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Table 1 Occupations “Berlin list” and “Extended list”

Three-digit	Title		Berlin list	Extended list (with branches)
111	Occupations in farming			1, 3, 10, 11, 46, 47
112	Occupations in animal husbandry			1, 3, 10, 11, 46, 47
114	Occupations in fishing			1, 3, 10, 11, 46, 47
115	Occupations in animal care			1, 3, 75
121	Occupations in gardening			1, 3, 43, 45, 46, 47, 81, 84, 85, 86, 87
262	Technical occupations in energy technologies			35
263	Occupations in electrical engineering			35
291	Occupations in beverage production			1, 3, 10, 11, 46, 47
292	Occupations in the production of foodstuffs, confectionery and tobacco products			1, 3, 10, 11, 46, 47
293	Cooking occupations			1, 3, 10, 11, 46, 47
311	Occupations in construction scheduling and supervision, and architecture			36, 37, 38, 39
341	Occupations in building services engineering			43, 45, 46, 47, 81, 84, 85, 86, 87
342	Occupations in plumbing, sanitation, heating, ventilating, and air conditioning			43, 45, 46, 47, 81, 84, 85, 86, 87
343	Occupations in building services and waste disposal		x	36, 37, 38, 39
412	Occupations in biology			72, 85, 86
413	Occupations in chemistry			20, 21, 26, 32, 47, 69, 72, 78, 85, 86, 87, 88, 94
431	Occupations in computer science			61, 62, 63
432	Occupations in IT-system-analysis, IT-application-consulting and IT-sales			61, 62, 63
433	Occupations in IT-network engineering, IT-coordination, IT-administration and IT-organisation		x	61, 62, 63
434	Occupations in software development and programming			61, 62, 63

511	Technical occupations in railway, aircraft and ship operation		x	49, 50, 51, 52, 53
512	Occupations in the inspection and maintenance of traffic infrastructure			49, 50, 51, 52, 53
513	Occupations in warehousing and logistics, in postal and other delivery services, and in cargo handling		x	49, 50, 51, 52, 53
514	Service occupations in passenger traffic			49, 50, 51, 52, 53
515	Occupations in traffic surveillance and control		x	49, 50, 51, 52, 53
516	Management assistants in transport and logistics			49, 50, 51, 52, 53
521	Driver of vehicles in road traffic		x	49, 50, 51, 52, 53
522	Drivers of vehicles in railway traffic		x	49, 50, 51, 52, 53
523	Aircraft pilots			49, 50, 51, 52, 53
524	Ship's officers and masters			49, 50, 51, 52, 53
531	Occupations in physical security, personal protection, fire protection and workplace safety		x	1, 3, 84
532	Occupations in police and criminal investigation, jurisdiction and the penal institution		x	1, 3, 84
533	Occupations in occupational health and safety administration, public health authority, and disinfection		x	1, 3, 84
541	Occupations in cleaning services		x	1, 3, 84, 10, 11, 21, 26, 32, 35, 36, 37, 38, 39, 46, 47, 59, 60, 61, 62, 63, 64, 65, 72, 85, 86, 87, 88, 90
611	Occupations in purchasing and sales			1, 3, 10, 11, 46
612	Trading occupations			1, 3, 10, 11, 46
622	Sales occupations (retail trade) selling clothing, electronic devices, furniture, motor vehicles and other durables			43, 45, 46, 47, 81, 84, 85, 86, 87
623	Sales occupations (retail) selling foodstuffs		x	1, 3, 10, 11, 46, 47
624	Sales occupations (retail) selling drugstore products, pharmaceuticals, medical supplies and healthcare goods		x	21, 26, 32, 47, 86, 87, 88
712	Legislators and senior officials of special interest organisations			1, 3, 20, 69, 78, 84, 94
715	Occupations in human resources management and personnel service			1, 3, 20, 69, 78, 84, 94
721	Occupations in insurance and financial services			64, 65
731	Occupations in legal services, jurisdiction, and other officers of the court			1, 3, 20, 69, 78, 84, 94
732	Occupations in public administration		x	64, 65
811	Doctors' receptionists and assistants		x	21, 26, 32, 47, 86, 87, 88
812	Laboratory occupations in medicine			21, 26, 32, 47, 86, 87, 88
813	Occupations in nursing, emergency medical services and obstetrics		x	21, 26, 32, 47, 86, 87, 88

814	Occupations in human medicine and dentistry		x	21, 26, 32, 47, 86, 87, 88
815	Occupations in veterinary medicine and non-medical animal health practitioners			1, 3, 75
816	Occupations in psychology and non-medical psychotherapy			21, 26, 32, 47, 86, 87, 88
818	Occupations in pharmacy		x	21, 26, 32, 47, 86, 87, 88
821	Occupations in geriatric care		x	21, 26, 32, 47, 86, 87, 88
824	Occupations in funeral services			1, 3, 21, 26, 32, 47, 84, 86, 87, 88
825	Technical occupations in medicine, orthopaedic and rehabilitation			21, 26, 32, 47, 86, 87, 88
831	Occupations in education and social work, and pedagogic specialists in social care work		x	85
841	Teachers in schools of general education			85
842	Teachers for occupation-specific subjects at vocational schools and in-company instructors in vocational training			85
843	Teachers and researchers at universities and colleges			85
922	Occupations in public relations			59, 60, 90
924	Occupations in editorial work and journalism			59, 60, 90
943	Presenters and entertainers			59, 60, 90
945	Occupations in event technology, cinematography, and sound engineering			59, 60, 90

Table 2 Branches (two-digit) according to WZ08

1	Agriculture, forestry and fishing
3	Fishing and aquaculture
10	Manufacture of food products
11	Manufacture of beverages
20	Manufacture of chemicals and chemical products
21	Manufacture of basic pharmaceutical products and pharmaceutical preparations
26	Manufacture of computer, electronic and optical products
32	Other manufacturing
35	Electricity, gas, steam and air conditioning supply
36	Water collection, treatment and supply
37	Sewerage
38	Waste collection, treatment and disposal activities; materials recovery
39	Remediation activities and other waste management services
43	Specialised construction activities
45	Wholesale and retail trade and repair of motor vehicles and motorcycles
46	Wholesale trade, except of motor vehicles and motorcycles
47	Retail trade, except of motor vehicles and motorcycles
49	Land transport and transport via pipelines
50	Water transport
51	Air transport
52	Warehousing and support activities for transportation
53	Postal and courier activities
59	Motion picture, video and television programme production, sound recording and music publishing activities
60	Programming and broadcasting activities
61	Telecommunications
62	Computer programming, consultancy and related activities
63	Information service activities
64	Financial service activities, except insurance and pension funding
65	Insurance, reinsurance and pension funding, except compulsory social security
69	Legal and accounting activities
72	Scientific research and development
75	Veterinary activities
78	Employment activities
81	Services to buildings and landscape activities
84	Public administration and defence; compulsory social security
85	Education
86	Human health activities
87	Residential care activities
88	Social work activities without accommodation
90	Creative, arts and entertainment activities
94	Activities of membership organisations

Table 3 Means and percentages of “Berlin list” and “Extended list”

Mean values	Berlin list	Extended list	All professions
How often do you feel that your job is important?*	3.75	3.73	3.69
Hourly wage	16.32	18.38	18.37
Average occupational prestige (ISEI)	40.15	47.05	45.65
"Replacement potential"***	0.33	0.04	0.13
Percentages	Berlin list	Extended list	All professions
Qualification level (highest occupational qualification)			
No occupational qualification	10.75%	7.30%	8.90%
Occupational qualification	65.23%	55.05%	55.67%
Further training	4.80%	6.54%	7.56%
Academic qualification	19.22%	31.14%	27.87%
Requirement level (What training is usually required? Subjective assessment)			
No occupational qualification	24.10%	14.50%	17.50%
Occupational qualification	53.50%	52.10%	51.50%
Further training	5.50%	5.40%	6.60%
Academic qualification	17%	28.10%	24.40%
Requirement level (According to skill level of occupational classification KldB2010)			
Helper and semi-skilled work	14.21%	6.40%	7.97%
Professionally oriented activities	62.39%	56.06%	52.81%
Complex specialist activities	13.06%	12.15%	17.01%
Highly complex specialist activities	10.33%	25.40%	22.21%
Matching highest qualification with subjectively described requirement level			
Underqualified	10.17%	8.55%	9.30%
Suitably qualified	65.70%	72.46%	69.37%
Overqualified	24.13%	18.99%	21.34%
Matching highest qualification with requirement level according to KldB2010			
Underqualified	14.71%	14%	18.25%
Suitably qualified	62.43%	69%	62.65%
Overqualified	22.86%	17%	19.10%
Working conditions***	Berlin list	extended list	all occupations
Factor 1, “work physical, outdoors”	0.38	0.36	0.34
Factor 2, “positive value of work”	0.84	0.85	0.84
Factor 3, “rather autonomous work (design)”	0.61	0.65	0.67
Factor 4, “poorly informed about processes”	0.46	0.46	0.47
Factor 5, “workplace rather noisy”	0.43	0.45	0.44
Stresses caused by working conditions***			
Stress due to factor 1, “work physical, outdoors”	0.10	0.09	0.09
Stress due to factor 2, “positive value of work”	0.02	0.02	0.02
Stress due to factor 3, “rather autonomous work (design)”	0.07	0.07	0.06

Stress due to factor 4, “poorly informed about processes”	0.10	0.09	0.09
Stress due to factor 5, “workplace rather noisy”	0.14	0.14	0.14

* Mean values on a scale from 1 (never) to 4 (frequently).

**“Replacement potential” indicates on a continuum from approx. -3 to approx. +3 how strongly task perceptions are characterised by detailed specifications on the one hand or necessities to try out new things on the other (for more information, see Lewalder et al. 2019, p. 7 ff.).

*** Additive, weighted indices formed from different characteristics. All index values range between 0 (no agreement) and 1 (high agreement). All values weighted, own calculations.

Values for which there are significant differences between employees in essential job occupations on the respective lists and the others according to the Wilcoxon rank sum test are grey. For detailed individual results, please contact the team of authors.

Table 4 Mis-/matching with subjective requirement level

Occupations on the “Berlin list”

	Subjective requirement level			
Qualification level	No occup. qualification	Occupational qualification	Further education	Academic qualification
No occup. qualification	64.35%	27.99%	4.43%	3.23%
Occupational qualification	23.19%	67.8%	4.64%	4.37%
Further education	8.8%	54.63%	26.85%	9.72%
Academic qualification	8.16%	18.9%	3.78%	69.16%

Occupations on the “Extended list”

	Subjective requirement level			
Qualification level	No occup. qualification	Occupational qualification	Further education	Academic qualification
No occup. qualification	54.04%	35.55%	4.28%	6.14%
Occupational qualification	15.29%	76.05%	4.47%	4.2%
Further education	5.11%	58.95%	28.44%	7.51%
Academic qualification	5.91%	12.04%	2.37%	79.69%

All occupations

	Subjective requirement level			
Qualification level	No occup. qualification	Occupational qualification	Further education	Academic qualification
No occup. qualification	59.2%	31.64%	3.56%	5.59%
Occupational qualification	17.81%	73.11%	4.66%	4.42%
Further education	5.11%	51.64%	34.6%	8.66%
Academic qualification	7.1%	14.53%	3.74%	74.63%

All values weighted, grey: cells below 20 cases

Source: BIBB/BAuA-Employment Survey 2018

Table 5 Mis-/matching with objective requirement level according to KldB2010

Occupations on the “Berlin list”

	Objective requirement level			
Qualification level	Helper and semi-skilled jobs	Professional activities	Complex specialist activities	Highly complex specialist activities
No occup. qualification	36.58%	57.18%	4.91%	1.33%
Occupational qualification	13.97%	75.79%	8.62%	2.62%
Further education	5.18%	46.95%	36.20%	11.68%
Academic qualification	4.79%	26.55%	27.17%	41.50%

Occupations on the “Extended list”

	Objective requirement level			
Qualification level	Helper and semi-skilled jobs	Professional activities	Complex specialist activities	Highly complex specialist activities
No occup. qualification	19.7%	63.62%	9.63%	7.05%
Occupational qualification	8.45%	77.94%	9.5%	4.11%
Further education	1.31%	54.19%	34.25%	10.25%
Academic qualification	0.58%	14.74%	12.67%	72%

All occupations

	Objective requirement level			
Qualification level	Helper and semi-skilled jobs	Professional activities	Complex specialist activities	Highly complex specialist activities
No occup. qualification	27.56%	54.74%	10.1%	7.6%
Occupational qualification	8.88%	72.01%	12.87%	6.24%
Further education	1.56%	41.18%	41.76%	15.51%
Academic qualification	1.56%	16.8%	20.86%	60.78%

All values weighted, grey: cells below 20 cases

Source: BIBB/BAuA-Employment Survey 2018

Table 6 Logistic regression model for working in occupations on the “Berlin list”

	Estimate	Std. Error	z value	Pr(> z)	
(Intercept)	-0.96	0.29	-3.36	0.00	***
Female	0.62	0.05	12.87	6.48E-38	***
Age	0.01	0.00	4.57	4.89E-06	***
ISEI, occupational status	-0.03	0.00	-12.68	7.64E-37	***
Hourly wage	-0.01	0.00	-2.66	0.01	**
Replacement potential	-0.21	0.03	-6.23	4.76E-10	***
Qualification (Ref.: occupational qualification)					
No occupational qualification	0.09	0.11	0.83	0.41	
Further education	-0.52	0.09	-5.63	1.75E-08	***
Academic qualification	-0.17	0.08	-2.18	0.03	*
Matching according to KldB2010 requirement level (Ref.: suitably qualified)					
Underqualified	-0.47	0.07	-6.53	6.67E-11	***
Overqualified	0.08	0.07	1.22	0.22	
Matching according to subjective assessment of the requirement level (Ref.: suitably qualified)					
Underqualified	0.31	0.08	3.62	0.00	***
Overqualified	0.17	0.06	2.71	0.01	**
Working conditions					
Factor 1, “work physical, outdoors”	-1.54	0.21	-7.27	3.60E-13	***
Factor 2, “positive value of work”	-0.07	0.21	-0.36	0.72	
Factor 3, “rather autonomous work (design)”	-0.48	0.10	-4.78	1.74E-06	***
Factor 4, “poorly informed about processes”	-0.38	0.11	-3.57	0.00	***
Factor 5, “workplace rather noisy”	-0.36	0.09	-3.98	6.92E-05	***
Occupational content according to 3D model					
Routine index	0.53	0.12	4.54	5.72E-06	***
Object reference index	2.31	0.16	14.28	2.83E-46	***
Knowledge requirement index	-1.02	0.13	-8.12	4.57E-16	***
Stresses caused by working conditions					
Stress due to factor 1, “work physical, outdoors”	-0.70	0.18	-3.85	0.00	***
Stress due to factor 2, “positive value of work”	0.07	0.38	0.19	0.85	
Stress due to factor 3, “rather autonomous work (design)”	0.20	0.17	1.21	0.23	
Stress due to factor 4, “poorly informed about processes”	0.11	0.11	1.03	0.30	
Stress due to factor 5, “workplace rather noisy”	0.18	0.09	1.95	0.05	.
Temporary employment relationship (Ref.: No)	0.20	0.08	2.52	0.01	*
Standby duty? (Ref.: No)	-0.03	0.07	-0.36	0.72	
On-call duty? (Ref.: No)	0.84	0.06	14.47	1.95E-47	***

Work at unusual hours? (Ref.: No)	-0.53	0.05	-9.60	8.07E-22	***
Working hours planning: How often do you manage to take your family and private interests into account?? (Index)	-0.01	0.03	-0.46	0.65	
Occupational closure	-0.09	0.03	-3.27	0.00	**
Subjective perception of the importance of the activity	0.28	0.04	6.49	8.55E-11	***
Work in desired occupation (Ref.: Yes)	0.11	0.06	1.81	0.07	.
With regard to content, able to meet the requirements? (Ref.: As a rule, yes)					
Rather underchallenged	-0.02	0.11	-0.16	0.88	
Rather overchallenged	-0.15	0.07	-2.01	0.04	*
With regard to the amount of work, can you cope with the requirements? (Ref.: As a rule, yes)					
Rather underchallenged	0.25	0.05	4.52	6.08E-06	***
Rather overchallenged	0.12	0.11	1.05	0.29	
How hard is it to switch off after work? (Index)	-0.17	0.02	-7.12	1.07E-12	***
How often do emotionally stressful situations arise? (Index)	0.45	0.03	17.16	5.06E-66	***
Interaction Satisfaction overall with duration at work	0.00	9.15E-05	-3.14	0.00	**
McFaddens R2: 0.17					
AIC: 13591					
BIC: 13898.68					
N: 13290					

Grey: non-significant

Reading example: The probability (measured as a log odds ratio) of being in an essential job occupation on the "Berlin List" is 0.62 points higher for female workers, or converted $\exp(0.622)=1.86$, or approximately 86%.

Source: BIBB/BAuA-Employment Survey 2018

Table 7 Logistic regression model for working in occupations on the “Extended list”

	Estimate	Std. Error	z value	Pr(> z)	
(Intercept)	-0.48	0.27	-1.80	0.07	.
Female	0.31	0.04	6.83	8.35E-12	***
Age	0.00	0.00	1.85	0.06	.
ISEI, occupational status	0.01	0.00	3.95	7.92E-05	***
Hourly wage	0.00	0.00	-0.06	0.95	
Replacement potential	-0.24	0.03	-7.35	1.92E-13	***
Qualification (Ref.: occupational qualification)					
No occupational qualification	0.11	0.11	0.99	0.32	
Further education	-0.17	0.08	-2.07	0.04	*
Academic qualification	-0.17	0.07	-2.28	0.02	*
Matching according to KldB2010 requirement level (Ref.: suitably qualified)					
Underqualified	-0.40	0.07	-5.87	4.25E-09	***
Overqualified	-0.10	0.06	-1.55	0.12	
Matching according to subjective assessment of the requirement level (Ref.: suitably qualified)					
Underqualified	0.00	0.08	-0.04	0.97	
Overqualified	0.21	0.06	3.33	0.00	***
Working conditions					
Factor 1, “work physical, outdoors”	-0.52	0.20	-2.62	0.01	**
Factor 2, “positive value of work”	0.05	0.20	0.25	0.80	
Factor 3, “rather autonomous work (design)”	-0.52	0.10	-5.36	8.51E-08	***
Factor 4, “poorly informed about processes”	-0.13	0.10	-1.29	0.20	
Factor 5, “workplace rather noisy”	-0.38	0.09	-4.50	6.66E-06	***
Occupational content according to 3D model					
Routine index	0.68	0.11	6.13	8.67E-10	***
Object reference index	0.86	0.15	5.61	1.98E-08	***
Knowledge requirement index	-0.82	0.12	-6.97	3.26E-12	***
Stresses caused by working conditions					
Stress due to factor 1, “work physical, outdoors”	-0.13	0.17	-0.77	0.44	
Stress due to factor 2, “positive value of work”	-0.22	0.37	-0.59	0.55	
Stress due to factor 3, “rather autonomous work (design)”	-0.05	0.16	-0.32	0.75	
Stress due to factor 4, “poorly informed about processes”	-0.12	0.10	-1.18	0.24	
Stress due to factor 5, “workplace rather noisy”	0.13	0.09	1.42	0.16	
Temporary employment relationship (Ref.: No)	0.32	0.07	4.40	1.06E-05	***
Standby duty? (Ref.: No)	-0.07	0.07	-1.03	0.30	
On-call duty? (Ref.: No)	0.47	0.05	8.64	5.50E-18	***

Work at unusual hours? (Ref.: No)	-0.39	0.05	-7.42	1.18E-13	***
Working hours planning: How often do you manage to take your family and private interests into account? (Index)	-0.07	0.03	-2.44	0.01	*
Occupational closure	0.65	0.03	24.88	1.23E-136	***
Subjective perception of the importance of the activity	0.00	0.04	-0.10	0.92	
Work in desired occupation (Ref.: Yes)	-0.11	0.06	-1.91	0.06	.
With regard to content, able to meet the requirements? (Ref.: As a rule, yes)					
Rather underchallenged	0.09	0.10	0.94	0.34	
Rather overchallenged	-0.12	0.07	-1.76	0.08	.
With regard to the amount of work, can you cope with the requirements? (Ref.: As a rule, yes)					
Rather underchallenged	0.16	0.05	3.05	0.00	**
Rather overchallenged	-0.15	0.11	-1.34	0.18	
How hard is it to switch off after work? (Index)	-0.05	0.02	-2.16	0.03	*
How often do emotionally stressful situations arise? (Index)	0.14	0.02	5.64	1.66E-08	***
Interaction Satisfaction overall with duration at work	-8.44E-05	8.55E-05	-0.99	0.32	
McFaddens R2: 0.11					
AIC: 15123					
BIC: 15429.95					
N: 13290					

Grey: non-significant

Reading example: The probability (measured as a log odds ratio) of being in an essential job on the "Expanded list" is 0.31 points higher for female workers than for male workers (reference), or the equivalent of $\exp(0.307)=1.36$, or about 36 percent.

Source: BIBB/BAuA-Employment Survey 2018

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