

Csaba Makó, Miklós Illéssy, András Borbély

Diverging workplace innovation trajectories in the European public sector (a preliminary cross-country comparison)

Abstract

Objectives: The core aim of this paper is to improve our knowledge base on the innovation process comparing how public and private organisations can develop abilities to innovate in order to cope with the challenges created by the changing priorities of the political market, the intensification of global competition and the higher speed of the technological changes. The authors intend to identify and compare the creative/learning capabilities of the workplaces in the EU-27 countries.

Research Design & Methods: In testing empirically the various types of jobs our analysis uses the data sets of the fourth (2005), fifth (2010) and sixth (2015) waves of the European Working Conditions Survey (EWCS). The EWCS is a cross-sectional survey taken in every five years since 1990, organised by the European Foundation for the Improvement of Living and Working Conditions (Eurofound, Dublin). The recent editions of this survey cover more than 40,000 workers in the EU member states and in various other European countries (Eurofound, 2017). We used a cluster analysis in order to identify three clusters of jobs in Europe and their prevalence in different countries and country groups.

Findings: The data from the European Working Condition Surveys (2005, 2010 and 2015) shows that in the public administration boosts creative workplaces in all countries. The ability of organisations to mobilise their internal resources into efficient and dynamic routines depends on intangible resources (e.g. creativity) and less on such traditional tangible factors such as physical or financial sources. Powering public sector innovation is inhibited by the following major factors: unfavourable institutional settings; weak innovation leadership; lack of systematic knowledge of the innovation process; and a shortage of the systematic data collection at both the EU and Member State levels.

Implications & Recommendations: The increasing rate of creative jobs may speed up the implementation of the “High-Engagement Civil Services” to improve both efficiency and quality of work in the public sector. A more profound and evidence-based understanding of the innovation processes at the workplace level would allow us to exploit the full potential thereof in terms of positive impacts on both employment and job quality.

Contribution & Value Added: Despite the fact that innovation studies have been at the heart of socio-economic research for decades now, relatively little attention has been paid on innovation in the public sector. This research topic has

Csaba Makó
The National University of Public Service
1083 Budapest
Üllői u. 82
Mako.Csaba@tk.mta.hu

Miklós Illéssy
The Centre for Social Sciences of the Hungarian
Academy of Sciences
1097 Budapest
Tóth K. u. 4
Illussy.Miklos@tk.mta.hu

András Borbély
Szent István University
2100 Gödöllő
Páter K. u. 1
andras.borbely1989@gmail.com

gained more importance only in the 2010s and thus there is often a lack of empirical evidence for this sector, which plays a crucial role in all developed economies as a major employer as well as the main actor shaping the regulatory environment. This article is among the first attempts aimed at giving insights into the job characteristics of public sector organisations.

Keywords: innovation, private/public sector, work organisation, creativity, learning organisations

Article Classification: Research article

JEL classification: O30, O52

Innovation in the public sector: Theoretical and methodological foundations¹

After the second World War, until the end of 1970s, the mainstream international innovation surveys focused and collected data on research and development (R&D) activities in the private sector. These analyses were able to describe the innovation potential of mainly manufacturing (and other industrial) firms operating in the private sector, while the innovation activity of the service sector and, in particular, the organisations of public administration were omitted. The report of the expert group of the European Commission indicated "... that public sector innovation today mostly happens through unco-ordinated initiatives rather than as a result of deliberate, strategic efforts. The quest for more and better public sector innovation is hindered by several barriers, which fall into four major categories: weak enabling factors or unfavourable framework conditions, lack of innovation leadership at all levels, limited knowledge and application of innovation processes and methods, and insufficiently precise and systematic use of measurement and data." (European Commission, 2013, p. 5)

After more than a decade of preparation, the OECD started pilot studies on innovation –

in the private and manufacturing sectors – in the Nordic countries. The lessons from those surveys were summarised in the Oslo Manual (1992). That manual served as a theoretical and methodological guideline for the various waves of the Community Innovation Surveys (CIS), which are carried out by the National Statistical Offices (NSO) within the European Union. The first edition of Oslo Manual essentially aimed at measuring or mapping not only the R&D activities in their strict sense but the diffusion of technological (product + process) innovation as well. In this regard it is worth mentioning that the original questionnaire elaborated in the first edition of the manual and used in the following surveys was not able to measure innovation in the rapidly growing service sector. The modified version of the questionnaire published in the second edition of the Oslo Manual (1997) is suitable for measuring innovation in both manufacturing and the service sector. However, only the third edition of this Manual (2005) covers such types of non-technological innovations as marketing or new business and organisational practices. According to this Manual "... innovation represents a new or significantly developed product (services) or process, new marketing methods, or the implementation of the new management-organisational methods in the business or workplace practices and in the external relations of the organisation." (Szunyogh, 2010, p. 494)

There is a rather new research agenda which has the ambition of comparing and identifying the similarities and differences of organisational innovation characterising the private and the public

¹ This paper has been written with the support and within the framework of: KÖFOP 2.1.2 – VEKOP – 15–2016–00001 Public Service Development for Establishing Good Governance: Innovative. Learning Public Administration – Ludovika Research Centre of Excellence.

sectors. Following Hollanders et al. (2013), Table 1 compares the characteristics of innovation in the private and the public sectors. The table indicates well both similarities and differences of innovation activities in the two sectors. For example, similarities are dominating in the fields of process and organisational innovation. However, service innovation instead of product innovation and communication innovation instead of market innovation characterise the public sector in comparison with the private sector. In the innovation management literature the following definition of service innovation is used widely: “Service innovation is a new service or such a renewal of an existing service which is put into practice and which provides benefit to the organisation that has developed it: the benefit usually derives from the added value that the renewal provides the customers ... A service innovation process is the process through which the renewals described are achieved.” (Saari & Lehtonen, 2015, p. 4)

Table 1. Differences between Private and Public Sector Innovation

Private sector	Public sector
Product innovation	Service innovation
Process innovation	Process innovation
Organisational innovation	Organisational innovation
Marketing innovation	Communication innovation

Source: EPSIS (Hollanders et al., 2013, p. 9).

Methodology: How can we measure creative and innovative capability at the workplace?

In testing empirically the various types of work our analysis uses the data sets of the fourth (2005), fifth (2010) and sixth (2015) waves of the European Working Conditions Survey (EWCS).² The

² The EWCS is a cross-sectional survey taken in every five years since 1990 organised by the European Foundation for the Improvement of Living and Working Conditions

methods used are based on the work of Lorenz and Lundvall (2011), who analysed the fourth wave of the European Working Conditions Survey and distinguished between three types of employees according to the dimensions of cognitive demands of work and employees’ autonomy. These three groups are “creative workers”, “constrained problem-solvers” and “Taylorised workers”. The methodological background of these groups will be presented in detail later in this section.

In our study we focus on salaried employees working in organisations with at least 10 employees in non-agricultural sectors such as industry, service and public administration, excluding education, health and social work, household activities, agriculture, and fishing.³ The sample examined consists of 11,661 salaried employees in the case of the fourth wave (2005), 14,192 in the fifth wave (2010), and 14,425 in the sixth wave (2015). Not only the sampling procedure but also our method to group the sectors of the statistical nomenclature are consistent with Lorenz & Lundvall’s 2011 work (see our groups in Table 2 below).

In order to identify the main differences between EU countries, we distinguished between five country-groups on the basis of their institutional settings (i.e. welfare system, labour market regulation, labour relations system, etc). Our typology is analogous to country groupings used in comprehensive institutional studies (e.g. Hall & Soskice, 2001), as well as organisational studies using the same database (Parent-Thirion et al., 2007; Valeyre et al., 2009; Gallie & Zhou, 2013). In this perspective, we distinguished between “Scandinavian”, “Anglo-Saxon”, “Continental”, “Mediterranean” and “Central and Eastern European (CEE)” country clusters (see Table 3). In order to

(Eurofound, Dublin). The recent waves of this survey cover more than 40,000 workers in the EU member states and in various other European countries (Eurofound, 2017).

³ The EWCS uses the NACE (Nomenclature Statistique des Activités Économiques dans la Communauté Européenne) industry standard classification system (its Hungarian equivalent is the TEÁOR system). In order to achieve data interoperability, we used NACE version 1.1.

Table 2. Summary of NACE sectors, codes and the sector groups used in this paper

Sector group	Code	Economical activities
Manufacturing, construction, utilities	C	Mining and quarrying
	D	Manufacturing
	E	Electricity, gas and water supply
	F	Construction
Retail and other services	G	Wholesale and retail trade, repair
	H	Hotels and restaurants
	I	Transport, storage and communication
Business and financial services	J	Financial intermediation
	K	Real estate, renting and business activities
Public administration	L	Public administration and defence; compulsory social security
Community, social and personal services*	O	Other community, social and personal service activities
	Q	Extra-territorial organisations and bodies
<i>Excluded sectors</i>	A	Agriculture, hunting and forestry
	B	Fishing
	M	Education
	N	Health and social work
	P	Activities of households

* We did not indicate a “Community, social and personal services” group in our sector level tables; however, we have included it in the aggregate results.

Source: own compilation following the work of Lorenz & Lundvall (2011)

Table 3. Summary table of countries and country groups used in this paper

Country group	Country
I. EU-15 (old member states)	
Scandinavian	Denmark, Finland, Sweden
Anglo-Saxon	Ireland, United Kingdom
Continental	Austria, Belgium, France, Germany, Luxembourg, the Netherlands
Mediterranean	Greece, Italy, Portugal, Spain
II. EU-12 (new member states)	
Central and Eastern European	Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia*
-----	Cyprus, Malta**

* Croatia was excluded from our analysis.

** Cyprus and Malta weren't assigned to any of the country groups, however, we included them in EU-27 aggregates.

Source: own compilation following the work of Hall-Soskice (2001), Parent-Thirion et al. (2007), Valeyre et al. (2009) and Gallie & Zhou (2013).

produce unbiased results, all tables presented in this study incorporate cross-national weighted data.

Following the model of Lorenz & Lundvall (2011), we used the following six binary variables to characterise the main attributes of a creative workplace:

- (1) a variable measuring whether the work requires problem solving (PBSOLV);
- (2) a variable measuring whether one is able to learn new things in one's work (LEARN);
- (3) a variable measuring the presence of complex tasks in one's work (COMPLX);
- (4) a variable measuring the use of the individual's own ideas at work (IDEAS);⁴
- (5) a variable indicating the presence of autonomy in choosing one's working methods (AUTMET); and
- (6) a variable indicating autonomy in choosing the order of tasks (AUTORD).

The type of factor method which was carried out on these variables is multiple correspondence analysis (MCA). Further analyses were carried out on two factors which contributed together to 58% of the inertia in the case of EWCS-2005, 60% of the inertia in the case of EWCS-2010, and 59% of the inertia in the case of EWCS-2015. In order to group the cases, hierarchical clustering (Ward's method) was carried out, on the basis of the factor scores, on each sample.

This paper, however, uses Lorenz & Lundvall's 2011 work only as a theoretical and methodological starting point, and it differs from that work in several ways. First, we included data from the fifth and sixth wave of EWCS (2010 and 2015). This allowed us to enlarge the scope of the analysis with the comparison of periods before and after the recent financial crisis in 2008. Second, our paper widens the limits of their study by evaluating the differences between each European country group, and includes

⁴ A binary variable transformed from a five-level ordinal scale, as follows: "always", "most of the time" ("almost always" and "often" in EWCS-2005) answers were recoded as "yes"; "sometimes", "rarely", and "never" ("sometimes", "rarely", "almost never" in EWCS-2005) were recoded as "no".

the public administration sector in the analysis. In the current phase of our research we intend to introduce several results of descriptive analyses⁵ on the basis of the results of the abovementioned more sophisticated statistical tools.

Creative jobs in the European Union: A sharp contrast along the north-west to south-east axis

Before presenting the distribution of different job clusters and later their changes over time, it is worth addressing briefly the characteristics of these clusters. As we can see from Table 4 below, the variables used to measure both the cognitive and the autonomy dimensions of work show relative stability in the three waves of the European Working Conditions Survey carried out between 2005 and 2015. The creative cluster can be characterised by an overrepresentation in all six variables: such staff utilise their cognitive abilities extensively during their work and they enjoy a high level of autonomy in doing so. Around half of European employees belong to this category of staff. The constrained problem-solver positions show high degree of problem-solving and learning activities, their working tasks are rather complex, but – surprisingly enough – these staff rarely use their own ideas during work. Similarly, the level of autonomy in choosing the methods of work and the order of tasks, is far the lowest as compared to other employees. Such staff account for nearly one quarter of the employees. The group of Taylorised workers can be characterised by the lowest level of problem-solving and learning activities, they execute relatively simple tasks. By contrast, their autonomy is significantly higher than those from the category of constrained problem-solvers, although it is far below the average of creative employees; between a quarter and a third of employees are in this job category.

⁵ For the sake of transparency, the tables and figures presented in this paper incorporate results without decimals (the results in our raw cross tables were rounded).

Table 4. Distribution of work organisation variables across job clusters, EU-27

Variable	2005				2010				2015			
	CW	CP	TW	AV	CW	CP	TW	AV	CW	CP	TW	AV
PBSOLV	97	87	40	80	97	91	45	81	97	92	44	83
LEARN	91	85	16	70	92	85	14	69	93	87	14	72
COMPLX	84	82	8	64	85	78	7	62	86	77	7	64
IDEAS	76	22	29	51	71	16	25	46	70	16	25	46
AUTMET	94	22	37	62	94	16	38	60	94	18	41	63
AUTORD	91	14	34	58	94	17	37	60	93	19	38	62
Total share	50	24	26	100	49	24	27	100	52	24	24	100

Legend: CW = creative workers; CP = constrained problem-solvers; TW = Taylorised workers; AV = average; PBSOLV = solves problems during work; LEARN = learns new things in work; COMPLX = solves complex tasks; IDEAS = able to use own ideas; AUTMET = able to choose work methods; AUTORD = able to choose order of tasks.

Source: Following Lorenz & Lundvall's 2011 choice of variables, own calculations based on EWCS 2005, 2010 and 2015

Creative jobs are especially prevalent in such sectors as; research and development; other computer-related activities; electricity, gas, steam and hot water supply; insurance, reinsurance and pension funding; and financial intermediation. Constrained problem-solvers are typically working in such sectors as: land transport and transport via pipelines; manufacture of textiles; manufacture of motor vehicles; manufacture of chemicals and chemical products; and manufacture of basic metals. Taylorised workers are most prevalent in: sewerage; manufacture of textiles; manufacture of wearing apparel; land transport and transport via pipelines; and postal and courier activities.

Creativity and autonomy of employees in the European Union: polarisation of work organisation from north-west to south-east

As can be seen from the table above, undoubtedly the creative job cluster gives the biggest opportunity for employees to work autonomously and to deploy their creativity. It is not at all surprising that the Scandinavian countries are those where these kinds of jobs dominate the most (see Figure 1). In Denmark 77% of all jobs analysed are

creative, while the same ratio is 74% in Sweden and 73% in Finland. As well as these countries we find above the European average presence of creative workplaces in such Continental countries as Luxembourg (65%), the Netherlands (63%), France (62%), Belgium (59%) and Austria (57%), together with the two Anglo-Saxon countries: the UK (59%) and Ireland (55%). It is interesting to see that while all Mediterranean countries are below the European average (52%), two former socialist countries, Estonia (62%) and Slovenia (55%), have a share of creative jobs above the average. The position of Germany is also surprising: creative work organisations are less widespread in Europe's biggest economy than the EU-27 average and the number there exceeds Spain by only two percentage points. Beside Germany we find only Mediterranean and Central and Eastern European countries below the EU-27 average, with Greece, Latvia, Slovakia, Romania and Hungary being the five countries where creative jobs are the least widespread.

The jobs of Taylorised workers can be characterised by low levels of both creativity and employee autonomy. The next figure, illustrating the share of these jobs in Europe, is almost the inverse

version of the previous one presenting the share of creative jobs (see Figure 2). This means that in most of the cases, in a country where creative jobs are more widespread we will find fewer

Taylorised workers. This is true, for example, for the Scandinavian and the Central and Eastern European (CEE) countries: Denmark, Finland and Sweden are leading countries in terms of creative

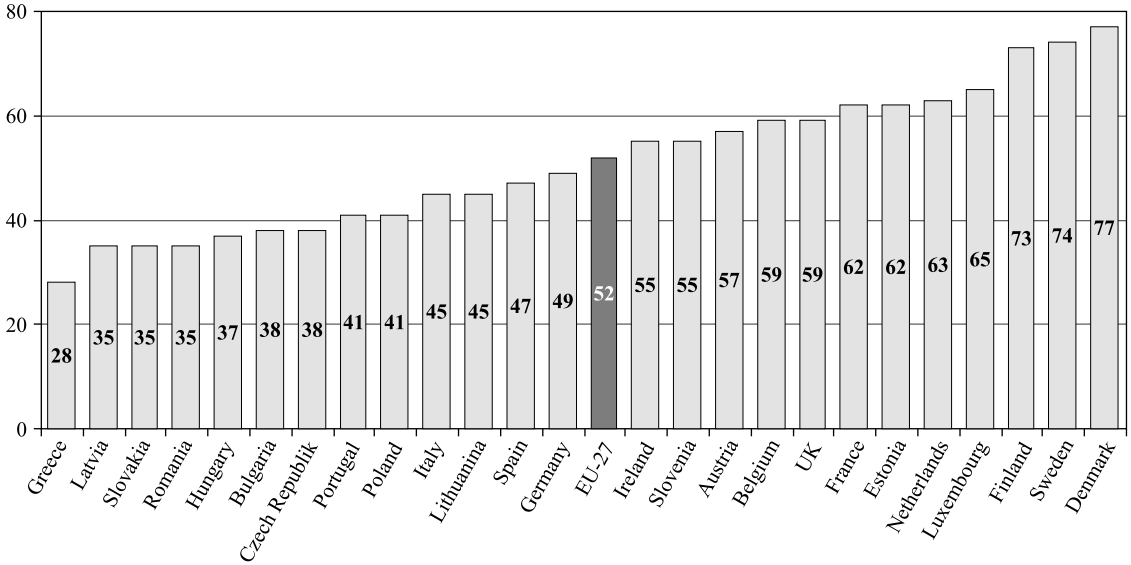


Figure 1. The share of creative jobs in the European Union (2015)

Source: Own compilation based on EWCS 2015.

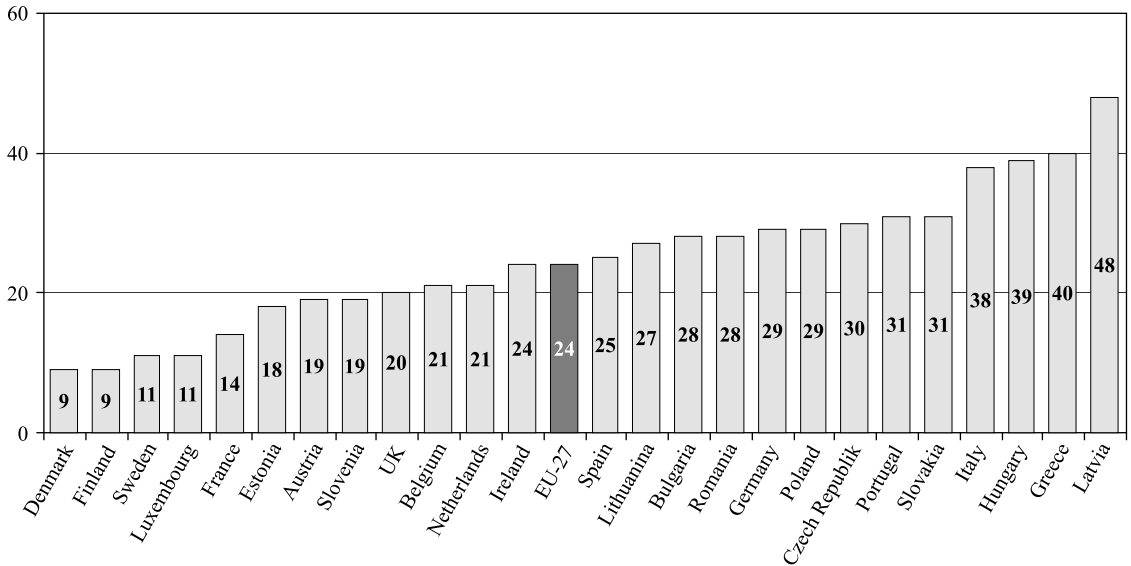


Figure 2. The share of Taylorised workers in the European Union (2015)

Source: Own compilation based on EWCS 2015.

jobs and are lagging behind all other countries when it comes to Taylorised workers. In contrast, creative jobs are less prevalent in the CEE countries while we found the highest shares of Taylorised workers in this region.

However, there are notable exceptions as well. It is surprising that almost one third of German workplaces (29%) belong to the Taylorised cluster and this is the ninth biggest share among the EU-27 countries. Italy is middle-ranked among European countries in the share of creative jobs, but it is one of the most Taylorised countries, with 38% of jobs being Taylorised. All in all, four countries have a significantly higher share of Taylorised jobs than the EU-27 average: Latvia (48%), Greece (40%), Hungary (39%) and Italy (38%). They are followed by Slovakia, Portugal, the Czech Republic, Poland, Germany, Romania, Bulgaria and Lithuania (27%–31%). Spain and Ireland are around the EU-27 average (25% and 24%, respectively). The Netherlands, Belgium, the UK, Slovenia, Austria and Estonia are the countries where the share of Taylorised

jobs (18%–21%) is visibly below the average, while we find the lightest presence of this type of work organisation in Denmark (9%), Finland (9%), Sweden (11%), Luxembourg (11%) and France (14%).

Constrained problem-solvers are those employees whose jobs demand relatively high level of cognitive capacities during the work but allow the lowest level of employee autonomy at the same time. Given the fact that creative jobs represent around three quarters of all jobs in the Scandinavian countries, it is not at all surprising that the share of both Taylorised employees and constrained problem-solvers is among the lowest in Denmark, Sweden and Finland. The share thereof is similarly low in the Netherlands, Italy, Latvia, Belgium, Ireland, the UK and Estonia (between 15% and 21%) (see Figure 3). The EU-27 average is 24% and we find eight countries very close to that rate: Germany, France, Luxembourg, Austria, Slovenia, Portugal, Spain and Lithuania (23%–28%). The highest share of constrained problem-solvers can be found in CEE countries,

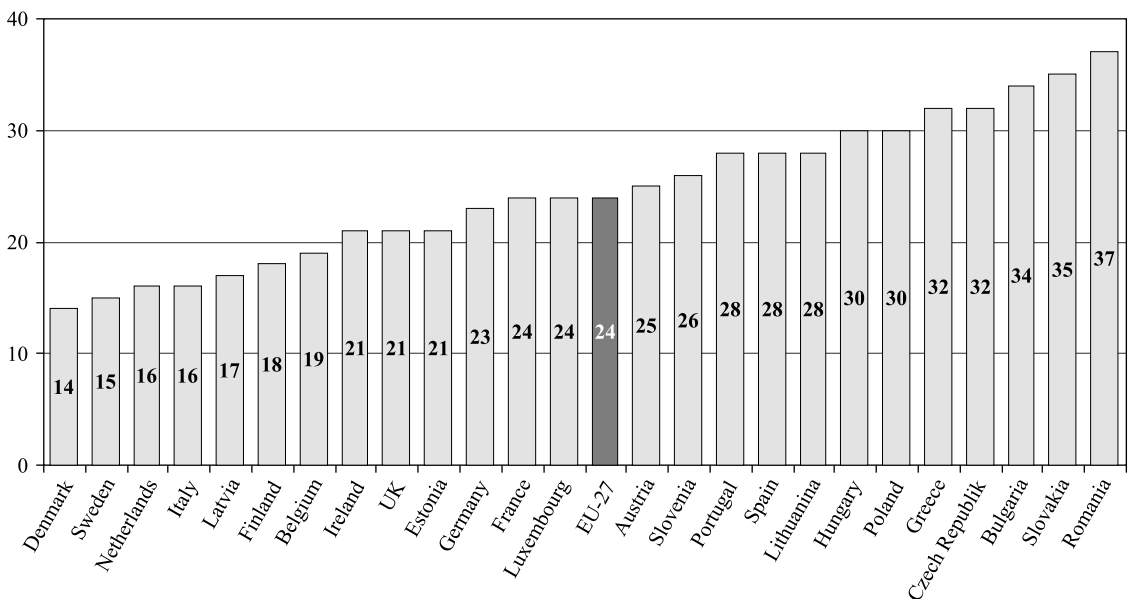


Figure 3. The share of constrained problem-solvers in the European Union (2015)

Source: Own compilation based on EWCS 2015.

in Hungary, Poland, the Czech Republic, Bulgaria, Slovakia and Romania (30%–37%), together with Greece (32%), the only Mediterranean country in this country group.

If we add the share of constrained problem-solvers to the share of Taylorised workers, it gives a good proxy indicator on those employees who enjoy less autonomy in their work. This is even more important because the lack of participative employee involvement sets serious limits to any kind of creativity having long-term impact on innovation. It is obvious that employees are important sources of innovation, their active participation in the implementation is a necessary precondition of any innovation: “The basic idea of Employee-Driven Innovation rests on the assumption that employees have hidden abilities for innovation, and that this potential can be made visible, recognised and exploited to the benefit of both the firm and its employees.” (Kesting & Ulhoi, 2010, p. 66)

As we can see from Figure 4 above, the three Scandinavian countries are visibly separated from the rest of Europe, the share of the two least autonomous job clusters there is around 25%. The next country group is composed of Luxembourg, the Netherlands, France, Estonia, Belgium, the UK, Austria, Ireland and Slovenia. Those countries are below the European average (35%–45%); it is interesting to note that the group doesn’t contain any Mediterranean countries and only two CEE countries (Estonia and Slovenia). These two country groups are over-represented at the low end of the scale: more than every second jobs has limited level of employee autonomy in Spain, Italy and Lithuania, while the share thereof is about 60%–66% in Portugal, Poland, Bulgaria, the Czech Republic, Latvia, Romania and Slovakia. The situation is the worst in Hungary and Greece, where the same ratio is 69% and 72%, respectively. This means that these countries have the lowest potential to develop the innovative capabilities of employees and their work organisations.

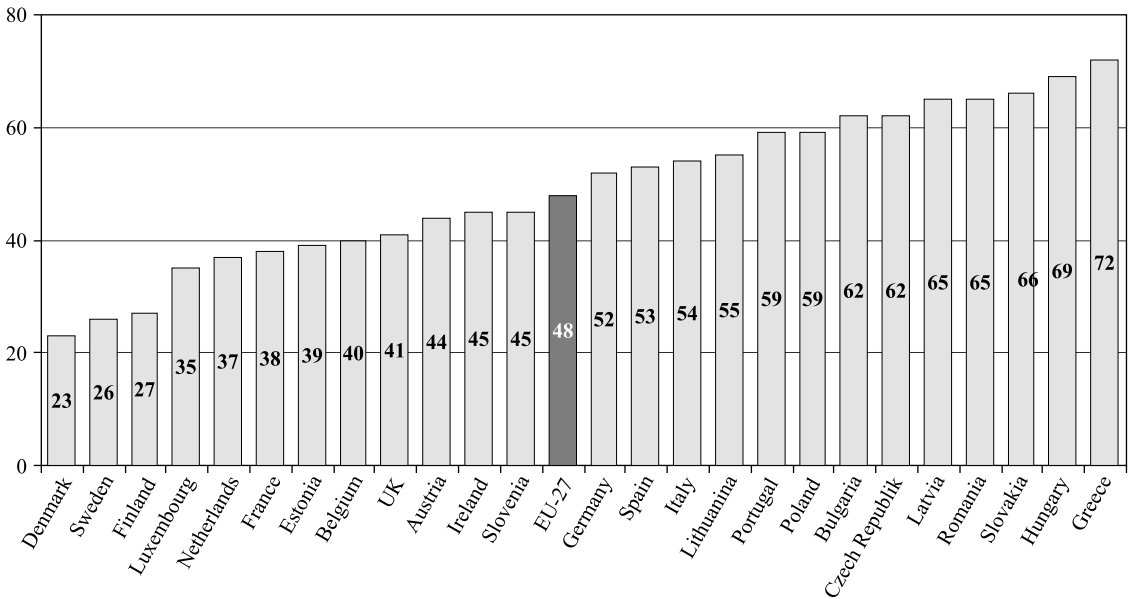


Figure 4. The share of constrained problem-solvers and Taylorised workers in the European Union (2015)

Source: Own compilation based on EWCS 2015.

Sectoral differences: the public sector is an important locus of creative jobs

In the following sections we will analyse differences in the shares of job clusters from a sectoral perspective. In the first step we distinguished work organisations operating in the private and public sectors.⁶ In order to keep the analysis easy to understand, we will focus on Hungary and aggregate country-group-level data. As can be seen from Table A1 (see the annex hereto), the public sector is an important locus of creative jobs in all country groups, as the share thereof is visibly higher than in the private sector. However, that is not true for Hungary, where there were no differences between the two sectors in 2015. Longitudinal analysis shows that this is a relatively recent trend in Hungary, because public sector had a notably higher share of creative jobs than the private sector both in 2005 (58% v. 40%) and 2010 (59% v. 44%). This shift was due to expansion of Taylorised workplaces. In 2010, for example, only 16% of public sector jobs were Taylorised but this percentage doubled in only five years (16% v. 33% in 2010 and 2015). Similar trends were observable in other CEE countries but to a significantly lesser degree (20% v. 26%). In contrast, the Anglo-Saxon country group showed a reverse trend: the share of Taylorised workers was 33% in 2005 and it declined to 18% in 2015. The case of the Mediterranean and Continental country groups is also interesting: in the public sector there was a slightly higher share of creative jobs in 2005, but over a 10-year time period this difference has been growing significantly higher and public sector has become the undisputable leader in the share of creative jobs.

⁶ Based on the related question asked in each of the three waves of the survey (“Are you working in the...? private sector; public sector; joint private-public organisation or company; not-for-profit sector, NGO; other”) we were able to distinguish between private and public sector employees (“joint private-public organisation or company”; “not-for-profit sector, NGO”; and “other” answers were excluded from the results presented in Table 15).

In the following section we will analyse in more detail the changes in public administration compared to other sectors, such as: manufacturing, construction, and utilities; retail and other services; and business and financial services. It is impossible to make any comparisons at country level because of the low number of cases, therefore we will limit our analysis to country-group-level investigation. As can be seen from the table below, public administration has a leading role in promoting creative workplaces in all country groups. Even the “business and financial services”, which is traditionally regarded as one of most innovative sectors, is lagging behind public administration in terms of the share of creative jobs. This is not a new phenomenon, the results of the data analysis show similar patterns for 2005 and 2010, with public administration being one of the most creative sectors (see Table 5). This supports the argument that innovation in the public sector shouldn’t be overlooked and needs much more attention from both policy makers and social scientists instead.

Despite this inherent innovative characteristic of the public administration in every country group, there are non-negligible differences as well. Among them the most striking is the high rate of constrained problem-solvers in the public administration of the CEE countries (see Table 6). The share of these jobs varies between 11% and 20% in the Old Member States, while – in a sharp contrast – the same ratio is 35% in the case of post-socialist countries, which is 14 percentage points higher than the EU-27 average. This is also the only country group in Europe where this type of jobs is the most prevalent in the public administration in comparison to the other three sectors investigated.

Regarding Taylorised jobs it is worth noting that these jobs are almost absent in Scandinavian public administration (see Table 7). Only every 25th employee is working in such an organisational arrangement characterised by low level of creativity and autonomy. In CEE and Mediterranean countries the level of Taylorised job is visibly higher than the EU average. The real divide therefore can be found not between Old and New Member States

Table 5. The share of creative jobs in selected sectors by country groups (2015)

Sector	SCD	AGS	CON	MED	CEE	EU-27
Manufacturing, construction, and utilities	75	64	53	44	38	50
Retail and other services	68	42	46	39	37	43
Business and financial services	78	70	63	54	46	61
Public administration	85	75	69	59	43	64
Average	75	59	55	46	39	52

Legend: SCD = Scandinavian; AGS = Anglo-Saxon; CON = Continental; MED = Mediterranean; CEE = Central and Eastern European

Source: Own calculations based on EWCS 2015.

Table 6. The share of constrained problem-solvers in selected sectors by country groups (2015)

Sector	SCD	AGS	CON	MED	CEE	EU-27
Manufacturing, construction, and utilities	16	24	24	30	34	27
Retail and other services	17	25	26	26	28	26
Business and financial services	14	17	19	17	33	20
Public administration	11	17	18	20	35	21
Average	15	21	22	25	32	24

Legend: SCD = Scandinavian; AGS = Anglo-Saxon; CON = Continental; MED = Mediterranean; CEE = Central and Eastern European

Source: Own calculations based on EWCS 2015.

Table 7. The share of Taylorised jobs in some selected by country groups (2015)

Sector	SCD	AGS	CON	MED	CEE	EU-27
Manufacturing, construction, and utilities	9	12	23	26	29	23
Retail and other services	15	33	28	35	35	31
Business and financial services	7	14	19	29	22	20
Public administration	4	8	13	21	22	15
Average	10	20	22	29	29	24

Legend: SCD = Scandinavian; AGS = Anglo-Saxon; CON = Continental; MED = Mediterranean; CEE = Central and Eastern European

Source: Own calculations based on EWCS 2015

but between the Mediterranean and CEE countries on the one hand, and the Scandinavian, Continental and Anglo-Saxon countries on the other.

In order to put the analysis in a dynamic perspective we also calculated the distribution of different job clusters for 2005 and 2010. As Table A2 shows (see the annex hereto), while the rate of creative jobs did not change significantly from 2005 to 2015, that apparent stability hides important sectoral differences. For example, the share of creative jobs fell in the retail and other services sector as well as in business and financial services, while in manufacturing it rose slightly. In contrast, European public administration experienced an eight-percentage point increase and became the most creative sector among the analysed four branches. This growth was primarily due to the performance of the Mediterranean, Continental and Anglo-Saxon countries, producing an impressive increase in creative jobs (the growth rate varies between 14 and 17 percentage points). In the Scandinavian countries this ratio remained almost the same high level. Meanwhile, the CEE country group experienced a significant loss of creative jobs, as was already pointed out earlier in this section.

In contrast to creative jobs, the share of constrained problem-solvers decreased significantly between 2005 and 2015 in European public administration (see Table A3 in the annex). This was especially true for the Mediterranean countries, where the growth of creative workplaces was balanced mainly by a loss of constrained problem-solvers. It is also worthy of note that in the case of the Anglo-Saxon and CEE country groups there was a fluctuation in between the two terminal dates of the investigation. In the former country group, for example, the share of these workers increased from 18% to 27% between 2005 and 2010 and then fell back to 17% in 2015. The in between variation was even bigger in the post-socialist countries (23%, 35% and 22%, respectively, in the three periods).

Similarly to the previously analysed job cluster, the share of Taylorised workers also decreased in European public administration

between 2005 and 2010 but to a lesser degree (from 19% to 15%; see Table A4 in the annex). The Anglo-Saxon countries experienced the biggest loss in this regard but the share of Taylorised workers fell in all other country groups. The only exception is the CEE countries in which the share thereof grew from 18% to 22%. Almost the same dynamics characterised the manufacturing sector: there were significantly fewer Taylorised workers in the Scandinavian, Anglo-Saxon and Mediterranean countries, while their share remained the same in the Continental countries. The only country group where a slight increase was detected is the CEE countries (from 27% to 29%).

Conclusions

People are playing a key role in the public administration innovation, "... so one of the goals of public human resource management should be to support employees in innovating – that is, ensuring they have the ability, motivation and opportunity to come up with new approaches. Ability requires not just technical skills but also creativity and associative thinking, as well as the behavioural and social skills needed to bring about change" (Fostering Innovation, 2017, p. 11). In relation to the types of investment in innovation ability the majority of efforts are focused on the development of "human capital" (i.e. investment in vocational education). Much less efforts are taken to understand and invest into the improvement of "structural capital". Focusing on structural capital it "... may imply creating and/or implementing learning-intensive forms of organisation or technology" (Cedefop, 2012, p. 22).

The aim of our analysis is to better understand the characteristics of the "structural capital" fostering innovation in public administration. To create a new innovation policy framework it is necessary to identify the pool of creative/innovative and less creative jobs reflecting the quality of structural capital in European public administration in comparison to other sectors (e.g. manufacturing, knowledge intensive business services, etc).

To make a general picture of the variation in creativity in the European economy, firstly a **cross-country analysis** was carried out in an ambition to map the share of job-clusters, measured by six variables presented in the methodology section of the paper, labelled as “creative”, “constrained problems-solvers” and “Taylorised” types. Secondly, we intended to indicate the differences of job-clusters by sectors (e.g. private v. public, public administration v. manufacturing, etc).

One of the most important lessons of this exercise is that, in spite of the 2008 financial crisis and economic downturn, every second European worker is performing “creative/innovative” work offering them both excellent learning opportunities and a substantial level of autonomy in their job. This type of job is one key factor developing learning/innovative organisations (Totterdill, 2017). The remaining European workforce is characterised, by equal shares, as “constrained problems-solvers” and “Taylorised workers”. Jobs performed by “constrained problem-solvers” offer substantial learning opportunity and rather limited autonomy. The “Taylorised” jobs, as an emblematic mass production type of work, are characterised by lack of learning/innovation and low levels of autonomy. Patterns of job cluster distribution remained fairly stable when comparing the three waves of the EWCS (2005, 2010 and 2015).

The core aim of this paper was to outline the **sectoral** differences in the distribution of “job clusters”. In this regard special attention was paid to the private sector versus the public sector. A more detailed comparison of various sub-sectors (e.g. manufacturing, retail and other services, knowledge intensive business services and public administration) was only possible at the country group level, because of the low number of cases.

The analysis shows that the sectors of public administration and knowledge intensive business services are the undeniable locus of the “creative” jobs in all European countries according to the surveys carried out before (2005) and just after (2010) of the 2008 crisis. However, the most recent EWCS, carried out in 2015, indicates that the only

exception from this pattern is Hungary: the share of the “creative” job cluster in public administration in Hungary is less than half of the private sector there.

Focusing on **public administration**, we have to stress that this sector **boosts creative workplaces in all country groups**. In this regard it is worth noting that even “knowledge intensive business service”, which is the emblematic sector of the learning economy, is lagging behind public administration in terms of share of creative jobs.

Public administration is operating in a challenging environment, coping with the following complex policy challenges: how to simultaneously solve the problems created by citizens’ high expectations regarding quality services and by the lower or stagnant level of available resources. It is clear that our analysis based on such elements of job quality as learning/creative opportunities and the level of employee autonomy is highly relevant in this regard. An increasing level of creative/innovative jobs may facilitate the implementation of “High-Performance Civil Service” or “High-Engagement Civil Services”, where “... engaged employees participate beyond the expected level and contribute actively to the success of the organisation” (OECD: Governance Reviews, 2016, p. 60). This justifies the argument that creativity/innovation in the public sector shouldn’t be overlooked but need much more attention from both policy makers and social scientists instead.

It is an urgent challenge for both policy makers and other practitioners as well as for researchers to better understand the roles of human and structural capitals responsible for the development of the “creative” job cluster. A decade-old empirical experience shows that “... very clear patterns that in countries where a higher share of employees are engaged in discretionary learning or carrying out creative jobs⁷ organisations were more engaged in radical innovation” (Totterdill, 2017, p. 3) Finally, when observing the amount of investment in the workplace innovations improving creativity

⁷ Note: in our analysis, discretionary learning was similar to the “creative” job-cluster.

of jobs, it is necessary to extend the attention from the North-South asymmetry to the North-Western–South-Eastern’ divide: the Mediterranean and the NMS countries are in the “trailing edge” category in relation with the investment in the workplace innovations.

This paper has been written with the support and within the framework of: KÖFOP 2.1.2 – VEKOP – 15-2016-00001 Public Service Development for Establishing Good Governance: ‘Innovative, Learning Public Administration’ – Ludovika Research Centre of Excellence.

References

- Cedefop (European Centre for the Development of Vocational Training) (2012). *Learning and Innovation in Enterprise*. Research Paper, No. 27. Luxembourg: Publications Office of the European Union.
- European Commission (2013). *Powering European Public Sector Innovation: Towards A New Architecture, Report of the Expert Group on Public Sector Innovation*, Luxembourg: Publication Office of the European Union.
- European Working Condition Survey – 2005, 2010, 2015 database.
- Fostering Innovation in the Public Sector* (2017). Paris: OECD Publishing, <http://dx.doi.org/10.1787/9789264270879-en>
- Gallie, D. & Zhou, Y. (2013) *Work Organization and Employee Involvement in Europe*. Luxembourg: Publications Office of the European Union.
- Hall, P.A. & Soskice, D. (Eds.) (2001). *Varieties of Capitalism. The Institutional Foundations of Comparative Advantage*. Oxford: Oxford University Press.
- Hollanders, H. et al. (2013). *European Public Sector Innovation Scoreboard 2013. A Pilot Exercise*. Brussels: European Commission – DG for Enterprise and Industry.
- Illéssy, M. (2016). *A gazdaság új fejlődési útjainak keresése: a szervezeti innováció és a szervezeti tanulás szerepének felértékelődése a gazdasági válság idején*. Gödöllő: Szent István Egyetem – Vezetés és Gazdálkodástudományi Doktori Iskola.
- Kesting, P. & Ulhoi, J.P. (2010) Employee-driven innovation: extending the license to foster innovation. *Management Decision*, 48(1), 65–84.
- Lorenz, E. & Lundvall, B. A. (2011) Accounting for creativity in the European Union: A multi-level analysis of individual competence, labour market structure, and systems of education and training. *Cambridge Journal of Economics*, 35(2), 269–294.
- Makó, Cs. et al. (2018). Creative workers in Europe: Is it a reserve of the would be entrepreneurs? (A cross country comparison) In B. Dallago, E. Tortia (Eds.), *Entrepreneurship and Regional Economic Development: A Comparative Perspective on Entrepreneurship, Universities and Governments*. New York: Routledge (in press).
- Makó, Cs. & Illéssy, M. (2016). Segmented capitalism in Hungary: Diverging or converging development paths? In V. Deteil, V.N. Kirov (Eds.), *Labour and Social Transformation in Central and Eastern Europe, Europeanization and Beyond* (pp. 77–97). London: Routledge.
- Makó, Cs. & Illéssy, M. (2015). Coexistence of the high-quality human resources and poor organisational capabilities: Why do post-socialist countries lag behind the EU-15 in public sector innovation? In: A. Bhaltazar, B. Colob, H. Hansen, B. König, R. Müller-Török, A. Prosser (Eds.), *CEE e/Dem and e/Gov Days 2015 – Independence Day: Time for European Internet Integration?* (pp. 283–296). Wien: Computer Society – Österreichische Computer Gesellschaft.
- OECD Governance Reviews – Engaging Public Employees for a High-Performing Civil Service* (2016). Paris: OECD Publishing, www.oecd.org/about/publishing/corrigenda.htm
- Parent-Thirion, A. et al. (2007). *Fourth European Working Conditions Survey*. Dublin: European Foundation for the Improvement of Living and Working Conditions.
- Saari, E., Lehtonen, M. & Toivonen, M. (2015). Making bottom-up and top-down processes meet in innovation. *The Service Industries Journal*, 35(6), 323–344.
- Szunyogh, Zs. (2010). Az innováció mérésének módszertani kérdései. *Statisztikai Szemle*, 88(5), 493–507.
- Totterdill, P. (2017). Interview with Bengt-Ake Lundvall: The learning economy, <http://portal.ukwon.eu/The-Learning-Economy>
- Valeyre, A. et al. (2009). Munkaszervezeti modellek Európában és az emberierőforrás-gazdálkodás néhány jellemzője – Kísérlet a munkaszervezetek nemzetközi paradigmaterképének elkészítésére – I. Rész. *Vezetéstudomány*, 11(10), 2–15.

Annex

Table A1. The distribution of job clusters in the EU between 2005, 2010 and 2015

Country grp.	2005						2010						2015					
	Private			Public			Private			Public			Private			Public		
	CW	CP	TW	CW	CP	TW	CW	CP	TW	CW	CP	TW	CW	CP	TW	CW	CP	TW
Scandinavian	73	14	13	83	11	7	72	16	12	76	15	10	74	17	9	80	10	10
Anglo-Saxon	52	19	30	49	18	33	50	23	27	61	27	12	58	22	21	63	19	18
Continental	55	21	24	56	25	20	48	25	27	55	25	20	52	23	24	67	19	14
Mediterranean	39	27	34	41	32	27	45	19	35	48	22	30	44	25	31	52	25	23
CEE	40	33	27	52	28	20	40	29	30	44	32	24	38	31	30	41	33	26
<i>Hungary</i>	40	31	29	58	25	17	44	30	26	59	25	16	38	31	31	38	29	33
EU-27	50	23	27	53	24	23	48	24	29	53	26	21	50	25	26	58	23	19

Legend: CW = Creative workers; CP = Constrained problem-solvers; TW = Taylorised workers

Source: Own calculations based on EWCS 2005, 2010, 2015.

Table A2. Changes in the share of creative jobs in Europe between 2005, 2010 and 2015

Sector	Scandinavian			Anglo-Saxon			Continental			Mediterranean			CEE			EU-27		
	2005	2010	2015	2005	2010	2015	2005	2010	2015	2005	2010	2015	2005	2010	2015	2005	2010	2015
MNS	73	74	75	49	58	64	53	49	53	38	47	44	38	38	38	46	48	50
RET	68	60	68	42	34	42	49	37	46	38	37	39	46	37	37	46	38	43
BFS	84	82	78	63	60	70	70	70	63	38	56	54	52	57	46	63	64	61
PBA	87	86	85	61	67	75	55	56	69	42	51	59	60	48	43	56	57	64
Average	75	72	75	50	51	59	56	50	55	39	46	46	43	42	39	50	49	52

Legend: MNS = Manufacturing, construction and utilities; RET = Retail and other services; BFS = Business and financial services; PBA = Public administration

Source: Own calculations based on EWCS 2005, 2010, 2015.

Table A3. Changes in the share of constrained problem-solvers in Europe between 2005, 2010 and 2015

Sector	Scandinavian		Anglo-Saxon		Continental		Mediterranean		CEE		EU-27							
	2005	2010	2005	2010	2005	2010	2005	2010	2005	2010	2005	2010						
MNS	14	16	16	28	25	24	24	29	24	28	20	26	35	30	29	27	26	23
RET	16	22	17	17	29	25	22	26	26	22	22	35	28	31	35	22	27	31
BFS	10	12	14	20	19	17	18	15	19	28	13	29	32	24	22	21	16	20
PBA	9	11	11	18	27	17	26	27	18	35	22	21	23	35	22	25	26	15
Average	13	16	15	20	25	21	22	25	22	28	20	29	32	30	29	24	24	24

Legend: MNS = Manufacturing, construction and utilities; RET = Retail and other services; BFS = Business and financial services; PBA = Public administration

Source: Own calculations based on EWCS 2005, 2010, 2015.

Table A4. Changes in the share of Taylorised workers in Europe between 2005, 2010 and 2015

Sector	Scandinavian		Anglo-Saxon		Continental		Mediterranean		CEE		EU-27							
	2005	2010	2005	2010	2005	2010	2005	2010	2005	2010	2005	2010						
MNS	13	10	9	23	17	12	23	22	23	34	34	26	27	31	29	26	26	23
RET	16	17	15	41	36	33	29	37	28	36	41	35	26	32	35	32	36	31
BFS	7	6	7	17	22	14	12	14	19	34	31	29	16	20	22	16	19	20
PBA	4	3	4	21	5	8	19	17	13	23	27	21	18	17	22	19	17	15
Average	12	12	10	30	24	20	22	25	22	33	34	29	25	29	29	26	27	24

Legend: MNS = Manufacturing, construction and utilities; RET = Retail and other services; BFS = Business and financial services; PBA = Public administration

Source: Own calculations based on EWCS 2005, 2010, 2015.