no, 1=yes)	
w_boni (2009)	Payment of bonuses in reference year (0=no, 1=yes)	
w_kap (2009 2017)	Employee equity participation in reference year (0=no, 1=yes)	
w_tarif (2009)	Orientation of payment of employees on collective agreement (1: sectoral collective agreement, 2: company agreement, 3: voluntary, 4: no)	
bes_025 (2009)	Number of employees who are younger than 25 years in reference year (truncation, if bes_025>19)	S
bes_025_x (2009)	Truncation indicator bes_025 (1=yes)	
bes_2540 (2009)	Number of employees who are between 25 and 40 years old in reference year (truncation, if bes_2540>22)	S
bes_2540_x (2009)	Truncation indicator bes_2540 (1=yes)	
bes_4155 (2009)	Number of employees who are between 41 and 55 years old in reference year (truncation, if bes_4155>17)	S
bes_4155_x (2009)	Truncation indicator bes_4155 (1=yes)	
bes_ue55 (2009)	Number of employees who are over 55 years old in reference year (truncation, if bes_ue55>8)	S

Name (Wave)	Description	Method of anonym.
bes_ue55_x (2009)	Truncation indicator bes_ue55 (1=yes)	
bes_befr (2009)	Number of fixed-term workers in reference year (truncation, if bes_befr>22)	S
bes_befr_x (2009)	Truncation indicator bes_befr (1=yes)	
bes_fortb (2009 2017)	Number of employees who have attended an advanced training in reference year (2009: truncation, if bes_fortb>20)	2017: - 2009: S
bes_fortb_x (2009)	Truncation indicator bes_fortb (1=yes)	
mindl (2014)	Potential concern of minimum wage regulations (due to the political discussion at that time) (0=no, 1=yes)	-
kurzarbeit (2022)	Short-time allowance (0=no, 1=yes)	-
Homeoffice		
home (2022)	Possibility to work from home (0=no, 1=yes)	-
home_zahl_absolut (2022)	Number of employees who regularly work from home	-
home_zahl_prozent (2022)	Number of employees who regularly work from home, in percent of all employees	-
home_spaeter (2022)	After the Corona pandemic: extent of home office (1 = approximately the same extent as before the Corona pandemic, 2 = to a greater extent than before the Corona pandemic, 3 = to a lesser extent than before the Corona pandemic, 4 = we want to fully go without home office (again), 5 = I can't say (yet))	-

6. Entrepreneurial Orientation

Name (Wave)	Description	Method of anonym.
	Strategic focus of the firm due to competitive behaviour, innovation behaviour, attitude to risk, and leadership of employees	

Name (Wave)	Description	Method of anonym.
eo_act1 (2014-2016 2017)	In dealing with its competitors my firm's strategy is to ... A: ... respond to action which competitors initiate. B: ... initiate actions which competitors then respond to. (1=totally A, 2=preferably A, 3=undecidedly, 4=preferably B, totally B)	-
eo_act2 (2014-2016 2017)	When introducing new products, services, administrative techniques, operating technologies in to my firm's markets, my firm ... A: ... does not need to be the first one. B: ... wants to be the first one. (1=totally A, 2=preferably A, 3=undecidedly, 4=preferably B, totally B)	-
eo_inno1 (2014-2016 2017)	My firm puts a strong emphasis on ... A: ... the marketing of tried-and-true products or services. B: ... innovation, technological leadership, and R&D. (1=totally A, 2=preferably A, 3=undecidedly, 4=preferably B, totally B)	-
eo_inno2 (2014-2016 2017)	I follow the strategy that changes in products or services lines to be ... A: ... of a minor nature. B: ... be quite dramatic and fundamental. (1=totally A, 2=preferably A, 3=undecidedly, 4=preferably B, totally B)	-
eo_konk1 (2014-2016 2017)	My firm ... A: ... makes no special effort to take business from the competition. B: ... is very aggressive and intensively competitive. (1=totally A, 2=preferably A, 3=undecidedly, 4=preferably B, totally B)	-
eo_konk2 (2014-2016 2017)	In dealing with its competitors, my firms ... A: ... typically seeks to avoid competitive clashes, preferring a "live-and-let-live" posture. B: ... typically adopts a very competitive "undo-the-competitors" posture. (1=totally A, 2=preferably A, 3=undecidedly, 4=preferably B, totally B)	-
eo_risk1 (2014-2016 2017 2018 2019)	In order to achieve the firm objectives in situations involving uncertainty, my business ... A: ... adopts a cautious "wait and see" posture. B: ... adopts a bold aggressive posture. (1=totally A, 2=preferably A, 3=undecidedly, 4=preferably B, totally B)	-
eo_risk2 (2014-2016 2017 2018 2019)	My business has a strong proclivity for projects with ... A: ... low risks and thereby normal but certain rates of return. B: ... high risks and thereby chances of very high return. (1=totally A, 2=preferably A, 3=undecidedly, 4=preferably B, totally B)	-
eo_auto1 (2014-2016 2017)	In general, I believe that ... A: ... the best results occur when employees have a say in what business opportunities to pursue. B: ... the best results occur when the Mangers provide the primary impetus for pursuing business opportunities. (1=totally A, 2=preferably A, 3=undecidedly, 4=preferably B, totally B)	-

Name (Wave)	Description	Method of anonym.
eo_auto2 (2014-2016 2017)	My firm ... A: ... supports the efforts of employees to work autonomously. B: ... requires employees to rely on managers to guide their work. (1=totally A, 2=preferably A, 3=undecidedly, 4=preferably B, totally B)	-

7. Personality traits – „BIG5“

Name (Wave)	Description	Method of anonym.
Conscientiousness		
pers_gewiss_1 (2018, 2019- 2021)	I am someone who works thoroughly. (Scale from 1: does not apply at all to 5: applies fully)	-
pers_gewiss_2 (2018, 2019- 2021)	I am someone who tends to be lazy. (Scale from 1: does not apply at all to 5: applies fully)	-
pers_gewiss_3 (2018, 2019- 2021p)	I am someone who completes tasks effectively and efficiently. (Scale from 1: does not apply at all to 5: applies fully)	-
Openness		
pers_offen_1 (2018, 2019- 2021)	I am someone who is original and brings in new ideas. (Scale from 1: does not apply at all to 5: applies fully)	-
pers_offen_2 (2018, 2019- 2021)	I am someone who values artistic experience. (Scale from 1: strongly disagree to 5: strongly agree)	-
pers_offen_3 (2018, 2019- 2021)	I am someone who has a vivid imagination and a good imagination. (Scale from 1: does not apply at all to 5: applies fully)	-
Neuroticism		
pers_neuro_1 (2018, 2019- 2021)	I am someone who often worries. (Scale from 1: does not apply at all to 5: applies fully).	-
pers_neuro_2 (2018, 2019- 2021)	I am someone who gets nervous easily. (Scale from 1: not at all true to 5: strongly true)	-
pers_neuro_3 (2018, 2019- 2021)	I am someone who is relaxed and can handle stress well. (Scale from 1: does not apply at all to 5: applies fully)	-
Extraversion		

Name (Wave)	Description	Method of anonym.
pers_extra_1 (2018, 2019-2021)	I am someone who is communicative and talkative. (Scale from 1: does not apply at all to 5: fully applies).	-
pers_extra_2 (2018, 2019-2021)	I am someone who is outgoing and sociable. (Scale from 1: not at all true to 5: strongly true)	-
pers_extra_3 (2018, 2019-2021)	I am someone who is reserved. (Scale from 1: does not apply at all to 5: applies fully)	-
Agreeableness		
pers_vertraeglich_1 (2018, 2019-2021)	I am someone who is sometimes a little rough with others. (Scale from 1: does not apply at all to 5: fully applies).	-
pers_vertraeglich_2 (2018, 2019-2021)	I am someone who can forgive. (Scale from 1: not at all true to 5: strongly true)	-
pers_vertraeglich_3 (2018, 2019-2021)	I am someone who is considerate and kind to others. (Scale from 1: does not apply at all to 5: applies fully)	-

8. Enterprise type, product characteristics, innovations

Name (Wave)	Description	Method of anonym.
handwerk (2015)	Belonging to craft business (0 = no, 1 = yes)	A
produkt_kat (all)	Classification of the main activities of the company (1: Producing a product, 2: Building and extension work, 3: Repairs, 4: Leasing, 5: Trading, 6: provision of other services)	
krea_kund (2015)	Customers demand products and services of the firm due to ... 1 = rather their originality and uniqueness 2 = rather their reliability and approved quality 3 = none of both 4 = both are equally important	
krea_erf (2015)	For producing the goods and services of the firm is important ... 1 = rather the founders' formal education and professional experience 2 = rather founders' creativity and individual talents 3 = none of both 4 = both are equally important	
krea_prod	Firm primarily produces ...	

Name (Wave)	Description	Method of anonym.
(2015)	1 = rather specialized goods and services for individual customers 2 = rather standardized goods and products 3 = none of both 4 = both are equally important	
konkurrenz (2008)	Number of domestic and foreign main competitors (1 = less than 6, 2 = 6 to 20, 3 = more than 20)	
inno (2008-2015)	Degree of innovation of (new) products (1 = tested and commonly useable techniques, 2 = new combination of old-established techniques, 3 = new techniques of third party enterprises, 4 = new, self-developed techniques, 5 = none of those) [2008: only firms in sectors; STW, HTW, TDL and software / 2009-2015: only firms in sectors; STW, HTW, TDL and software and NTW, see tables of industry classifications in the annex] In the panel questionnaire, the question addresses product innovations in the reference year (if pd=1).	
marktneu (all)	Introduction of new products into the market since founding (1 = no, 2 = yes, regional, 3 = yes, national, 4 = yes, worldwide)	
marktneu-jahr (2009, 2010)	Year of introduction of new products into the market	
mneu (all)	Introduction of new products into the market in reference year (1=no; 2=yes, regional; 3=yes, national; 4=ja, worldwide)	
pd (all)	Product innovations in the reference year (0 = no, 1 = yes)	
pd_add (2010-2019, 2021, 2022)	Besides market novelties, product innovations (0=no, 1=yes)	
pd_um (all)	Turnover share with product innovations, that were introduced in the previous year, in reference year (intervall: 0: x=0, 1: 0<x<=10, 2: 10<x<=20, 3: 20<x<=30, 4: 30<x<=55, 5: 55<x<=95, 6: x>95)	I
pz (all)	Process innovations in the reference year (0 = no, 1 = yes) [2008: only firms in sectors; STW, HTW, TDL and software / 2009: only firms in sectors; STW, HTW, TDL and software and NTW, see tables of industry classifications in the annex]	
pz_kost (all)	Process innovations in the previous year resulted cost reductions in reference year	
pz_qual (all)	Process innovations in the previous year resulted quality improvement in reference year	
Non-Implemented innovation plans		
inno_pl (2009, 2010)	Non-implementation of innovation plans in reference year (0=no, 1=yes)	

Name (Wave)	Description	Method of anonym.
prod_pl (2009, 2010)	Non-implementation of an entry with a wider range of products in reference year (0=no, 1=yes)	
pz_pl (2009, 2010)	Non-implementation of introduction of new processes in reference year (0=no, 1=yes)	
innopl_ga (2009, 2010)	Non-implemented innovation in reference year because of deteriorated business perspectives (0=no, 1=yes)	
innopl_ik (2009, 2010)	Non-implemented innovation in reference year because of high innovation costs(0=no, 1=yes)	
innopl_fin (2009, 2010)	Non-implemented innovation in reference year because of insufficient funding (0=no, 1=yes)	
innopl_org (2009, 2010)	Non-implemented innovation because of organizational problems in the company in reference year (0=no, 1=yes)	
innopl_fach (2009, 2010)	Non-implemented innovation because of a lack of qualified personnel (0=no, 1=yes)	
innopl_br (2009, 2010)	Non-implemented innovation because of bureaucratic barriers in reference year (0=no, 1=yes)	
Innovationsaktivitäten, die zwar durchgeführt, aber noch nicht abgeschlossen oder abgebrochen wurden		
pdzna_lauf (2019, 2021)	Ongoing innovation activities that have not yet been completed (0=no, 1=yes)	-
pdzna_abbr (2019, 2021)	Cancelled innovation activities (0=no, 1=yes)	-
pfzna_no (2019, 2021)	No cancelled or ongoing innovation activities (0=no, 1=yes)	-
Development in special fields of technologies – preconditions for development of products and processes		
tf_ikthard (2008)	IKT-developments were drivers of innovation (0 = no, 1 = yes)	
tf_software (2008)	Software developments were drivers of innovation	

Name (Wave)	Description	Method of anonym.
tf_internet (2008)	Internet-technology-developments were drivers of innovation (0 = no, 1 = yes)	
tf_ele (2008)	Electro-, measurement-, control-technique-developments were drivers of innovation (0 = no, 1 = yes)	
tf_biotech (2008)	Eio-, genetic-technology-developments were innovation drivers (0 = no, 1 = yes)	
tf_mech (2008)	Process-engineering-, mechatronics-development were drivers of innovation (0 = no, 1 = yes)	
tf_optik (2008)	Optics-development were drivers of innovation (0 = no, 1 = yes)	
tf_pharm (2008)	Pharmaceutical and pharmacological developments were drivers of innovation (0 = no, 1 = yes)	
tf_umw (2008)	Power engineering-, environmental engineering-development were drivers of innovation (0 = no, 1 = yes)	
tf_werkstoff (2008)	Material engineering-developments were drivers of innovation (0 = no, 1 = yes)	
Competitive advantage caused by factor....		
wettv_preis (2008)	Price (1 = big, 2 = small, 3 = none)	
wettv_qual (2008)	Quality (1 = big, 2 = small, 3 = none)	
wettv_flex (2008)	Flexibility regarding to customer needs (1 = big, 2 = small, 3 = none)	
wettv_inno (2008)	Introduction of new products (1 = big, 2 = small, 3 = none)	
wettv_tech (2008)	Technical predominance (1 = big, 2 = small, 3 = none)	
wettv_sorti (2008)	Range of products (1 = big, 2 = small, 3 = none)	
wettv_werb (2008)	Advertisement (1 = big, 2 = small, 3 = none)	
wettv_desg	Design and packaging (1 = big, 2 = small, 3 = none)	

Name (Wave)	Description	Method of anonym.
(2008)		
wettv_distr (2008)	Distribution, sales and product presentation (1 = big, 2 = small, 3 = none)	
preisleist (2008)	Price-quality ratio compared to main competitor (1 = higher quality and higher price, 2 = higher quality and comparable price, 3 = comparable quality and price, 4 = comparable quality and lower price, 5 = lower quality and lower price, 6 = none of these)	
fue (all)	Research and development (1 = yes, continues, 2 = yes, occasional, 3 = no)	
fuep (all)	Number of employees at the R&D department (2008: truncation, if fuep > 14) (2009: truncation, if fuep > 11) (2010: truncation, if fuep > 14) (2011/12: truncation, if fuep > 14) (2013: truncation, if fuep > 17) (2014: truncation, if fuep > 16) (2015: truncation, if fuep > 15) (2016: truncation, if fuep > 18) (2017: truncation, if fuep > 20) (2018: truncation, if fuep > 14) (2019: truncation, if fuep > 15) (2021: truncation, if fuep > 20) (2022: truncation, if fuep > 19)	S
fuep_x (all)	Truncation indicator fuep (1 = yes)	
fuek (all)	R&D expenditures (2008-2010: truncation, if fuek > 1 Mio EURO) (2011: truncation, if fuek > 0.8 Mio EURO) (2012-2014: truncation, if fuek > 1 Mio EURO) (2015: truncation, if fuek > 0.8 Mio EURO) (2016: truncation, if fuek > 1 Mio EURO) (2017: truncation, if fuek > 1 Mio EURO) (2018-2019, 2021: truncation, if fuek > 1 Mio EURO) (2022: truncation, if fuek > 1.3 Mio EURO)	S
fuek_x (all)	Truncation fuek (1 = yes)	
Measures to protect intellectual property rights		
ip_patente (2008) schutz_pat (2015)	Use / planning to use of patents (0 = no, 1 = yes)	
ip_gebramust (2008)	Use / planning to use of registered designs (0 = no, 1 = yes)	

Name (Wave)	Description	Method of anonym.
schutz_gebr (2015)		
ip_geheim (2008) schutz_geh (2015)	Use / planning to use of confidentiality (0 = no, 1 = yes)	
ip_copyr (2008) schutz_copy (2015)	Use / planning to use of copyrights (0 = no, 1 = yes)	
ip_marke (2008) schutz_mark (2015)	Use / planning to use of trademarks (0 = no, 1 = yes)	
ip_time (2008) schutz_zeit (2015)	Use / planning to use of time advantage (0 = no, 1 = yes)	
ip_komplex (2008) schutz_kom (2015)	Use / planning to use of complexity of products (0 = no, 1 = yes)	
Relevance of the protection activity		
bip_patente (2008) schutz- bed_pat (2015)	2008: Relevance of patents (1 = no relevance, 2 = low relevance, 3 = moderate relevance, 4 = relevant, 5 = high relevance) 2015: Relevance of patents (1 = no relevance, 2 = low relevance, 3 = relevant, 4 = high relevance)	
bip_gebra must (2008) schutz- bed_gebr (2015)	2008: Relevance of registered designs (1 = no relevance, 2 = low relevance, 3 = moderate relevance, 4 = relevant, 5 = high relevance) 2015: Relevance of registered designs (1 = no relevance, 2 = low relevance, 3 = relevant, 4 = high relevance)	
bip_geheim (2008) schutz- bed_geh (2015)	2008: Relevance of confidentiality (1 = no relevance, 2 = low relevance, 3 = moderate relevance, 4 = relevant, 5 = high relevance) 2015: Relevance of confidentiality (1 = no relevance, 2 = low relevance, 3 = relevant, 4 = high relevance)	
bip_copyr (2008) schutz- bed_copy (2015)	2008: Relevance of copyrights (1 = no relevance, 2 = low relevance, 3 = moderate relevance, 4 = relevant, 5 = high relevance) 2015: Relevance of copyrights (1 = no relevance, 2 = low relevance, 3 = relevant, 4 = high relevance)	
bip_marke (2008) schutz- bed_mark	2008: Relevance of trademarks (1 = no relevance, 2 = low relevance, 3 = moderate relevance, 4 = relevant, 5 = high relevance) 2015: Relevance of trademarks (1 = no relevance, 2 = low relevance, 3 = rele-	

Name (Wave)	Description	Method of anonym.
(2015)	vant, 4 = high relevance)	
bip_time (2008) schutzbed_zeit (2015)	2008: Relevance of time advantage (1 = no relevance, 2 = low relevance, 3 = moderate relevance, 4 = relevant, 5 = high relevance) 2015: Relevance of time advantage (1 = no relevance, 2 = low relevance, 3 = relevant, 4 = high relevance)	
bip_komplex (2008) schutzbed_kom (2015)	2008: Relevance of complexity of products (1 = no relevance, 2 = low relevance, 3 = moderate relevance, 4 = relevant, 5 = high relevance) 2015: Relevance of complexity of products (1 = no relevance, 2 = low relevance, 3 = relevant, 4 = high relevance)	
patj (all)	Enterprise has valid patents (0 = no, 1 = yes)	
anzpat (all)	Number of valid patents (2008-2010: truncation, if anzpat > 4) (2011/12: truncation, if anzpat > 5) (2013: truncation, if anzpat > 4) (2014: truncation, if anzpat > 6) (2015/2016: truncation, if anzpat > 5) (2017: truncation, if anzpat > 3) (2018/2019: truncation, if anzpat > 4) (2021/2022: truncation, if anzpat > 3)	S
anzpat_x (all)	Truncation anzpat (1 = yes)	
pvgr (all)	Number of patents before founding (2008/2009: truncation, if pvgr > 2) (2010-2013: truncation, if pvgr > 3) (2014: truncation, if pvgr > 4) (2015-2017: truncation, if pvgr > 3) (2018/2019/2021/2022: truncation, if pvgr > 2)	S
pvgr_x (all)	Truncation pvgr (1 = yes)	
panm (2008)	Number of inventions applied for a patent (truncation, if panm > 30)	S
panm_x (2008)	Truncation panm (1 = yes)	
Relevance of different functions of patents		
pf_liz (2008)	Realisation of licence profits (1 = no relevance, 2 = low relevance, 3 = moderate relevance, 4 = relevant, 5 = high relevance)	
pf_verh (2008)	Support in negotiations with other enterprises (1 = no relevance, 2 = low relevance, 3 = moderate relevance, 4 = relevant, 5 = high relevance)	

Name (Wave)	Description	Method of anonym.
pf_law (2008)	Prevention of patent infringement (1 = no relevance, 2 = low relevance, 3 = moderate relevance, 4 = relevant, 5 = high relevance)	
pf_imi (2008)	Protection against plagiarism (1 = no relevance, 2 = low relevance, 3 = moderate relevance, 4 = relevant, 5 = high relevance)	
pf_rep (2008)	Increase of reputation (1 = no relevance, 2 = low relevance, 3 = moderate relevance, 4 = relevant, 5 = high relevance)	
pf_fin (2008)	Increase of financing possibilities (1 = no relevance, 2 = low relevance, 3 = moderate relevance, 4 = relevant, 5 = high relevance)	
Advertising		
werb (2009)	Implementation of promotional activities in reference year (0=no, 1=yes)	
werbk (2009)	Advertising costs in reference year (truncation, if werbk>100.000 €)	S
werbk_x (2009)	Truncation werbk (1=yes)	
werbpd (2009)	Share of advertising of new products (interval: 0: x=0, 1: 0<x<=10, 2: 10<x<=25, 3: 25<x<=50, 4: 50<x<=80, 5: 80<x<=95, 6: x>95)	I
werb_zeit (2009)	Ads in newspapers and magazines in reference year (0=no, 1=yes)	
werb_tv (2009)	Advertising through radio and TV spots in reference year (0=no, 1=yes)	
werb_HP (2009)	Advertising on the company's homepage in reference year (0=no, 1=yes)	
werb_fly (2009)	Advertising through brochures, letters, emails in reference year (0=no, 1=yes)	
werb_mess e (2009)	Advertising through trade shows in reference year (0=no, 1=yes)	
werb_road (2009)	Advertising through special marketing events, e.g. Road shows, in reference year (0=no, 1=yes)	
werb_sonst (2000)	Other advertising in reference year (0=no, 1=yes)	
Innovation co-operation partners		
koop_kund (2015)	Customers (0=no, 1=yes)	

Name (Wave)	Description	Method of anonym.
koop_lief (2015)	Suppliers (0=no, 1=yes)	
koop_wett (2015)	Competitors (0=no, 1=yes)	
koop_priv (2015)	Private research institutions (0=no, 1=yes)	
koop_uni (2015)	Universities (0=no, 1=yes)	
Information sources for innovation activities		
info_int (2015)	Firm internal sources (1=not important, 2=slightly important, 3=important, 4=highly important)	
info_kund (2015)	Customers (1=not important, 2=slightly important, 3=important, 4=highly important)	
info_lief (2015)	Suppliers (1=not important, 2=slightly important, 3=important, 4=highly important)	
info_wett (2015)	Competitors (1=not important, 2=slightly important, 3=important, 4=highly important)	
info_priv (2015)	Private research institutions (1=not important, 2=slightly important, 3=important, 4=highly important)	
info_uni (2015)	Universities (1=not important, 2=slightly important, 3=important, 4=highly important)	
info_messe (2015)	Trade fairs, conferences, exhibition (1=not important, 2=slightly important, 3=important, 4=highly important)	
info_verb (2015)	Associations (1=not important, 2=slightly important, 3=important, 4=highly important)	
info_pat (2015)	Patent scripts, standardization documents (1=not important, 2=slightly important, 3=important, 4=highly important)	

9. Development of enterprise: success, expenses and revenues

Name (Wave)	Description	Method of anonym.
bplj (2013-2018)	Preparation of a business plan in the foundation process (0=no, 1=yes)	-
bpl_fbed (2013-2018)	financial demand according to the business plan	-
umsj (all)	Generation of revenue (0 = no, 1 = yes)	-
ums (all)	Revenue (2008: truncation, if revenue/employee (labour productivity) > 657 thousand EURO) (2009: truncation, if revenue/employee (labour productivity) >1000 thousand EURO) (2010: truncation, if revenue/employee (labour productivity) >1000 thousand EURO) (2011: truncation, if revenue/employee (labour productivity) >833 thousand EURO) (2012: truncation, if revenue/employee (labour productivity) >750 thousand EURO) (2013: truncation, if revenue/employee (labour productivity) >760 thousand EURO) (2014: truncation, if revenue/employee (labour productivity) >800 thousand EURO) (2015: truncation, if revenue/employee (labour productivity) >850 thousand EURO) (2016: truncation, if revenue/employee (labour productivity) >1,000 thousand EURO) (2017: truncation, if revenue/employee (labour productivity) >900 thousand EURO) (2018: truncation, if revenue/employee (labour productivity) >1 Mio. EURO) (2019: truncation, if revenue/employee (labour productivity) >1.09 Mio. EURO) (Spring 2020: truncation, if revenue/employee (labour productivity) >1.428 Mio. EURO) (Autumn 2020: truncation, if revenue/employee (labour productivity) >1.1 Mio. EURO) (2021: truncation, if revenue/employee (labour productivity) >1.5 Mio. EURO) (2022: truncation, if revenue/employee (labour productivity) >1.2 Mio. EURO)	S
ums_x (all)	truncation ums (1 = yes)	
umsq1 (2009, 2010)	Sales growth 1. quarter 2008/2009 or 1. quarter 2009/2010 (Intervall: 1: $x \leq -50$, 2: $-50 < x \leq -15$; 3: $-15 < x \leq 0$, 4: $0 < x \leq 20$, 5: $20 < x \leq 50$, 6: $x > 50$)	I
umssit (2012-2013)	Rating of current sales situation (1=very good, 2=good, 3=moderate, 4=bad, 5=very bad)	-
umserw (2009-2013)	Expected turnover in 2009 compared with 2008 or 2010 compared with 2009 (1: rise, 2: constant, 3: fall)	-

Name (Wave)	Description	Method of anonym.
kunden (2011)	Clients predominantly firms (=1), private persons (=2) oder public bodies (=3)	-
grkundvH (2012-2019, 2021, 2022)	Turnover share of the three most important customers, in percent	-
expj (2010-2019, 2021, 2022)	Turnover due to export (0=no, 1=yes)	-
exp (2010)	Turnover due to export (truncation, if exp/ums > 1)	S
exp_x (2010)	Truncation exp (1=yes)	
expvH (2011-2019, 2021, 2022)	Share of exports on revenues in per cent	-
fausfj (2012-2013)	Bad debt losses (0=no, 1=yes)	-
fausf (2012-2013)	Bad debt losses (truncation, if fausf>160 thousand EURO)	S
fausf_x (2012-2013)	Truncation fausf (1=yes)	
loehne (2008)	Staff costs (truncation, if loehne/employee > 107 thousand EURO)	S
loehne_x (2008)	Truncation loehne (1 = yes)	
ulohn (2008)	Paid entrepreneur salary (truncation, if ulohn/ums > 2,31)	S
ulohn_x (2008)	Truncation ulohn (1 = yes)	
gewj (all)	Profit situation (1 = profit, 2 = loss, 3 = none of both)	
gew (all)	Profit in base year (2008: truncation, if gew/ums > 1 or if gew/ums < -3.5)	S

Name (Wave)	Description	Method of anonym.
	<p>(2009: truncation, if gew/ums > 0.86 or if gew/ums < -3.6) (2010: truncation, if gew/ums > 0.83 or if gew/ums < -3.3) (2011: truncation, if gew/ums > 0.86 or if gew/ums < -5.6) (2012: truncation, if gew/ums > 0.82 or if gew/ums < -5) (2013: truncation, if gew/ums > 0.82 or if gew/ums < -5.25) (2014: truncation, if gew/ums > 0.82 or if gew/ums < -6.0) (2015: truncation, if gew/ums > 0.82 or if gew/ums < -5.0) (2016/2017: truncation, if gew/ums > 0.82 or if gew/ums < -6.7) (2018: truncation, if gew/ums > 1 or if gew/ums < -6) (2019: truncation, if gew/ums > 1 or if gew/ums < -8.5) (2021: truncation, if gew/ums > 1 or if gew/ums < -8) (2022: truncation, if gew/ums > 1 or if gew/ums < -7.5)</p> <p>If no revenues stated: Truncation profit at 99%-percentile (2008: truncation, if gew >278 thousand EURO) (2009: truncation, if gew >280 thousand EURO) (2010: truncation, if gew >300 thousand EURO) (2011: truncation, if gew >350 thousand EURO) (2012: truncation, if gew >320 thousand EURO) (2013: truncation, if gew >350 thousand EURO) (2014: truncation, if gew >400 thousand EURO) (2015: truncation, if gew >500 thousand EURO) (2016: truncation, if gew >450 thousand EURO) (2017: truncation, if gew >500 thousand EURO) (2018: truncation, if gew >450 thousand EURO) (2019, 2021, 2022: truncation, if gew >500 thousand EURO)</p>	
gew_x (all)	Truncation gew (1 = yes)	
auftr (2008)	Present situation of orders (1 = very bad, 2 = bad, 3 = sufficient, 4 = good, 5 = very good) [not questioned to retail firms and most of the firms in consumer oriented services, see questionnaire 2008]	
kapa (2008)	Present degree of utilisation of capacity in per cent	
Questions about the economic crisis in 2009		
krise (2009)	Effect of the current economic crisis (1: not noticeable, 2: negative noticeable, 3: positiv noticeable)	
krn_mit (2009)	Negative effect on the employment of employees (0=no, 1=yes)	
krn_ums (2009)	Negative effect on the turnover (0=no, 1=yes)	
krn_gew (2009)	Negative effect on the profit situation (0=no, 1=yes)	
krn_inv (2009)	Negative effect on investments (0=no, 1=yes)	
krn_fin (2009)	Negative effect on the funding situation (0=no, 1=yes)	

Name (Wave)	Description	Method of anonym.
krn_inno (2009)	Negative effect on the innovation activities (0=no, 1=yes)	
krn_al (2009)	Negative effect on the order situation (0=no, 1=yes)	
krn_liins (2009)	Negative effect causing supplier bankruptcy (0=no, 1=yes)	
krn_kuins (2009)	Negative effect causing customer bankruptcy (0=no, 1=yes)	
krp_mit (2009)	Positive effect on the employment of employees (0=no, 1=yes)	
krp_ums (2009)	Positive effect on the turnover (0=no, 1=yes)	
krp_gew (2009)	Positive effect on the profit situation (0=no, 1=yes)	
krp_inv (2009)	Positive effect on investments (0=no, 1=yes)	
krp_fin (2009)	Positive effect on the funding situation (0=no, 1=yes)	
krp_inno (2009)	Positive effect on the innovation activities (0=no, 1=yes)	
krp_al (2009)	Positive effect on the order situation (0=no, 1=yes)	
krp_liins (2009)	Positive effect because favorable purchasing from suppliers (0=no, 1=yes)	
krm (2010)	Targeted measures to prevent negative effects of the financial crisis on the firm (0=no, 1=yes)	
krm_besm (2010)	Measure (0=no, 1=yes): staff reduction / short time work	
krm_innom (2010)	Measure (0=no, 1=yes): reduction of innovation activities	
krm_invm (2010)	Measure (0=no, 1=yes): abandonment if investments	
krm_besp (2010)	Measure (0=no, 1=yes): placement of personnel	

Name (Wave)	Description	Method of anonym.
krm_innop (2010)	Measure (0=no, 1=yes): strengthening of innovation activities	
krm_invp (2010)	Measure (0=no, 1=yes): strengthening of investment activities	
krm_dl (2010)	Measure (0=no, 1=yes): customer specific adjustments of products and services	
krm_markt (2010)	Measure (0=no, 1=yes): adjustment products markets / circle of customers	
krm_preis (2010)	Measure (0=no, 1=yes): price reduction	
krm_mk (2010)	Measure (0=no, 1=yes): reduction of material costs	
krm_org (2010)	Measure (0=no, 1=yes): organizational changes	
krm_liq (2010)	Measure (0=no, 1=yes): securement of liquidity	
krd (2010)	Estimated time the crisis will affect your firm (number of months)	
Environment protection due to products / services		
greenj (2012)	Environment protection due to the use of firm's products / services (0=no, 1=yes)	-
green_effi (2012)	Improvement of energy efficiency (0=no, 1=yes)	-
green_ener (2012)	Production of renewable energy (0=no, 1=yes)	-
green_emis (2012)	Reduction of emissions in air, water, ground, noise (0=no, 1=yes)	-

10. Use of Social Media on business

Name (Wave)	Description	Method of anonym.
Usage of social media applications		
som_profil (2013)	Firm profile in social media applications (Facebook, Google etc.) (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
som_video (2013)	Publication if podcasts or videos on websites as Youtube (0=no, 1=yes)	-
som_nachr (2013)	Sending short messages via webpages as Twitter (0=no, 1=yes)	-
som_blog (2013)	firm internal blog (0=no, 1=yes)	-
som_wiki (2013)	firm internal Wiki (0=no, 1=yes)	-
som_feedb (2013)	feedback possibilities for external persons on the firm's homepage (0=no, 1=yes)	-
som_sonst (2013)	others (0=no, 1=yes)	-
Tasks of social media applications on business		
soma_werb (2013)	advertisement, marketing, public relations activities (0=no, 1=yes)	-
soma_komm (2013)	internal communication (0=no, 1=yes)	-
soma_vert (2013)	distribution or customer services (0=no, 1=yes)	-
soma_info (2013)	search for information (0=no, 1=yes)	-
soma_rekr (2013)	recruitment of employees (0=no, 1=yes)	-
soma_such (2013)	search for suppliers, service firms, co-operation partners (0=no, 1=yes)	-
soma_sonst (2013)	others (0=no, 1=yes)	-
somn_zufr (2013)	expectations to social was met (1=totally fulfilled, 2=usually fulfilled, 3=partly fulfilled, 4=sparsely fulfilled, 5=not fulfilled at all)	-
somn_plan (2013)	plans to use social media applications in the future (0=no, 1=yes)	-

11. Internationalisation

Name (Wave)	Description	Method of anonym.
Managers' international experiences		
int_aus (2012)	Education in foreign countries (0=no, 1=yes)	-
int_arb (2012)	Professional experience in foreign countries (0=no, 1=yes)	-
int_taet (2012)	Internationally oriented activities in German firms (0=no, 1=yes)	-
expj_v11 (2012)	Export sales before 2011 (0=no, 1=yes)	-
exp_erst (2012)	Year of first export sales	-
exp_anzl (2012)	Number of export countries (0=no, 1=yes)	-
exp_L1vH (2012)	Share of firm's first-order export market on total export sales, in percentage terms	-
exp_L2vH (2012)	Share of firm's second-order export market on total export sales, in percentage terms	-
exp_L3vH (2012)	Share of firm's third-order export market on total export sales, in percentage terms	-
exp_akt (2012)	Planning of export activities (0=first exports were unexpected, 1=first exports have been planned)	-
exp_aufn (2012)	Realisation of export activities due to (1=request of foreign customers, 2=contacting foreign customers, 3=consultants, 4=trade fair / exhibition, 5=international firms in Germany)	-
Hindrances of export activities		
exph_eign (2012)	Lack of export suitability of products / services (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
exph_zeit (2012)	Management is short of time (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
exph_kapa (2012)	Capacity bottleneck (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
exph_erf (2012)	Lack of international experience of the management (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-

Name (Wave)	Description	Method of anonym.
exph_info (2012)	Lack of information about international markets (1=very important, 2=important, 3=middle Importance, 4=less important, 5=unimportant)	-
exph_kost (2012)	Additional cost of export activities (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
exph_fins (2012)	Problems to finance export activities (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
exph_risk (2012)	High risks of export activities (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
exph_unt (2012)	Cultural and language differences (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
exph_reg (2012)	Governmental standards and rules, tariffs (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
exph_part (2012)	Problems with foreign business partners (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
impj (2012)	Import of products / services (0=no, 1=yes)	-
impvH (2012)	Share of imports on total expenditures for products / services, in percentage terms	-
impj_v11 (2012)	Import of products / services in 2011 (0=no, 1=yes)	-
imp_erst (2013)	Year of first imports of products / services	-
Import goods		
impg_rhb (2012)	Materials (0=no, 1=yes)	-
impg_inv (2012)	Capital goods (0=no, 1=yes)	-
impg_prod (2012)	Products and commodity (0=no, 1=yes)	-
impg_infdl (2012)	Information and communication services (0=no, 1=yes)	-
impg_sonst (2012)	Other services (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
imp_anzl (2012)	Number of import countries	-
imp_L1vH (2012)	Share of firm's first-order import market on total import expenditure, in percentage terms	-
imp_L2vH (2012)	Share of firm's second-order import market on total import expenditure, in percentage terms	-
imp_L3vH (2012)	Share of firm's third-order import market on total import expenditure, in percentage terms	-
Hindrance of import activities		
imph_zeit (2012)	Management is short of time (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
imph_erf (2012)	Lack of international experience of the management (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
imph_info (2012)	Lack of information about international markets (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
imph_kost (2012)	Additional cost of import activities (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
imph_fins (2012)	Problems to finance export activities (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
imph_risk (2012)	High risks of export activities (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
imph_unt (2012)	Cultural and language differences (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
imph_reg (2012)	Governmental standards and rules, tariffs (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
imph_part (2012)	Problems with foreign business partners (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-

12. Environmental protection and sustainability

Name (Wave)	Description	Method of anonym.
Products / services that have an environmental impact on the customer or end user		
um-welt_wirk_gesverbr (2018, 2021)	Reduction of energy consumption or overall CO2 balance at the customer. (0=no, 1=yes, significant, 2=yes, low)	-

Name (Wave)	Description	Method of anonym.
umwelt_wirk_emiss (2018, 2021)	Reduction of further emissions in the area of air or of emissions in the areas of water, soil or noise at the customer. (0=no, 1=yes, significant, 2=yes, low)	-
umwelt_wirk_resverbr (2018, 2021)	Reduction of material and resource consumption, e.g. water, at the customer (0=no, 1=yes, significant, 2=yes, low)	-
umwelt_wirk_recycling (2018, 2021)	Improving the recyclability of customers' products (0=no, 1=yes, significant, 2=yes, low)	-
umwelt_wirk_haltbar (2018, 2021)	Increasing the shelf life of products from customers (0=no, 1=yes, significant, 2=yes, low)	-
Innovationen, die Umweltwirkungen für Unternehmen haben		
umwelt_inno_gesverbr (2018, 2021)	Reduction of energy consumption or overall CO2 balance in the company. (0=no, 1=yes, significant, 2=yes, low)	-
umwelt_inno_emiss (2018, 2021)	Reduction of further emissions in the area of air or of emissions in the areas of water, soil or noise in the company. (0=no, 1=yes, significant, 2=yes, low)	-
umwelt_inno_resverbr (2018, 2021)	Reduction of material and resource consumption, e.g. water, in the company (0=no, 1=yes, significant, 2=yes, low)	-
umwelt_inno_recycling (2018, 2021)	Improving the recyclability of company's products (0=no, 1=yes, significant, 2=yes, low)	-
umwelt_inno_haltbar (2018, 2021)	Increasing the shelf life of products from the company (0=no, 1=yes, significant, 2=yes, low)	-

13. Public support and main bank (“Hausbank”) relationships

Name (Wave)	Description	Method of anonym.
foerd (all)	Public support (0=no, 1=yes)	A
gruenderzentrum (2016-2019)	support from technology centres or start-up centres (0=no, 1=yes)	
hbf (all)	Main bank offered public funding (0=ja, 1=nein)	

Name (Wave)	Description	Method of anonym.
hb_typ (2012)	Type of main bank (1=savings bank ("Sparkasse"), 2=co-operative bank ("Volks Raiffeisenbanken", 3=private bank, 4=no main bank relationship)	-
hb_bez (2012)	Former, private relationship to firm's main bank (0=no, 1=yes)	-
Criteria for main bank choice		
hb_komp (2012)	Bank's specific industry experience (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
hb_krh (2012)	In case of negative business development support is expected (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
hb_spez (2012)	Supply of special financial services (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
hb_nah (2012)	Spatial proximity (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
hb_kond (2012)	Attractive terms (1=very important, 2=important, 3=middle importance, 4=less important, 5=unimportant)	-
hb_gesspk (2012)	Discussions with (further) savings banks (0=no, 1=yes)	-
hb_gesvob (2012)	Discussions with (further) corporate banks (0=no, 1=yes)	-
hb_gespriv (2012)	Discussions with (further) private bank (0=no, 1=yes)	-
hb_abl (2012)	At least one bank rejects request for credits / business connections (0=no, 1=yes)	-
invz_bekj (2013)	awareness of the public funding program INVEST – grant for venture capital for private investors of young firms (0=no, 1=yes)	
inv_nutzj (2013)	using INVEST is conceivable (0=no, 1=yes)	

14.Financing and capital investment

Name (Wave)	Description	Method of anonym.
sachmittel (all)	Use of tangibles for founding (0=no, 1=yes)	
sachmittel_wert	Tangible asset (2008: truncation, if sachmittel_wert > 200.000 EURO) (2009: truncation, if sachmittel_wert > 250.000 EURO)	S

Name (Wave)	Description	Method of anonym.
(all)	(2010: truncation, if sachmittel_wert > 300.000 EURO) (2011: truncation, if sachmittel_wert > 175.000 EURO) (2012: truncation, if sachmittel_wert > 150.000 EURO) (2013/2014: truncation, if sachmittel_wert > 200.000 EURO) (2015: truncation, if sachmittel_wert > 250.000 EURO) (2016: truncation, if sachmittel_wert > 200.000 EURO) (2017/2018: truncation, if sachmittel_wert > 150.000 EURO) (2019/2021/2022: truncation, if sachmittel_wert > 200.000 EURO)	
sachmittel_wert_x (all)	Truncation sachmittel_wert (1 = yes)	
invj (all)	Investment status (0=no, 1 = yes)	
inv (all)	Investment volume (2008: truncation, if inv/ums (investment intensity) > 14.7) (2009: truncation, if inv/ums (investment intensity) > 8.3) (2010: truncation, if inv/ums (investment intensity) > 9.3) (2011-2013: truncation, if inv/ums (investment intensity) > 10) (2014: truncation, if inv/ums (investment intensity) > 8.1) (2015: truncation, if inv/ums (investment intensity) > 8) (2016: truncation, if inv/ums (investment intensity) > 10) (2017: truncation, if inv/ums (investment intensity) > 9) (2018: truncation, if inv/ums (investment intensity) > 8) (2019: truncation, if inv/ums (investment intensity) > 2.75) (2020: truncation, if inv/ums (investment intensity) > 2.7) (2021: truncation, if inv/ums (investment intensity) > 5) (2022: truncation, if inv/ums (investment intensity) > 14.3) If revenues were not stated: Truncation Investment volume at 99%-percentile (2008: truncation, if inv>749.000 EURO) (2009: truncation, if inv>800.000 EURO) (2010: truncation, if inv>750.000 EURO) (2011: truncation, if inv>550.000 EURO) (2012-2014: truncation, if inv>500.000 EURO) (2015: truncation, if inv>525.000 EURO) (2016/2017: truncation, if inv>600.000 EURO) (2018/2019: truncation, if inv>500.000 EURO) (2020: truncation, if inv>700.000 EURO) (2021/2022: truncation, if inv>800.000 EURO)	S
inv_x (all)	Truncation inv (1=yes)	
invpl_ns (2009-2013)	Investment project has not even started in reference year (0=no, 1=yes)	
invpl_late (2009-2013)	Investment project started later than planned in reference year (0=nein, 1=yes)	
invpl_abbr (2009-2013)	Investment project was canceled in reference year (0=no, 1=yes)	
invpl_sml (2009-2013)	Investment project started smaller than planned in reference year (0=no, 1=yes)	

Name (Wave)	Description	Method of anonym.
inpl_lz (2009-2013)	Project duration has lengthened during reference year (0=no, 1=yes)	
invgap (2009-2011)	Amount of money which was not invested in reference year (2009: truncation, if invgap/ums>13.3) (2010: truncation, if invgap/ums>15) (2011: truncation, if invgap/ums>30.7) If revenues were not stated: Truncation invgap volume at 99%-percentile (2009: truncation, if inv>2 Mio. EURO) (2010: truncation, if inv>2 Mio. EURO) (2011: truncation, if inv>4.6 Mio. EURO)	S
invgap_x (2009-2012)	Truncation invgap (1=yes)	
invziel (2012-2013)	Amount of money which originally should be invested (2012: truncation, if invziel/ums>16) (2013: truncation, if invziel/ums>25) If revenues were not stated: Truncation invziel volume at 99%-percentile I (2012: truncation, if invziel>2 Mio. Euro) (2013: truncation, if invziel>2,5 Mio. Euro)	S
invziel_x (2012-2013)	Truncation invziel (1=ja)	
Reasons for non-implementation of investment plans		
invpl_aus (2009-2013)	Deterioration of business perspectives (0=no, 1=yes)	
invpl_fin (2009-2013)	Insufficient funding (0=no, 1=yes)	
invpl_inv (2009-2013)	To high investment costs (0=no, 1=yes)	
invpl_org (2009-2013)	Organizational problems in the company (0=no, 1=yes)	
invpl_fach (2009-2013)	Lack of qualified employees (0=no, 1=yes)	
invpl_br (2009, 2010)	Bureaucratic barriers (0=no, 1=yes)	
invpl_hgr (2010)	Main reason investment gap (1-7: invpl_aus-invpl_br or no mean reason)	
bk (all)	Running costs (operating costs: salaries, rents, interest rates, material expenditures) (2008: truncation, if bk/ums > 4.55) (2009: truncation, if bk/ums > 3.5) (2010: truncation, if bk/ums > 5.8)	S

Name (Wave)	Description	Method of anonym.
	(2011/12: truncation, if bk/ums > 7) (2013: truncation, if bk/ums > 8) (2014: truncation, if bk/ums > 6.4) (2015: truncation, if bk/ums > 9.4) (2016: truncation, if bk/ums > 7.5) (2017: truncation, if bk/ums > 9.9) (2018: truncation, if bk/ums > 9.1) (2019: truncation, if bk/ums > 9.75) (2020: truncation, if bk/ums > 15.3) (2021: truncation, if bk/ums > 9.6) (2022: truncation, if bk/ums > 9.8)	
bk_x (all)	Truncation bk (1 = yes)	
Use of the three financing sources to finance investments and running costs		
fin_gesch_07 (2008)	Funds from business operations (0 = no, 1 = yes)	
fin_eig_07 (2008)	Use of owners' funds (0 = no, 1 = yes)	
fin_ext_07 (2008)	Use of external funds (0 = no, 1 = yes)	
finv_in (all)	Share of internal financing - investments - in percent	
finv_aus (all)	Share of external financing - investments - in percent	
fbk_in (all)	Share of internal financing - operating costs - in percent	
fbk_aus (all)	Share of external financing - operating costs - in percent	
fin_gesch_ant_07 (2008)	Share of financing of funds from business operation in per cent	
fin_eig_ant_07 (2008)	Share of financing of owners' funds in per cent	
fin_ext_ant_07 (2008)	Share of financing of external funds in per cent	
Attention! Change to the questionnaire to record sources of funding from 2022 on		
f_ums	Financing through sales and retained earnings (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
(2022)		
Type of financing to cover the demand of external funds		
f_inh (all)	Financing by owner (0=no, 1=yes)	
fin_ext_kk_07 (2008) f_kk (all)	Use of external funds – short-term loans: open credit, overdraft facility (0 = no, 1 = yes)	
fin_ext_lk_07 (2008) f_lk (all)	Use of external funds – long-term loans: long-term bank credit, KfW promotion, German Bundesland aid (0 = no, 1 = yes)	A
fin_ext_fff_07 (2008) f_ba (all)	Use of external funds – loans and donated money by relatives, friends (0 = no, 1 = yes)	
fin_ext_fff_07 (2008) f_fff (all)	Use of external funds – share of loans and donated money by relatives, friends in per cent	
fin_ext_ba_07 (2008) f_ba (all)	Use of external funds – funds of the “Bundesagentur für Arbeit” (German Federal Labour Market Authority) (0 = no, 1 = yes)	
fin_ext_bet_eil_07 (2008) f_bet (all)	Use of external funds – venture capital inclusive mezzanine-capital (0 = no, 1 = yes)	A
fin_ext_sonst_07 (2008) f_sonst (all)	Use of external funds – other sources (0 = no, 1 = yes)	
fant_inh <i>(until 2021, from 2022 on fint_inh)</i>	Share of funding by owner, in percent	
fin_ext_kk_ant_07	Use of external funds – share of short-term loans: open credit, overdraft facility, in per cent	

Name (Wave)	Description	Method of anonym.
(2008) fant_kk (until 2021, from 2022 fint_inh)		
fin_ext_lk_ ant_07 (2008) fant_lk (until 2021, from 2022 fint_inh)	Use of external funds – share of long-term loans: long-term bank credit, KfW promotion, German Bundesland aid, in per cent	A
fin_ext_fff_ ant_07 (2008) fant_fff (until 2021, from 2022 fint_inh)	Use of external funds – share of loans and donated money by relatives, friends in per cent	
fin_ext_ba_ ant_07 (2008) fant_ba (until 2021, from 2022 fint_inh)	Use of external funds – share of funds of the “Bundesagentur für Arbeit” (German Federal Labour Market Authority) in per cent	
fin_ext_bet eil_ant_07 (2008) fant_bet (until 2021, from 2022 fint_inh)	Use of external funds – share of venture capital inclusive mezzanine-capital in per cent	A
fin_ext_son st_ant_07 (2008) fant_sonst (until 2021, from 2022 fint_inh)	Use of external funds – share of other funds in per cent	
Attention! Change to the questionnaire to record sources of funding from 2022 on		
f_inh (2022)	Financing by owner (0=no, 1=yes)	-
f_ba (2022)	Financing by the Federal Employment Agency (0=no, 1=yes)	-
f_kk (2022)	Financing through overdraft facility (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
f_bank (2022)	Financing through long-term loans (0=no, 1=yes)	-
f_foel (2022)	Financing through subsidised loans and grants from public subsidy and funding programmes (0=no, 1=yes)	-
f_fff (2022)	Financing by relatives and friends (0=no, 1=yes)	-
f_bet (2022)	Financing by equity investors (0=no, 1=yes)	-
f_sonst (2022)	Financing from other sources (0=no, 1=yes)	-
Shares of the individual financing sources		
fint_ums (2022)	Share of financing through sales and retained earnings, in per cent	-
fint_inh (2022)	Share of financing by owners, in per cent	-
fint_ba (2022)	Share of financing by the Federal Employment Agency, in per cent	-
fint_kk (2022)	Share of financing through overdraft facility, in per cent	-
fint_bank (2022)	Share of financing through longer-term loans, in per cent	-
fint_foel (2022)	Share of financing by subsidised loans and grants from public subsidy and funding programmes, in percent	-
fint_fff (2022)	Share of financing by relatives and friends, in per cent	-
fint_bet (2022)	Share of financing from equity investors, in per cent	-
fint_mez (2022)	Share of financing through mezzanine capital, in per cent	
fint_sonst (2022)	Share of financing from other sources, in per cent	-
Type of equity or mezzanine capital		
fbet_priv (2018, 2022)	Private investors, e.g. business angels (0=no, 1=yes)	-
fbet_vc (2018, 2022)	Private venture capital firm or private equity company (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
2022)		
fbet_mbg (2018, 2022)	Mittelständische Beteiligungsgesellschaft (MBG) (0=no, 1=yes)	-
fbet_unt (2018, 2022)	Other companies (MBG) (0=no, 1=yes)	-
fbet_sonst (2018, 2022)	Other (0=no, 1=yes) -	-
financing difficulties with external financing		
fsj (all)	Financing difficulties with external capital provider (0 = no, 1 = yes)	
fs_kk (2008)	Difficulties with short-term loans: open credit, overdraft facility (0 = no, 1 = yes)	
fs_ikredit (2008) fs_ik (all)	Difficulties with long-term loans: long-term bank credit, KfW promotion, German Bundesland aid (0 = no, 1 = yes)	A
fs_fff (2008)	Difficulties with loans and donated money by relatives and friends (0 = no, 1 = yes)	
fs_ba (all, 2021, 2022 only in the panel)	Difficulties with funds from the "Bundesagentur für Arbeit" (German Federal Labour Market Authority) (0 = no, 1 = yes)	
fs_bet (all, 2021, 2022 only in the panel)	Difficulties with venture capital inclusive mezzanine-capital (0 = no, 1 = yes)	A
fs_sonst (all, 2021, 2022 only in the panel)	Difficulties with other financial sources, capital provider	
fs_bank (2011 2013-2019, 2021, 2022)	Difficulties with banks and saving banks (0=no, 1=yes)	
fs_kfw (2014-	Difficulties with KfW (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
2019, 2021, 2022)		
fs_foel (2011 2013-2015)	Difficulties with funding institutions of the federal states (0=no, 1=yes)	
grund_kfs (2012-2019, 2021, 2022)	Explanation for missing difficulties with external financiers (1=search for external financing sources seemed to be futile, 2=no further funding needed, 3=required funding could be acquired without difficulties, 4=no answer)	
Problems of bank financing in the reference year		
fsbank_abl (2009, 2010) fs_bank_abg (2014)	Bank has declined new requested credit (0=no, 1=yes)	
fsbank_kl (2009, 2010) fsbank_kue (2014)	Bank has cut or canceled existing credit line (0=no, 1=yes)	
fsbank_kon d (2009, 2010)	Offers of the bank were unattractive, so I declined (0=no, 1=yes)	
fsbak_nalt (2009, 2010)	The bank's offer was unattractive, but has been accepted because a lack of alternatives (0=no, 1=yes)	
fsbank_nfoe (2009, 2010) fsbank_foe (2014)	Bank was not willing to apply for funding credit (0=no, 1=yes)	
Problems with bank financing: reasons for credit denial		
fsb_abl_vol (2014)	Requested credit volume too high (0=no, 1=yes)	-
fsb_abl_sich (2014)	Insufficient collateral (0=no, 1=yes)	-
fsb_abl_erf (2014)	Insufficient experience on the part of the firm (0=no, 1=yes)	-
fsb_abl_ren (2014)	Bank declared that firm's profitability is insufficient (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
fsb_abl_rat (2014)	Insufficient rating / equity capital (0=no, 1=yes)	-
fsb_abl_sonst (2014)	Other reasons (0=no, 1=yes)	-
Problems with bank financing: reasons for shortening the credit line		
fsb_kue_aus (2014)	Bad debt (0=no, 1=yes)	-
fsb_kue_ueb (2014)	Over-indebtedness (0=no, 1=yes)	-
fsb_kue_rue (2014)	Insufficient reserves (0=no, 1=yes)	-
fsb_kue_lag (2014)	Bad business situation (0=no, 1=yes)	-
fsb_kue_pol (2014)	Bank policy has changed (0=no, 1=yes)	-
fsb_kue_sonst (2014)	Other reasons (0=no, 1=yes)	-
Problems with bank financing: bank's reasons not to apply for publicly funded credits		
fsb_kfk_gen (2014)	Bank never applied for publicly funded credits (0=no, 1=yes)	-
fsb_kfk_ueb (2014)	Insufficient assumption of risk by the funding institution (0=no, 1=yes)	-
fsb_kfk_zin (2014)	Interest margins of the funding institutions were too low (0=no, 1=yes)	-
fsb_kfk_risk (2014)	Bank declared that the risk of co-financing is too high (0=no, 1=yes)	-
fsb_kfk_sonst (2014)	Other reasons (0=no, 1=yes)	-
Difficulties with equity investors		
fsb_PI (2011)	Difficulties with private investors (0=no, 1=yes)	
fsb_VC (2011)	Difficulties with venture capital firms or private equity companies (0=no, 1=yes)	

Name (Wave)	Description	Method of anonym.
fsb_MBG (2011)	Difficulties with medium-sized holding companies (0=no, 1=yes)	
fsb_U (2011)	Difficulties with other companies (0=no, 1=yes)	
fsb_sonst (2011)	Difficulties with other investors (0=no, 1=yes)	
Kind of difficulties with investors		
fsbet_abl (2011)	Equity investor has refused contract (0=no, 1=yes)	
fsbet_attr (2011)	Offer of equity investor was not attractive, thus contract was refused (0=no, 1=yes)	
fsbet_kont (2011)	No contact to suitable equity investor (0=no, 1=yes)	
fsbet_sw (2011)	Beteiligung kam trotz Schwierigkeiten zustande (0=nein, 1=ja)	
Reasons for refusal by equity investor		
betabK_V (2011)	Different ideas concerning the financing volume (0=no, 1=yes)	
be- tabK_MS (2011)	Equity investors didn't have enough say in the matter (0=no, 1=yes)	
be- tabK_pers (2011)	Personal differences (0=no, 1=yes)	
betabK_r (2011)	Expected return to equity was too low for investor (0=no, 1=yes)	
betabK_ES (2011)	Ownership structure not acceptable for investor (0=no, 1=yes)	
betabK_br (2011)	Administrative costs too high (0=no, 1=yes)	
be- tabK_GB (2011)	Profit sharing too low (0=no, 1=yes)	
be- tabK_rep (2011)	Obligation to report too low for investor (0=no, 1=yes)	
be- tabK_ant (2011)	Different ideas of investor on his company share (0=no, 1=yes)	

Name (Wave)	Description	Method of anonym.
Company's reasons for refusing financing by equity investor		
betabU_V (2011)	Different ideas concerning the financing volume (0=no, 1=yes)	
be-tabU_MS (2011)	Equity investors had too much say in the matter (0=no, 1=yes)	
be-tabU_pers (2011)	Personal differences (0=no, 1=yes)	
betabU_r (2011)	Investor's expectation on return too high (0=no, 1=yes)	
be-tabU_ES (2011)	Investor wants change in ownership structure (0=no, 1=yes)	
betabU_br (2011)	Administrative costs too high (0=no, 1=yes)	
be-tabU_GB (2011)	Investor's demand concerning profit sharing unacceptable (0=no, 1=yes)	
be-tabU_rep (2011)	Obligation to report too costly (0=no, 1=yes)	
be-tabU_ant	Different ideas of investor on his company share (0=no, 1=yes)	
Difficulties with negotiating received equity financing		
betsw_V (2011)	Financing volume (0=no, 1=yes)	
betsw_MS (2011)	Demanded say (0=no, 1=yes)	
betsw_pers (2011)	Personal differences (0=no, 1=yes)	
betsw_r (2011)	Different perception of ratability of business concept (0=no, 1=yes)	
betsw_ES (2011)	Ownership structure (0=no, 1=yes)	
betsw_br (2011)	Administrative costs (0=no, 1=yes)	
betsw_GB (2011)	Demanded profit share (0=no, 1=yes)	

Name (Wave)	Description	Method of anonym.
betsw_rep (2011)	Magnitude of reporting obligations (0=no, 1=yes)	
betsw_ant (2011)	Company share of investor (0=no, 1=yes)	
Using equity investors to finance expansion		
betpl_moeg (2011)	Informed about equity financing possibilities (0=no, 1=yes)	
betpl_bet (2011)	Contact with equity investors established/contract negotiations take place (0=no, 1=yes)	
betpl_akq (2011)	Equity capital already acquired (0=no, 1=yes)	
betpl_no (2011)	No plans to finance expansion through equity financing (0=no, 1=yes)	
betpl_ant (2011)	Max. potential company share of investor in per cent	
Information sources / Consulting sources concerning equity financing		
betkt_IHK (2011)	ICC/ Chamber of Commerce (0=no, 1=yes)	
betkt_Zt (2011)	Newspaper articles or journals (0=no, 1=yes)	
betkt_WW W (2011)	General internet search ((0=no, 1=yes)	
betkt_FFF (2011)	Friends, relatives, colleagues (0=no, 1=yes)	
betkz_exh	Fairs (0=no, 1=yes)	
betkt_ber (2011)	Consulting companies (0=no, 1=yes)	
betkt_net (2011)	Other self-employed or founder-networks (0=no, 1=yes)	
betkt_BA (2011)	Business angel networks oder German Private Equity and Venture Capital Association (BVK) (0=no, 1=yes)	
betkt_bank (2011)	Banks and saving banks (0=no, 1=yes)	
Reasons for not using equity financing		
nbet_FM	Sufficient other financing means (0=no, 1=yes)	

Name (Wave)	Description	Method of anonym.
(2011)		
nbet_info (2011)	Insufficient information on financing form (0=no, 1=yes)	
nbet_aufw (2011)	Financing form too costly (0=no, 1=yes)	
nbet_w (2011)	Growth target too low (0=no, 1=yes)	
nbet_fail (2011)	Earlier tries with equity financing have failed (0=no, 1=yes)	
nbet_erf (2011)	Reports of negative experiences with equity financing (0=no, 1=yes)	
nbet_ctrl (2011)	Keep total control over company (0=no, 1=yes)	
grund_eig (2012)	Explanation why own (private) financial capital has been utilized (1=use of own financial capital were required by external financiers, 2=own financial capital is easily and cheaply available, 3=no or not enough external capital, 4=reservation of owners against external financiers, 5=none of these reasons)	-
grund_keig (2012)	Explanation why own (private) financial capital has not been utilized (1=no own financial capital available, 2=high risks of investments of own financial capital in the firm, 3=other profitable investment opportunities for own financial capital, 4= Preservation of private, financial resources for the founders / owners, 5=none of these reasons)	-
Securities for creditors		
sich_grun (2013- 2015)	firm's real estate (0=no, 1=yes)	-
sich_grinh (2013- 2015)	firms owners' real estate (0=no, 1=yes)	-
sich_vmun (2013- 2015)	firm's other assets (0=no, 1=yes)	-
sich_vminh (2013- 2015)	firm owners' other assets	-
sich_buerg (2013- 2015)	bonds (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
sich_sonst (2013-2015)	others (0=no, 1=yes)	-

15. Other Financing Sources

Name (Wave)	Description	Method of anonym.
Financing by private investors		
ba_seitgr (2013)	(external) private investors invested in the firm since foundation (0=no, 1=yes, one person, 2=more than one person)	-
ba_seitgr_1 ba_seitgr_2 ba_seitgr_3 (2019)	(external) private investors invested in the firm since foundation (0=no, 1=yes): 1: one person 2: more than one single persons 3: via a Venture Capital firm	-
ba_anz (2013 2019)	number of private investors (truncation, if ba_anz>6)	S
ba_anz_x (2013 2019)	Truncation indicator ba_anz (1 = yes)	
ba_vol (2013 2019)	total investments from private investors (2013: truncation, if ba_vol>2,600 thousand EURO) (2019: truncation, if ba_vol>8 Mio. EURO)	S
ba_vol_x (2013 2019)	Truncation indicator ba_vol (1 = yes)	
ba_alter (2019)	Ages of private investors	-
ba_fff (2019)	Relationship (family and/or friends) between founders and investors (0=no, 1=yes)	-
ba_time_monat ba_time_jahr (2019)	time of the first investment of a private investor: month and year	-
ba_stage (2019)	Development phase of the firm at the time of the first investment (1=Seed-Phase, 2=Start-up-Phase, 3=Later-Stage-Phase)	-
ba_round (2019)	Number of financing rounds of investors	-

Name (Wave)	Description	Method of anonym.
ba_sh (2013 2019)	total company share of private investors, in percent	-
invest (2019)	INVEST-funding of the investors (1=yes, all, 2=yes, partly, 3=no)	-
invest_ovc (2019)	common investment of INVEST-funded investors with official VC-fonds (0=no, 1=yes)	-
Types of investments		
bart_offen (2013 2019)	equity investment (0=no, 1=yes)	-
bart_still (2013 2019)	silent equity investment (0=no, 1=yes)	-
bart_mezz (2013)	mezzanine capital (0=no, 1=yes)	-
bart_darl (2019)	credit (0=no, 1=yes)	-
bart_wdarl (2019)	convertible loan (0=no, 1=yes)	-
bart_sonst (2013 2019)	others (0=no, 1=yes)	
Support by private investors		
smart_kont (2013)	liaising contacts (1=very intensive, 2=intensive, 3=middle, 4=minor, 5=not at all)	-
smart_kontG (2019)	Establishing contact of the firm with business partners (1=very intensive, 2=intensive, 3=middle, 4=minor, 5=not at all)	-
smart_kontF (2019)	Establishing contact of the firm with financing partners (1=very intensive, 2=intensive, 3=middle, 4=minor, 5=not at all)	-
smart_cons (2013 2019)	consulting (1=very intensive, 2=intensive, 3=middle, 4=minor, 5=not at all)	-
smart_infrast (2013 2019)	providing infrastructure (1=very intensive, 2=intensive, 3=middle, 4=minor, 5=not at all)	-
smart_beirat (2013 2019)	act as a formal business adviser (1=very intensive, 2=intensive, 3=middle, 4=minor, 5=not at all)	-

Name (Wave)	Description	Method of anonym.
smart_kaufm (2013 2019)	taking over business tasks (1=very intensive, 2=intensive, 3=middle, 4=minor, 5=not at all)	-
smart_prod (2013 2019)	taking over tasks in production or R&D (1=very intensive, 2=intensive, 3=middle, 4=minor, 5=not at all)	-
Contact making with private investors		
kont_art (2013)	active search for private investors (0=no, 1=yes)	-
kont_privat (2013)	active search via private contacts (0=no, 1=yes)	-
kont_netz (2013)	active search via Business Angels networks (0=no, 1=yes)	-
kont_ihk (2013)	active search via chamber of industry and commerce (0=no, 1=yes)	-
kont_bplan (2013)	active search via business plan- or founder contests (0=no, 1=yes)	-
kont_messe (2013)	active search via trade fairs (0=no, 1=yes)	-
kont_internet (2013)	active search via internet (0=no, 1=yes)	-
kont_rest (2013)	active search via others (0=no, 1=yes)	-
kont_zuf_privat (2013)	accidental contact via private contacts (0=no, 1=yes)	-
kont_zuf_ba (2013)	accidental contact by the initiative of the private investor(s) (0=no, 1=yes)	-
kont_zuf_rest(20 13)	accidental contact via others (0=no, 1=yes)	-
konta_verb (2013)	improvement of contact possibilities to private investors is necessary (0=no, 1=yes)	-
kont_privat (2019)	via private contacts (0=no, 1=yes)	-
kont_netz (2019)	via Business Angels networks (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
kont_ihk (2019)	via chamber of industry and commerce (0=no, 1=yes)	-
kont_bplan (2019)	via business plan- or founder contests (0=no, 1=yes)	-
kont_messe (2019)	via trade fairs (0=no, 1=yes)	-
kont_internet (2019)	via internet (0=no, 1=yes)	-
kont_events (2019)	via events and programmes for start-ups (0=no, 1=yes)	
kont_sonst (2019)	via others (0=no, 1=yes)	-
kont_verb_txt (2019)	suggestions for improvements for contact making (text field)	-
Time exposure for search for investors		
suche_zeit_ Woche Monate (2019)	time needed for search for investors, in weeks or months	-
suche_int (2019)	time needed for search for investors, in hours per week	-
Sale of private investors' equity shares		
ba_exit (2013 2019)	divestment of investors' equity shares (0=no, 1=yes)	-
exit_gruend (2019)	divestment of investors' equity shares to founders (0=no, 1=yes)	-
exit_vc (2019)	divestment of investors' equity shares to venture capital firms (0=no, 1=yes)	-
exit_fin (2019)	divestment of investors' equity shares to others (0=no, 1=yes)	-
exit_boerse (2019)	divestment of investors' equity shares via stock exchange (0=no, 1=yes) (IPO)	-
exit_result (2019)	Profit or loss on divestment of investors' equity shares (1=profit, 2=loss, 3=neither)	-
exit_erloes	Revenue of divestment of investors' equity shares, in Euro	-

Name (Wave)	Description	Method of anonym.
(2019)		
exit_verlust (2019)	Loss of divestment of investors' equity shares, in Euro	-
Contact to potential private investors which were not successful		
pot_kont (2013 2019)	contact to a potential private investor (0=nein, 1=ja)	-
pkont_art (2013)	active search for a potential private investor (0=nein, 1=ja)	-
pkont_priv (2013)	active search via private contacts (0=nein, 1=ja)	-
pkont_netz (2013)	active search via Business Angels networks (0=no, 1=yes)	-
pkont_ihk (2013)	active search via chamber of industry and commerce (0=no, 1=yes)	-
pkont_bplan (2013)	active search via business plan- or founder contests (0=no, 1=yes)	-
pkont_messe (2013)	active search via trade fairs (0=no, 1=yes)	-
pkont_internet (2013)	active search via internet (0=no, 1=yes)	-
pkont_rest (2013)	active search via others (0=no, 1=yes)	-
pkont_zuf_priv (2013)	accidental contact via private contacts (0=no, 1=yes)	-
pkont_zuf_netz (2013)	accidental contact via Business Angel networks (0=no, 1=yes)	-
pkont_zuf_ihk (2013)	accidental contact via chamber of industry and commerce (0=no, 1=yes)	-
pkont_zuf_bplan (2013)	accidental contact via business plan- or founder-contests (0=no, 1=yes)	-
pkont_zuf_messe (2013)	accidental contact via trade fairs (0=no, 1=yes)	-
pkont_zuf_internet (2013)	accidental contact via internet (0=no, 1=yes)	-
pkont_zuf_ba	accidental contact by the initiative of a private investor (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
(2013)		
pkont_zuf_rest (2013)	accidental contact via others (0=no, 1=yes)	-
pkont_priv (2019)	via private contacts (0=nein, 1=ja)	-
pkont_netz (2019)	via Business Angels networks (0=no, 1=yes)	-
pkont_ihk (2019)	via chamber of industry and commerce (0=no, 1=yes)	-
pkont_bplan (2019)	via business plan- or founder contests (0=no, 1=yes)	-
pkont_messe (2019)	via trade fairs (0=no, 1=yes)	-
pkont_internet (2019)	via internet (0=no, 1=yes)	-
pkont_events (2019)	via events and programmes for start-ups (0=no, 1=yes)	
pkont_sonst (2019)	via others (0=no, 1=yes)	-
Time exposure for search for potential investors		
psuche_zeit_ Woche Monate (2019)	time needed for search for investors, in weeks or months	-
psuche_int (2019)	time needed for search for investors, in hours per week	-
Reasons for contacts to potential private investor have not been successful		
noinv_quelle (2019)	Responsible for contacts to potential investors have not been successful (1=firm's decision, 2=investor's decision, 3=decision of both, 4=negotiation process is still ongoing)	-
noinv_concept (2013)	poor business concept (0=no, 1=yes)	-
noinv_growth (2013)	poor growth prospects of the firm (0=no, 1=yes)	-
noinv_owner	shareholder structure has been inappropriate for the investor (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
(2013)		
noinv_invest (2013)	no consent about the amount of investment (0=no, 1=yes)	-
noinv_pers (2013)	personal differences (0=no, 1=yes)	-
noinv_verh (2013)	negotiation not yet finished (0=no, 1=yes)	-
noinv_rest (2013)	others (0=no, 1=yes)	-
noinv_a_concept (2019)	investor decision due to poor business concept (0=no, 1=yes)	-
noinv_growth_a_c (2019)	investor's assessment: poor growth prospects of the firm (0=no, 1=yes) a: decision of investor c: decision of both	-
noinv_owner_a_c (2019)	investor's assessment: shareholder structure has been inappropriate (0=no, 1=yes) a: decision of investor c: decision of both	-
noinv_qual_a_c (2019)	investor's assessment: lack of founders' qualification (0=no, 1=yes) a: decision of investor c: decision of both	-
noinv_sum_b_c (2019)	investment size (0=no, 1=yes) b: decision of firm c: decision of both	-
noinv_bet_b_c (2019)	no agreement on the equity share (0=no, 1=yes) b: decision of firm c: decision of both	-
noinv_pers_a_b_c (2019)	no agreement due to personal differences (0=no, 1=yes) a: decision of investor b: decision of firm c: decision of both	-
noinv_berat_b_c (2019)	firm's assessment: lack of consulting by the investor (0=no, 1=yes) b: decision of firm c: decision of both	-

Name (Wave)	Description	Method of anonym.
noinv_sonst _a _b _c (2019)	other reasons (0=no, 1=yes), a: decision of investor b: decision of firm c: decision of both	-
Reasons for not contacting a potential private investor		
nokont_baknow (2013 2019)	missing knowledge about Business Angel activities (0=no, 1=yes)	-
nokont_bedarf (2013 2019)	no demand (0=no, 1=yes)	-
nokont_contact (2013 2019)	missing contact possibilities (0=no, 1=yes)	-
nokont_quali (2013 2019)	firm not qualified for Business Angel investments (0=no, 1=yes)	-
nokont_mitspr (2013 2019)	denial to grant to say for external persons (0=no, 1=yes)	-
nokont_rest (2013 2019)	others (0=no, 1=yes)	-
Financing by Venture Capital Companies		
vc_seitgr (2013 2019)	venture capital from a venture capital company (0=no, 1=yes)	-
vc (2016 2017)	Venture Capital from private or public Venture Capital Funds or investor consortium as equity capital, since foundation time (0=no, 1= yes, once, 2=yes, repeatedly)	-
vc_vol (2013 2016 2017 2019)	total investments by venture capital companies (2013: truncation, if ba_vol>7,000 thousand EURO) (2016: truncation, if ba_vol>5,600 thousand EURO) (2019: truncation, if ba_vol>7,250 thousand EURO)	S
vc_vol_x (2013 2016 2017 2019)	truncation indicator vc_vol (1=yes)	-
vc_stage	Development phase of the firm at the time of the first VC-fonds/firm invest-	-

Name (Wave)	Description	Method of anonym.
(2019)	ment (1=Seed-Phase, 2=Start-up-Phase, 3=Later-Stage-Phase)	
vc_anz (2016 2017)	Number of investments by VC companies, since firm's foundation time	-
vc_typ (2016 2017)	type of investment (1=Fonds / firm, 2=consortium of several investors)	-
vc_vcart (2016 2017)	type of VC firm (1=private VC firm, 2=public VC fonds, 3=corporate VC fonds)	-
vc_kons_pVC (2016 2017)	type of partner in consortium: private VC firm (0=nein, 1=ja)	-
vc_kons_oeV C (2016 2017)	type of partner in consortium: public VC fonds (0=nein, 1=ja)	-
vc_kons_cVC (2016 2017)	type of partner in consortium: corporate VC fonds (0=nein, 1=ja)	-
vc_kons_sons (2016 2017)	type of partner in consortium: others	-
vc_ende (2016 2017)	sale of VC equity shares (0=no, 1=yes)	-
vc_kauf_gruen d (2016 2017)	sale of VC equity shares to founders (0=no, 1=yes)	-
vc_kauf_vc (2016 2017)	sale of VC equity shares to another VC firm (0=no, 1=yes)	-
vc_kauf_fin (2016 2017)	sale of VC equity shares to another investor (0=no, 1=yes)	-
vc_kauf_unt (2016 2017)	sale of VC equity shares to another firm (0=no, 1=yes)	-
vc_kauf_boer (2016)	sale of VC equity shares by initial public offering (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
2017)		
vc_kauf_sons (2016 2017)	sale of VC equity shares otherwise	-
vc_no (2016 2017)	reasons for denying investments by VC firms (1 = no need 2 = not interested 3 = akquisition too elaborate 4 = denied the offer(s) 5 = got no offer 6 = others)	
Crowdfunding		
cf_funkt (2013)	functioning of crowdfunding known (0=no, 1=yes)	-
cf_interes (2013)	usage imaginable if required (0=no, 1=yes)	-
cf_bedarf (2013)	point of time of possible requirement (1=in two years, 2=in three to five years, 3=later)	-
cf_nutz_vol (2013)	potential amount of financing by crowdfunding	-
cf_kapart (2013)	form of financing by crowdfunding (1=equity financing or similar forms, 2=debt capital)	-
Reasons for not using crowdfunding		
cfno_unat (2013)	business concept inappropriate (0=no, 1=yes)	-
cfno_nied (2013)	financing demand too low (0=no, 1=yes)	-
cfno_hoch (2013)	financing demand too high (0=no, 1=yes)	-
cfno_geb (2013)	charges of crowdfunding platforms too high (0=no, 1=yes)	-
cfno_risk (2013)	high risk of absent investments (0=no, 1=yes)	-
cfno_zeit (2013)	capital acquisition takes too much time (0=no, 1=yes)	-
cfno_aufw (2013)	effort for capital acquisition too high (0=no, 1=yes)	-
cfno_abw	awaiting for the development of the crowdfunding market (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
(2013)		
cfno_rept (2013)	fear of reputation loss (0=no, 1=yes)	-
cfno_info (2013)	unfolding of firm insides (0=no, 1=yes)	-
cfno_anzk (2013)	too much share holders (0=no, 1=yes)	-
cfno_sonst	others (0=no, 1=yes)	-

16. Management teams

Name (Wave)	Description	Method of anonym.
gfanz (all)	Number of CEO in reference year (2009-2012: truncation, if gfanz>3) (2015: truncation, if gfanz>4) (2016: truncation, if gfanz>7.5) (2017: truncation, if gfanz>3) (2018: truncation, if gfanz>3) (2019/2021: truncation, if gfanz>4) (2022: truncation, if gfanz>3)	S
gfanz_x (all)	Truncation gfanz (0=no, 1=yes)	
gruender (2022)	Contact person is founder (0=no, 1=yes)	-
gfjahr (all)	CEO (Interview partners) in the company since <year>	-
gfbet (all)	CEO (Interview partners) has a financial stake in the company (0=no, 1=yes)	-
gfn (all)	(other) new CEOs	-
gfnbet (all)	(other) new CEOs has/have a financial stake in the company (0=no, 1=yes)	-
gfn_abs (all)	highest level of education of the new CEO (0=no degree, 1=apprenticeship/professional school, 2=master/public servant/vocational college, 3=college/university)	A
Field of study (level of =3) new CEO		
gfn_bwl (all)	Economics/Business science (0=no, 1=yes)	

Name (Wave)	Description	Method of anonym.
gfn_natur (all)	Natural sciences (including medical science) (0=no, 1=yes)	A
gfn_mathinf (all)	Mathematics/Computer sciences (0=no, 1=yes)	A
gfn_ingwiss (all)	Engineering sciences (0=no, 1=yes)	A
gfn_fach_s onst (all)	Other fields of study (0=no, 1=yes)	A
Profession (diplome=1 or 2) new CEO		
gfn_kaufma nn (all)	Mercantile professions (0=no, 1=yes)	A
gfn_technik er (all)	Technical professions (0=no, 1=yes)	A
gfn_sozial (all)	Social professions (0=no, 1=yes)	A
gfn_sonst_ DL (all)	Hotel and restaurant industry, other services (0=no, 1=yes)	A
gfn_sonst_ beruf (all)	Other professions (0=nein, 1=ja)	A
gfl (all)	Retired CEO (0=no, 1=yes)	
gflbet (all)	Retired CEO had a financial stack in the company (0=no, 1=yes)	
gfl_abs (all)	Highest level of education of the retired CEO (0=no degree, 1=apprenticeship/professional school, 2=master/public servant/vocational college, 3=college/university)	A
Fields of study (abschluss=3) retired CEOs		
gfl_bwl (all)	Economics/Business science (0=no, 1=yes)	
gfl_natur (all)	Natural sciences (including medical science) (0=no, 1=yes)	A

Name (Wave)	Description	Method of anonym.
gfl_mathinf (all)	Mathematics/Computer sciences (0=no, 1=yes)	A
gfl_ingwiss (all)	Engineering sciences (0=no, 1=yes)	A
gfl_fach_sonst (all)	Other fields of study (0=no, 1=yes)	A
Profession (abschluss=1 oder 2) retired CEOs		
gfl_kaufmann (all)	Mercantile professions (0=no, 1=yes)	A
gfl_techniker (all)	Technical professions (0=no, 1=yes)	A
gfl_sozial (all)	Social professions (0=no, 1=yes)	A
gfl_sonst_DL (all)	Hotel and restaurant industry, other services (0=no, 1=yes)	A
gfl_sonst_beruf (all)	Other professions (0=nein, 1=ja)	A
Cooperation and communication within the current management team in reference year		
tw_info (2009)	I am satisfied with the amount of information from other managers. (1: strongly disagree, 2: rather not correct, 3: true in 50% of cases, 4: rather correct, 5: strongly agree)	
tw_halt (2009)	The team is characterized by a strong cohesion. (1: strongly disagree, 2: rather not correct, 3: true in 50% of cases, 4: rather correct, 5: strongly agree)	
tw_eins (2009)	Each manager is fully committed to achieving the common targets. (1: strongly disagree, 2: rather not correct, 3: true in 50% of cases, 4: rather correct, 5: strongly agree)	
tw_vors (2009)	Managing proposals are discussed and developed. (1: strongly disagree, 2: rather not correct, 3: true in 50% of cases, 4: rather correct, 5: strongly agree)	
tw_aufg (2009)	The processing of tasks is closely coordinated between the managers. (1: strongly disagree, 2: rather not correct, 3: true in 50% of cases, 4: rather correct, 5: strongly agree)	

Name (Wave)	Description	Method of anonym.
tw_disk (2009)	In case of disagreement within the team, the manager can simply agree. (1: strongly disagree, 2: rather not correct, 3: true in 50% of cases, 4: rather correct, 5: strongly agree)	

17. Business objectives

Name (Wave)	Description	Method of anonym.
zgew (2009)	Objective in reference year: achieve profit (0=no, 1=yes)	
zbes (2009)	Objective in reference year: Create or preserve jobs for employees (0=no, 1=yes)	
zmarkt (2009)	Objective in reference year: achieve a strong market position (0=no, 1=yes)	
zim (2009)	Objective in reference year: establish a positive corporate image (0=no, 1=yes)	
zreg (2009)	Objective in reference year: support local area (0=no, 1=yes)	
zumw (2009)	Objective in reference year: contribution of environmental conservation (0=no, 1=yes)	
zoth (2009)	Objective in reference year: other objectives (0=no, 1=yes)	
z1 – z7 (2009)	Ranking of the above objectives	

18. Composition of the founding team - Women and Men

Name (Wave)	Description	Method of anonym.
fr30 (2009)	Number of female founders who work less than 30 hours a week in the company	
m30 (2009)	Number of male founders who work less than 30 hours a week in the company	
rt30 (2009)	Number of founders in pure female or male teams, who work less than 30 hours a week in the company	
fr_abs (2009)	Highest level of education of female founders (0=no degree, 1=apprenticeship/professional school, 2=master/public servant/vocational college, 3=college/university)	A

Name (Wave)	Description	Method of anonym.
m_abs (2009)	Highest level of education of male founders (0=no degree, 1=apprenticeship/professional school, 2=master/public servant/vocational college, 3=college/university)	A
Fields of study (abschluss=3) of female/male founders		
fr_bwl m_bwl (2009)	Economics/Business science (0=no, 1=yes)	
fr_natur m_natur (2009)	Natural sciences (including medical science) (0=no, 1=yes)	A
fr_mathinf m_mathinf (2009)	Mathematics/Computer sciences (0=no, 1=yes)	A
fr_ingwiss m_ingwiss (2009)	Engineering sciences (0=no, 1=yes)	A
fr_fach_sonst m_fach_sonst (2009)	Other fields of study (0=no, 1=yes)	A
Profession (abschluss=1 oder 2) of female/male founders		
fr_kaufman n m_kaufman n (2009)	Mercantile professions (0=no, 1=yes)	A
fr_techniker m_techniker (2009)	Technical professions (0=no, 1=yes)	A
fr_sozial m_sozial (2009)	Social professions (0=no, 1=yes)	A
fr_sonst_DL m_sonst_DL (2009)	Hotel and restaurant industry, other services (0=no, 1=yes)	A

Name (Wave)	Description	Method of anonym.
fr_sonst_beruf m_sonst_beruf (2009)	Other professions (0=no, 1=yes)	A
Employment situation of female/male founders immediately before founding		
frsit_s msit_s (2009)	Self-employed (0=no, 1=yes)	
frsit_ang msit_ang (2009)	Employee (in private companies or public service) (0=no, 1=yes)	A
frsit_al msit_al (2009)	Unemployed (0=no, 1=yes)	
frsit_ne msit_ne (2009)	Inactive persons (0=no, 1=yes)	
frleitung mleitung (2009)	Leading position of the female / male founders in dependent employment (0=no, 1=yes)	A

19. Corporate Spinoffs

Name (Wave)	Description	Method of anonym.
angpu (2010)	Founders were employees of a private enterprise before foundation (0=no, 1=yes)	
Fields of activities in the former private enterprise		
puber_prod (2010)	Production (0=no, 1=yes)	
puber_sales (2010)	Distribution (0=no, 1=yes)	
puber_admin (2010)	Administration (0=no, 1=yes)	
puber_forsch (2010)	Research (0=no, 1=yes)	

Name (Wave)	Description	Method of anonym.
puber_sonst (2010)	other fields (0=no, 1=yes)	
Professional position in the former private enterprise		
pust_gf (2010)	Chief executive (0=no, 1=yes)	
pust_lang (2010)	Executive employee (0=no, 1=yes)	
pust_ang (2010)	Other employee (0=no, 1=yes)	
pust_fa (2010)	Skilled worker (0=no, 1=yes)	
pust_a (2010)	Other worker (0=no, 1=yes)	
Relevance of the following factors for foundation		
i_faeh (2010)	Special skill learned in the former enterprise (1=essential, 2=high relevance, 3=minor relevance, 4=irrelevant)	
i_forsch (2010)	New ideas created within R&D projects in the former enterprise (1=essential, 2=high relevance, 3=minor relevance, 4=irrelevant)	
i_taet (2010)	New ideas created within other fields in the former enterprise (1=essential, 2=high relevance, 3=minor relevance, 4=irrelevant)	
i_tech (2010)	Coding text field – specific idea for foundation: technological idea (0=no, 1=yes)	
i_tpz (2010)	Coding text field – specific idea for foundation: technological process (0=no, 1=yes)	
i_dl (2010)	Coding text field – specific idea for foundation: service idea (0=no, 1=yes)	
i_dlpz (2010)	Coding text field – specific idea for foundation: new processes generating services (0=no, 1=yes)	
i_markt (2010)	Coding text field – specific idea for foundation: opening new markets (0=no, 1=yes)	
i_mkv (2010)	Coding text field – specific idea for foundation: new ideas regarding management concepts / administration /marketing (0=no, 1=yes)	

Name (Wave)	Description	Method of anonym.
purea (2010)	reaction of the former employer on foundation purpose (1=initiated foundation, 2=supported foundation, 3=behaved neutral, 4=interfered foundation, 5=not relevant or former enterprise did not exist anymore at foundation time)	
puimpl (2010)	Attempt to install new idea in the former enterprise (0=no, 1=yes)	
Relation of own products / services to products /services of the former enterprise		
ibz_vgl (2010)	Similar products / services (0=no, 1=yes)	
ibz_rev (2010)	Improved or further developed products / services (0=no, 1=yes)	
ibz_erg (2010)	Products / services complement each other (0=no, 1=yes)	
ibz_inp (2010)	Own products / services are deliveries for the former enterprise (0=no, 1=yes)	
ibz_use (2010)	Usage of products / services from the former enterprise (0=no, 1=yes)	
ibz_proz (2010)	Usage of own products / services within production processes in the former enterprise (0=no, 1=yes)	
pubes, pubes_c1-pubes_c5 (2010)	Number of employees from former enterprise (Truncation, if pubes>180,000)	S
pubes_x, pubesc1_x -pubesc5_x (2010)	Truncation pubes (1=yes)	
puex_pl (2010)	If several former enterprises are relevant for foundation: former enterprises still exist (1=yes, all, 2=part of them, 3=all closed)	
puex_s (2010)	If one former enterprise is relevant for foundation: former enterprise still exists (0=no, 1=yes)	
pubet (2010)	Former enterprise is / was shareholder of the firm: (0=no, 1=yes)	
puMA (2010)	Onetime employees of the former enterprise are / were employed in the firm (0=no, 1=yes)	
puMAanz (2010)	Number of employees who were employed in the former enterprise before	

Name (Wave)	Description	Method of anonym.
pukon_pl (2010)	If several former enterprises are relevant for foundation: former enterprises are competitors (1=yes, all, 2=part of them, 3= none of them)	
pukon_s (2010)	If one former enterprise is relevant for foundation: former enterprise is competitor (0=no, 1=yes)	
pukund (2010)	Customers switched from the former enterprise (0=no, 1=yes)	
pukont (2010)	Business contacts to the former enterprise (0=no, 1=yes)	
pukont_pj (2010)	Business contacts to the former enterprise: common projects (0=no, 1=yes)	
pukont_av (2010)	Business contacts to the former enterprise: orders to former enterprise (0=no, 1=yes)	
pukont_ab (2010)	Business contacts to the former enterprise: orders from the former enterprise (0=no, 1=yes)	
pukont_inf (2010)	Business contacts to the former enterprise: informal contacts (0=no, 1=yes)	

20. Supplier Credits and Factoring

Name (Wave)	Description	Method of anonym.
Supplier credit		
zzljj (2011)	Payment target of suppliers (0=no, 1=yes)	
zzlf (2011)	Share of payments with target of all expenditures in Procent	
zzlf_tag (2011)	Typical length of payment target in days	
zzlf_vor (2011)	Share of bills with payment target, that have been settled before the deadline has been reached, in per cent	
zzlf_sp (2011)	Share of bills with payment target, that have been settled at the latest possible date, in per cent	
zzlf_sko (2011)	Share of bills with payment target and possibility of cash discount, in per cent	
zzlfv (2011)	Payment target denied (0=no, 1=yes)	

Name (Wave)	Description	Method of anonym.
Reasons for denial of payment target		
zzlfv_grun (2011)	Suppliers principally denies payment target (0=no, 1=yes)	
zzlfv_neuk (2011)	Supplier principally doesn't grant new clients payment targets (0=no, 1=yes)	
zzlfv_junt (2011)	Supplier principally doesn't grant young companies payment targets (0=no, 1=yes)	
zzlfv_bon (2011)	Insufficient credit-worthiness of company (0=no, 1=yes)	
Response to denial of payment target		
zzlfvr_akz (2011)	Advanced payment or payment upon delivery accepted (0=no, 1=yes)	
zzlfvr_ifwe (2011)	Products/services obtained from other suppliers (0=no, 1=yes)	
zzlfvr_auf (2011)	Purchase deferred (0=no, 1=yes)	
zzlfvr_hand (2011)	Price reduction negotiated (0=no, 1=yes)	
zzlfvr_ger (2011)	Lesser amount purchased (0=no, 1=yes)	
Granting of payment targets to clients		
zzkuj (2011)	Granting of payment targets to clients (0=no, 1=yes)	
Conditions for granting of payment targets to clients (if clients are predominantly companies (see variable „kunden“))		
zzkuu_brk (2011)	Payment targets are uncommon in the branch of the client (0=no, 1=yes)	
zzkuu_bra (2011)	Payment targets are common in the branch of the client (0=no, 1=yes)	
zzkuu_mak (2011)	Great market power of the client (0=no, 1=yes)	
zzkuu_dau (2011)	Duration of professional relationship with client (0=no, 1=yes)	
zzkuu_etb (2011)	Payment targets only granted to established companies (0=no, 1=yes)	

Name (Wave)	Description	Method of anonym.
zzkuu_bon (2011)	Duration of professional relationship with client (0=no, 1=yes)	
Conditions for granting of payment targets to clients (if clients are predominantly private persons (see variable „kunden“))		
zzkup_bra (2011)	Payment targets are common in the branch of the company (0=no, 1=yes)	
zzkup_mak (2011)	Significance of client for sales of company (0=no, 1=yes)	
zzkup_dau (2011)	Duration of professional relationship with client (0=no, 1=yes)	
zzkup_bon (2011)	Duration of professional relationship with client (0=no, 1=yes)	
Conditions for granting of payment targets to clients (if clients are predominantly public bodies (see variable „kunden“))		
zzkuoe_ue k (2011)	Payment targets are common with my client (0=no, 1=yes)	
zzkuoe_bra (2011)	Payment targets are common in the branch of the company (0=no, 1=yes)	
zzkuoe_ma k (2011)	Great market power of the client (0=no, 1=yes)	
zzkuoe_da u (2011)	Duration of professional relationship with client (0=no, 1=yes)	
zzku_ua (2011)	Share of company's bills for which payment target has been granted on company revenues	
zzku_tag (2011)	Typical duration for which payment target was granted in days	
zzku- beg_tag (2011)	Typical duration for settlement of bill for which payment target had been granted in days	
zzku_vor (2011)	Share of sales with payment target that were settled by client before deadline of target, in per cent	
zzku_sp (2011)	Share of sales with payment target that were settled by client at the latest date in per cent	

Name (Wave)	Description	Method of anonym.
zzku_sko (2011)	Share of sales with payment target with possibility of cash discount for clients, in per cent	
Factoring		
facj (2011)	Sale of outstanding receivables to a financing institution (=factoring used) (0=no, 1=yes)	
facumsan (2011)	Share of receivables that were sold to a factoring institution, in per cent	
Services of factoring institution		
fac_buch (2011)	Debtor accounting (0=no, 1=yes)	
fac_boni (2011)	Check of credit-worthiness of clients by company (0=no, 1=yes)	
fac_ausf (2011)	Assumption of risk of default (0=no, 1=yes)	
fac_inka (2011)	Collection services (0=no, 1=yes)	
fac_laufz (2011)	Duration of contract with factoring institution in years	
Not using factoring		
facno_unb (2011)	Factoring unknown (0=no, 1=yes)	
facno_inf (2011)	Insufficient Information on how factoring works (0=no, 1=yes)	
facno_geb (2011)	Factoring fee to expensive (0=no, 1=yes)	
facno_jur (2011)	Legal situation unclear (0=no, 1=yes)	
facno_sel (2011)	Own implementation of debtor accounting and check of credit-worthiness of client (0=no, 1=yes)	
facno_kun (2011)	Sale of receivables forbidden by client (Purchasing conditions) (0=no, 1=yes)	
facno_abg (2011)	Receivables already assigned to someone else (0=no, 1=yes)	

Name (Wave)	Description	Method of anonym.
Measures to prevent loss of receivables		
fausf_vers (2011)	Contingency insurance for outstanding payments (0=no, 1=yes)	
fausf_mahn (2011)	Immediate admonition when exceeding the payment target (0=no, 1=yes)	
fausf_inka (2011)	Outsourcing of debt management to a collection agency (0=no, 1=yes)	

21. Leasing

Name (Wave)	Description	Method of anonym.
lease (2011)	Leasing contract closed as lessee (0=no, 1=yes)	
Leasing objects		
l_kfz (2011)	Car (0=nein, 1=ja)	
l_buero (2011)	Office equipment and EDP (0=no, 1=yes)	
l_masch (2011)	Machines for production (0=no, 1=yes)	
l_app (2011)	Other technical appliances (0=no, 1=yes)	
l_immat (2011)	Intangible assets (0=no, 1=yes)	
l_immob (2011)	Real estate (0=no, 1=yes)	
lv_object (2011)	Value of leasing objects in euro	
lv_zahlung (2011)	Yearly leasing payments in euro	
Institutions that close leasing contracts		
linst_LG (2011)	Independent leasing company (0=no, 1=yes)	

Name (Wave)	Description	Method of anonym.
linst_H (2011)	Manufactures or dealers and their own bank (0=no, 1=yes)	
linst_HB (2011)	House bank (0=no, 1=yes)	
Reasons for leasing instead of buying		
lvk_fin (2011)	Insufficient financial means (0=no, 1=yes)	
lvk_risk (2011)	Less risk when leasing (0=no, 1=yes)	
lvk_zeit (2011)	Only temporary use of leasing objects (0=no, 1=yes)	
lvk_serv (2011)	Service of lessor (0=no, 1=yes)	
lvk_steu (2011)	For tax reasons (0=no, 1=yes)	
lvk_bil (2011)	For financial reasons (0=no, 1=yes)	
lpl (2011)	Leasing plans for 2010 (0=no, 1=yes)	
lkauf (2011)	Purchase of objects instead of leasing: 0=no, 1=yes, all, 2=yes, some	
Reasons for no (further) leasing contracts (if lpl = 1)		
lno_bedarf (2011)	Objects are no longer needed (0=no, 1=yes)	
lno_voraus (2011)	Advance payments too high (0=no, 1=yes)	
lno_rate (2011)	Leasing rates too high (0=no, 1=yes)	
lno_kond (2011)	Other conditions of leasing contract unfavorable (0=no, 1=yes)	
lno_abl (2011)	Leasing providers have refused leasing contract (0=no, 1=yes)	

22. Digitalization

Name (Wave)	Description	Method of anonym.
Digitalization of production processes		
digit-prod_soft (2017)	Digital networks within production processes (0=no, 1=yes)	-
digit-prod_log (2017)	Digital networks between production processes and firm's logistics (0=no, 1=yes)	-
digit-prod_kund (2017)	Digital networks with customers (0=no, 1=yes)	-
digit-prod_lief (2017)	Digital networks with suppliers and cooperation partners (0=no, 1=yes)	-
digit-prod_sonst (2017)	Other digital applications within production processes (0=no, 1=yes)	-
digit-prod_bed (2017)	Importance of digitalization of production processes (1 = essential importance, 2 = high importance, 3 = medium importance, 4 = low importance, 5 = no importance)	-
Digitalization in internal organization and communication		
digi-torg_erp (2017)	Software applications for resource planning (0=no, 1=yes)	-
digi-torg_tele (2017)	Provision on mobile devices (0=no, 1=yes)	-
digi-torg_kom (2017)	Communication software (0=no, 1=yes)	-
digitorg_pf (2017)	Intranet-based platforms (0=no, 1=yes)	-
digi-torg_sonst (2017)	Others (0=no, 1=yes)	-
digi-torg_bed (2017)	Importance of digitalization in internal organization and communication (1 = essential importance, 2 = high importance, 3 = medium importance, 4 = low importance, 5 = no importance)	-

Name (Wave)	Description	Method of anonym.
Digitalization in sales and external communication		
dig-itdist_web (2017)	Own website (0=no, 1=yes)	-
dig-itdist_econom (2017)	E-commerce (0=no, 1=yes)	-
dig-itdist_app (2017)	Product accompanying applications (0=no, 1=yes)	-
dig-itdist_sm (2017)	Social media (0=no, 1=yes)	-
dig-itdist_sonst (2017)	Others (0=no, 1=yes)	-
dig-itdist_bed (2017)	Importance of digitalization in sales and external communication (1 = essential importance, 2 = high importance, 3 = medium importance, 4 = low importance, 5 = no importance)	-
dig-tiecom_bedd (2017)	Share of turnover due to e-commerce, in percent	-
Digital information processing		
digi-tinf_cloud (2017)	Cloud Computing (0=no, 1=yes)	
digi-tinf_bigd (2017)	Analyses of Big Data (0=no, 1=yes)	-
digi-tinf_sonst (2017)	Others (0=no, 1=yes)	-
digitunt (2017)	Firm offers digital products itself (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
digit-unt_haupt (2017)	Firm mainly offers digital products and services (0=no, 1=yes)	-

23. Introduction of the new European General Data Protection Regulation (GDPR)

Name (Wave)	Description	Method of anonym.
daten (2018)	Affected by the new GDPR: 0: no 1: yes 2: I haven't heard about the new data protection directive yet. 3: I do not know (yet)	-
expected impact on company		
daten_eff_recht (2018)	GDPR leads to increased legal certainty. (0=no, 1=yes)	-
daten_eff_aufwand (2018)	GDPR leads to increased effort. (0=no, 1=yes)	-
daten_eff_kompl (2018)	GDPR complicates business processes. (0=no, 1=yes)	-
daten_eff_vertrauen (2018)	GDPR increases customer confidence. (0=no, 1=yes)	-
daten_eff_beratung (2018)	GDPR requires external consulting. (0=no, 1=yes)	-
Use of personal data of customers and business partners		
da-ten_nutz_kundkom (2018)	for communication with customers (0=no, 1=yes, 2=company does not use personal data of customers and business partners)	-
daten_nutz_partkom (2018)	for communication with other business partners (0=no, 1=yes, 2=company does not use personal data of customers and business partners)	-
daten_nutz_info (2018)	to disseminate information and advertising (0=no, 1=yes, 2=company does not use personal data of customers and business partners)	-
daten_nutz_verbess (2018)	to improve our products and services (0=no, 1=yes, 2=company does not use personal data of customers and business partners)	-
daten_nutz_grundl (2018)	as an important basis for our business model (0=no, 1=yes, 2=company does not use personal data of customers and business partners)	-

Name (Wave)	Description	Method of anonym.
daten_nutz_sonst (2018)	other use (0=no, 1=yes, 2=company does not use personal data of customers and business partners)	-

24. Special survey 2020 Corona

Name (Wave)	Description	Anonym. method
besak_feb besak_june besak_actual bes	Number of employees in <ul style="list-style-type: none"> February 2020 June 2020 at the time of the survey (fall 2020) 2019 	-
close_lex	Filter question: legal order of complete or partial cessation of business activity (0=no, 1=yes).	-

In the two surveys of 2020 (in spring and fall), companies were directed to different questionnaire blocks through a filter.

1. filter question: Has your company been **legally ordered to** cease all or part of its operations as a result of the Corona pandemic? (*close_lex*)

2nd filter question: Has the Corona pandemic had a **negative economic impact on** your company to date?

Through these two filter questions, interviewees were directed to one of three blocks of questions:

1st block (a.): Companies that have had to cease all or part of their business activities due to the statutory order: filter question 1 = yes

2nd block (b.): Companies whose business activities did not have to be suspended, but for which the Corona pandemic had a negative impact: filter question 1 = no, filter question 2 = yes.

3rd block (c.): Companies that were not negatively affected by the Corona pandemic: Filter question 1 = no, filter question 2 = no.

a. Block 1: Companies that have had to cease all or part of their business activities as a result of the statutory order

Name (Wave)	Description	Method of anonym.
operation	Maintaining business operations despite closure order (0=no, 1=yes)	-
Personnel policy measures in response to the Corona pandemic		
mass_entl	redundancies for operational reasons (0=no, 1=yes)	-
mass_tz	(Temporary) reduction of working hours (not short-time work) Spring 2020: (0=no, 1=yes) Fall 2020: (0=no, 1=yes, consistently, 2=yes, intermittently, but not now, 3=yes, intermittently, right now).	-

Name (Wave)	Description	Method of anonym.
mass_ka	Short-time work Spring 2020: (0=no, 1=yes) Fall 2020: (0=no, 1=yes, consistently, 2=yes, intermittently, but not now, 3=yes, intermittently, right now).	-
mass_ur	Ordered use of leave (0=no, 1=yes)	-
mass_nb	Failure to fill vacancies (0=no, 1=yes)	-
mass_kpa	Postponing a planned increase in staff (0=no, 1=yes)	-
mass_ho	Home Office Spring 2020: (0=no, 1=yes) Fall 2020: (0=no, 1=yes, consistently, 2=yes, intermittently, but not now, 3=yes, intermittently, right now).	-
mass_sonst_neg	other measures (0=no, 1=yes)	-
mass_ka_u pstock	Supplement to short-time allowance (0=no, 1=yes)	-
liquid	Liquidity bottlenecks (0=no, 1=yes)	-
Only in spring survey: Reasons for liquidity bottlenecks		
liquid_kre	Repayment of loans due or interest payments (0=no, 1=yes)	-
liquid_rent	Rent and lease payments (0=no, 1=yes)	-
liquid_vorl	Payments for inputs or intermediates (0=no, 1=yes)	-
liquid_tax	Tax payments (0=no, 1=yes)	-
liquid_wage	Wage payments (0=no, 1=yes)	-
liquid_other	other (0=no, 1=yes)	-
Spring survey only: Reasons for closure intentions even before the Corona pandemic.		
close	Closure already considered before Corona (0=no, 1=yes)	-
closegr_nrent	Business activity was no longer profitable (0=no, 1=yes)	-
closegr_nge s	I wanted to reorient myself, had another business idea (0=no, 1=yes)	-
closegr_ns	I looked for more attractive non-self-employment opportunities (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
closegr_other	other reasons (0=no, 1=yes)	-
open	Business activity was allowed to resume (0=no, 1=yes)	-

b. Block 2: Companies whose business activities did not have to be suspended, but for which the Corona pandemic had a predominantly negative impact

Name (Wave)	Description	Method of anonym.
ausw_negj	predominantly negative effects (0=no, 1=yes)	-
ausw_negint	Strength of negative impact (1= low negative impact to 5 = very strong negative impact).	-
Concrete negative effects		
ausw_neg_na	Decrease in demand (0=no, 1=yes)	-
ausw_neg_vor	Difficulties in obtaining inputs or intermediate products (0=no, 1=yes)	-
ausw_neg_vertr	Logistical difficulties in selling own products (0=no, 1=yes)	-
ausw_neg_besch	Staff shortages due to illness, quarantine, or childcare (0=no, 1=yes).	-
ausw_neg_liq	Liquidity bottlenecks (0=no, 1=yes)	-
Spring survey only: Reasons for liquidity bottlenecks		
liquid_kre	Repayment of loans due or interest payments (0=no, 1=yes)	-
liquid_rent	Rent and lease payments (0=no, 1=yes)	-
liquid_vorl	Payments for inputs or intermediates (0=no, 1=yes)	-
liquid_tax	Tax payments (0=no, 1=yes)	-
liquid_wage	Wage payments (0=no, 1=yes)	-
liquid_other	other (0=no, 1=yes)	-
Spring survey only: Reasons for closure intentions even before the Corona pandemic.		
Close	Closure already considered before Corona (0=no, 1=yes)	-
closegr_nrent	Business activity was no longer profitable (0=no, 1=yes)	-
closegr_nges	I wanted to reorient myself, had another business idea (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
closegr_ns	I looked for more attractive non-self-employment opportunities (0=no, 1=yes)	-
closegr_other	other reasons (0=no, 1=yes)	-
Personnel policy measures in response to the Corona pandemic		
mass_entl	redundancies for operational reasons (0=no, 1=yes)	-
mass_tz	(Temporary) reduction of working hours (not short-time work) Spring 2020: (0=no, 1=yes) Fall 2020: (0=no, 1=yes, consistently, 2=yes, intermittently, but not now, 3=yes, intermittently, right now).	-
mass_ka	Short-time work Spring 2020: (0=no, 1=yes) Fall 2020: (0=no, 1=yes, consistently, 2=yes, intermittently, but not now, 3=yes, intermittently, right now).	-
mass_ur	Ordered use of leave (0=no, 1=yes)	-
mass_nb	Failure to fill vacancies (0=no, 1=yes)	-
mass_kpa	Postponing a planned increase in staff (0=no, 1=yes)	-
mass_ho	Home Office Spring 2020: (0=no, 1=yes) Fall 2020: (0=no, 1=yes, consistently, 2=yes, intermittently, but not now, 3=yes, intermittently, right now).	-
mass_sonst_n eg	other measures (0=no, 1=yes)	-
mass_ka_upst ock	Supplement to short-time allowance (0=no, 1=yes)	-

c. Block 3: Companies for which the Corona pandemic had predominantly positive effects

Name (Wave)	Description	Method of anonym.
ausw_posj	predominantly positive effects (0=no, 1=yes)	-
ausw_posint	Strength of positive impact (1= low positive impact to 5 = very strong positive impact).	-
Concrete positive effects		
ausw_pos_na	Increase in demand for existing products or services (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
ausw_pos_vor	Increased demand by switching supply to products or services needed during the crisis (0=no, 1=yes)	-
Personnel policy measures in response to the Corona pandemic		
mass_einstanzen	Settings (0=no, 1=yes)	-
mass_uebst	Overtime (0=no, 1=yes)	-
mass_extv	external awards (0=no, 1=yes)	-
mass_hire	Temporary work (0=no, 1=yes)	-
mass_other_pos	other (0=no, 1=yes)	-

d. Other questions addressed to all companies, i.e. regardless of whether they were positively or negatively affected, or not affected at all

Name (Wave)	Description	Method of anonym.
Changes in business processes, investments or restructuring		
aend_ren	Conversions and renovations (0=no, 1=yes)	-
aend_proz	Process innovations (0=no, 1=yes)	-
aend_inno	Product innovations (0=no, 1=yes)	-
aend_vertr	Distribution channels (0=no, 1=yes)	-
aend_wb	Continuing education (0=no, 1=yes)	-
aend_dig	Digitization (0=no, 1=yes)	-
aend_other	Other (0=no, 1=yes)	-
ums_ant	Spring survey: What percentage of your January and February 2020 revenue do you estimate you generated in March and April 2020? Fall survey: What percentage of your January and February 2020 revenue do you estimate you generated in September and October 2020?	-
Applying for federal, state, or local aid and assistance		
oef_to	Grants, emergency aid or one-off payments (0=no, 1=yes)	-

Name (Wave)	Description	Method of anonym.
oef_kr	Loans or guarantees (0=no, 1=yes)	-
oef_wstf	Funds from the Economic Stabilization Fund (0=no, 1=yes)	-
oef_stst	Tax deferrals (0=no, 1=yes)	-
oef_rett	Rescue parachute for startups (0=no, 1=yes)	-
oef_st	Other (0=no, 1=yes)	-
o- ef_acceptan ce	Fall survey only: Acceptance of the motion(s) (0=no, all were rejected, 1=yes, all, 2=yes, partially)	-
oef_rueck	Fall survey only: Repayment of subsidies (0=no, 1=yes, completely, 2=yes, partially)	-
Strategic changes for the period after the Corona pandemic		
strat_to	Alignment of corporate goals (0=no, 1=yes)	-
strat_inno	Adaptation of the innovation strategy (0=no, 1=yes)	-
strat_marctor	Adjustment of the spatial market orientation (0=no, 1=yes)	-
strat_other	Other (0=no, 1=yes)	-
Fall survey only: Implementation of strategic changes		
strat_to_final	Alignment of corporate goals (0=no, 1=yes)	-
strat_inno_fin al	Adaptation of the innovation strategy (0=no, 1=yes)	-
strat_marktor _final	Adjustment of spatial market orientation (0=no, 1=yes)	-
strat_other_fi nal	Other (0=no, 1=yes)	-

25. Corona effects 2021

Name (Wave)	Description	Anonym. method
close_lex	Legal order for the complete or partial cessation of business activities (0=no, 1=yes)	-
close_auw (2021, 2022)	Effects of the Corona pandemic (1=mainly negative, 2=mainly positive, 3=either positive nor negative)	-

Name (Wave)	Description	Anonym. method
Change of firm's strategy due to the Corona pandemic		
strat_zu (2021)	Adaption of business objectives (0=no, 1=yes)	-
strat_inno (2021)	Adaption of firm's innovation strategy (0=no, 1=yes)	-
strat_market or (2021)	Adaption of the regional market orientation (0=no, 1=yes)	-
strat_sonst (2021)	Others (0=no, 1=yes)	-
corona_grd (2021, 2022)	Foundation even without the Corona pandemic (0=no, 1=yes)	-

26. Effects of the war in Ukraine on companies

Name (Wave)	Description	Anonym. method
ukraine_na (2022)	Decrease in demand (0=no, 1=yes)	-
ukraine_vor (2022)	Difficulties in procuring inputs or intermediate products (0=no, 1=yes)	-
ukraine_liq (2022)	Liquidity bottlenecks due to increased energy costs (0=no, 1=yes)	-
ukraine_vertr (2022)	Logistical difficulties in selling own products (0=no, 1=yes)	-

27. Public Procurement

Name (Wave)	Description	Anonym. method
pp_j (2022)	Tenders for public procurement contracts have helped, assess market opportunities (0=no, 1=yes)	-
pp_mneu (2022)	Tenders have revealed a need for market novelties (0=no, 1=yes)	-

Name (Wave)	Description	Anonym. method
pp_ori (2022)	The company's offer is orientated towards the identified need (0=no, 1=yes)	-
pp_antrag (2022)	Application for tender (0=no, 1=yes)	-
pp_gruend (2022)	Founding of this company due to tender (0=no, 1=yes)	-
pp_funktion (2022)	Functional performance requirements in tender (0=no, 1=yes)	-
pp_chance (2022)	Market novelties were introduced to increase the chances of winning the tender (0=no, 1=yes)	-
pp_auftrag (2022)	Contract has been awarded (0=no, 1=yes)	-
pp_mneu_grund (2022)	Market novelties were introduced to fulfil the functional performance requirements in the tender (0=no, 1=yes)	-

28. Employer rating platforms

Name (Wave)	Description	Anonym. method
Profile on an employer rating platform		
erp_platfor m_1 (2022)	Glassdoor (0=no, 1=yes)	-
erp_platfor m_2 (2022)	Kununu (0=no, 1=yes)	-
erp_platfor m_3 (2022)	Indeed (0=no, 1=yes)	-
erp_platfor m_4 (2022)	MeinChef.de (0=no, 1=yes)	-
erp_platfor m_5 (2022)	JobVoting.de (0=no, 1=yes)	-

Name (Wave)	Description	Anonym. method
erp_platfor m_6 (2022)	Stepstone.de (0=no, 1=yes)	-
erp_platfor m_7 (2022)	Others (0=no, 1=yes)	-
Active maintenance of the profile		
erp_aktiv_ 1 (2022)	Glassdoor (0=no, 1=yes)	-
erp_aktiv_ 2 (2022)	Kununu (0=no, 1=yes)	-
Employees are asked to rate companies on the platform		
erp_auffor d_1 (2022)	Glassdoor (0=no, 1=yes)	-
erp_auffor d_2 (2022)	Kununu (0=no, 1=yes)	-
Profile has an impact on human resources		
erp_nutzen _1_a (2022)	Glassdoor: Applicant quality (0=no, 1=yes)	-
erp_nutzen _1_b (2022)	Glassdoor: Number of applicants (0=no, 1=yes)	-
erp_nutzen _1_c (2022)	Glassdoor: Employee satisfaction (0=no, 1=yes)	-
erp_nutzen _1_d (2022)	Glassdoor: Duration employees stay with the company (0=no, 1=yes)	-
erp_nutzen _2_a (2022)	Kununu: Applicant quality (0=no, 1=yes)	-
erp_nutzen _2_b (2022)	Kununu: Number of applicants (0=no, 1=yes)	-

Name (Wave)	Description	Anonym. method
erp_nutzen 2_c (2022)	Kununu: Employee satisfaction (0=no, 1=yes)	-
erp_nutzen 2_d (2022)	Kununu: Duration employees stay with the company (0=no, 1=yes)	-

5. Annex

Classification of industry sectors of the KfW/ZEW start-up panel (survey wave 2008)

Industry Sector	Abbreviation	WZ93-Code
High technology industries		
Cutting-edge technology manufacturing	STW	23.30, 24.20, 24.41, 24.61, 29.11, 29.60, 30.02, 31.62, 32.10, 32.20, 33.20, 33.30, 35.30
High-technology manufacturing	HTW	22.33, 24.11, 24.12-4, 24.17, 24.30, 24.42, 24.62-4, 24.66, 29.12-4, 29.31-2, 29.40, 29.52-6, 20.01, 31.10, 31.40, 31.50, 23.30, 33.10, 33.40, 34.10, 34.30, 35.20
Technology-intensive services	TDL	64.2, 72 (w/o 72.2), 73.1, 74.2, 74.3
Software	Software	72.2
Non-high-tech industries		
non-high-tech manufacturing	NTW	15 – 37, 33.10.4 (w/o STW and HTW)
skill-intensive services (non-technical, consulting services)	wissDL	73.2, 74.11-4, 74.4
other business-orientated services	UDL	71.1, 71.2, 71.3, 74.5 – 74.8 (w/o 74.84.7), 90
consumer-orientated services	KDL	55, 70, 71.4, 92, 93, 80.4 (w/o public health services)
construction	Bau	45
wholesale and retail market (w/o trade agents)	Handel	50 – 52 (w/o 51.1)

Note: In addition to the above explicit named sectors, the energy/mining sector (10-14, 40, 41), the transport sector (60-63), the postal system (64.1) and the banks and assurance sector (65-67) are unconsidered. Differentiations of the classification of the sectors are followed by the "Statistisches Bundesamt"

Source: KfW/ZEW Start-up Panel (2008), Grupp/Legler (2000), Hochtechnologie 2000, Neudefinition der Hochtechnologie für die Berichterstattung zur technologischen Leistungsfähigkeit Deutschlands, Gutachten für das bmbf, Karlsruhe, Hannover.

Classification of industry sectors of the KfW/ZEW start-up panel (survey waves 2009 and 2010)

Industry Sector	Abbreviation	WZ2003-Code
High technology industries		
Cutting-edge technology manufacturing	STW	23.30, 24.20, 24.41, 24.61, 29.11, 29.60, 30.02, 31.62, 32.10, 32.20, 33.20, 33.30, 35.30
High-technology manufacturing	HTW	22.33, 24.11, 24.12-4, 24.17, 24.30, 24.42, 24.62-4, 24.66, 29.12-4, 29.31-2, 29.40, 29.52-6, 20.01, 31.10, 31.40, 31.50, 23.30, 33.10, 33.40, 34.10, 34.30, 35.20
Technology-intensive services	TDL	64.2, 72 (w/o 72.2), 73.1, 74.2, 74.3
Software	Software	72.2
Non-high-tech industries		
non-high-tech manufacturing	NTW	15 – 37, 33.10.4 (w/o STW and HTW)
skill-intensive services (non-technical, consulting services)	wissDL	73.2, 74.11-4, 74.4
other business-orientated services	UDL	71.1, 71.2, 71.3, 74.5 – 74.8 (w/o 74.84.7), 90
creative consumer-orientated services	KDL	55, 70, 71.4, 92, 93, 80.4 (w/o public health services)
construction	Bau	45
wholesail and retail market (w/o trade agents)	Handel	50 – 52 (w/o 51.1)

Note: In addition to the above explicit named sectors, agriculture (WZ 2003-Code 01-05), mining (10-14), energy and water supply (40, 41), the public sector (75), the health care industry (85) are unconsidered. Differentiations of the classification of the sectors (WZ 2003) are followed by the "Statistisches Bundesamt".

Source: KfW/ZEW Start-up Panel (2009, 2010), Legler und Frietsch (2006), Neuabgrenzung der Wissenswirtschaft – forschungsintensive Industrien und wissensintensive Dienstleistungen (NIW/ISI-Listen 2006), Studien zum deutschen Innovationssystem, Nr. 22-2007, Karlsruhe, Hannover

Classification of industry sectors of the KfW/ZEW start-up panel (survey wave 2011-2013 and since 2016)

Industry Sector	Abbreviation	WZ2008-Code
High technology industries		
Cutting-edge technology manufacturing	STW	20.20, 21.10, 21.20, 24.46, 25.40, 26.11, 26.20, 26.30, 26.40, 26.51, 26.60, 30.30, 30.40, 32.50
High-technology manufacturing	HTW	20.13, 20.14, 20.16, 20.17, 20.41, 20.51, 20.53, 20.59, 22.11, 22.19, 23.19, 26.70, 27.11, 27.12, 27.20, 27.40, 27.90, 28.11–15, 28.23, 28.24, 28.29, 28.30, 28.41, 28.49, 28.92–96, 28.99, 29.10, 29.31, 29.32, 30.20
Technology-intensive services	TDL	61.1–3, 62 (ohne 62.01), 63.1, 71.1–2, 72.1
Software	Software	62.01
Non-high-tech industries		
non-high-tech manufacturing	NTW	10–33 (without STW and HTW)
skill-intensive services (non-technical, consulting services)	wissDL	69.1–2, 70.2, 72.2, 73.1–2
other business-orientated services	UDL	49.2, 49.5, 50.2, 50.4, 51.2, 52, 53, 61.9, 63.9, 64, 74.1, 74.3, 74.9, 77.1, 77.3–4, 78, 80–82,
creative consumer-orientated services	krea_KDL	58–60, 74.2, 85.5-6, 90–91, 93.21, 95.1, 95.21
other consumer-orientated services	sons_KDL	49.1, 49.3, 49.4, 50.1, 50.3, 51.1, 55, 56, 65, 66, 68, 77.2, 79, 92, 93 (ohne 93.21), 95 (ohne 95.1 und 95.21), 96
construction	Bau	41–43
wholesale and retail market (w/o trade agents)	Handel	45–47 (without 46.1)

Note: In addition to the above explicit named sectors, agriculture (WZ 2008-Code 01-03), mining (05-09), energy and water supply (35, 36), waste and sewage water disposal (37-39), the public sector (84,94), the health care industry (85) are unconsidered. Differentiations of the classification of the sectors (WZ 2003) are followed by the "Statistisches Bundesamt".

Source: KfW/ZEW start-up panel, Legler und Frietsch (2006), Neuabgrenzung der Wissenswirtschaft – forschungsintensive Industrien und wissensintensive Dienstleistungen (NIW/ISI-Listen 2006), Studien zum deutschen Innovationssystem, Nr. 22-2007, Karlsruhe, Hannover.

Classification of industry sectors of the Mannheim Start-up Panel (survey waves 2014 and 2015)

Industry sector	Abbreviation	WZ 2008-Code
High technology industries		
Cutting-edge technology manufacturing	STW	20.2, 21.1, 21.2, 24.46, 25.4., 26.11, 26.2., 26.3., 26.4., 26.51, 26.6., 30.3., 30.4., 32.5.
High-technology manufacturing	HTW	20.13, 20.14, 20.16, 20.17, 20.41, 20.51, 20.53, 20.59, 22.11, 22.19, 23.19, 26.7, 27.1, 27.2, 27.4, 27.9, 28.1, 28.23, 28.24, 28.29, 28.3, 28.41, 28.49, 28.92–96, 28.99, 29.1, 29.3, 30.2
Technology-intensive services	TDL	61.1–3, 62 (ohne 62.01), 63.1, 71.1–2, 72.1
Software	Software	62.01
Non-high-tech industries		
Non-high-tech manufacturing	NTW	10–33 (ohne STW und HTW)
Skill-intensive services (non-technical, consulting services)	wissDL	69, 70.2, 72.2, 73.1–2
Other business-orientated services	UDL	49.2, 49.5, 50.2, 50.4, 51.2, 52, 53, 61.9, 63.9, 64, 74.1, 74.3-9, 77.1, 77.3–4, 78, 80–82,
Creative consumer-orientated services	KDL	58–60, 74.2, 85.5-6, 90–91, 93.21, 95.1, 95.21
Construction	Bau	41–43

Note: In addition to the above explicit named sectors, agriculture (WZ 2008-Code 01-03), mining (05-09), energy and water supply (35, 36), waste and sewage water disposal (37-39), the public sector (84,94), the health care industry (85) are unconsidered. Differentiations of the classification of the sectors (WZ 2003) are followed by the "Statistisches Bundesamt".

Source: KfW/ZEW-Gründungspanel, Legler und Frietsch (2006), Neuabgrenzung der Wissenswirtschaft – forschungsintensive Industrien und wissensintensive Dienstleistungen (NIW/ISI-Listen 2006), Studien zum deutschen Innovationssystem, Nr. 22-2007, Karlsruhe, Hannover.