

Investment patterns in vocational Adult Education and Training in international comparison

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Differences of results by distinguishing and combining Formal and Non-formal Education

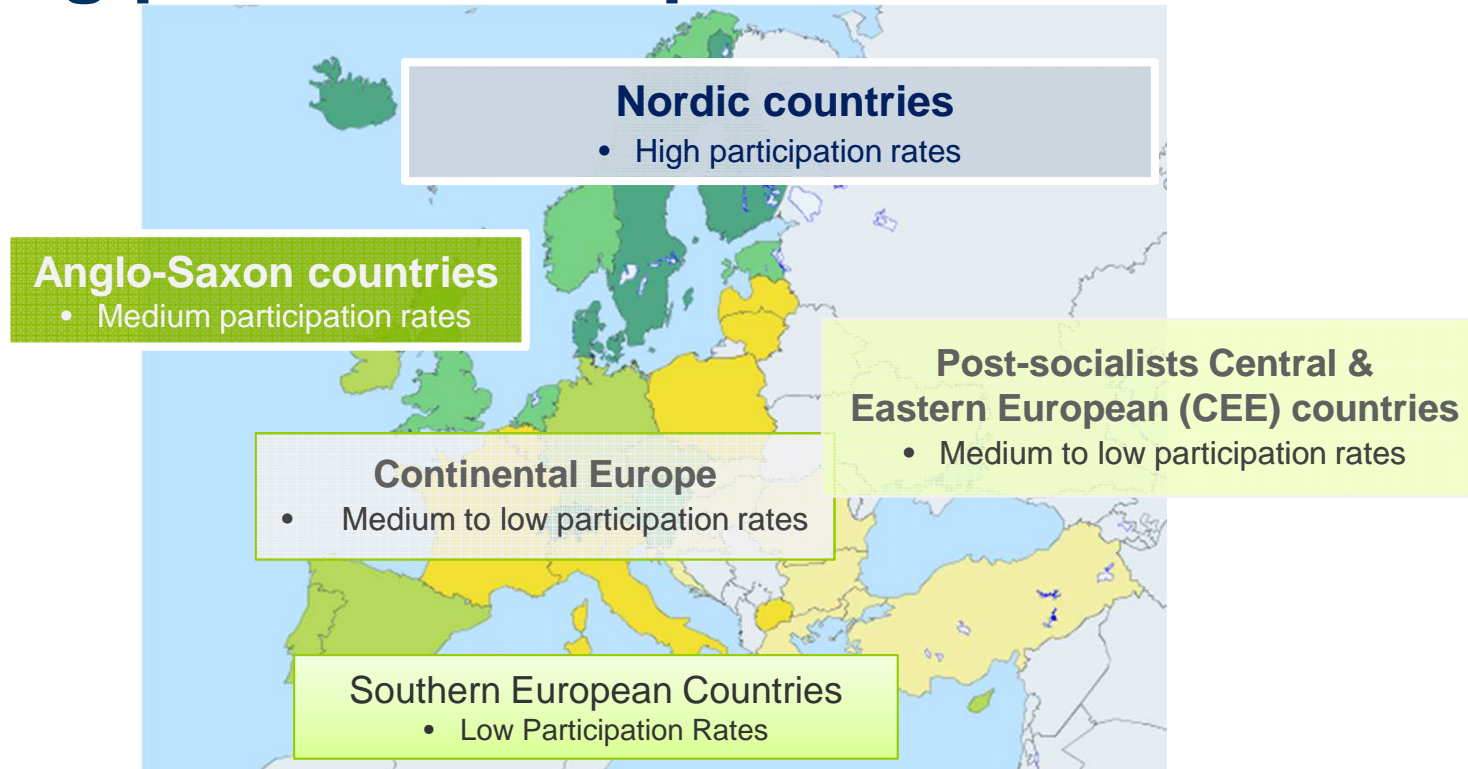
Presentation at the 4th EU-Microdata User-conference
in Mannheim, March 5-6, 2015

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Outline

- Background & Theoretical Framework
- Research questions
- Formal Education (FED) & Non-formal Education (NFE) in international comparison
- Data base & operationalisation
- Analyses & Results
- Discussion

Starting point – Participation in AET



- general participation pattern homogenous
- extent of inequality in access to adult education heterogeneous
- employers main source of funding for training
 - different patterns and determinants of participation in employer-sponsored vs. non-employer-sponsored AET

Overall theoretical framework

Varieties of capitalism approach

LME

= 'liberal market economies'
(here: UK)

Labour market

rather weak employment & unemployment protection

Skill formation system

general skills

firm specific skills

CME

= 'coordinated market economies'
(here: Germany & Norway/Sweden)

high security in employment or unemployment protection

industry/occupational specific skills

'Mediterranean countries'

= characteristics of LME & CME
(here: France & Spain)

DME

= 'dependent market economies'
(here: Latvia/Lithuania)

rather weak employment & unemployment protection

firm specific skills

general skills

(Hall/Soskice 2001; Estevez-Abé et al. 2001; Nölke/Vliegenthart 2009)

Research Questions

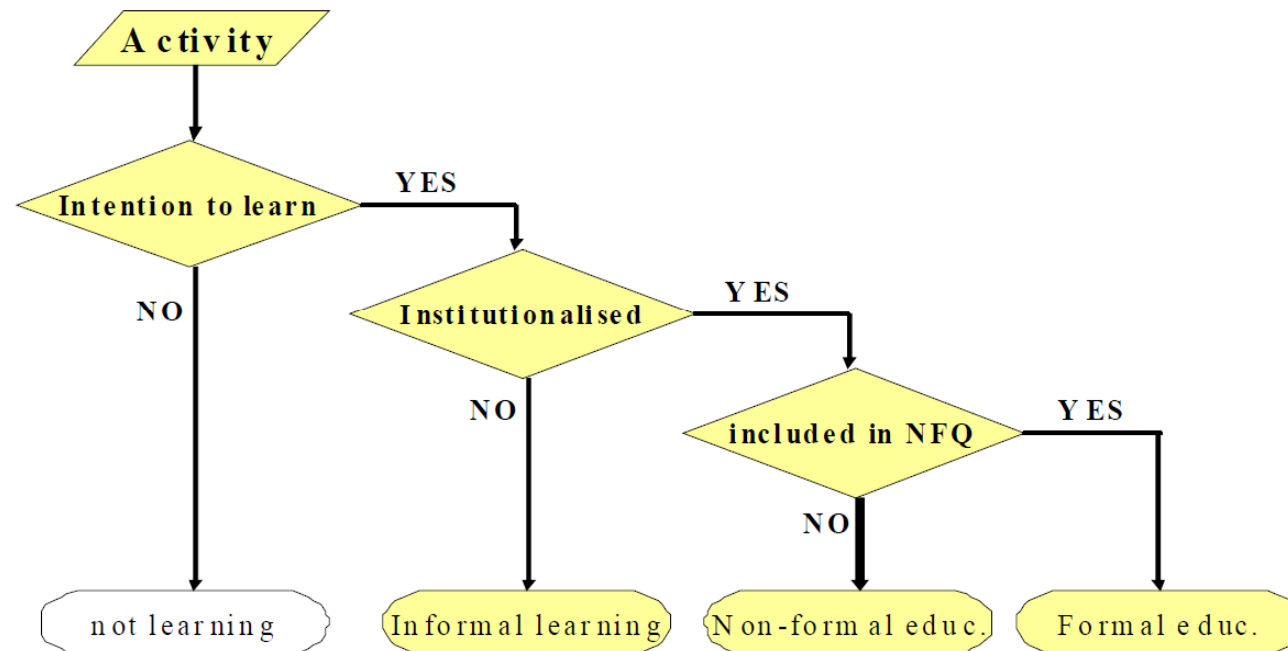
Starting point: Cross-country variation of AET *investment-patterns* as an indicator for different welfare production regimes and corresponding employer and state investment

Research questions

1. *Exist systematic differences in patterns of investment in AET in different countries that can theoretically be related to LME, CME, DME & mediterranean countries?*
2. *Exist systematic differences in characteristics of activities in diverse investment-segments (duration, reasons, participants) that can theoretically be related to LME, CME, DME & mediterranean countries?*
3. ***To answer these questions, is it better to use FED activities, NFE activities, or FED+NFE activities combined?***

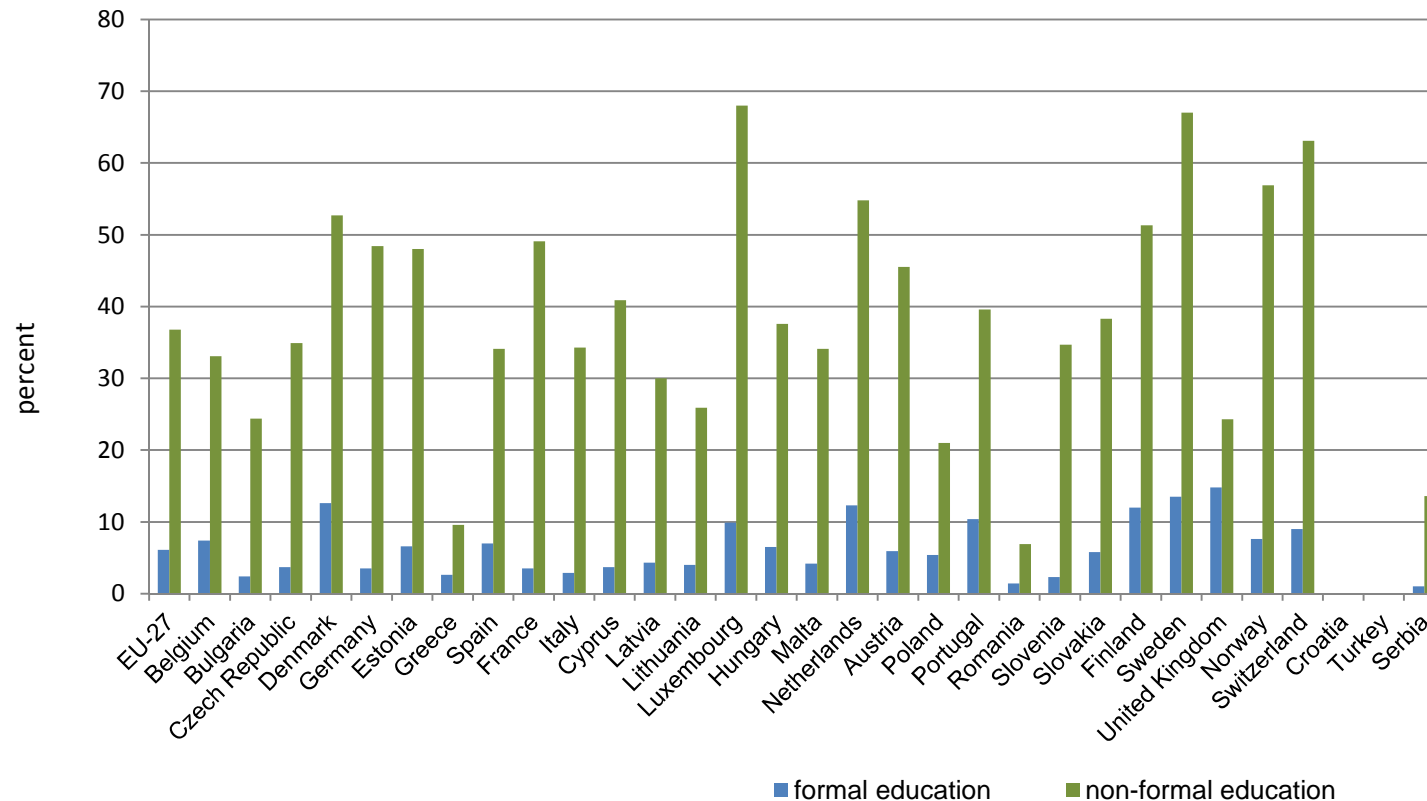
Definitions: FED, NFE, INF (CLA 2006) used in AES 2011

Chart A1 – Forms of learning in the CLA (2006)



FED vs. NFE in international comparison

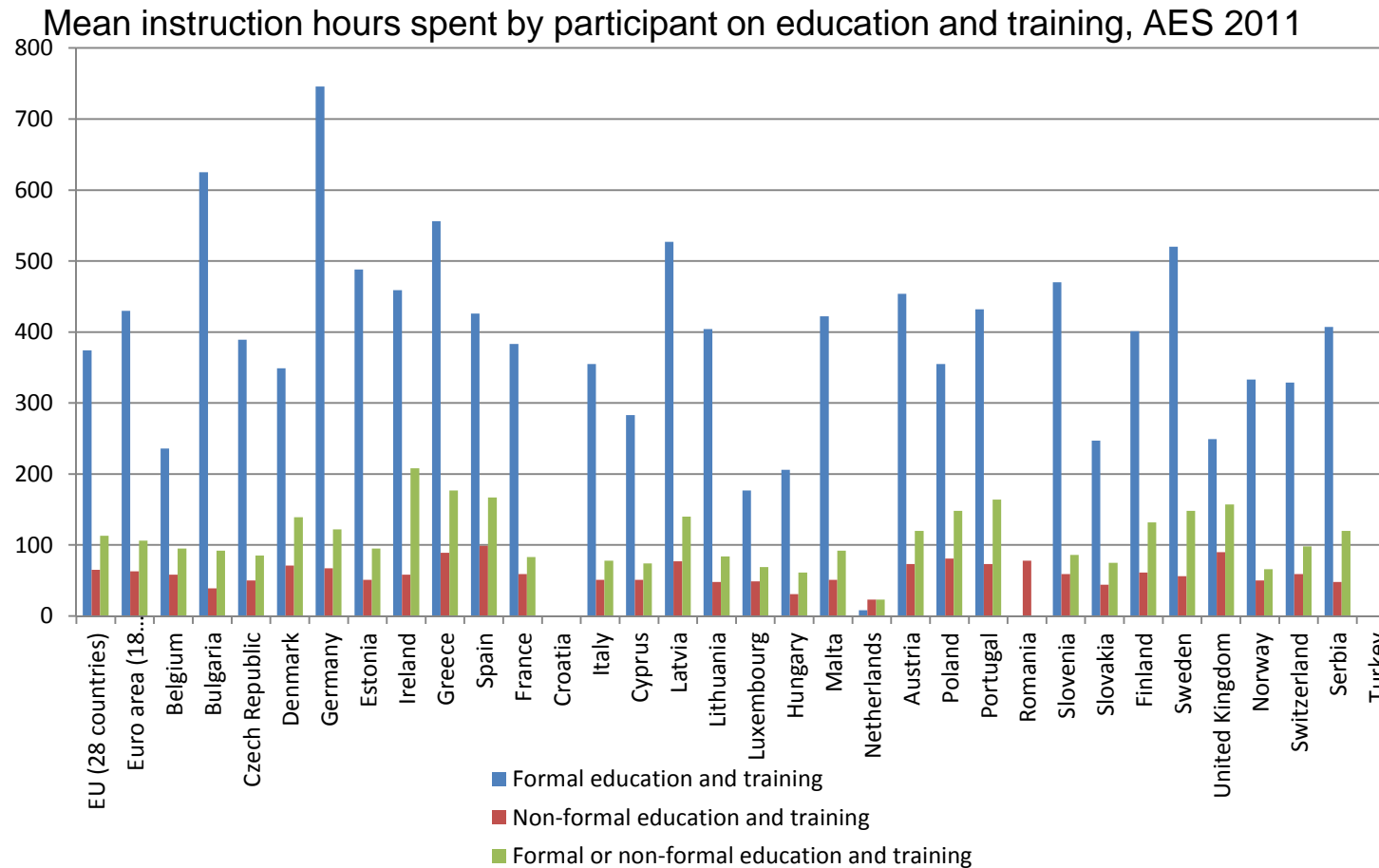
Participation rates by activity type, AES 2011



“Therefore, it is recommended to combine FED and NFE in comparative research” (Behringer, Schönfeld 2014).

Source: Eurostat database, retrieved 02/26/2015

FED vs. NFE in international comparison II



Source: Eurostat database, retrieved 02/26/2015

Data base & sample restrictions

Adult Education Survey (AES) 2011 (Eurostat, scientific-use-file)

- **Europe-wide study about participation in Lifelong Learning (2nd wave)**
- **Sample:** 25-64-old population; gainfully employed persons; no family workers
- **Selection of eight countries according to theoretical framework**

	CME	CME	DME	Medit. Country	Medit. Country	LME
	Nordic Countries (Norway, Sweden)	Germany	Baltic States (Lithuania, Latvia)	Spain	France	UK
N (individuals) [Total 35,294]	4,665	4,190	6,127	9,535	8,614	2,163

- **Participation in job-related AET (during the last 12 months)**

FED & NFE

Activity dataset

FED-activity

- information on most recent educational activity
- interpreted as job-related due to missing information about purpose

NFE-activities

– detailed information for 2 randomly selected NFE-activities

• 1. activity

- Private lessons / courses
- Seminars or workshops
- Courses conducted through open and distance education
- Guided on the job training

• 2. activity

- Private lessons / courses
- Seminars or workshops
- Courses conducted through open and distance education
- Guided on the job training

for job
related
reasons

Activity dataset

Activity dataset

	CME	CME	DME	Medit. Countries	Medit. Country	LME
	Nordic Countries (Norway, Sweden)	Germany	Baltic States (Lithuania, Latvia)	Spain	France	UK
All activities Total: 24,891	5,247	3,414	3,106	5,302	6,688	1,134
FED activities Total: 2,065	415	98	276	629	286	361
NFE activities (1 st & 2 nd) ; Total: 22,826	4,832	3,316	2,830	4,673	6,402	773

For descriptive analyses data are weighted by adjusted weight for activities
(according to Eurostat (2013): Draft AES manual. Version 9, S. 249ff.)

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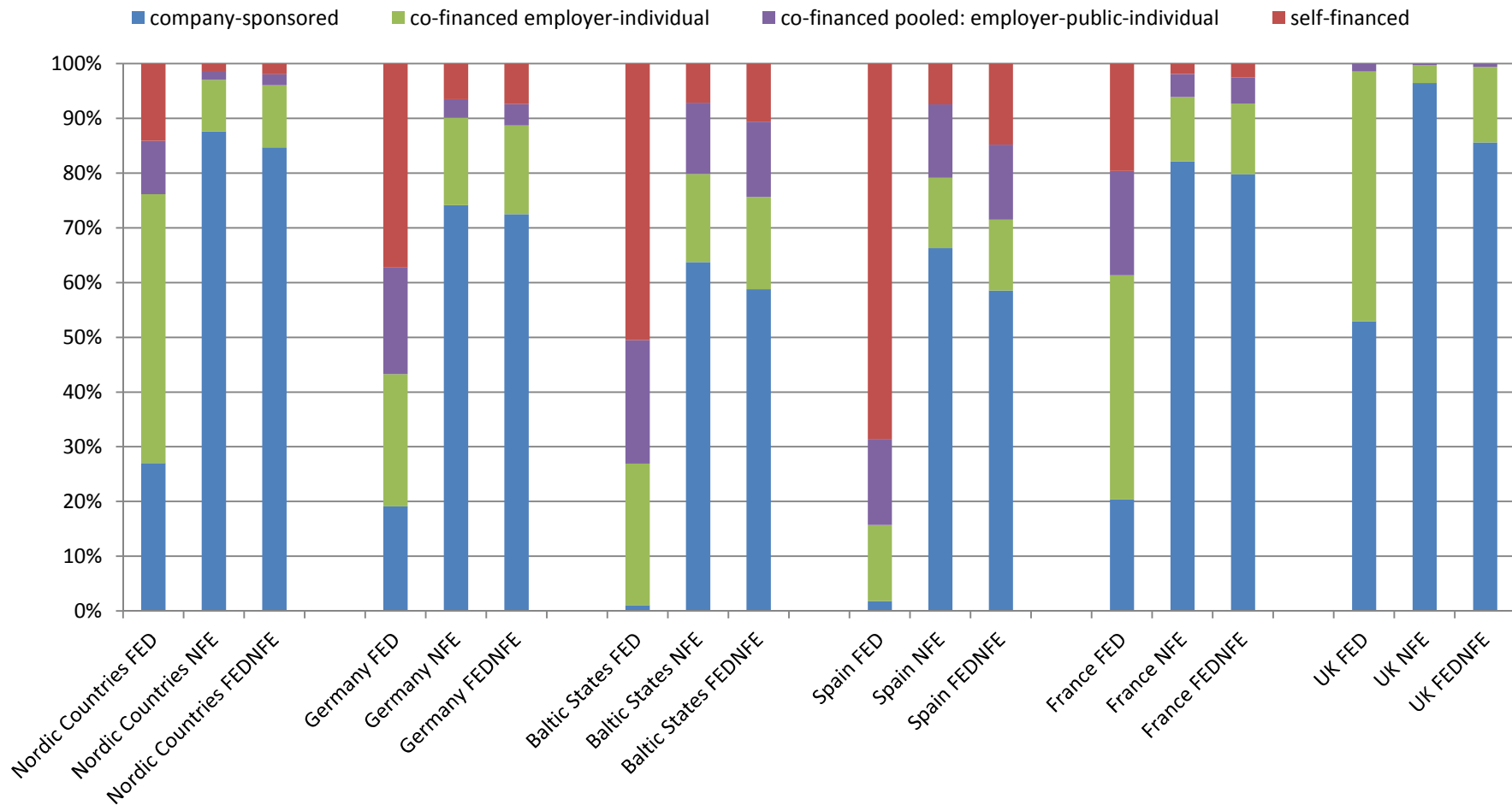
- $NFEACTWEIGHT = RESPWEIGHT * (NFENUM / NFENUM) = RESPWEIGHT$
→ if individual participated in 1 or 2 activities (then they will all be selected for further details)
- $NFEACTWEIGHT = RESPWEIGHT * (NFENUM / 2)$.
→ if individual participated in at least 3 activities (a max. of 2 will be selected to represent all of the individual's activities)
- Activityweight =
 - participation in FED only: Activityweight = RESPWEIGHT
 - participation in NFE only: Activityweight = $RESPWEIGHT * (NFENUM / 2)$
 - participation in FED AND NFE: Activityweight = $RESPWEIGHT * [FEDNUM + NFENUM] / 3$

Operationalisation of investment segments

<i>AET for job related reasons</i>	
company-sponsored	self-financed
costs fully paid by employer OR free of charge	costs fully paid by individual OR free of charge
AND fully during working hours	AND fully outside working hours
OR Guided on the job training	

Analyses & Results

Distribution of investment segments for job-related FED, NFE & FED-NFE activities in countries grouped



Database: all job-related FED/NFE activities; weighted by Activityweigh; N=21,759t

Multivariate analyses

Dependent variables:

- participation company-sponsored activity (Ref.: participation in all other segments)
- Participation in co-finance-pooled activity (Ref.: dito)

Logistic regressions

- for each country / country group separately
- for NFE, FED, and FED+NFE
- Robust standard errors, correcting for clustered outcomes

Independent variables:

Age, Sex, Formal qualification, Occupational classification, Contract, Working Time, Duration of Job, Company Size, Reasons for participation

FED models suffered from low case numbers

Comparison of multivariate results – FED+NFE vs. NFE

Logistic regression models with robust standard errors correcting for clustered outcomes. DV= participation in company-sponsored activities; Direction of significant influences		Norway, Sweden		Lithuania, Latvia		Germany		Spain		France		UK	
		FED+ NFE	NFE	FED+ NFE	NFE	FED+ NFE	NFE	FED+ NFE	NFE	FED+ NFE	NFE	FED+ NFE	NFE
Age	<i>RC: 35-44</i>												
	25-34											+	
	45-54					-	-	+	+				
	55-64					-	-					+	
Sex	<i>Female (RC: Male)</i>			-	-	-	-	-	-	-	-		
Formal qualification	<i>RC: higher Education</i>												
	Low Education							+	+				-
	Medium Education	+	+	+	+	+	+	+	+	+	+		
Occupational classification	<i>RC: high skilled non-manual (ISCO1-2)</i>												
	elementary occupations (ISCO 9)							+	+	+	+		
	low skilled nonmanual (ISCO 3-5)					+	+	+	+	+	+		
	skilled manual (ISCO 6-8)							+	+	+	+		
Contract	<i>RC: Unlimited contract</i>												
	Limited contract	-	-	-	-	-	-	-	-	-	-		
	Self-employed	-	-	-	-	-	-	-	-	-	-		
Working Time	<i>Part-time (RC: Full-time)</i>					-	-	-	-	-	-		
Duration of Job	Duration of employment in current job (centered)	-	-			+	+						+
	Duration of employment in current job (centered, squared)	+	+	-									+
Company Size	<i>RC: 1-10 persons</i>												
	11-19 persons							-	-	+	+		
	Don't know, but more than 10 p.												
	20-49 persons	+	+							+	+		
	50 persons & more	+	+	+	+	+	+			+	+		
Reasons for participation	adjustment/improvement	+	+	+				+					
	Change	-	-	-	-	-	-	-	-	-	-		
	obligation/certification	+	+			+	+	+	+	+	+	+	
	interest	-	-			-	-	-	-	-	-	+	
N		3,250	3,072	2,748	2,496	2,913	2,829	4,653	4,113	5,872	5,623	438	224
Pseudo-R2 (NK)		0.135	0.110	0.124	0.058	0.192	0.188	0.116	0.086	0.251	0.226	0.443	0.283

Comparison of multivariate results – FED+NFE vs. NFE

Logistic regression models with robust standard errors correcting for clustered outcomes. DV= participation in co-financed pooled activities Direction of significant influences (p<=.05)		Norway, Sweden		Lithuania, Latvia		Germany		Spain		France		UK	
		FED+NFE	NFE	FED+NFE	NFE	FED+NFE	NFE	FED+NFE	NFE	FED+NFE	NFE	FED+NFE	NFE
Age	RC: 35-44												
	25-34												
	45-54					+	+						
	55-64						+						
Sex	Female (RC: Male)			+	+								
Formal qualification	RC: higher Education												
	Low Education							-					
	Medium Education							-					
Occupational classification	RC: high skilled non-manual (ISCO1-2)												
	elementary occupations (ISCO 9)												
	low skilled nonmanual (ISCO 3-5)			-				-	-				
	skilled manual (ISCO 6-8)							-	-				
Contract	RC: Unlimited contract												
	Limited contract	+	+	+	+		+	+	+	+			
	Self-employed			+	+					+	+		
Working Time	Part-time (RC: Full-time)				+					+	+		
Duration of Job	Duration of employment in current job (centered)	+						-	-				
	Duration of employment in current job (centered, squared)							+	+				
Company Size	RC: 1-10 persons												
	11-19 persons										-	-	
	Don't know, but more than 10 p.							+					
	20-49 persons	-	-						+				
	50 persons & more	-	-										
Reasons for participation	adjustment/improvement				-								
	Change	+	+			+	+			+	+		
	obligation/certification									-	-		
	interest								+	+			
N		3,250	3,072	2,748	2,496	2,913	2,829	4,653	4,113	5,872	5,623		
Pseudo-R2 (NK)		0.173	0.142	0.051	0.058	0.169	0.173	0.068	0.081	0.211	0.201		

Discussion

Discussion I

- Finance segments differ by country group AND type of learning activity; differences between countries seem more pronounced for FED
 - Activities financed by employers-only have the greatest share among NFE activities in all country groups, but at different levels
 - Determinants of participation in the employer-sponsored and co-finance-pooled segments differ in characteristic ways
 - There are several factors that show significant influence in the same direction in most countries
 - However there are also characteristic patterns of (in)significant factors
-
- **different finance segments seem to exist**
 - **meaning in national contexts needs to be further explored considering national education systems**

Discussion II

Depending on the research question it might be wise to combine FED and NFE

- Definition of FED and NFE may vary between countries
 - Regarding finance segments of further education, there seem to exist different structures between FED & NFE (and supposedly: determinants)
 - If FED & NFE are combined, these differences would not be seen
 - Other models and determinants might be useful for analysing FED
 - Alternative approach of combining activities could be a definition according to instruction hours (e.g. general cut-off at 400)
- Perspective for further research: multilevel analysis with macro indicators

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Thank you for your attention!
Questions & Comments are welcome!

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