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"LABOUR IS NOT A COMMODITY"

The Value of Work
and its Rules between
Innovation and Tradition

TODAY

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X Edition



MAPPING TRANSITIONAL LABOUR MARKETS MODELS IN EUROPE



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INSTITUTUL NAȚIONAL DE CERCETARE ȘTIINȚIFICĂ
ÎN DOMENIUL MUNCII ȘI PROTECȚIEI SOCIALE
- INCSMPS



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Disruptive factors (population ageing, migration, globalisation, digitisation & digitalisation transformation, artificial intelligence, knowledge economy, climate changes, carbon emission) ***radically change the world*** of ***work***.

Europe's new paradigm "Social Investment" is centred on individual and focused on improving ***employability***, the ***fact that indicate the restoring of a long-term perspective***.

Bredgaard and Madsen (2018) revised the flexicurity concept.

Schmid, and Gazier (2002) TLM Integration and adaption

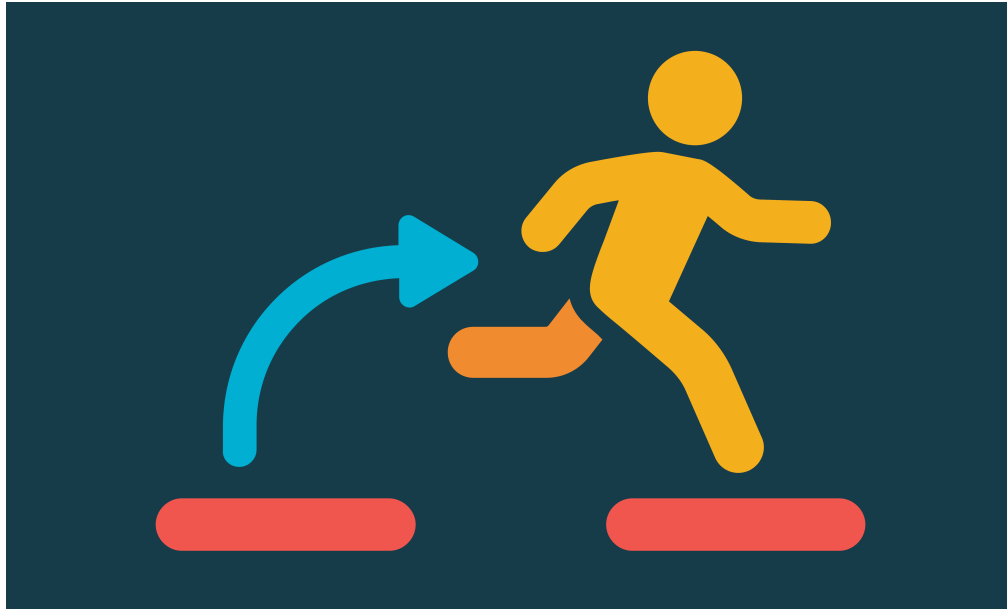
Schmidt (2009) lifetime

Gazier and Gautié (2009) a systemic perspective", with the European labour markets, collective and structured version of the "social investment" paradigm.

Brzinsky-Fay (2010) improve the concept in theoretical and methodological terms.

Gazier (2010) TLM dynamic adaptation policy of labour markets to the globalised world.

*Schmid (2017) enriches the TLM with "transitions from one employment status to the other, **including combinations of work and education** or work and unpaid care",*



Our analysis is focused on change of **job tenure** by different intervals as well as by the mirror image in **unemployment duration by intervals**, as it possible comparable. On the background of the knowledge economy presence we emphasize *the tendency of shrinking the job tenure coupled with increasing unemployment spells*. **These processes are in the same time and cover a unique market – EU market.**



On this background our research question is:

What are the patterns of job tenure change and unemployment incidence change across Europe for main target LMP's policies groups of youth, adults and old workers by gender?

*This question is made in the background of TLM shift in **knowledge economy KE** more and more manifestation. The adoption of the **new** at the organisation level, an especially the **radical** new request training in view **to acquire new adequate skills**. (Rainie & Anderson, 2017) The need for training is increasing in view to minimise the skill mismatch generated by (**qualified**) **labour shortage** – increases the frequencies of transitions working- unemployment, or in other words ore and more. **changes the job tenure and unemployment duration***

“Michaelides, Economakis, & Lagos (2006) uses **Multivariate Clustering Analysis** for **employment and regional planning** in Greece. (Bena et al., 2013) apply this tool to analyse the *job tenure and work injuries* in relation with previous experience and difference by age. (Tatarczak & Boichuk, 2017, 2018) apply multivariate methods and explore **the nature of youth unemployment and unemployment in Poland** in more precise detail using dendograms.

We use Multivariate Clustering Analysis (MCA) tool allow to “organise, group, differentiate and catalogue” the European transitional labour markets.

Spatial unit is NUTS 0, respectively country level and the software is ARC GIS Pro. **Multivariate clustering analysis (MCA) tool uses K-Means algorithm.** The natural clusters are identified directly from the data, MCA is an unsupervised machine learning method. Data are grouped in clusters “*where all the features within each cluster are as similar as possible, and all the clusters themselves are as different as possible*”. MCA is not a spatial tool but produce a spatial pattern of transitional labour markets by gender and age.

Labour Force Statistics (LFS) survey is the main source that provide data which are used to compile the statistics on employment and unemployment in OECD.stat.

Job tenure “is measured by the length of time workers have been in their current or main job or with their current employer and are expressed in numbers of years/months- This information is valuable for **estimating the degree of fluidity in the labour market and in identifying the areas of economic activity where the turnover of labour is rapid or otherwise**”.

Unemployment duration definition states that the “duration is the minimum between the **duration of job search and the duration of joblessness**. Duration “Less than one month” refers to the duration of unemployment during the previous four weeks, including the survey reference week”. **Unemployment duration** uses the “Incidence of unemployment by duration „from OECD.Stat, which cover over 30 countries. <https://stats.oecd.org/>, metadata

Change is the a difference between levels of the variables in 2018 and 2009

		YMsk1	AMsk2	OMsk3	YWsk4	AWsk5	OWsk6	YMk7	AMk8	OMk9	YWk10	AWk11	OWk12
/inputs		job duration - s						unemployment duration					
		M- Males			W- women			M- Males			W- women		
		15-24	25-54	55-64	15-24	25-54	55-64	15-24	25-54	55-64	15-24	25-54	55-64
		Y	A	O	Y	A	O	Y	A	O	Y	A	O
d1	< 1 month	YMsd1	AMsd1	OMsd1	YWsd1	AWsd1	OWsd1	YMd1	AMd1	OMd1	YWd1	AWd1	OWd1
d2	1 to <6 months	YMsd2	AMsd2	OMsd2	YWsd2	AWsd2	OWsd2						
d21	> 1 month and < 3 months							YMd21	AMd21	OMd21	YWd21	AWd21	OWd21
d22	> 3 month and < 6 months							YMd22	AMd22	OMd22	YWd22	AWd22	OWd22
d3	> 6 month and < 1 year	YMsd3	AMsd3	OMsd3	YWsd3	AWsd3	OWsd3						
d5	1 year and over							YMd3	AMd3	OMd3	YWd3	AWd3	OWd3
d4	10 years and over	YMsd4	AMsd4	OMsd4	YWsd4	AWsd4	OWsd4	YMd5	AMd5	OMd5	YWd5	AWd5	OWd5
Results		YMs6	AMs3	OMs3	YFs5	AFs3	OFs3	YM4	AM3	OM8	YW6	AW4	OW2

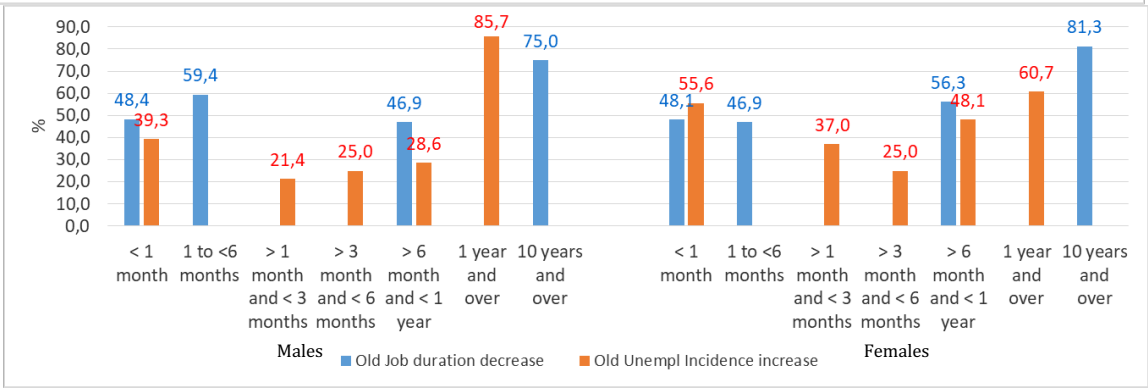
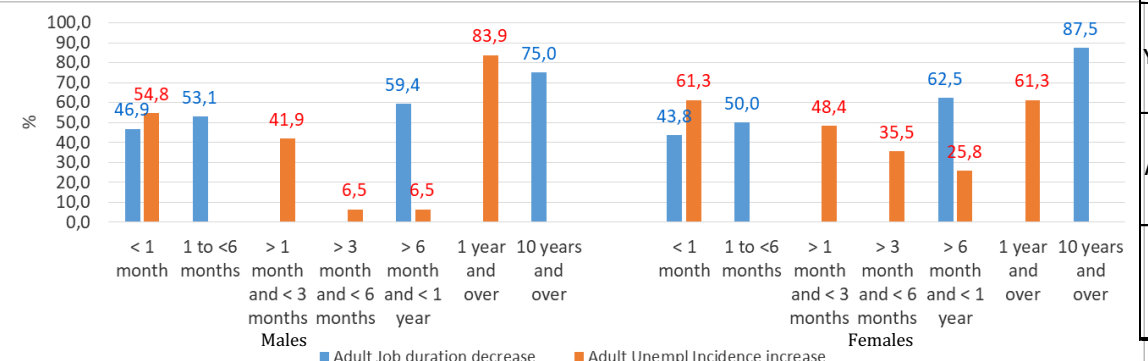
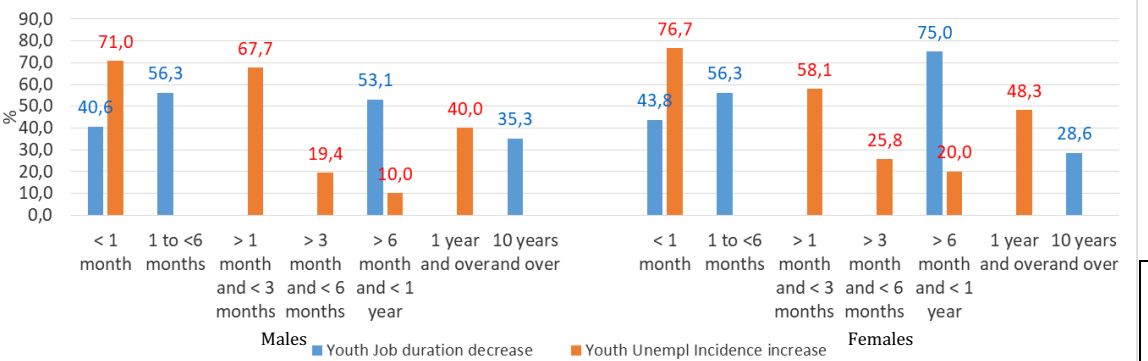
Table 1
Variable codification system and analysis fields for cluster analysis

- Notations:
- a) Duration intervals codes
- | | | | | | | |
|-----------|----------------|--------------------------|--------------------------|------------------------|-----------------|-------------------|
| d1 | d2 | d21 | d22 | d3 | d5 | d4 |
| < 1 month | 1 to <6 months | > 1 month and < 3 months | > 3 month and < 6 months | > 6 month and < 1 year | 1 year and over | 10 years and over |
- b) Age intervals:
Y youth: 15-24 years old
A adults: 25-54 years old
O old/ aged: 55-64 years old
- c) Gender: M males; W females / women

Job tenure change is detailed in 24 variables.

Unemployment duration change is detailed in 30 variables. Cases with missing are excluded.

Figure 1
The shares of the countries with Job duration decrease and Unemployment incidence increase during 2009-2018 by duration interval, gender and age



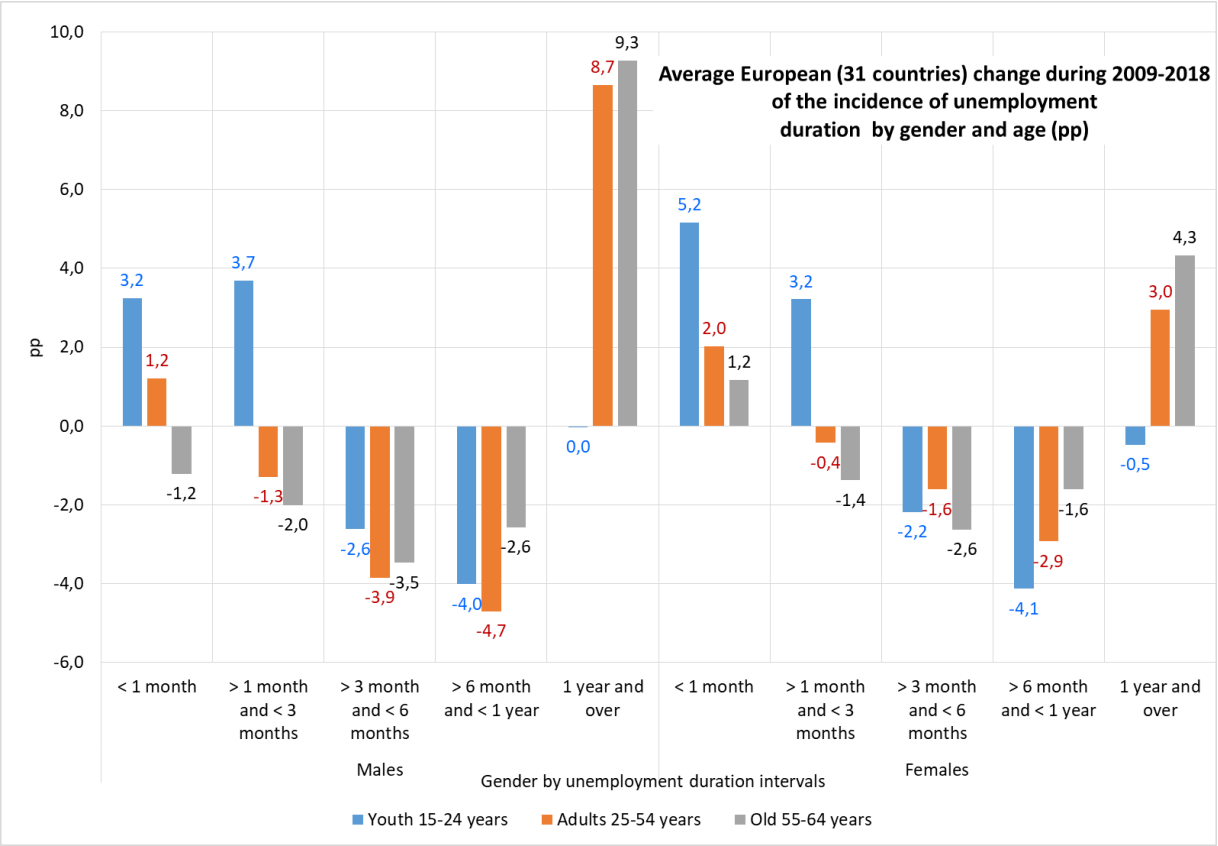
		Males							Females						
		< 1 month	1 to <6 months	> 1 month and < 3 months	> 3 month and < 6 months	> 6 month and < 1 year	1 year and over	10 years and over	< 1 month	1 to <6 months	> 1 month and < 3 months	> 3 month and < 6 months	> 6 month and < 1 year	1 year and over	10 years and over
Youth	No of countries with data Job duration	32	32			32		17	32	32			32		14
	No of countries that register Job duration decrease	13	18			17		6	14	18			24		4
	No of countries with data Unempl Incidence	31		31	31	30	30		30		31	31	30	29	
Adult	No of countries that register Unempl Incidence increase	22		21	6	3	12		23		18	8	6	14	
	No of countries with data Job duration	32	32			32		32	32	32			32		32
	No of countries that register Job duration decrease	15	17			19		24	14	16			20		28
Old	No of countries with data Unempl Incidence	31		31	31	31	31		31		31	31	31	31	
	No of countries that register Unempl Incidence increase	17		13	2	2	26		19		15	11	8	19	
	No of countries with data Job duration	31	32			32		32	27	32			32		32
	No of countries that register Job duration decrease	15	19			15		24	13	15			18		26
	No of countries with data Unempl Incidence	28		28	28	28	28		27		27	28	27	28	
	No of countries that register Unempl Incidence increase	11		6	7	8	24		15		10	7	13	17	

* Denmark, Ireland and Portugal missing date for old people

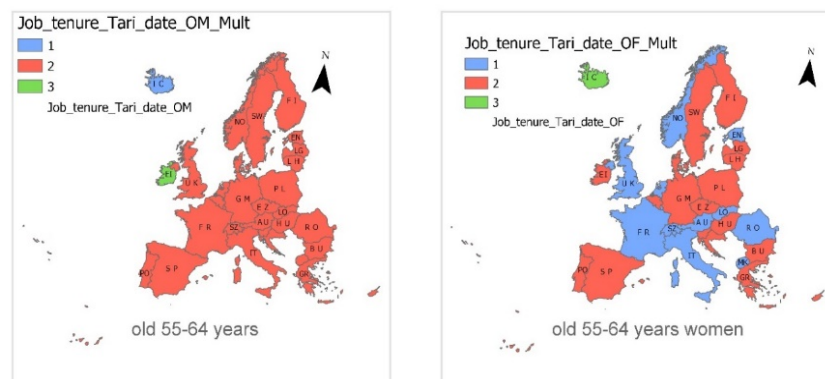
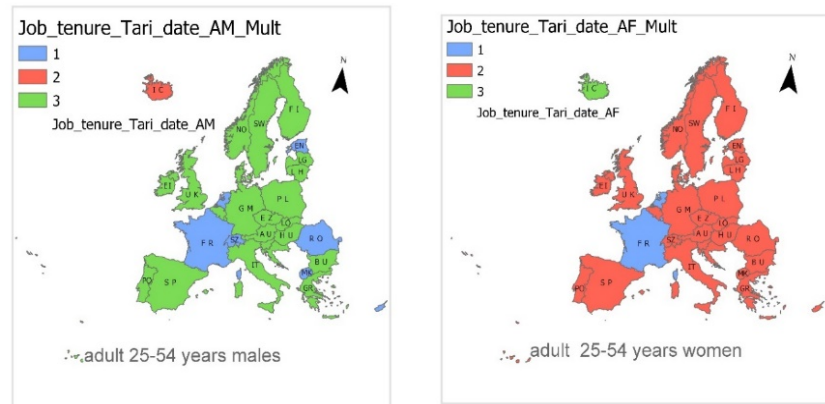
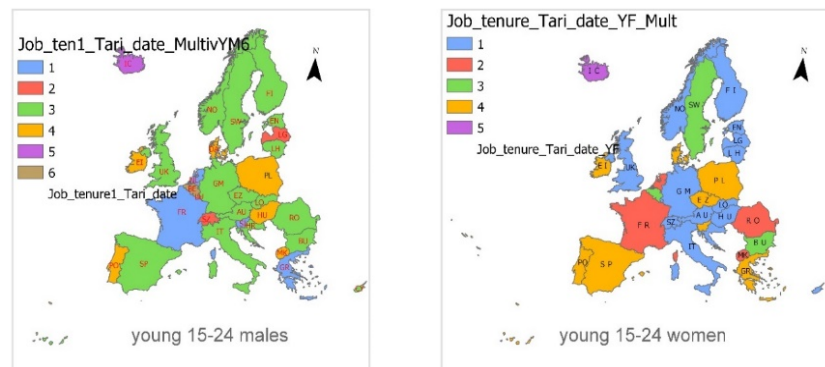
Note: Dataset: Employment by job tenure intervals - average tenure, Data extracted on 01 Nov 2019 21:10 UTC (GMT) from OECD.Stat and Dataset: Incidence of unemployment by duration, Data extracted on 14 Nov 2019 13:56 UTC (GMT) from OECD.Stat



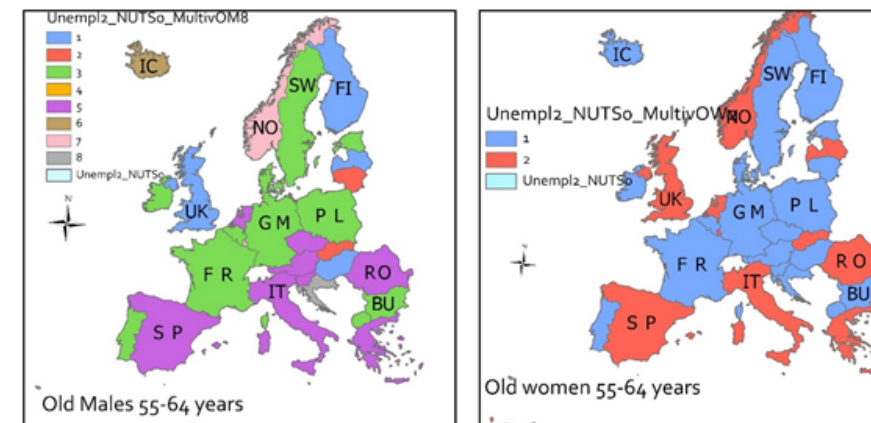
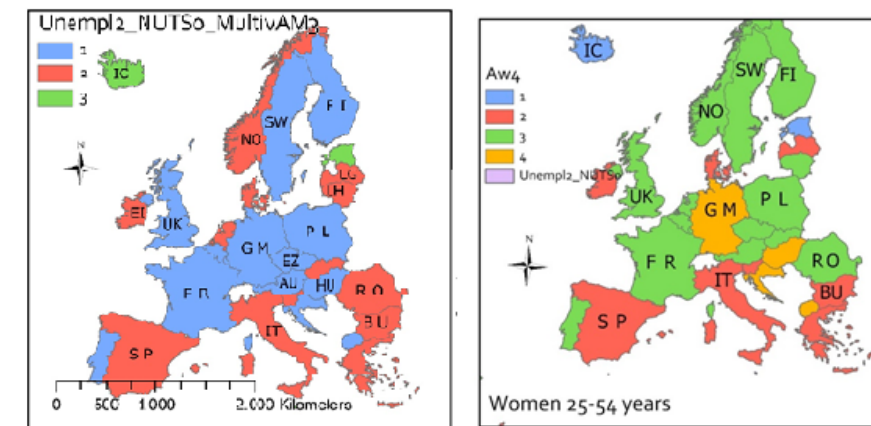
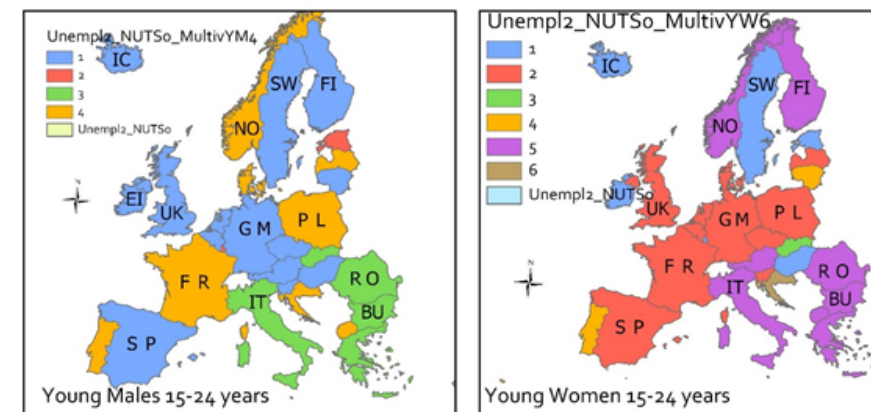
During 2009-2018, the average European job tenure of 10 years and over decreased in average for adult men with 0.6 months/10 years and for women with 0.7months/ 10 years. (Figure 2) The average European adult men long term unemployment (unemployment duration over 12 months) incidence increased with 8.7pp and for women with 3pp. Next to job tenure decreasing, another mark of increasing flexibility is the short term unemployment increasing.



Clusters for job duration changes during 2009-2018 by gender and age, at country level, for european states, resulted from multivariate analysis (k means), OECD data, ESRI Ro shapafiles



Clusters for unemployment incidence change for adult females during 2009-2018 in European countries by unemployment duration intervals resulted from multivariate analysis (k means), OECD data, ESRI Ro shapafiles



The patterns of change of job tenure is more similar across adult males and adult females groups, and less similar across youth males, respectively the highest heterogeneity is for youth males. *The lack of data for old person make impossible this analyse.*

The shrinking o job tenure is visible in 10 years and over tacks for adults (25-54 years old) with an average European decrease of 0.59 months/ 10 years for males and with 0.68 months / 10 years form females.

The **increase of the incidence of unemployment duration** for one year and over is visible in average with **8.7pp for adult males** and with **3.2pp for adult females**.

The second trend, is for youth. Also is visible, in average, in **the increase of the incidence of unemployment** duration for less than a month for **youth males with 3.2pp** and **for females with 5.2 pp**.

The differences in the identified clusters by job tenure identified could be explained through the radical innovation adoption versus incremental innovation adoption.

Greenan & Guellec (2000) “**Innovating firms and sectors create jobs** more than others over the medium run (5 years). **Process innovation is more about job creation than product innovation** at the firm level, but the converse is true at the sector level. This paradox is probably due to substitution effects (**creative destruction**)”.

Kleinknecht, van Schaik, & Zhou (2014) **demonstrate that firms with long job tenure, as firm with historically accumulated knowledge base, stimulate innovation**. As a confirmation, Griffith & Macartney (2014) establish that “**a higher share of multinational enterprise innovative activity in countries with high EPL is technologically advanced**”. On the other side, **short job tenure could signal the adverse effect of that could have on health**. (Militaru, Vasilescu, Cristescu, & Popescu, 2018).

The differences in the unemployment duration could be explained through the **unemployment protection and employment protection regimes**.

Filippetti & Guy (2020) concludes that

“Unemployment protection (UP) encourages diversity by reducing the risk burden of a broad range of learning, or human capital investment; for that reason, UP fosters innovation. Employment protection (EP) reduces the risk burden of a much narrower range of learning; for this reason, it will not enhance diversity to the extent UP does, and it may actually depress overall diversity and innovation”.

(Lamo, Messina, & Wasmer, 2011) prove that “**specialized education** reduces workers’ **mobility** and hence their ability to cope with economic changes.

Traditional labour market institutions (wage rigidity and employment protection) lead to an increase of the unemployment gap, but to a lesser extent”.

In the last decade the European Labour market start to function and more the clusters identified are more **homogeneous for adult** persons than for **youth for old worker** if we look at the job tenure.

Geographical reallocation of adult the labour force works as an efficient engine.

Patterns are differentiated by target groups more than by traditional labour market models.

There are different the clusters identified for youth than for adults, and more fragmented for females than for men.

Limits of the study: This is only a snap shot of TLM patterns in Europe covering only job tenure and unemployment duration (with a proxy), **without any measure for the learning time / learning spells / learning tenure**. The **life learning** could be identified in **active measures in unemployment spell**, in **individual development, at job place, under a work contract** but not as **employment activity / working time**.

TLM assure a specific stage in transitions for learning, but this dimension even is tremendously important in KE, is difficult to be measured in the absence of harmonised TLM indicators.

Learning time is working time?

Job tenure and unemployment duration different regimes reflects the life span of sectors driven by their capacity to innovate in both strategies: incremental and radical.

Firm shapes the training demand driven by incremental innovation. Dostie (2014) founds that job training “has a positive impact on firm-level productivity through improved process innovation”.

Incremental innovation keeps / links the learning for new skills inside the firm

The **transition to a new radical innovation sector** demand a huge quantity of **new skills** and consequently **a long training duration**. In this case, the old sector is destroyed and the new sector employed the workers with appropriate skills. So, it happens the **inter-sectorial reallocation of work force processes**. But, before the work force (in our case the adult one) need upskills. The technology from the old sector is used with an old set off skills that usually are not anymore adequate to use the new radical technology. **The inter-sectorial reallocation processes is another TLM case, extremely important in the perspective of automatization & AI.**

It takes time, as long as it is necessary to acquire new and adequate skills for the new sector. But this the case of long term unemployment. *(in extremis)* **Workers reintegration on labour market is the consequence of upskilling from active measures.** This new upskilling is made **outside the firm,**

ALMP's / LMP shapes the training demand driven by the radical innovation.

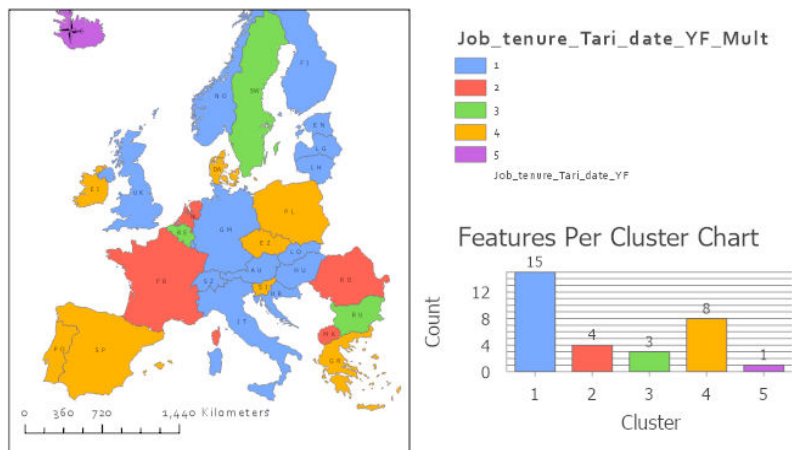
Radical innovation pushes the learning for new skills outside the firm

**New labour - creating and exploiting the
new**

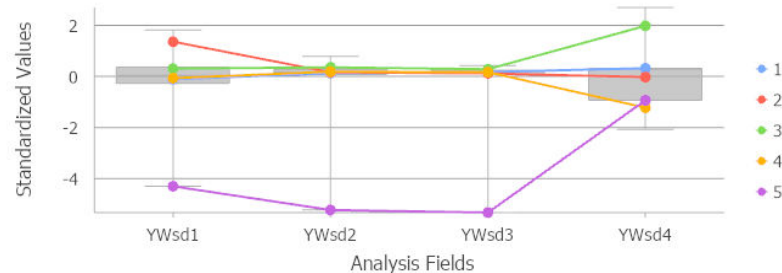
Radical & Incremental **Innovation**

Creativity is an human right (Louden, 2016)

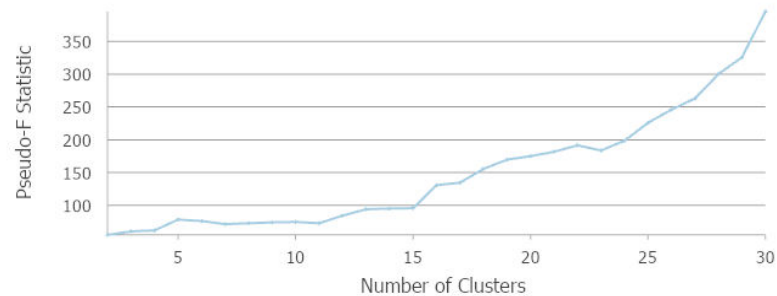
Job tenure change for youth females during 2009-2018 period in European countries by job tenure interval: Clusters Map, Features per Cluster Chart, Multivariate clustering Box-Plot and Optimised Pseudo-F Statistic Chart



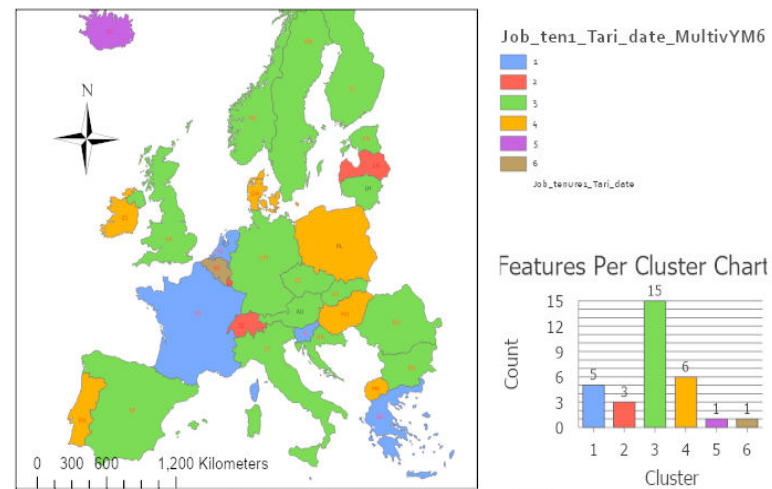
Multivariate Clustering Box-Plots



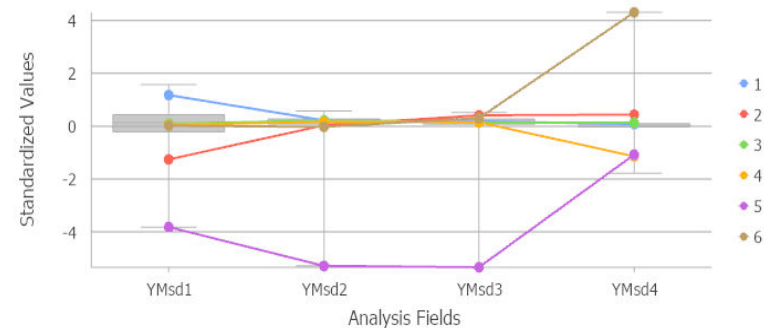
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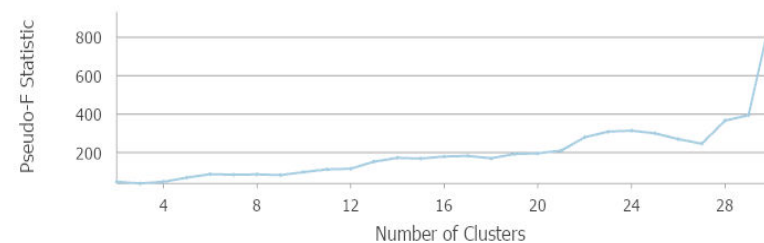
Job tenure change for youth males during 2009-2018 period in European countries by job tenure interval: Clusters Map, Features per Cluster Chart, Multivariate clustering Box-Plot and Optimised Pseudo-F Statistic Chart



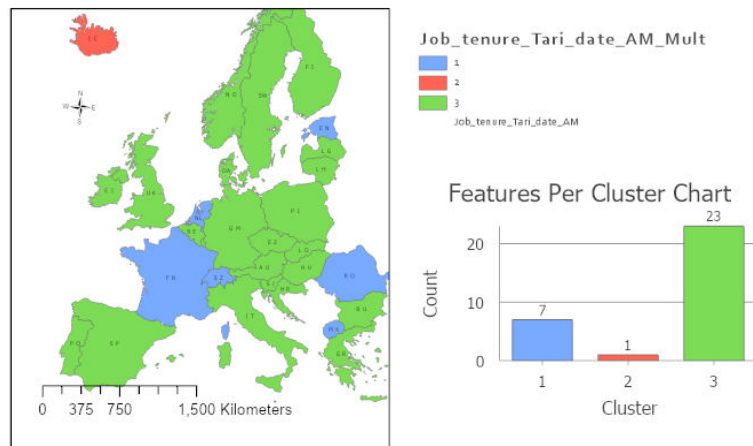
Multivariate Clustering Box-Plots



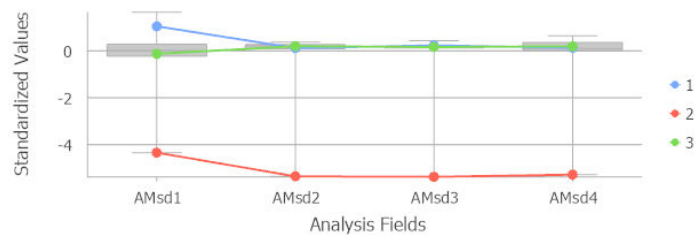
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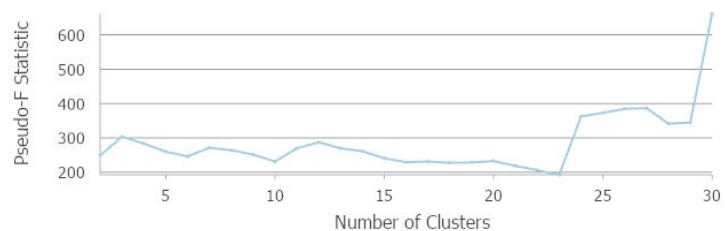
Job tenure change for adult males during 2009-2018 period in European countries by job tenure interval. Clusters Map, Features per Cluster Chart, Multivariate clustering Box-Plot and Optimised Pseudo-F Statistic Chart



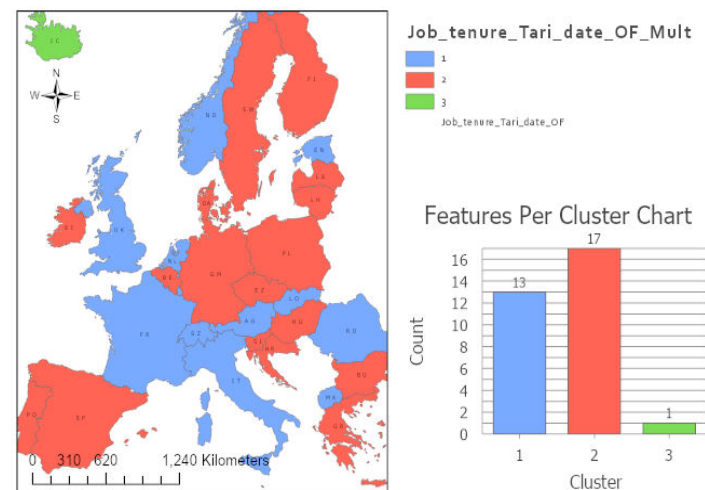
Multivariate Clustering Box-Plots



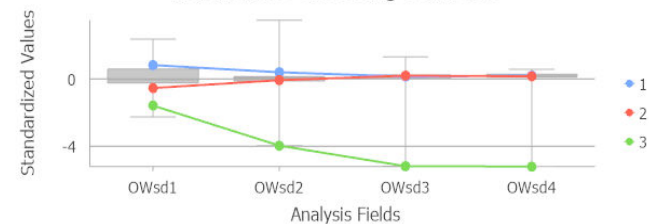
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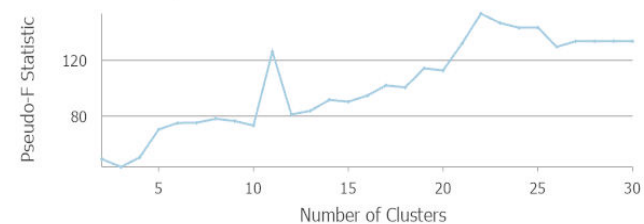
Job tenure change for aged (old) females during 2009-2018 period in European countries by job tenure interval. Clusters Map, Features per Cluster Chart, Multivariate clustering Box-Plot and Optimised Pseudo-F Statistic Chart



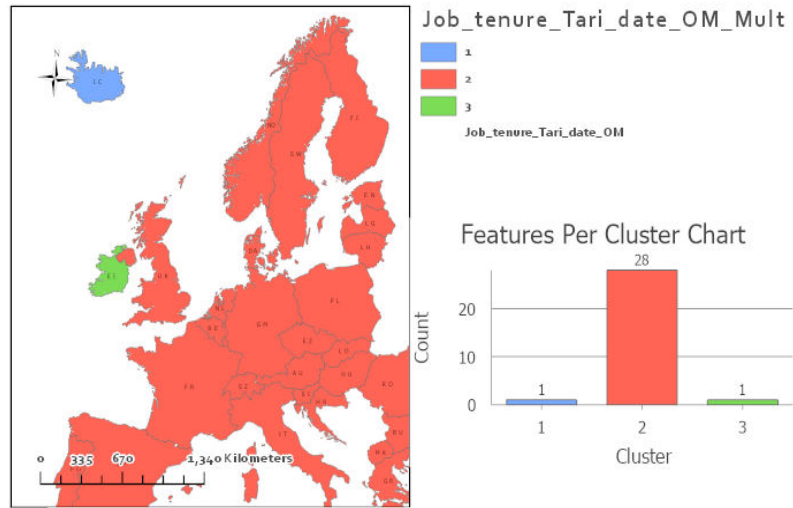
Multivariate Clustering Box-Plots



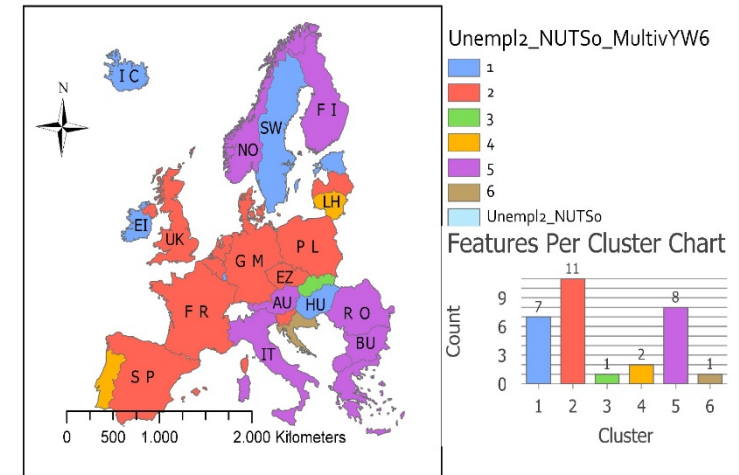
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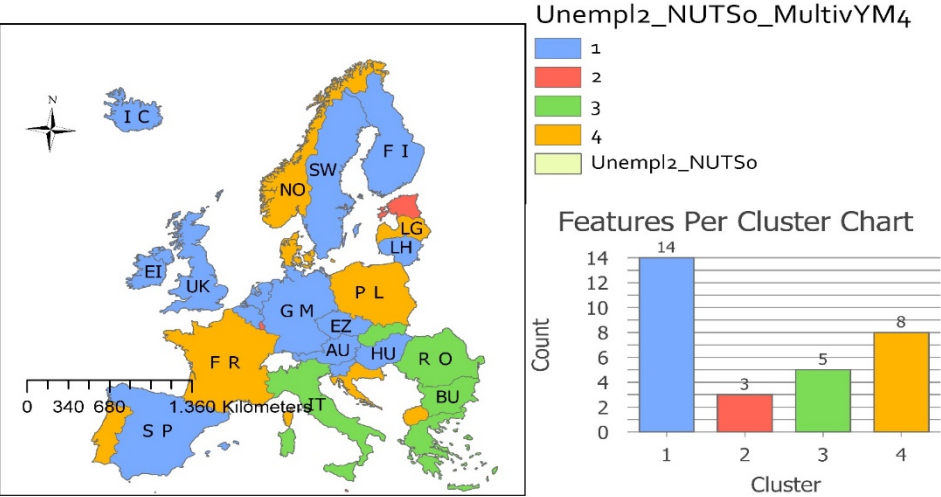
Job tenure change for aged (old) males during 2009-2018 period in European countries by job tenure interval: Clusters Map, Features per Cluster Chart, Multivariate clustering Box-Plot and Optimised Pseudo-F Statistic Chart



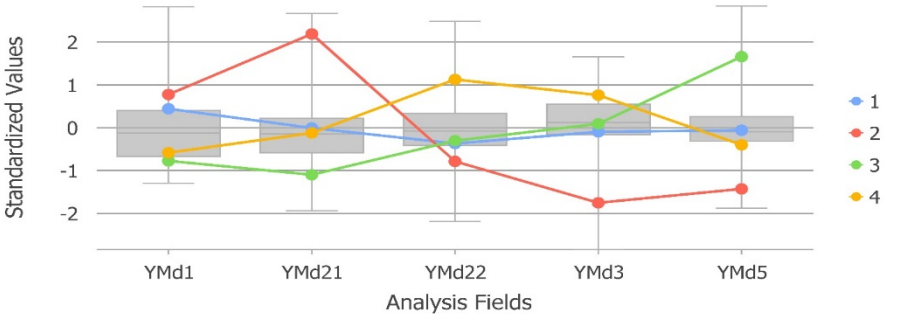
Unemployment incidence change for Youth Women during 2009-2018 in European countries by unemployment duration intervals: Clusters Map, Features per Cluster Chart, Multivariate clustering Box-Plot and Optimal Pseudo-F Statistic Chart



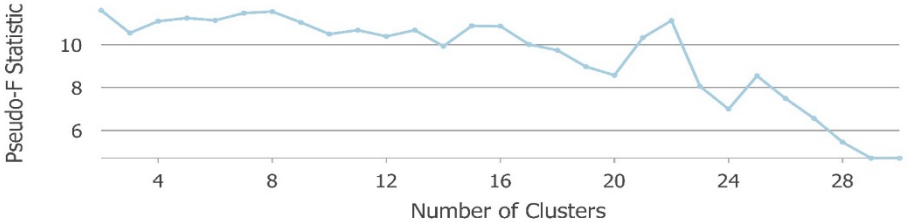
Unemployment incidence change for Youth Males during 2009-2018 in European countries by unemployment duration intervals: Clusters Map, Features per Cluster Chart, Multivariate clustering Box-Plot and Optimal Pseudo-F Statistic Chart



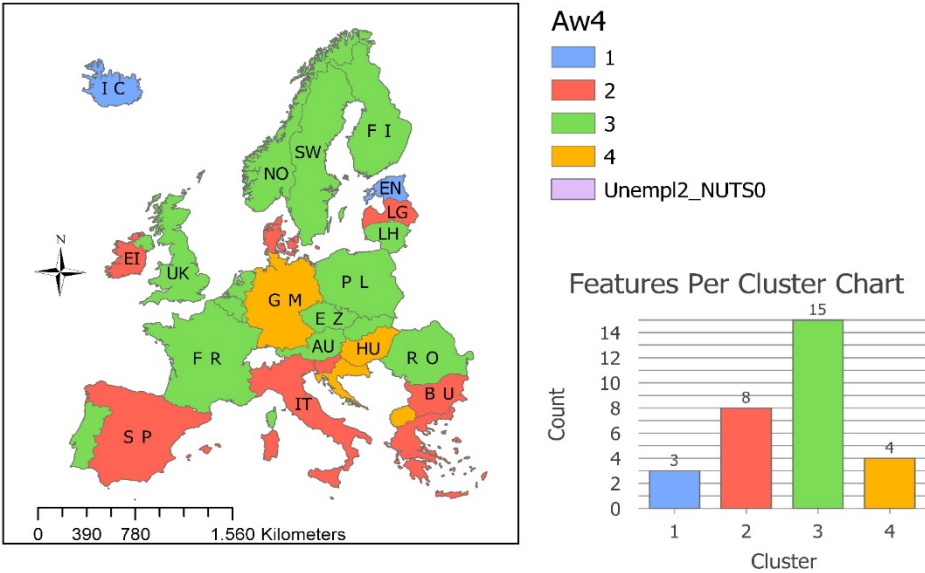
Multivariate Clustering Box-Plots



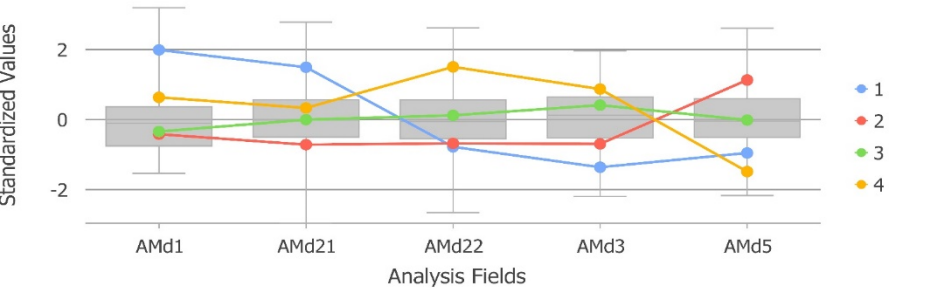
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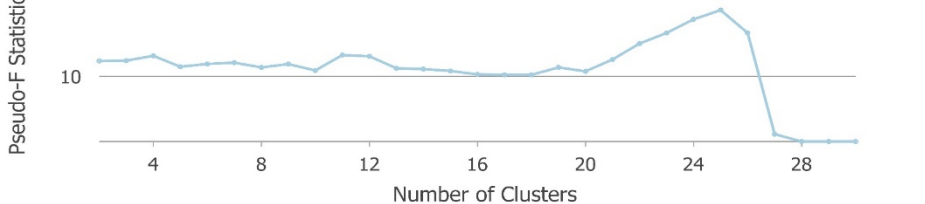
Unemployment incidence change for adult females during 2009-2018 in European countries by unemployment duration intervals: Clusters Map, Features per Cluster Chart, Multivariate clustering Box-Plot and Optimal Pseudo-F Statistic Chart



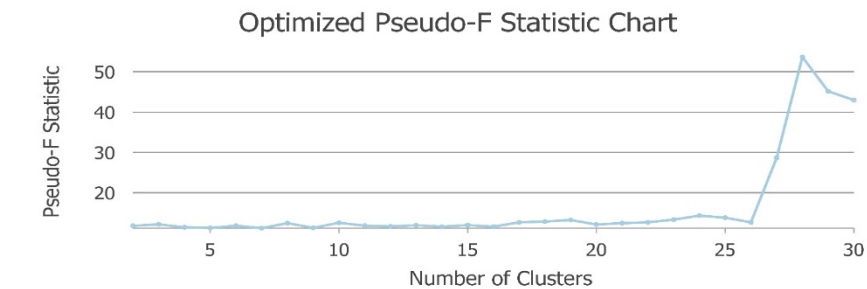
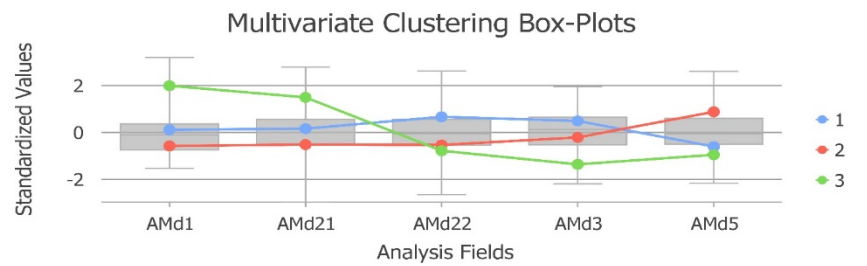
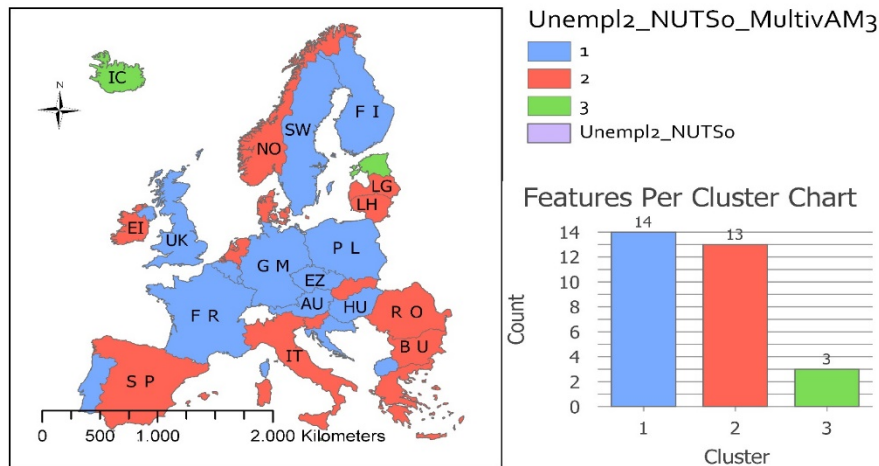
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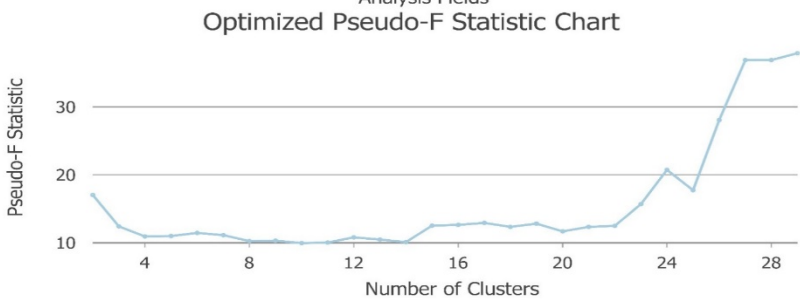
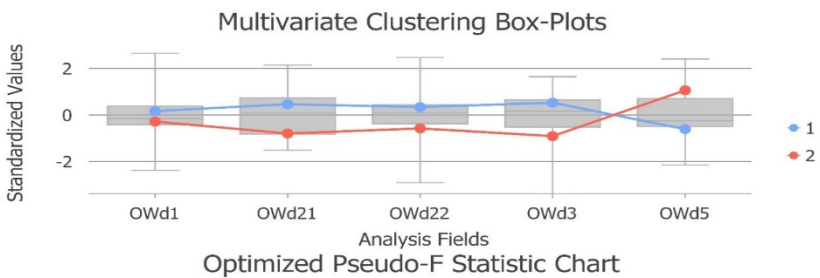
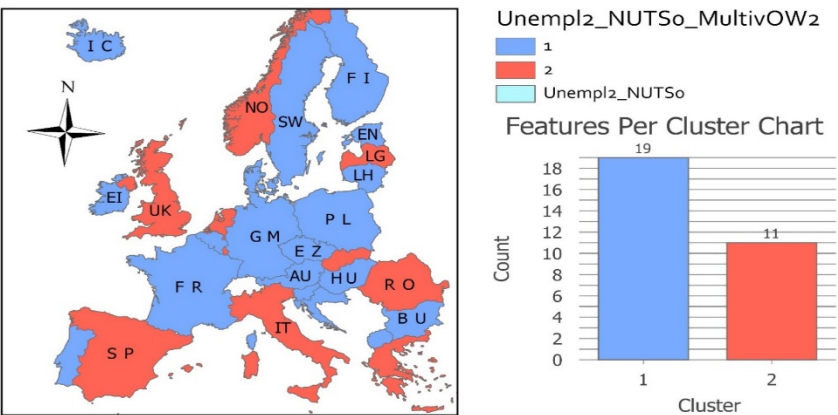
Optimized Pseudo-F Statistic Chart



Unemployment incidence change for adult males during 2009-2018 in European countries by unemployment duration intervals: Clusters Map, Features per Cluster Chart, Multivariate clustering Box-Plot and Optimal Pseudo-F Statistic Chart



Unemployment incidence change for Old females during 2009-2018 in European countries by unemployment duration intervals: Clusters Map, Features per Cluster Chart, Multivariate clustering Box-Plot and Optimal Pseudo-F Statistic Chart



Unemployment incidence change for Old Males during 2009-2018 in European countries by unemployment duration intervals: Clusters Map, Features per Cluster Chart, Multivariate clustering Box-Plot and Optimal Pseudo-F Statistic Chart

