Mapping and Managing Competencies in European Public Administrations.

Three Italian Initiatives

November, 2014

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Introduction

With this document DPA (the Department for Public Administration of the Italian Presidency of the Council of Ministers) presents to the EUPAN network, in the framework of the 2014 Italian Presidency of the Council of the European Union, the main results coming from three different projects, all in the domain of public employees' competency assessment and management[1].

- The first is the survey Managing Competencies in Public Administrations (MC-PA), launched in July by DPA through the EUPAN network, whose data collection has been completed by mid-October.

- The second is the project Organization, Learning and Competencies in the Italian Public Administrations (OLC-PA), the first competency mapping exercise referring to public employees accomplished in Italy. OLC-PA interviews to about 2,000 public employees in 203 public institutions were completed at the end of March, 2014.

- The third is an explorative exercise run for DPA by ISFOL (the Italian National Institute for Vocational Education and Training, Employment and Social Policies), aimed at providing an international comparison on public employees' competencies among European countries, based on the OECD PIAAC data.

The three projects are different but consistent pieces of a knowledge mosaic that Italy offers to the EUPAN network, with the aim of favouring the accumulation of a common patrimony of ideas, results, tools and practices that could help the European countries to improve the quality and effectiveness of public services.

The aim of the projects presented here, in fact, is not only to disseminate relevant information, but also to help establishing useful benchmark reference points for common European action lines that could be cultivated within the EUPAN network, thus contributing to deepening the knowledge about the core issues and diffuse the most effective solutions in modern HR strategies.

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[1] Specific documents of the three projects are available to the EUPAN network.

1. Managing Competencies in Public Administrations (MC-PA)

At the end of July, 2014, DPA (the Department for Public Administration of the Italian Presidency of the Council of Ministers) launched the MC-PA survey (Managing Competencies in Public Administrations) through the EUPAN network. The survey aimed at ascertaining the role of competence assessment and management as crucial to HRM relevant areas, such as personnel recruitment and selection, organizational learning, performance assessment, mobility management, and strategic workforce planning. The collected data have conveyed relevant information about the ways adopted by European countries to manage civil servants' competencies. MC-PA has encountered a high response rate: 72.2% among the 36 contacted countries and 85.7% among the European Union member states.

1.1. Personnel Recruitment and Selection

With reference to the area of *personnel recruitment and selection*, the scenario provided by MC-PA of the institutions responsible in each European country for assessing candidates' competencies is manifold and interesting. In six cases (Ireland, Belgium, Luxembourg, Portugal, Greece and Cyprus) candidates' competency assessment is centralized and performed by the Ministry of Public Administration, or by specific central institutions or commissions. On the contrary, for half the respondent countries (13), competency assessment for public employment candidates is decentralized to single administrations and agencies, even if it is always ruled by norms or guidelines issued by central bodies or by power delegations from the reference ministries. Even more interesting is that Scandinavian and Nordic countries, as well as Slovenia, report the absence of standardized procedures aimed at assessing candidates' competencies. This could happen because the selection processes and channels differ according to the competencies needed, and both ministries and agencies are free to choose the most suitable method, so that different institutions use various tools and procedures.

As regards the instruments used, the large majority of respondent countries (20 out of 26) assess candidates' competencies through *tests or interviews with formal assessment reports*, two thirds require that candidates take *public competitive examinations*, and only one out of three organize for candidates *training courses based on competitive entry exams*[2]. But once again, no generalized tools does exist for Denmark and Estonia, since recruitment and competence development of central government personnel may be delegated to local workplaces. Central authorities provide general guidelines and frameworks, but to manage and implement them is up to the local level, according to relevant local circumstances.

Another significant difference is found in the use of *direct recruitment practices*, given that for the large majority of European countries this channel is exceptional and related to filling particular and often temporary vacant positions, while it seems to be the standard procedure for a small number of countries. Public recruitment is open for all posts except for military and diplomatic careers in Finland, whilst tests or interviews with formal assessment reports are only occasionally used in the Netherlands.

Further interesting information, certainly deserving additional investigation, is about *the role of local trade unions in the selection process*. In Denmark, for instance, works councils deciding local crosswise strategies for employment are transversal across single administrations. In Norway, the union/staff representatives within administrations participate in the recruitment procedures

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[2] Six countries report the use of all three tools (test or interview, competitive examination and selective training courses).

according to the Civil Service Law, either taking part in the interviews or assessing the selection process based on the interview reports.

1.2. Labour Mobility Management

Coming to *labour mobility management*, the results of the survey give at this stage a quite fragmented view of the approach to tools and measures by European countries. There is a cluster of countries that are just marginally involved in specific and *formal mobility procedures*. Among them, Denmark and Norway in Scandinavia; Estonia, Latvia, Poland and Slovakia in Eastern Europe; Turkey in the Southern area.

On the opposite side, a few countries make intensive use of tools and instruments to manage mobility. Remarkable are the cases of Sweden and the Netherlands, which use different kinds of tools to support mobility (*outplacement agencies*, *web portals*, and others), and have also access to some *planned organizational mobility measures*, as well as to a wide range of solutions for *mandatory manager mobility*.

Most European countries, however, have specific tools to support public employees' mobility, as well as specific obligations for managers' mobility; but the ways to use these tools differ from country to country. Moreover, the diffusion of guidelines for appraising the competencies of staff members applying for voluntary mobility is quite limited, and so is it in the case of planned organizational mobility measures and of formal procedures, or consolidated calculation methods, to assess labour redundancies.

1.3. Performance Evaluation

Within the area of *performance assessment*, MC-PA data allow for separating the countries that practice performance evaluations of the results of the whole organization and of internal units from the other countries, which practice the assessment of team and individual results and individual competence. We call the first practices *structural evaluation* and the second *individual and team evaluation*. These last ones are all very close to personnel management practices. Fourteen countries do structural performance evaluation; nine only individual and team evaluation; three do not apply any sort of performance evaluation.

Evaluation affects many different personnel management tools. A large majority of respondent countries use performance evaluation to *identify training needs* and, consequently, to *plan training rounds*. Only in two countries (Italy and Cyprus) evaluation is not linked to training needs and training supply. Largely diffused is also the impact of evaluation on *career development*. Twenty-one are the European countries where career development depends on evaluation. At the opposite side of the coin, in only ten countries performance evaluation has an impact on *pay and financial rewards*, and in only five on *bonuses and benefits*. Half of the countries make no use of any incentive instruments.

Six countries have a thorough system of appraisal (organization, unit, team, individual, competencies and results), but the impact of this system on personnel management tools is different from country to country. The same lack of correlation is shown in the countries that do not practice any structural evaluation. Only in few European countries there is a strong coherence among individual and team evaluation and personnel policies. Bulgaria, Germany and Spain assess individual and team performance, and link the assessment results to training, pay, and careers. For these countries individual and team evaluation are very close to the whole toolbox of personnel management.

1.4. Learning Organization and High Performance Work Organization

The topics covered by MC-PA within the area of *learning organization and high-performance work*[3] are of paramount importance for developing effective and efficient public administrations in Europe. Knowledge management practices seem to be quite developed or, at least, under development. The largest diffusion is reported for *organizational tools aimed at sharing information, learning and knowledge* (i.e. job rotation, coaching, tutoring, mentoring, quality circles, thematic forums, focus groups, etc.). Also significantly wide is the presence of *practices aimed at recurrently involving and consulting employees, through "climate surveys"*, on the quality of their positions, jobs, workplaces, management etc. The presence of *inter-functional working teams* to ensure control and accountability as regards one or more processes is reported by half the respondents. Slightly more than one out of four countries refer the presence of *short-term financial incentives to reward learning, continuous improvement, innovation and skill development*.

Such data seem to witness significantly open managerial approaches and styles, with an evident effort to overturn traditional organisational arrangements, characterised by a bureaucratic, top-down perspective, which disregards consensus and bottom-up improvement opportunities. HR management in European public administrations appears to be mainly inspired by participatory criteria, while financial incentives represent kinds of tools of limited use in the current managerial practices. The focus group discussion has conveyed a common idea, whereby the implementation of learning organization/high-performance work organization models in public administrations is mostly a *cultural* matter, primarily linked to updated managerial mind-sets. The role of top management, therefore, appears as the key factor when promoting and supporting new trends in such an important field.

1.5. Strategic Workforce and Competency Planning

The last topic addressed in this document is the process of *Strategic Workforce and Competency Planning (SWCP)* and the spread of its key elements: *competency mapping, strategic workforce planning* (SWP) and *population need assessment*. *Competency mapping* tools are quite common throughout Europe: almost three quarters of the respondent countries refer the existence of guidelines, reports and/or periodical surveys on public employees' jobs and competencies. In six countries competency mapping is under the sole responsibility of the central authority, while in other eight cases similar tasks are also performed by each administration at the benefit of their own workforce.

Over two thirds of the respondent countries also declare to recruit staff through a form of *strategic workforce planning*. The high number of countries adopting SWP procedures is about the same as of those mapping jobs and competencies; but the countries are not. Five of them hire personnel through strategic plans without having general tools for competency mapping, so that the presence of both instruments is the prerogative of just 14 countries. The modal time horizon for the programming process is three to four years (8 countries), while only two countries adopt a

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[3] E.g. teamwork, participation in quality clubs, focus groups etc., systemic workers' involvement in performance improvement through briefings, meetings and suggestions, coaching and mentoring, task turnover, diagonal career move, etc., often in association with merit assessment policies and promotion of employees direct involvement. Among many others, for a general reference of high-performance work practices, see European Commission, 1997, *Partnership for a new organization of work. Green Paper*, 'Bulletin of the European Union - Supplement', no. 4; Ashton D.N., Sung J., 2002, "Supporting Workplace Learning for High Performance Working", ILO, Geneva; for a study review, Tamkin, P., 2004, *High Performance Work Practices*, Institute for Employment Studies, Brighton.

five-year or longer planning period. For half the countries hiring public personnel through a form of SWP, the procedure is carried out at both central and local level.

Only eight countries i.e. a little less than one third of respondents, combine all three elements of the SWCP process; but the survey data do not assess if they are all in the hands of the same authority and fit to be used together. Whereas six countries map employees' competencies and hire them according to a SWP procedure, but do not have formal assessments of population needs. And other seven countries enact just one element of SWCP: five of them competency mapping only, two a form of SWP.

2. Organization, Learning and Competencies in the Italian Public Administrations (OLC-PA)

In order to provide the Italian Public Administration with a key knowledge tool for strategic human resource planning, DPA has accomplished in 2014 the project Organization, Learning and Competencies in the Public Administration (OLC-PA), namely the first sample survey on Italian public employees' competencies. In a nutshell, planning human resources to meet people's needs (or Strategic Workforce and Competency Planning) may actually be considered as a process composed of two interrelated components: on one hand, planning recruitment, turnover and careers, on the other, planning public employees' competencies; and to accomplish this second task, public administrations need a competency map of their employees.

The OLC-PA project has set the goal to identify – through a sample survey on public employees and managers – the distribution of transversal competencies (namely those shared by all job profiles) enacted in the workplace; and in particular, the diffusion of those key competencies that are strategic for developing and improving efficiency and effectiveness of administrations processes and services. In particular, the survey has collected information allowing to analyse the following:
   a) competencies applied by employees and managers when performing their work;
   b) ways of acquiring these competencies;
   c) the diffusion of organizational measures that encourage the development of key competencies for continuous improvement of processes and services;
   d) competencies that workers intend to strengthen to better carry out their tasks.

Thanks to the considerable information acquired, it has been possible to verify public administrations capacity to manage employees' knowledge and learning through specific organizational practices identifying workplaces that the scientific literature defines *High Performance Work Organizations*, or HPWO (see also paragraph 1.4 above). The term refers to work environments where, often effectively reinforced by adopting ICT, specific processes and organizational practices are on the way, for the purpose of generating and spreading continuous learning. This way, these practices give birth to more organizationally efficient conditions and broader satisfaction of employees about their job.

The following present a synthetic review of the project main result.

2.1. Public Employees Ageing

A first evidence acquired by OLC-PA is that about ageing and concentration of little less than half of public employees in the 50-59 year old age bracket, implying that large cohorts are going to

leave soon the Italian public employment due to retirement. This perspective implies the need to foresee an adequate replacement workforce inflow, in order to minimize the risk of a loss of experience and, consequently, of the creation of service areas where potentially not only a lack of competence, but also a lack of manpower could be registered. To tackle this circumstance, which could produce relevant negative effects in the capacity of the public sector to ensure the necessary services to the population, it seems necessary to foresee forms of Strategic Workforce and Competence Planning (SWCP; see also paragraph 1.5 above), at both central and local level.

2.2. From Training to Learning

Training to Italian public employees emerges as an institutional initiative, not always supported by ad-hoc programming and integration with other aspects of knowledge and HR management, like target setting, performance assessment and strategic competence planning. Furthermore, quite often training is marked by a judgment of dissatisfaction about its usefulness for improving work quality and performance.

Italian public administrations are in the middle of a cultural change that require addressing the employees' capacity in terms of continuous learning and competence building. To this aim, empowering training activities requires the strengthening of its programming capacity, its integration with performance targets on one hand and performance assessment on the other, and its complementarity to organizational learning tools in the workplace. The deriving integration allows for a better focus by administrations on their training and competency needs.

2.3. Qualification and Commitment

The composite qualification or *broad skill index*[4] points out only the school sector as characterized by a qualification level significantly higher than the average, in relation to the fact that the occupational group of teachers shows index levels neatly higher compared to other occupational groups. The incidence within each occupational group of workers with higher qualification than the average is, however, particularly high for teachers, physicians and graduate nurses, and managers. But the average index is relatively contained for top administrative staff, administrative staff, professionals and technicians, qualified nurses and workers/support personnel

Italian public personnel shows a widespread *commitment* to their administration: 70% of employees declare to be available to work more to help the administration to improve its services. Nevertheless, the share who strongly identifies themselves with the administration but disagrees about its capacity to motivate them at the best is not so small (about 20%). In addition, a relatively low level of commitment to the administration accompanied by the perception of its insufficient capacity, or even incapacity to motivate the personnel at the most, is rather diffused among professionals and technicians, physicians and graduate nurses, managers, top administrative staff, qualified nurses and administrative staff.

The motivational aspect is acknowledged as one of the most important elements of work quality improvement. Of great relevance is that management training and organizational models strongly enhance crucial high-performance work tools, such as communication, meetings aimed at improvement and bottom-up suggestions. Also the performance evaluation processes, when set

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[4] The index synthesizes the duration of the schooling required to fill the respondent's job position, the time dedicated by the respondent to learn how to carry out his/her present job and the total duration of training that the respondent has received over the last five years. See Felstead A., Gallie D., Green F. and Zhou Y., 2007, "Skills At Work, 1986 to 2006", Oxford: University of Oxford, SKOPE.

upon criteria of transparency, communication and merit, may exercise positive motivational effects, above all as far as the younger personnel is concerned.

2.4. Competencies

The methodological criterion followed by OLC-PA when mapping competencies is the *Job Requirement Approach* (JRA), which is based on the identification of competencies expressed by respondents on their jobs, and of the frequency of their effective application. Similarly to relevant experiences at national and international level[5], mapping public employees' competencies develops through three subsequent stages:

a) surveying the diffusion and frequency of 47 elementary organizational behaviours among respondents;

b) statistically identifying the competencies applied by employees in their workplace, by extracting them as latent variables manifested by existing cores of correlated behaviours;

c) selecting and mapping the diffusion of key competencies for organizational learning and continuous improvement of processes and services, standing out of basic cognitive and interpersonal behaviours.

Through an explorative factor analysis (main components analysis) of the 47 organizational behaviours surveyed, OLC-PA has identified eight performed competencies, that can be grouped into: i) four cognitive competencies (*literacy*[6], *mathematical competencies*, *international interaction*, *problem-solving*); ii) two interpersonal competencies (*influencing and taking care of others and of users*, *teamwork*); iii) one aptitude competency (*task discretion*); iv) and one knowledge competency (*analysis and programming*).

The most diffused organizational competency among Italian public employees is *problem-solving*, highlighted as a significantly frequently acted out competency by over 60% of respondents. This result is confirmed by the results of the European comparative exercise run by Isfol on PIAAC data (see chapter 3 below). *Teamwork* and *literacy* follow, with an index of diffusion lower than 50%. About one third of employees points out to be working autonomously (*task discretion*) on a rather frequent basis[7]. Less diffused are *mathematical competencies* (little more than one tenth of employees); and even rarer are those related to the *caring of others and of users*, to the *analysis and programming* and *international interaction*.

Positive signs come from the widely spread *teamwork* and multi-competency framework emerging for some occupational groups, with particular reference to managers, as well as physicians and graduate nurses. However, some elements of criticality may derive from the poor diffusion of *mathematical competencies* and *international interaction*, by keeping in mind the role played by the first when analysing the quality of policies and of administrations' performance, and by the second with reference to the dissemination of up-to-date technical and organizational techniques.

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[5] See chapter 3 below.
[6] The ability to read, write and understand written texts as expressed by behaviours, such as: to read and understand brief documents like reports, letters or memos; to use a personal computer, calculators or other computerized tools; to write notes (i.e. brief reports, letters or memos, or e-mails) or to fill in forms in a correct manner; to read information, directives, forms, notices, warnings and e-mails; to read and understand long files, like reports, manuals, articles or books.
[7] Namely: without suggestions or advice, by managing problems with small guidance and assistance; by working hard even without a supervisor.

2.5. Key Competencies

The map of actually expressed competencies is though insufficient, because not all of them have the same importance for achieving the organization's goals and success. Thus, the need to verify the diffusion of some *key competencies of cognitive and interpersonal interaction nature* arises, which social and management sciences indicate as necessary to trigger organizational learning practices aiming at continuous improvement of processes and services. The statistical analysis of the latent structure of cognitive and interpersonal behaviours has resulted in isolating three key competencies: a) *communication and professional relationships among colleagues,* b) *problem-solving,* and c) *teamwork*. The second and the third competencies largely correspond to the majorly performed competencies, while the first results to be less frequent and spread: only 6.1% of employees reports to express it daily.

The diffusion of all three key competencies results to be higher in healthcare agencies. The central public administration reveals considerable diffusion of problem-solving. As far as school is concerned, the key competency related to communication and professional relationships among colleagues results to be more widely spread. The maximum diffusion of the relational key competency is identified among managers, and the values concerning teachers, physicians and healthcare personnel are also relatively high. On the contrary, the relational key competency among the administrative staff (both top and non-top) and among workers and support personnel is contained.

The considerable dissemination and frequency of the key competence of *problem-solving*, which characterizes Italian public employment, is to be positively assessed, even though it could show through a possible relation with the poor diffusion of competencies concerning *taking care of others* and *analysis and programming*, thus highlighting some issues as regards organizational communication and management quality.

2.6. High Performance Work Organization

In consideration of the role acknowledged by international literature to *high performance work organization* (HPWO) as a crucial factor for improving the organization's outcomes (see paragraph 1.4 above), as well as the employees' motivations, OLC-PA has verified their diffusion across the public service. In the framework of the survey, five distinctive practices of HPWO are identified as follows: i) belonging to *quality clubs with the involvement of citizens*; ii) participating in *work meetings once or more in a typical month*; iii) providing *bottom-up suggestions often or sometimes, that are taken in consideration* by managers; iv) receiving *formal performance evaluation on a regular basis through an interview* with the evaluator; v) *working in a team permanently or for some months over a year*, with consequent competency empowerment.

A worker is classified as operating in an *HPWO workplace* when s/he declares to be regularly involved in at least four HPWO practices; in an *intermediate quality workplace* when involved in two or three HPWO practices; in a *traditional workplace* if involved in one or no HPWO practice. Public employees who operate in high-performance workplaces do not exceed 7%. The majority of employees (53%) operate in workplaces of intermediate organizational quality, and traditional workplaces include little less than 40% of employees. HPWO practices are differently spread: If work meetings where suggestions and proposals are welcome are frequent enough (one third of employees), and teamwork is open to nearly half of employees, evaluation with an interview concerns only one fourth of employees, and quality clubs represent a very limited experience, thus restraining the diffusion of high-performance environments.

In universities (16%) and healthcare agencies (13%), high-performance workplaces assume a noticeable degree of relevance. Within territorial authorities (regional and provincial governments) these are slightly rarer than the average, while they are negligible within school, public authorities and central public administration. In these last two sectors, as well as in municipalities, most employees work in traditional organizational environments. The workplaces of top administrative staff, qualified nurses, physicians and graduate nurses, managers (with a peak of 21% for the latter) are clearly more high-performance oriented, while general administrative staff, and workers and support personnel frequently result to operate in traditional organizational workplaces.

Quite interesting is that the frequency according to which employees in HPWO workplaces perform the three key competencies is constantly higher, and so is the diffusion of the key competencies. In the case of communication and interpersonal relationships among colleagues, the distribution of this practice exercised on a daily basis almost triples compared to the average value. In other words, HPWO contexts are supported by and, at the same time, disseminate key competencies according to relationships of mutual reinforcement.

By mapping the competencies of public employees, Italy has accomplished a fundamental step towards the goal of endowing her Public Administration with the key elements of Strategic Workforce and Competency Planning. The competency map provided by OLC-PA allows for a substantial progress in the direction of planning public employees' competencies so to minimize competency gaps and meet present and future population needs for public services.

3. An Explorative Comparison of Public Employees Competencies through OECD PIAAC Data

The PIAAC survey (Programme for the International Assessment of Adult Competencies), promoted by the OECD in 2011-2012 and conducted in 24 countries, including Italy[8], contributes to provide the necessary statistical and analytical basis for dealing with the main policy issues regarding the competencies of adult population. PIAAC data allows for measuring competencies (according to competence level and competence indices in the workplace) in 24 countries, and the exercise run by ISFOL and described here focuses on public sector workers[9] in Italy and Europe[10].

As the PIAAC sample was designed to assess the competencies of the whole adult population, and not of the public sector workers of the various countries participating in the programme, the exercise has a merely explorative nature. But it anyhow shows some trends and interesting cues for further study. A total of 2,866 workers were interviewed in Italy for the PIAAC. Out of these, 2,227 were employed in the private sector (81.4%), 616 in the public sector (18%) and a small number (23) in the non-profit sector. In all other European countries considered here, both the number and the percentage share of interviewed public sector employees were higher.

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[8] In Italy the organisation responsible is the Ministry of Employment and Social Policies, which entrusted ISFOL for the scientific implementation.

[9] In the PIAAC, the sector of belonging was collected through the following item: Which sector do you work in? Do you work in… a) The private sector (e.g. a company); b) The public sector (e.g. local public administrations or state schools); c) A non-profit organisation (e.g. charities, professional associations, religious organisations).

[10] Austria, Belgium (Flanders), Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Poland, Slovak Republic, Spain, Sweden, United Kingdom (England and Northern Ireland).

3.1. Possessed Competencies

The comparison exercise addresses two competency areas. The first refers to the results of the literacy tests, administered in the same way in all the participating countries, and aimed at grading directly the possessed ability "to understand, evaluate, use, and engage with *written texts* to participate in society, to achieve one's goals, and to develop one's knowledge and potential"[11]. The second area encompasses the other competencies actually used by the respondents to accomplish the tasks required by their jobs, along the methodological lines of the Job Requirements Approach (JRA), followed also by OLC-PA (chapter 2 above).

As regards the results obtained in the literacy tests, in the Italian case the public sector workers obtained a higher mean score as compared to the private sector workers. This result is also generally found in the other countries. If we consider the percentage distributions for competence levels in literacy, however, we find that in both sectors about 40% of the Italian workforce are at level 2, that is a level under the minimum necessary for positive inclusion in social, economic and employment contexts[12]. It is, in any case, necessary to note that the public sector workers gravitate towards higher competence levels than private sector ones: 40% (against 32% of the private sector), achieve level 3 or higher. And a lower percentage (about 18%, as against 27% of the private sector) of public employees are in the lower competence levels (level 1 or below).

If we take only the public sector into consideration, it is possible to make a comparison among the European countries considered and observe the percentage distributions on the various competence levels. In all the countries, except Italy, over 50% of the public sector workers have a level 3 or higher competence in *literacy*. Of these, about 15% achieve level 4 compared to the 4% figure found in Italian public sector employees. The analysis of the mean scores obtained in the literacy tests shows that Finland and the Netherlands achieve high mean scores of 299 and 295, respectively, followed by Belgium, Germany, Norway, the United Kingdom, Sweden and Estonia around 285 points. The other countries show progressively lower mean scores.

For *numeracy*, the pattern of proficiency across countries is broadly the same, with few differences. Finland and the Netherlands, while remaining at the top of the rankings, get lower scores, as well as the UK, Poland, Ireland, France, Spain and Italy. Other countries record instead higher scores, among them Belgium, the Slovak Republic and Denmark.

3.2. Performed Competencies

Let us now examine the competencies used on the job[13]. For this kind of analysis it is worth noting that the PIAAC survey design guarantees a meaningful comparison of the results across countries,

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[11] Further to *literacy*, PIAAC tests directly *numeracy*, i.e. "Calculating prices, costs or budgets; using fractions, decimals or percentages; using calculators; preparing graphs or tables; algebra or formulas; using advanced mathematical or statistical functions (calculations, trigonometry, regressions)". Literacy and numeracy are surveyed also indirectly, by means of the JRA method, and the remaining competencies inquired are: *writing*, *ICT*, *problem-solving*, *task discretion*, *learning at work*, *influencing others*, *cooperation*, *self-organisation*, *dexterity*, *physical skills*.

[12] The results are represented on a 500-point scale. To help interpret the results, the reporting scales have been divided into "proficiency levels" defined by particular score point ranges. Six levels of proficiency have been established: Below Level 1 (0-175); Level 1 (176-225); Level 2 (226-275); Level 3 (276-325); Level 4 (326-375); Level 5 (376-500). Below Level 1 indicates very low competencies, nearing on illiteracy, while levels 4 and 5 indicate a mastery of the competence domain. Level 3 is considered as the minimum necessary for positive inclusion in social, economic and employment contexts.

[13] Here we do not consider numeracy, writing, planning and influencing skills because the item response rate is below 85%, and the skills relating to physical and manual tasks as are less relevant referring to the analysis of the public sector workers.

while the comparisons across competency domains should be taken only as suggestive. This is due to the standardisation of the competencies use indicators. In view of this, as regards Italy, we can analyse the differences between sectors (private and public), but not among the competency use indicators. In comparison with the private sector, the public sector employees show a greater frequency in the use of the competencies of *reading*, *influencing* and *learning at work*, while a lower frequency for all other competencies concerned.

Considering only the public sector among the European countries, the use ranking of the information processing competencies (*reading*, *ICT* and *problem-solving*) varies substantially.

Reading competencies are reported to be used at work most frequently in Austria, Denmark and Finland. There is instead a rather low frequency in using reading in Ireland, Italy, France and Slovak Republic. This is a fundamental competency for its effects on productivity. Analysis of results shows that the use of reading competencies at work correlates most strongly with a standard indicator of labour productivity and "differences in the average use of reading competencies explain around 30% of the variation in the labour productivity across countries" [14].

As regards the *use of information and communication technologies* at work, the picture changes. Estonia, the Netherlands and England are the countries where ICT competencies are used the most at work, while Sweden, Finland and Norway seem to use these competencies less frequently. It is worth noting that the use of ICT is very often associated with cognitive and analytical tasks, for example formal writing, and to higher literacy proficiency score.

Problem-solving competencies[15], the so-called transversal key competencies or more generally, "non-routine skills" (European Commission, 2009) are more frequently used in UK, Italy and Spain and less frequently in Belgium, Poland and Austria. Job characteristics such as monotonous versus complex tasks, and jobs which require problem solving and learning new things might also affect training incidence and informal learning as well.

In respect of generic competencies, if considering some competencies that usually characterize most innovative work contexts (i.e., HPWO workplaces) such as *task discretion* (that is, the worker's choice to choose or change his/her sequence of job task or the speed of work), the picture seems to be the same than *reading* one. At the top of the ranking for the use of this competency there are Austria, Denmark and Finland, while at the bottom there are Ireland, Italy, France and the Slovak Republic. The results on task discretion is worrying not only in relation to the quality of work and the worker's commitment, but also in the light of the correlations between task discretion, competencies and all those factors characterizing performing organizations.

Concerning the use of the *learning* competency at work (specifically *on-the-job learning* and *learning by doing*), this competency stands for one of the fundamental requisite for continuous learning required by today's knowledge society. Moreover, informal learning is not only one of the drivers of other competencies acquisition, but also provides opportunities to keep and update the workforce competencies, thus avoiding the risk of competency obsolescence due to the lack of or insufficient use. This competency is reported to be used most frequently in Spain, France and Norway, and less frequently in Poland, Belgium and Austria.

Finally, concerning *cooperation* (i.e. time spent collaborating and sharing of information with co-workers), it seems that this interpersonal competency is most frequently used in Ireland, UK and Denmark, and less frequently in Netherlands, Estonia and Finland. It is worth noting that

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[14] OECD, 2013, "Skills Outlook 2013. First Results from the Survey of Adult Skills", Paris/Brussels, 8 October, p. 148.
[15] They refer to the following question: "How often are you usually confronted with more complex problems that take at least 30 minutes to find a good solution?".

interpersonal competencies are needed for collaborative teamwork, that is of key importance in the modern workplace.