

Incidence of ill-health related job loss and related social and occupational factors. The "unfit for the job" study: a one-year follow-up study of 51,132 workers

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Objective: The analysis of ill-health related job loss may be a relevant indicator for the prioritization of actions in the workplaces or in the field of public health, and a target for health promotion. The aim of this study was to analyse the medical causes, the incidence, and the characteristics of employees medically unfit to their job.

Methods: This one-year prospective study included all workers followed by occupational physicians in an occupational health service in the South of the France. Our study design allowed two data frames to be merged (followed up workers and "unfit" patients who lost their jobs due to ill-health). We performed a multivariate analysis in order to adjust the Odds ratio for the age groups, sex, occupation and the activity sectors which are strongly associated with job loss.

Results: Seventeen occupational physicians followed 51,132 workers. The all-cause incidence of being unfit to return to one's job was 0.778%. The two main causes of being unfit for one's job were musculoskeletal disorders (47.2%) and psychopathology (38.4%). Being over 50 years old [Odds ratio (OR) 2.63, 95% confidence interval (95% CI) [2.13-3.25] and being a woman [OR 1.52, 95% CI 1.21-1.91] were associated with the all-cause unfitness, independent of occupations and activity sectors.

Conclusions: Identification of occupational and demographic determinants independently associated with ill-health related job loss may provide significant and cost-effective arguments for health promotion and job loss prevention.

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45 **Key terms:** Occupational medicine; Employment; Workplace; Job loss

46 The assessment of occupational diseases and their impact are a difficult issue. However, it is an
47 important to set the priority actions concerning health and safety at work. Most data about these
48 pathologies indirectly assesses their incidence or impact. The findings of The Health and
49 Occupation Reporting network (THOR) highlighted the gap between the epidemiological
50 assessment by a specialist network (i.e., psychiatrist) and a direct assessment by an occupational
51 physician (1).

52 The difficulties are (i) the comprehensive identification of the cases, (ii) the reliable
53 notification of work related accountability concerning multi factorial diseases, and (iii) the
54 knowledge about the population from which these cases are identified. Over recent years, several
55 occupational disease networks have been developed and data collected concerning occupational
56 diseases. Several nationwide networks of clinical specialists have been developed in Europe (2),
57 such as THOR in the UK (3), or the French National Occupational Disease Surveillance and
58 Prevention Network (RNV3P) in France (4, 5). Another way to assess occupational diseases is to
59 match different data sources. Mustard et al. (2015) matched different and independent data
60 sources: (i) emergency department encounter records, (ii) lost-time workers compensation claims
61 and (iii) representative samples of workers in a national health interview survey (6).

62 Numerous countries may also have a compensation system for occupational diseases. The data
63 concerning the recognition of occupational diseases are fairly easy to collect by the organizations
64 which pay the compensation. These systems, however, may provide compensation to workers for
65 benign illnesses, such as occupational contact eczema, and, conversely, compensation may never
66 be claimed for some frequent and fairly serious diseases, such as work-related depression or
67 burnout syndrome. Consequently, this kind of indicator is a poor representation of the main
68 occupational health problems in a country or a region. Likewise, the analyses of the causes of
69 disability pensions or disability retirements are probably not very suitable for the assessment of
70 the incidence of occupational diseases. So, one of the main difficulties is the use of relevant and
71 reliable indicators and the ability to collect them.

72 Unfitness (“inaptitude” in French), is the recognition by the occupational physician that a
73 worker's health status is no longer fit for his current job and will require a job change. This does
74 not mean that the worker cannot work anymore, but that he can no longer work in his current
75 work position. In France, the assessment of the fitness or the unfitness to perform the job is
76 exclusively carried out by the occupational physicians (OP) during a medical examination. All
77 paid workers are systematically followed, either yearly or every two years, by the OP. Additional
78 specific medical examinations are carried out when a medical problem appears. Moreover, when
79 a paid worker is on sick leave for one month or more, fitness is systematically assessed by the OP
80 (during a medical examination named "the reinstatement visit") at the end of the sick leave, when
81 the worker returns to work. An “unfit for the job” outcome may be pronounced for several
82 reasons which include, but are not limited to: (i) there is a change in an employee’s health status
83 (e.g., returning to work after recovery from a serious illness or injury), (ii) a medical condition
84 that may limit, reduce or prevent the person from effectively performing a new or current job
85 (e.g., musculoskeletal conditions that limit mobility), (iii) a medical condition that is likely to
86 make it unsafe both for the employee, their co-workers or the public (e.g., driving is essential to
87 the job but the employee is subject to unpredictable and sudden unconsciousness). Each OP
88 follows roughly 3,000 workers (7). There are currently 5,600 OPs in France. They report one of
89 three conditions back to the employer: fit, fit subject to work modifications, or unfit for the job.
90 Unfit for the job may lead to being assigned to a new suitable job in the same company, or the
91 termination of the employment contract due to a medical issues. The termination of the
92 employment contract is the main conclusion of an unfitness notification (more than 97% of cases)
93 according to a recent study performed in one French region by the General Labour Department of
94 the Ministry of Work (8) .

95 A previous study explored the analysis of the “unfit for the job” among 55,026 workers using a
96 direct collection of data from the medical records of an occupational health service in France (9).
97 The main limitation of this study was that only a univariate analysis was performed. Indeed, the
98 data concerning the followed up workers were basic statistical data (e.g. sex ratio occupations,
99 average age), not a data frame extracted from the information system. Consequently, the socio

100 demographics cannot be merged with the data frame of unfitness. However, to our knowledge,
101 this is the only study analysing ill-health related job loss.

102 The current study aimed to estimate the one-year incidence of unfitness for the job in an
103 occupational health service, and to describe their aetiology and the characteristics of the unfit
104 employees.

105 *Methods*

106 Study design and setting

107 This case-control study took place between January 1st 2014 and December 31st 2014, in the
108 occupational health service in Montpellier (France). Seventeen OPs followed up employees of
109 this employment area (except the farming area and the employees in public services).

110 Procedure and participants

111 All the workers followed in 2014 in this occupational health service were eligible to participate in
112 the study. General data concerning the followed workers were extracted from the information
113 system: age, sex, length of service, occupation and industry, fitness or unfitness. Occupation was
114 coded to four digits using the French Occupational Classification (socio professional categories
115 PCS-2003) and the industries were coded using the European NACE-2008 nomenclature and
116 aggregated A10 international classification. When an OP reported an “unfit for the job”, they
117 collected the age, sex, socio-professional group, activity sector, the diagnostic cause of the
118 unfitness and their judgment on the professional accountability. These diagnostics were supported
119 by an expert medical opinion (e.g., by a psychiatrist, orthopedic specialist, or a rheumatologist

120 depending on the disease). The duration of the sick leave, the accident at work or the
121 occupational disease recognition procedure, and what became of the employee (occupational
122 reclassification, discharge for unfitness) were also collected.

123 Fitness of the subject for modified work, or the unfitness with occupational reclassification
124 were not collected as an outcome. Each OP checked the cases of “unfit for the job” using an
125 informatics query at the end of the year and completed the data collection if necessary. All data
126 were anonymously collected. Participants were recruited during annual work medical
127 examinations. No consent was given because anonymous data was used from usual daily clinical
128 practices extracted from medical records. The ethics committee from the university hospital of
129 Clermont-Ferrand, France, was questioned about a similar previous study design (9). The
130 committee confirmed that there was no need for ethics approval for such a study design.

131 Statistical analysis

132 The incidence of unfitness to work was calculated (numerator = number of unfitness;
133 denominator = number of followed up employees). The statistical analyses were conducted for all
134 causes of unfitness together, and for the two main groups of pathologies. The relationship
135 between the unfitness and the other characteristics was calculated using the Odds Ratio (OR) and
136 its 95% Confidence Interval (95% CI). Multivariate analyses were computerized, adjusting for
137 age, sex, occupation and industry using logistic regression models. Statistical analyses were
138 conducted using the R and epicalc packages.

139 *Results*

140 Overall, 51,132 employees were followed up by the 17 OPs in 2014 and were included in this
141 study. Among them, 398 cases of “unfit for the job” were reported. The overall incidence of

142 “unfit for the job” was 7.78%.

143 Demographics and company characteristics for employees both fit and unfit for the job are
144 presented in Table 1.

145 Women [ORa 1.52, 95% CI 1.21-1.91] and workers over 50 years [ORa 2.63, 95% CI 2.13-
146 3.25] were more frequently unfit to the job, considering all causes together (Table 2).

147 Two groups of pathologies caused 85.7% of the cases of unfitness: the musculoskeletal
148 disorders (MSD) (47.2%) and the psychopathology (38.4%) (Table 2).

149 Most of the cases of unfitness were caused by a MSD. Among the 188 cases of unfitness caused
150 by a MSD, 32.4% were recognized as an occupational injury/disease, whereas the OP estimated
151 that 64.0% of these pathologies were work related. The average length of sick leave was
152 significant (13.1 months SD 12.3). After adjustment, the unfitness caused by a MSD was
153 associated with gender [women ORa 1.89, 95% CI 1.35-2.66] and the odds ratio increased with
154 the age groups, notably that of over 50 years old (Table 2). Concerning the associations with
155 industry, the activity sector for which the number of cases of unfitness was below 10
156 (manufacturing, construction, and Information & communication) were excluded from the
157 analysis. Moreover, the financial and insurance sectors were aggregated with real estate activities.
158 This aggregated sector was considered as the reference group. All the other sectors were
159 significantly associated with unfitness, but after adjustment, only one sector (trade, repair,
160 transportation, accommodation and food services) remained statistically significant [ORa 3.65,
161 95% CI 1.32-10.1] (Table 2). The higher grade white collar workers’ group was less concerned
162 [ORa 0.12, 95% CI 0.02-0.88] by unfitness than the reference group (intermediate occupations
163 and lower supervisors). By contrast, the blue collar workers were highly concerned by unfitness
164 resulting from a MSD [ORa 8.13, 95% CI 4.52-14.62] (Table 2).

165 One hundred and fifty three declarations of unfitness caused by a psychopathology were
166 delivered. Eight cases (5.2%) were recognized as an occupational injury or an occupational
167 disease. Conversely, the OP estimated that 64.7% of these diseases were work related. The

168 average length of sick leave (10.3 months SD 10.5) was lower than for the MSD ($p < 0.05$), and
169 workers were younger (40.9 years versus 46.0, $p < 0.001$).

170 Unlike the MSD, age and gender were less associated with psychopathology-related unfit.
171 Moreover, all occupation groups and activity sectors were concerned (Table 2).

172 *Discussion*

173 Data from this study were directly collected by the OP who determined the “unfit for the job”.
174 Consequently, the job losses and the medical causes are as reliable as possible. Moreover, they
175 are based on a medical examination and supported by an expert medical opinion.

176 Therefore, these data may be considered as reliable and of high quality, directly extracted from
177 the medical records. Moreover, this study design allowed information concerning the
178 denominator to be completed. The population followed by the OP involved in this study is known
179 and requested information was extracted directly from the information system. This is a strength
180 of the study design. Most of the experts in the network have accurate data concerning the cases
181 (i.e., an occupational disease), but cannot collect reliable data concerning the population observed
182 and, consequently, the precious indicators such as incidence or an associated risk.

183 The ill-health related job loss, known as “unfit for the job” in France, can be exclusively
184 performed by the worker’s OP. Consequently, the cases of ill-health related job losses are
185 probably under-evaluated. An employee with anxiety or depression caused by a conflict at work
186 may choose to resign, but will lose unemployment insurance. By contrast, a termination for a
187 medical reason will maintain the unemployment insurance and termination indemnity.
188 Consequently, it is in the interest of a worker with a medical problem to be determined unfit for
189 their job rather than to resign from the company. Particularly severe or life-threatening diseases
190 (e.g. most cancers) are probably under-evaluated in this study design, which is probably not
191 adapted to reliably assess the impact of such pathologies on jobs.

192 Ill-health related job losses and socio demographic data are easy to extract from the

193 information systems using a simple SQL query. Most of the data are comprehensively coded in
194 the databases of the occupational health services. Moreover, such an epidemiological system is
195 very cost effective. It is based on the French occupational health system.

196 One of the major advantages of integrating a denominator (the demographics of all the
197 workers followed up by each OP) in these cases is the ability to carry out multivariate analyses,
198 and the fact that the analyses can provide risk assessments. These assessments would allow these
199 risks to be monitored and geographical comparisons to be made in France, or other European
200 countries, which could accurately identify ill-health related job losses.

201 The reader should be aware that this study design does not identify the work related diseases,
202 neither can it provide a job loads attributable risk, but rather assesses the impact of diseases,
203 work-related or not, on the capacity to maintain the current job.

204 In our opinion, this must not be considered as a limitation. The mechanism of the observed
205 pathologies may be partly, completely or not at all work-related. However, it is a delicate issue to
206 determine the work-related accountability for each individual. Diseases are often multifactorial
207 with personal, professional and extra professional components (e.g., a sub acromial impingement
208 and musculoskeletal disorder). In fact, all data concerning the issue of work accountability should
209 be cautiously interpreted. In our study, the outcome is job loss, which is an objective data, rather
210 than the work accountability of cases, which requires a judgment. The analysis of the “unfitness
211 for the job”, even if it does not allow the work related accountability to be determined, allows at-
212 risk groups to be determined and preventative actions to be promoted in order to support the
213 continuation of employment.

214 Findings

215 The global one-year incidence of unfitness in our study was 7.78‰. A similar study of ill-health
216 related job losses was previously conducted in 2012 in another occupational health service in the

217 east of France (9). Dutheil et al. found very similar results. The global one year incidence of job
218 losses was 7.72 % in their study. Dutheil's study confirmed the major impact of MSD and
219 psychopathology on employment. However, the design of this previous study did not allow
220 multivariate analysis (c.f. above). Our study design allowed multivariate analysis because there
221 was a single data frame for fit and unfit workers, and consequently the possibility to adjust the
222 Odds Ratios based on the age groups, sex, occupation and activity sector which are strongly
223 associated with job losses. Our findings highlight that 85.7% of ill-health related job losses are
224 related to MSD (47.2%) and psychopathology (38.4%) (Table 2). The high prevalence of job
225 losses related to MSD (10, 11, 12) and psychopathology (12, 13, 14) have been estimated in other
226 countries. Recent data from the THOR-GP network (UK – 2015-2016) estimated that 85% of
227 self-reported work related ill-health are caused by these two groups of pathologies (15) , which is
228 similar to our findings. This supports the relevance of the unfit for the job as an indicator,
229 even if it does not assess the work related incidence of different pathologies. Moreover, the
230 process of rating a pathology as work related is partly subjective and complex, and may lead to a
231 misclassification.

232 The Labour Force Survey (LFS) is the Health and Safety Executive's data source,
233 complemented by other sources such as death certificates and reports from doctors (THOR). It
234 estimated the incidences of work related ill health by stress-anxiety-depression and MSD as
235 690/100,000 workers and 550/100,000 respectively (16). The incidences were higher than the job
236 loss incidence because all these cases of work-related ill health did not lead to a classification of
237 "unfit for the job". Stress, anxiety, and depression accounted for 37% of all work related ill health
238 cases in 2015/2016, and MSD prevalence accounted for 41% of all work related illnesses. These
239 data suggest that psychopathologies and MSD are not only the two main causes of work related
240 diseases, but also the two main causes of job loss.

241 Musculoskeletal disorders

242 Our findings highlight the important increase in the risk of job loss caused by musculoskeletal
243 disorders after 50 years. This is a major risk among blue collar workers. It is a particularly
244 worrying situation because the capacity to find a new job for people over the age of 50, in activity
245 sectors where mechanical loads are frequent, and which is adapted to the potential disability
246 caused by the MSD, may lead to employment problems for the concerned workers and significant
247 social problems. Unfortunately, the primary prevention of workplace tasks is probably rarely
248 adapted to the age of the worker. However, maintaining working ability in early old age is
249 essential for sustaining economic growth in Europe (14).

250 Psychopathology

251 First, our findings highlight the huge impact of psychopathology on job loss. These diseases are
252 invisible when they are observed through the national occupational diseases data (e.g. the
253 recognized occupational diseases), notably because it is very difficult to determine the
254 occupational accountability. According to the French medical insurance data, only a few hundred
255 cases of anxiety or depression are recognized as an occupational disease by the medical
256 insurance.

257 Another important finding is that all workers are concerned. There may be an increased risk
258 for women or older workers, but all socio professional statuses and activity sectors are impacted
259 by this issue.

260 Sex

261 The results highlight the gender inequalities in the face of job loss due to ill-health (Table 2).

262 Dutheil et al. observed similar univariate risks of job loss for women for MSD,
263 psychopathology and all-causes together (RR= 1.51, 1.70 and 1.51 respectively) (9).

264 This gender inequality issue probably needs particular attention. Traditionally, a high
265 proportion of women work in activity sectors with high physical or psychological loads, such as
266 health care, accommodation for seniors or social care. The higher risk of job loss in these sectors
267 could be a consequence of these women working in jobs that require lower levels of education.
268 There are too few cases of job losses in this study (398 cases) to analyse the risks associated with
269 specific occupations matched with sex ratio. However, an extended study (only 17 OPs
270 participated in this study versus 5,000 OPs in France) could provide very accurate information. A
271 more specific analysis of activity sectors and jobs for the observed population could provide
272 more accurate “indications” concerning these observed data.

273 Age

274 Our findings concerning the average age of unfit workers (44.4 years), and the risks of unfitness
275 according to the group of diseases among workers aged 50 years and older (Table 2) are similar
276 to the findings of the previous study carried out in 2012 (9). In this study, the average age of unfit
277 workers was 45.9 years, and the risk of job loss caused by a MSD, a psychopathology and all
278 causes together, up to the age of 50, were 2.92, 1.38, and 2.51 respectively. Not surprisingly, our
279 findings highlight the progressive increase of the odds ratios of job loss with the age of the
280 workers, particularly for MSD.

281 The encoding of pathologies leading to the unfitness notification, based on a common thesaurus
282 and adapted to a clinician’s routine practice, would increase the quality and processing speed of
283 such analyses. Unfortunately, the different information systems in the occupational health
284 services do not provide such a possibility at this time. Therefore, a common system would
285 considerably enhance the epidemiological capacity to analyse ill-health related job losses, and its
286 processing speed.

287 It would be appropriate to match our findings with other sources of data, such as expert-based

288 networks or observations. In our opinion, our data are complementary to them.

289 The population included in our study was limited (50,000 workers). A more significant
290 population would increase the power of the analysis. This would allow the more accurate
291 identification of the sub groups of workers or specific socio-professional categories at risk of
292 losing their jobs for medical reasons, and better provide information concerning prevention
293 targets or further specific studies. French occupational health systems have an important and cost
294 effective epidemiological capacity. The supervisory authorities of the occupational health
295 services, the General Labour department of the ministry of work, should consider promoting such
296 an epidemiological approach based on occupational health service data, which could provide
297 useful, accurate, and reliable information in the field of occupational health. Moreover,
298 occupational health information systems contain accurate and high quality data on workplace
299 analysis, medical records, or sociodemographic data. Moreover, several European countries, such
300 as Belgium, could collect and analyse similar data (17). It is for these reasons that an
301 Occupational Health System Data Analysis network should be promoted.

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304 *Competing interest*

305 The authors declare no conflict of interest

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358 **What is new in the paper?**

359 - In addition to a previous study in France (9), we conducted a multivariate analysis of the
360 causes of job loss in order to adjust the Odds Ratios for the age groups, sex, occupation and
361 activity sectors which are strongly associated with the job loss.

362 - We support the recognition of the French occupational health system as an important and
363 cost effective epidemiological tool.

Table 1 (on next page)

Demographics, company characteristics, and incidence of unfitness for the job.

		Employees unfit for the job <i>n</i> =398 (100%)	Employees fit for the job <i>n</i> =50,734 (100%)	Incidence % 7.78
	<i>Mean (sd)</i>	44.4 (11.8)	38.7 (11.8)	
Age (years)	≤30 y	50 (12.6%)	15,298 (30.2%)	3.26
	31-40 y	91 (22.9%)	13,510 (26.7%)	6.70
	41-50 y	98 (24.6%)	12,180 (24.0%)	7.98
	51-60 y	124 (31.2%)	8,165 (16.1%)	14.96
	>60 y	35 (8.8%)	1,512 (3.0%)	22.62
Sex	<i>Men</i>	124 (31.2%)	21,279 (42.0%)	5.79
	<i>Women</i>	274 (68.8%)	29,455 (58.0%)	9.22
Length of service (years)	<i>Mean (sd)</i>	8.47 (7.9)	5.53 (7.39)	
Occupation	Higher grade administrative and managerial occupations, higher grade professionals	24 (6.1%)	7,650 (17.0%)	3.13
	Intermediate occupations. Lower supervisors	65 (16.5%)	12,220 (27.2%)	5.29
	White collar workers. lower services, sales and clerical occupations	212 (53.8%)	19,671 (43.7%)	10.66
	Blue collar workers	93 (23.6%)	5,442 (12.1%)	16.80
	<i>Mean (sd)</i>	84.6 (99.47)	112.4 (184.7)	
Workforce	<10	105 (26.4%)	13,000 (25.6%)	8.01
	10-49	138 (34.7%)	16,102 (31.7%)	8.50
	50 - 249	93 (23.4%)	14,503 (28.6%)	6.37
	≥250	57 (14.3%)	7,129 (14.0%)	7.93
	Manufacturing (BE)	4 (1.0%)	154 (0.3%)	25.31
Construction (FZ)	0	515 (1.0%)	0	
Activity sectors (aggregated A10 code)	Wholesale and retail trade, repair of motor vehicles, transportation and storage, accommodation and food service activity (GI)	123 (30.9%)	14,051 (27.7%)	8.68
	Information & communication (JZ)	2 (5.0%)	2,306 (4.6%)	0.87
	Financial & insurance activities (KZ)	9 (2.3%)	2,954 (5.8%)	3.04
	Real estate activities (LZ)	13 (3.3%)	1,350 (2.7%)	9.54
	Professional, scientific and technical activities; administrative and support service activities (MN)	69 (17.3%)	9,696 (19.1%)	7.07
	Public administration, compulsory social security; education; human health and social work activities (OQ)	152 (38.2%)	14,909 (29.4%)	10.09
	Arts, entertainment, repair of household goods & other services (RU)	26 (6.5%)	4,799 (9.5%)	5.39

Table 2 (on next page)

Factors associated with unfitness for the job, for the different causes of unfitness: univariate and multivariate analyses.

ORc= crude Odds Ratio ; ORa= odds ratio adjusted on age, sex, occupation and industry

Causes of unfitness for the job												
	Musculoskeletal disorders (n=188)			Psychopathologies (n=153)			All causes together (n=398)					
	ORc[CI95%]	ORa[CI95%]	p	ORc[CI95%]	ORa[CI95%]	p	ORc[CI95%]	ORa[CI95%]	p			
	Mean (standard deviation)			46.0 (11.3)			40.9 (11.2)			44.4 (11.8)		
Age (years)	≤30 y	1	1	1	1	1	1	1	1	1		
	31-40 y	1.76 [0.97 ; 3.25]	2.37 [1.35 ; 4.18]	<0.001	2.22 [1.34 ; 3.75]	2.23 [1.36 ; 3.65]	<0.01	2.05 [1.46 ; 2.90]	2.43 [1.70 ; 3.45]	<0.001		
	41-50 y	3.14 [1.83 ; 5.57]	3.81 [2.25 ; 6.45]		1.96 [1.16 ; 3.38]	1.90 [1.14 ; 3.18]		2.46 [1.74 ; 3.44]	2.64 [1.86 ; 3.76]			
	51-60 y	6.56 [3.94 ; 11.39]	7.35 [4.40 ; 12.28]		2.4 [1.38 ; 4.22]	2.26 [1.32 ; 3.86]		4.59 [3.31 ; 6.37]	4.75 [3.37 ; 6.69]			
	>60 y	8.60 [4.22 ; 17.32]	9.93 [5.06 ; 19.49]		3.24 [1.26 ; 7.42]	3.22 [1.43 ; 7.23]		6.94 [4.52 ; 10.66]	7.62 [4.85 ; 11.96]			
≤50 years	1	1	1		1	1		1				
>50 years	3.65 [2.70 ; 4.91]	3.41 [2.53 ; 4.61]	<0.001	1.50 [1.02 ; 2.17]	1.41 [0.98 ; 2.04]	0.07	2.82 [2.29 ; 3.46]	2.63 [2.13 ; 3.25]	<0.001			
Sex	Men	1	1	1	1	1	1	1	1			
	Women	1.64 [1.19 ; 2.25]	1.89 [1.35 ; 2.66]	<0.001	1.41 [1.00 ; 1.98]	1.31 [0.92 ; 1.88]	0.14	1.48 [1.19 ; 1.83]	1.52 [1.21 ; 1.91]	<0.001		
Occupations	Intermediate occupations. Lower supervisors	1	1	1	1	1	1	1	1			
	Higher grade administrative and managerial occupations, higher grade professionals	0.11 [0.00 ; 0.69]	0.12 [0.02 ; 0.88]	<0.001	0.65 [0.34 ; 1.16]	0.76 [0.43 ; 1.35]	0.52	0.59 [0.35 ; 0.96]	0.66 [0.41 ; 1.06]	<0.001		
	White collar workers. lower services, sales and clerical occupations	4.47 [2.59 ; 8.27]	3.88 [2.25 ; 6.70]		1.09 [0.74 ; 1.64]	1.10 [0.74 ; 1.64]		2.03 [1.53 ; 2.72]	1.95 [1.47 ; 2.60]			
	Blue collar workers	9.43 [5.3 ; 17.85]	8.13 [4.52 ; 14.62]		1.02 [0.56 ; 1.79]	1.17 [0.66 ; 2.07]		3.21 [2.31 ; 4.49]	3.23 [2.30 ; 4.54]			
Financial & insurance activities (KZ)	1	1	1		1	1		1				
Activity sectors (aggregated A10 code)	Real estate activities (LZ) n=4326	1	1	1	1	1	1	1	1			
	Wholesale and retail trade, repair of motor vehicles, transportation and storage, accommodation and food service activity (GI) n=14174	5.26 [2.00;20.23]	3.65 [1.32; 10.1]	1.01 [0.53;2.06]	1.05 [0.55; 2.01]	1.71 [1.08;2.84]	1.45 [0.91; 2.32]					
	Professional, scientific and technical activities; administrative and support service activities (MN) n=9765	4.22 [1.52 ;16.28]	2.36 [0.83; 6.71]	0.75 [0.36;1.62]	0.69 [0.34; 1.39]	1.39 [0.85;2.37]	1.01 [0.61;1.65]					
	Public administration, compulsory social security; education; human health and social work activities (OQ) n=15061	4.33 [1.60;16.42]	2.33 [0.84;6.44]	1.38 [0.75;2.73]	1.16 [0.63;2.12]	1.99 [1.27;3.28]]	1.35 [0.86; 2.13]					

<i>Arts, entertainment, repair of household goods & other services (RU) n=4825</i>	2.91 [0.90;12.28]	1.99 [0.64;6.13]	0.76 [0.31;1.84]	0.76 [0.34;1.70]	1.06 [0.58;1.97]	0.85 [0.48; 1.51]
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