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Quality of work and depressive symptoms among older workers across Europe. A longitudinal analysis

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Job quality and mental health

Job Demand-Control (Job strain) model (Karasek and Theorell, 1990): the primary source of job stress and adverse mental health come from the **imbalance between job demands and low task control**

Effort-reward imbalance model (Siegrist, 2002): lack of monetary and non-monetary rewards received in return of efforts spent at work determines **emotional stress and adverse long-term effects on health**

Some studies tested these hypothesis founding mixed results (i.e. Marchand et al. 2005 used longitudinal data to control for workers' time-invariant unobservable characteristics → weak evidence)

More recent studies concentrated the attention on the relationship between unemployment and risk of poor mental health underlying a positive association

Most studies conducted on single country or case-study data and in middle-aged population with **few attention to older workers**, particularly exposed to new work efforts (intensification of job rhythms, introduction of ICT, physical demands, long lasting careers)

Job quality in late career

The objective of persuading people to work longer cannot be reached without improving older workers' job quality (Eurofound 2012)

It is agreed that maintaining and improving the quality of the job experience while employees get older is fundamental to persuade them to remain longer at work, but it is much more difficult identifying the specific dimensions that influence the perceived job quality of age-diverse workers and the concrete measures that could influence these dimensions

Combining the focus on job quality and that on ageing at work, requires taking into account those features of job quality that are mostly relevant to the ageing issue and those aspects of ageing that are relevant to job quality

Job quality in late career

Eurofound (2012) has developed an analytical framework, useful to researches on these combined topics.

The model includes four main dimensions of job quality:

1. Working conditions: changes in work, risk exposure, unusual working time, time flexibility, work rhythm, emotional pressure.
2. Health: physical and psychological health and perceived health.
3. Expressive dimensions of work: including among others, autonomy, work content, work satisfaction, work recognition, skills development, social environment.
4. Socio-economic conditions: job insecurity and career prospects.

The model should be adopted paying attention to the underlying characteristics of:

- the macro-institutional context (policy framework, economic crises etc.),
- the meso-organizational context (sector, size of the company etc.),
- the micro-level of individuals' characteristics (age, sex etc.).

Depression in later life

Depression in one of the most common mental disorder in later life

Old age is usually accompanied by a loss in social support related to changing family configurations, changes in body and in living styles, but also to changes in working conditions and retirement (especially referring to the young-old) that may increase vulnerability to depressive symptoms onset

However, depression problems affecting older individuals are still under-recognized and under-treated, due to difficulties in diagnosis : large proportions of older adults suffer from depression symptoms that do not meet criteria for psychiatric diagnosis even if they affect functioning and quality of life (George 2011) → sub-threshold depression

Job quality and depression among the older workers

Poor psycho-social conditions determine work stress which is associated with elevated probability of experiencing clinically relevant depressive symptoms among old age working men and women (Siegrist et al. 2012)

Experiencing stress at work or being in disadvantaged working position (high physical demands, job instability) are also associated with risk of reporting clinically relevant depressive symptoms during the transition from work to retirement (Wahrendorf et al. 2013)

Considering that the increase in exposure time to bad working conditions has a positive influence on depression incidence, the association between poor job quality and depression could be particularly strong among older workers

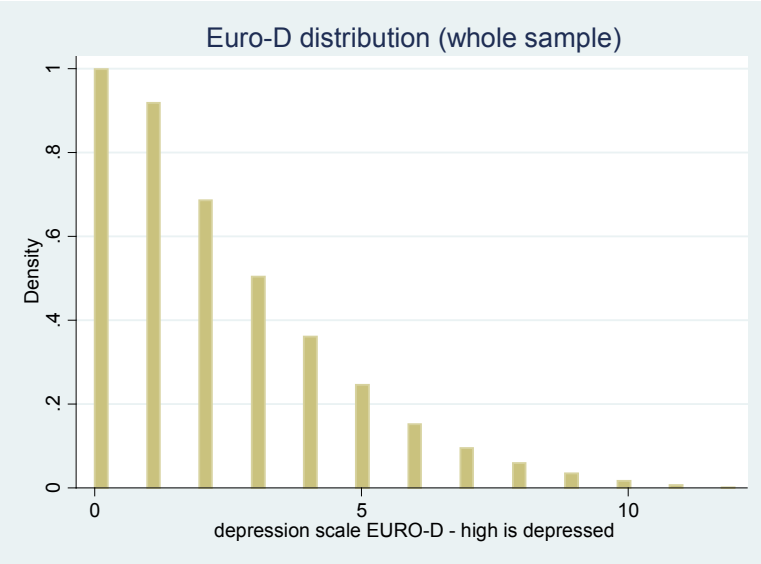
Hypothesis and Data

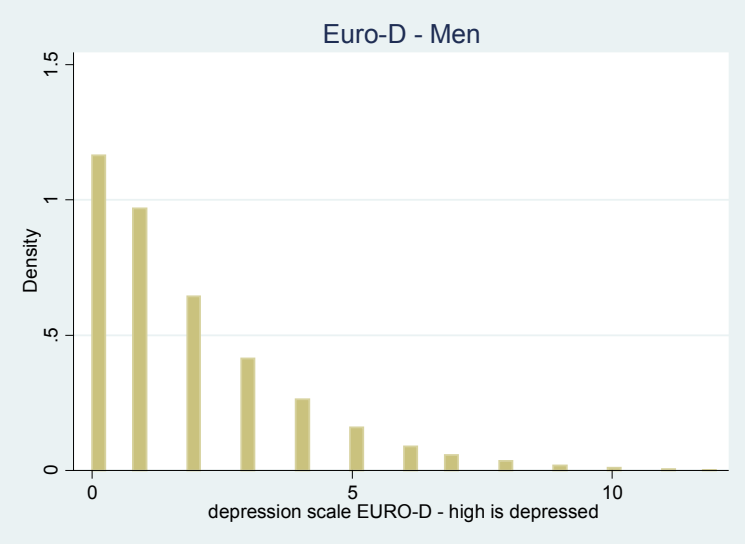
We focus on the **effects of poor job quality in late career on the onset of depressive symptoms** among the **older workers**. In particular, our research questions have concerned:

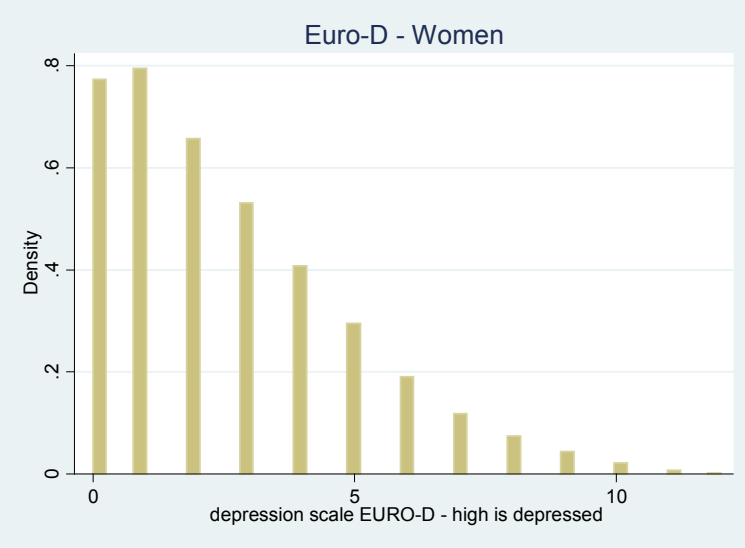
1. **Cross-country differences** in job quality among the older workers
2. **Poor job quality** as a risk factor for **depression** in late-career in the different countries

We tested our hypothesis analysing data from SHARE Waves 1, 2, 4 and 5. We selected a sample of employed respondents ("self-reported employment status") 50 to 65 years old in different EU countries (selected according to sample size).

Depression is measured using the Euro-D scale (12 items validated scale, Prince et al. 1999)


Euro-D distribution (whole sample)
Density
0
.2
.4
.6
.8
1
0
5
10
depression scale EURO-D - high is depressed


Euro-D - Men
Density
0
.5
1
1.5
0
5
10
depression scale EURO-D - high is depressed


Euro-D - Women
Density
0
.2
.4
.6
.8
0
5
10
depression scale EURO-D - high is depressed

Method: A multidimensional definition of job quality

Actually, it is not only a matter of job quality connected to ageing at work: the concept of **job quality in itself is multi-dimensional** and difficult to be defined and measured

Not all the approaches used in the literature represent adequately the multidimensional nature of complex phenomena such as job quality

Many studies in this domain are limited to developing composite indices by aggregating a certain number of indicators which represent very different dimensions within a synthetic index flattening the multidimensionality

Cluster analysis procedures are better suited to capture the multidimensional structure of the phenomena through the identification of homogeneous groups of objects based on a complex set of indicators

Method: A multidimensional definition of job quality

Among the various cluster techniques available, **we chose to adopt the two-step cluster analysis**, also called the BIRCH clustering method (Zhang, Ramakrishnan and Livny 1996), capable of handling both continuous and categorical variables and of automatically selecting the optimal number of groups

Indicators of job quality :

1. Satisfied with job
2. Job physically demanding
3. Time pressure due to a heavy workload
4. Little freedom to decide how I do my work
5. I have an opportunity to develop new skills
6. Support in difficult situation
7. Receive the recognition deserving for my work
8. Salary or earnings are adequate
9. Prospects for job advancements are poor
10. Job security is poor

Country	Cluster of quality of work (%) Poor	Medium	High	Total
Austria	26,99	33,88	39,13	100
Germany	25,99	35,44	38,57	100
Sweden	20,27	37,91	41,82	100
Netherlands	18,92	50,72	30,35	100
Spain	29,67	45,46	24,87	100
Italy	41,81	30,09	28,10	100
France	34,83	26,47	38,70	100
Denmark	17,65	39,03	43,31	100
Greece	40,13	35,46	24,41	100
Switzerland	15,48	41,84	42,68	100
Belgium	26,25	35,32	38,44	100
Israel	31,63	39,01	29,36	100
Czechia	37,87	45,09	17,05	100
Poland	42,39	36,68	20,93	100
Ireland	21,64	55,26	23,10	100
Hungary	43,26	18,79	37,94	100
Portugal	37,41	38,37	24,22	100
Slovenia	33,67	43,69	22,65	100
Estonia	37,15	41,38	21,48	100
Total	28,6	38,11	33,29	100

Method: Causal effect of job quality to depression score

$$DEP_{it} = \gamma_1 QUAL_{it} + \sum_{k=1}^{K} \beta_k X_{it} + \sum_{q=1}^{Q} \delta_q Z_i + \alpha_i + \psi_t + \varepsilon_{it}$$

DEP_{it} is the depression score of respondent i at time t.

$QUAL_{it}$ is the typology of quality of work (categorical variable with three categories)

X_{it} is a vector of k time-varying individual characteristics, weighted for their respective coefficients β_k that we consider as control variables

Z_i is a vector of q time-constant individual characteristics weighted for their respective coefficients δ_q

α_i is a time-invariant individual-specific effect that will be removed by applying the within-demeaning transformation

ψ_t corresponds to wave effects

ε_{it} is the idiosyncratic error term that capture the non-deterministic variation in the dependent variable

Random and fixed effect models

	RE		**FE**	
	Medium	*High*	*Medium*	*High*
AT	-0,593***	-0,451**	-0,137	0,472
GER	-0,430***	-0,348**	-0,339	-0,042
SWE	-0,565***	-0,711***	-0,894***	-1,003***
NL	-0,718***	-0,657***	-0,397	-0,247
SPA	-0,561***	-0,432*	-0,037	-0,325
ITA	-0,725***	0,086	-0,935	-0,268
FRA	-0,717***	-0,590***	-0,451	-0,599
DK	-0,963***	-0,794***	-0,657**	-0,547*
GRE	-0,360*	-0,119	-0,954	0,019
SWI	-1,001***	-1,046***	-0,683*	-0,682*
BEL	-0,571***	-0,712***	0,268	-0,262
ISR	-0,855***	-0,493*	-0,647	-0,919
CZ	-0,562***	-0,254	-0,501	-1,054
POL	-1,191***	-1,304***	-5,863*	-6,278*
SLO	-0,567**	-0,816***	0,277	-0,443
EST	-0,309**	-0,566***	0,530	-0,071

Control variables: wave, gender, age, marital status, education, professional status, term of job, job experience

Concluding remarks

The distribution of the three levels of job quality is largely based on the country of residence.

On average, citizens of the Nordic countries, but also those of Continental Europe, have a lower chance of belonging to clusters of poor job quality than countries in Mediterranean and Eastern Europe

Estimated models confirm the relationship between poor job quality and higher risk of report depressive symptoms

- Further steps: Instrumental variables (older workers' employment rate; changes in retirement age, …), Arellano Bond estimator to test whether depression is autoregressive (too few cases?)

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Thank you for your attention!