

# Work organisation and workforce vulnerability to non-employment : evidence from OECD's survey on adult skills (PIAAC)

Nathalie Greenan<sup>1</sup>, Ekaterina Kalugina<sup>2</sup> and Mouhamadou M. Niang<sup>3</sup>

1- CNAM-LIRSA-CEET and TEPP    2- Evry University, CNAM-CEET and TEPP    3- CNAM-LIRSA-CEET

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# Introduction

- Organisational restructuring in workplaces within OECD countries has been widely observed since the 1980s
  - ✓ Introduction of new forms of work organisation
  - ✓ Related with technological change
  - ✓ High-involvement management and high performance work practices
  
- At the same time unemployment as well as non standard forms of employment have been on the rise.
  
- Mixed impact of organisational restructuring on employees:
  - ✓ improvement of job satisfaction (through more autonomy and task complexity)
  - ✓ deterioration of working conditions (through increased stress and work pressure)
  
- More generally, in the literature
  - ✓ Studies on work organisation focus mostly on outcomes such as productivity, innovation, job satisfaction and working conditions
  - ✓ Studies on labour market vulnerability focus on supply side factors
  - ✓ Not many studies on the effects of work organisation on labour market issues, except for the feeling of job insecurity

# Introduction

- We consider a new area of impact: *vulnerability to non-employment*
  
- **Idea:** employees' ability to secure employment in changing work environments is related to the form of work organisation in which they are employed...
  - ✓ either because some forms of work organisation make enterprises more resilient to business shocks
  - ✓ or because through better skill utilisation and development, employees are more successful at adjusting their skills to business needs
  
- **Objectives:**
  - ✓ To provide an insight into the link between different forms of work organisation and the vulnerability of the workforce to non-employment
  - ✓ To identify policies and labour institutions that have an influence on this relationship

# Data

- First and second rounds of the Programme for the International Assessment of Adults Competencies (PIAAC) – a survey carried out by OECD in 2012 and 2015 :
  - ✓ Gathers information on adults' skill proficiency and how those skills are used in the workplace in addition to personal and job characteristics
  - ✓ Offers a retrospective view into employment situation over a year:
    - measure of *vulnerability to non-employment*
  - ✓ Employees are asked to describe the task they perform, indirect measures of skills, direct measures of work organisation
    - measure *some dimensions of work organisation*
  - ✓ 28 countries in econometric analysis (out of 33 in the survey)
    - Belgium (Flanders), Chile, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Israel, Italy, Japan, Korea, Lithuania, Netherlands, New Zealand, Norway, Poland, Russian Federation, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Turkey and United Kingdom (England and Northern Ireland)
- OECD, World Bank and ICTWSS (IALS) databases for country-level variables

# Measuring vulnerability to non-employment and forms of work organisation

## ➤ *Measuring vulnerability to non-employment:*

Being currently non-employed while having been employed at some point during the last twelve months

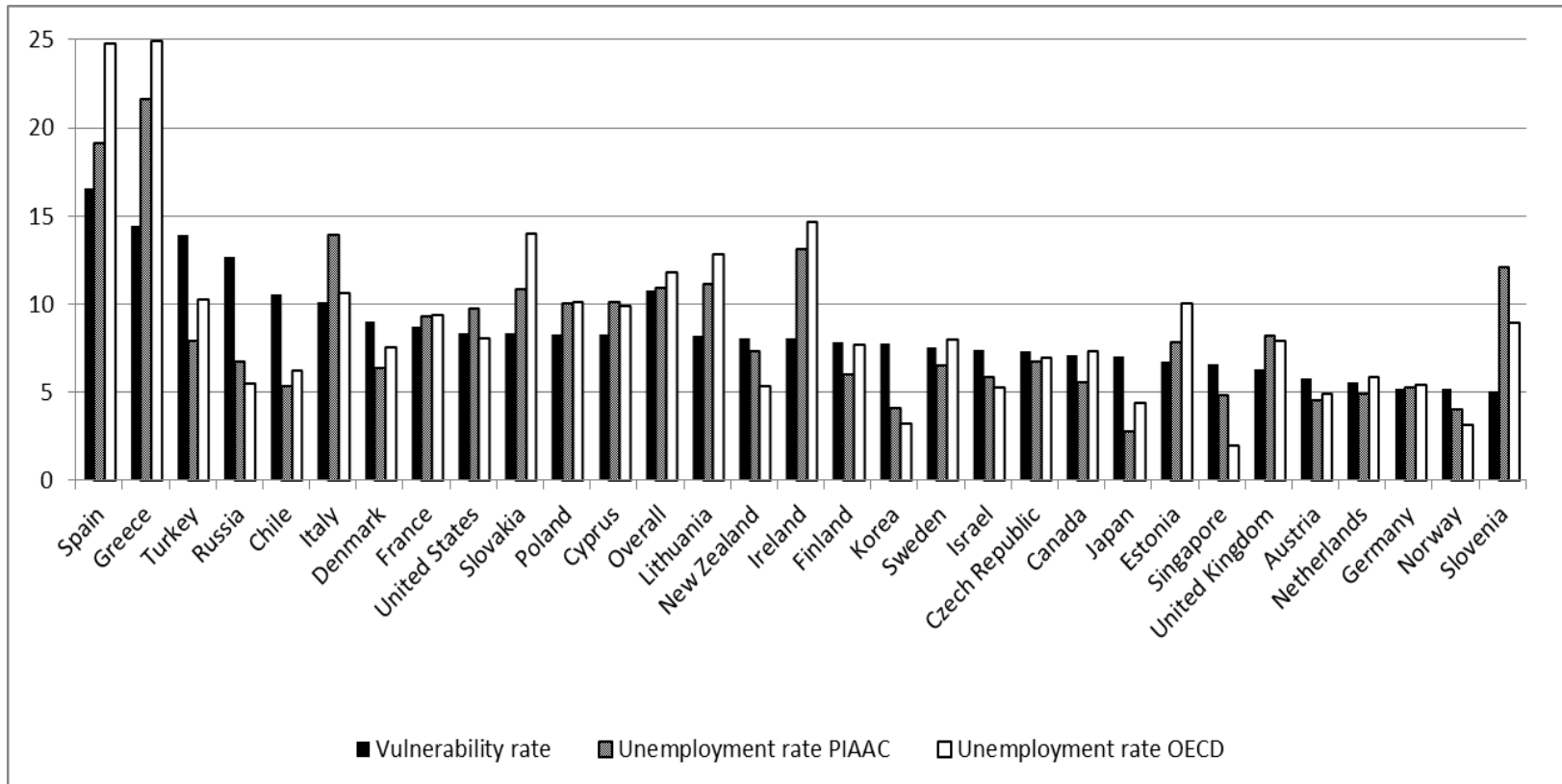
- ✓ Transition from employment to non-employment
- ✓ 8.8% of the considered population

## ➤ *Measuring forms of work organisation:*

- ✓ Discretion; problem solving; teamwork and collaboration; Influence; Formalisation; on-the-job training
- ✓ How often the task is performed: 1 never, 2 less than once a month, 3 less than once a week but at least once a month, 4 at least once a week but not every day, 5 every day
- ✓ Work organisation variables characterise the current work or the last job for those who are currently non employed (section F of the BQ)
- ✓ *Methodology:* Ward's hierarchical clustering

# Measuring vulnerability to non-employment

- Vulnerability to non-employment and unemployment rate

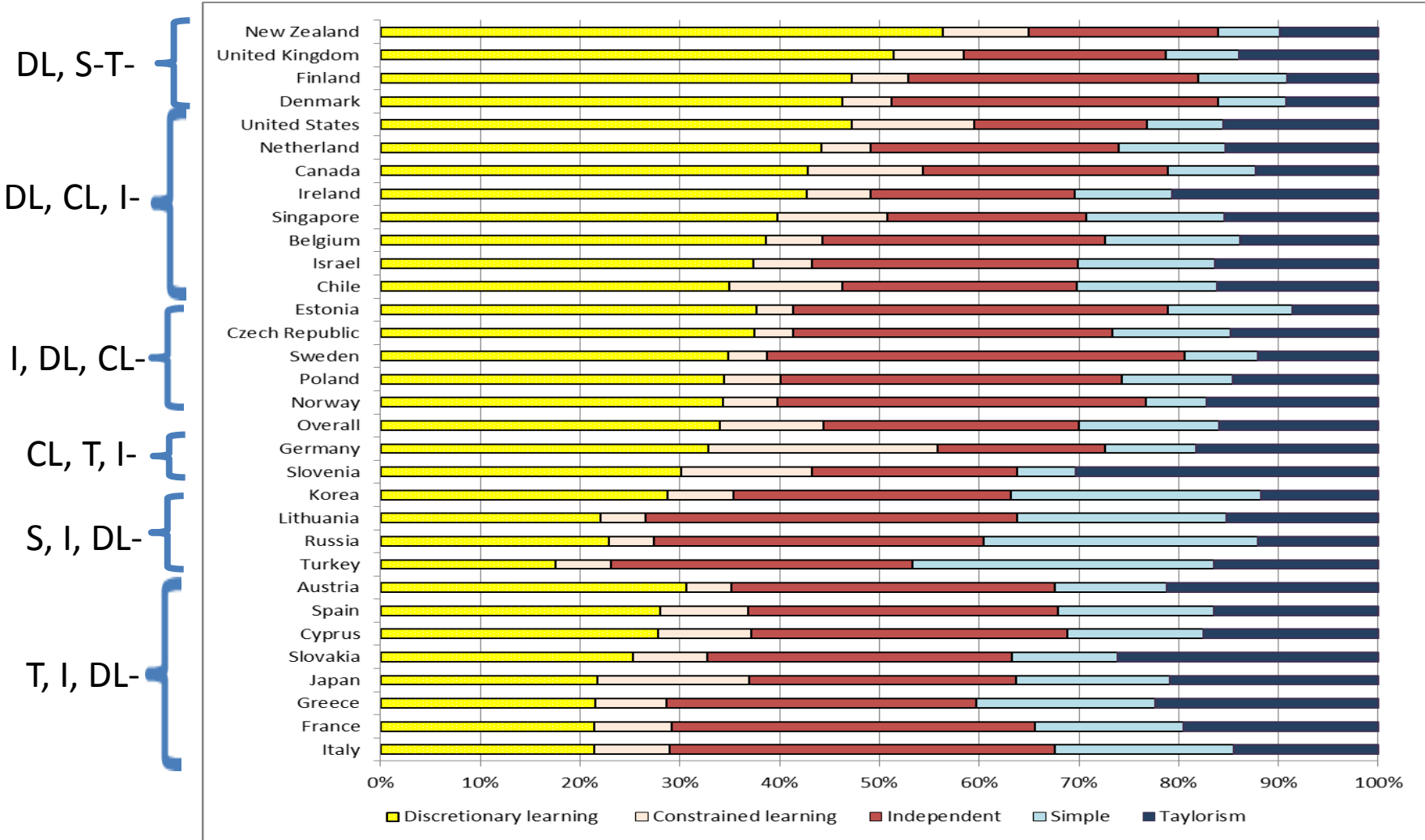


# Measuring work organisation

	Discretionary learning	Constrained learning	Independent	Simple	Taylorism	Overall
	Mean	Mean	Mean	Mean	Mean	Mean
Planning own activities	<b>4.63</b>	1.71	<b>4.69</b>	2.61	1.63	3.58
Organising own time	<b>4.77</b>	<b>4.62</b>	<b>4.78</b>	3.03	1.22	3.95
Solving complex problems	<b>3.77</b>	2.50	2.70	1.94	2.10	2.84
Sharing work-related information	<b>4.70</b>	<b>4.64</b>	<b>4.49</b>	1.68	<b>4.63</b>	4.20
Cooperating or collaborating	<b>3.77</b>	<b>3.77</b>	3.36	1.89	<b>4.07</b>	3.45
Persuading or influencing people	<b>4.25</b>	2.49	2.78	1.72	2.12	2.99
Read directions or instructions	<b>4.31</b>	<b>3.43</b>	2.94	2.14	2.88	3.33
On-the -job training	<b>0.76</b>	<b>0.45</b>	0.08	0.13	0.29	0.39
Overall	33.96	10.47	25.57	14.02	15.98	100

- **Discretionary Learning:** More frequent performance of all the tasks
- **Constrained Learning:** more constraints on the organisation of work than in DL but scores high in collaborations and sharing work-related information
- **Independent:** more informal work organisation comparing to DL
- **Simple:** simple jobs in simple organisations
- **Taylorism:** simple tasks but performed in more structured organisations than in the Simple form

# Measuring work organisation





# Work organisation and vulnerability to non-employment

	Overall	Vulnerable	Non-vulnerable
Work organisation	(%)	(%)	(%)
Discretionary learning	33.96	20.99	<b>35.21</b>
Constrained learning	10.47	<b>11.03</b>	10.41
Independent	25.57	<b>27.35</b>	25.40
Simple	14.02	<b>17.80</b>	13.66
Taylorism	15.98	<b>22.83</b>	15.32
Total	100	100	100

# Empirical strategy

- *Idea*: explaining the incidence of labour market vulnerability taking into account not only the *individual and employer characteristics* but also *the institutional context*
- We run our econometric analysis using data on 28 OECD countries
  - ✓ offers the possibility to quantify the extent to which differences in individual vulnerability reflect differences in the effects of country-specific characteristics, which are different from effects associated with variations in the characteristics of the individuals themselves
- *Multilevel logistic regression* to estimate the probability of making a transition to non-employment. We test two hypotheses:
  - ✓ H1: The forms of work organisation have an impact on the probability to make a transition from employment to non-employment
  - ✓ H2: This impact is moderated by countries' labour market institutions and economic factors

# Empirical strategy

## ➤ *Model*

$$\pi_{ij} = \log\left(\frac{p_{ij}}{1 - p_{ij}}\right) = \beta_{1j} + \sum_{k=2}^5 \beta_{kj} c_{kij} + \beta_6 x_{ij}$$

with:

$$\begin{aligned}\beta_{1j} &= \gamma_1 + \gamma_{11} z_j + r_{1j} \\ \beta_{kj} &= \gamma_k + \gamma_{k1} z_j + r_{kj}\end{aligned}$$

where:

$c_{kij}$  -  $k$  forms of work organisation

$x_{ij}$  - job (occupation, type of contract, hours worked, computer use) and employer characteristics (institutional sector, size, industry) as well as sociodemographic characteristics (gender, age, education, marital status, children, immigration status, education level of parents)

$z_j$  - country-level variables

*We suppose that belonging to one of the form of work organisation does not have the same effect on vulnerability to non-employment according to national contexts*

# Empirical strategy

## ➤ *Institutional and economic factors:*

### ✓ *Labour market policies (LMP)*

- It is usually considered LMPs are important to explain the transition from “unemployment” to “employment” i.e. impact the *incentives to supply* labour
- However, LMP, especially active LMP, also *favour general employability* of individuals and thus contribute to the job stability and decreased individual *vulnerability to non employment*

### ✓ *Industrial relations*

- *Strictness of employment protection legislation*
- *Degree of centralisation of wage bargaining*
- More centralised wage bargaining and stricter employment protection are supposed to decrease the probability to be vulnerable to non-employment

### ✓ *Economic factors*

- *Share of employment in services*
- *R&D expenditure as a percentage of GDP*
- *GDP growth rate*

# Results

	Multilevel logistic regression			
	Model 1	Model 2	Model 3	Model 4
<u>Fixed Effects estimates</u>				
Intercept	-1.574***	-1.938***	-1.867***	-1.897***
<u>Work organisation (ref. Taylorism)</u>				
Discretionary learning	-0.571***	-0.559***	-0.543***	-0.636***
Independent	-0.141**	-0.125**	-0.114*	-0.172***
Simple	-0.220***	-0.186**	-0.202***	-0.256**
Constrained learning	-0.200**	-0.217***	-0.200**	-0.391***
<u>Random effects estimates</u>				
Intercept	0.141 (0.037)	0.048 (0.014)	0.091 (0.026)	0.087 (0.025)
Discretionary learning	0.096 (0.026)	0.035 (0.010)	0.093 (0.027)	0.064 (0.018)
Independent	0.061 (0.016)	0.023 (0.007)	0.041 (0.012)	0.035 (0.010)
Simple	0.084 (0.023)	0.043 (0.013)	0.051 (0.015)	0.060 (0.017)
Constrained learning	0.147 (0.039)	0.088 (0.026)	0.109 (0.031)	0.055 (0.016)
Number of observations level 1	89705	78439	78985	80317
Number of observations level 2	28	23	24	24
-2 Log Pseudo-Likelihood	3.0089E8	2.3121E8	2.4958E8	2.2601E8

# Results

- The impact of the forms of work organisation and country-level heterogeneity

Country-level variable * Work organisation	Model 2: Labour market policies				
	Intercept	Forms of work organisation			
	Taylorism (reference)	Discretionary learning	Independent	Simple	Constrained learning
<b>Economic factors</b>					
Share of services in employment	-0.648	2.007***	0.010	1.275	-0.079
GDP growth rate	-0.009	-0.078**	-0.041	-0.025	-0.169***
Research & Development (% GDP)	-0.180***	0.036	0.134***	-0.035	-0.018
<b>Labour Market Institutions</b>					
<i>Expenditures on labour market policies (% GDP)</i>					
Public employment services and administration	-0.818*	-0.271	0.065	-0.302	-0.410
Training	1.421***	-0.392	-0.453*	-0.075	-0.393
Employment and start-up incentives	1.756***	-1.737***	-1.029***	-0.175	-0.387
Sheltered and supported employment and rehabilitation and direct job creation	-0.540*	0.616**	0.411*	0.401	0.510
Passive labour market policies	0.015	-0.132	-0.100	-0.253**	-0.369***
<i>Strictness of employment protection legislation</i>					
Individual and collective dismissals	.	.	.	.	.
Use of temporary contract	.	.	.	.	.
<i>Trade union and wage setting</i>					
Measure of the Centralisation of wage bargaining	.	.	.	.	.
Measure of the Centralisation of wage bargaining squared	.	.	.	.	.
Number of individuals	78439				
Number of countries	23				
-2 Log Pseudo-Likelihood	2.3121E8				

# Results

Country-level variable * Work organisation	Model 3: Employment protection legislation				
	Intercept	Forms of work organisation			
	Taylorism (reference)	Discretionary learning	Independent	Simple	Constrained learning
<b>Economic factors</b>					
Share of services in employment	-0.317	0.342	-0.955	1.213	-0.705
GDP growth rate	-0.110***	0.013	0.029	0.085***	-0.011
Research & Development (% GDP)	-0.056	-0.012	0.099*	-0.038	-0.078
<b>Labour Market Institutions</b>					
<i>Expenditures on labour market policies (% GDP)</i>					
Public employment services and administration	.	.	.	.	.
Training	.	.	.	.	.
Employment and start-up incentives	.	.	.	.	.
Sheltered and supported employment and rehabilitation and direct job creation	.	.	.	.	.
Passive labour market policies	.	.	.	.	.
<i>Strictness of employment protection legislation</i>					
Individual and collective dismissals	-0.270*	0.010	0.051	0.321***	0.342**
Use of temporary contract	0.118*	0.038	0.009	-0.036	-0.114
<i>Trade union and wage setting</i>					
Measure of the Centralisation of wage bargaining	.	.	.	.	.
Measure of the Centralisation of wage bargaining squared	.	.	.	.	.
Number of individuals	78985				
Number of countries	24				
-2 Log Pseudo-Likelihood	2.4958E8				

# Results

Country-level variable * Work organisation	Model 4: Centralisation of wage bargaining system				
	Intercept	Forms of work organisation			
	Taylorism (reference)	Discretionary learning	Independent	Simple	Constrained learning
<b>Economic factors</b>					
Share of services in employment	1.267	0.575	-1.125**	-0.979	-3.160***
GDP growth rate	-0.051	-0.027	0.001	0.022	-0.123***
Research & Development (% GDP)	-0.127*	0.002	0.124***	0.088	0.035
<b>Labour Market Institutions</b>					
<i>Expenditures on labour market policies (% GDP)</i>					
Public employment services and administration	.	.	.	.	.
Training	.	.	.	.	.
Employment and start-up incentives	.	.	.	.	.
Sheltered and supported employment and rehabilitation and direct job creation	.	.	.	.	.
Passive labour market policies	.	.	.	.	.
<i>Strictness of employment protection legislation</i>					
Individual and collective dismissals	.	.	.	.	.
Use of temporary contract	.	.	.	.	.
<i>Trade union and wage setting</i>					
Measure of the Centralisation of wage bargaining	-0.234	-0.646	-0.244	0.197	-0.639**
Measure of the Centralisation of wage bargaining squared	-4.120***	4.856***	3.254***	1.363	6.467***
Number of individuals	80317				
Number of countries	24				
-2 Log Pseudo-Likelihood	2.2601E8				



# Conclusions

- A significant impact of work organisation on vulnerability to non-employment after controlling for relevant job and personal characteristics:
  - ✓ Compared with *Taylorism* employees' in all other forms of work organisation have a lower probability of making a transition to non-employment.
  - ✓ Employees in *Learning* forms of work organisation, where they have a certain degree of discretion in the planning of their activities and time, are the least vulnerable.
- Employment policies need to take into account the structure of the economy in terms of forms of work organisation:
  - ✓ Labour market policies, employment protection legislation and the centralisation of the wage bargaining system moderate the impact of forms of work organisation
- Further research is needed on how to promote discretionary learning forms of work organisation
- In PIAAC, enrich the questions on work organisations for the currently working *and* the last job