The Education-Job Satisfaction Paradox in the Public Sector

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Abstract

We compare the self-reported satisfaction of workers, employed in the private and the public sectors across European countries, with their working conditions and pay and have reached a controversial conclusion. Although we have found there are more educated workers in the public sector than in the private sector, higher-educated workers report lower levels of satisfaction with their working conditions and income when employed in the public sector, which was the opposite for less educated workers employed in this same sector. In contrast, we found a positive association between education and job satisfaction for workers employed in the private sector.

Keywords Education · Job satisfaction · Public sector · Private sector · Balanced worth

JEL Classification I26 · J28 · H83

Introduction

Much has been written on employment in the public and private sectors and the relative attributes of each one. To begin with, there exists a vast array of literature on public–private sector wage differentials[1] (Bender, 1998; Mueller, 1998; Birch, 2006; Lucifora & Muers, 2006; Makridis, 2021; Sánchez-Sánchez & Fernández Puente, 2021), as well as job satisfaction (Ghinetti, 2007; Heywood et al., 2002). In addition, there is another area of research on employment in the public and private sectors that focuses on the returns to education that workers obtain when they are employed in both sectors. Most studies are empirical and have been done using

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[1] We only cite a few articles in each research area, as we do not intend to undertake an exhaustive literature review.

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surveys of mainly cross-sectional data for specific countries. However, within this line of research, there seems to exist a consensus that returns to education are higher in the private sector in most countries (Montenegro & Patrinos, 2022). That is to say, the return of workers in the private sector of the economy to further education is higher than for those working in the public sector (Psacharopoulos & Patrinos, 2018). According to Budria (2010), this is a worldwide phenomenon, although some authors have recently found exceptions to this stylized fact in a handful of countries such as India (Chen et al., 2022) and Turkey (Patrinos et al., 2019). Psacharopoulos (1979) explains that wages may exceed productivity in the public but not in the private sector. Furthermore, the overpayment of government workers with respect to their productivity can be mostly found at the lower end of the earnings distribution (Siminski, 2013). The public sector offers (relatively) high wages to unskilled workers and (relatively) low wages to the high-skilled (Budria, 2010). Psacharopoulos (1983) concludes that less qualified labor is better treated in the public than in the private sector.

Nonetheless, we could reasonably argue that it may not be the *earnings* that matter most to the workers, but the satisfaction they obtain from their working conditions and pay. Also, as far as we know, relatively less attention has been paid to returns to education in the public and the private sectors in terms of the workers' well-being. Furthermore, there are several studies on job satisfaction in which both education and the sector (either public or private) are considered explanatory variables in job-satisfaction regressions, but the interaction between both variables and their effect on job satisfaction has not been analyzed yet.

In this paper, we analyze the self-reported levels of satisfaction with working conditions and pay of public and private sector workers who have attained different levels of education. In the context of Herzberg's two-factor theory (Herzberg et al., 1959), our focus on satisfaction with working conditions and pay could be framed as an analysis of the hygiene or extrinsic factors of job satisfaction. In particular, we compare and rank the satisfaction with working conditions and pay of European workers who are employed in the private and public sectors. We intend to shed some new light on this topic by analyzing self-reported job satisfaction in a large sample of 43,850 workers from 35 countries, which is the last available wave of the European Working Conditions Survey (EWCS).

Since data on job satisfaction provided by surveys is based on subjective replies to an interviewer's questions in some sort of categorical fashion, in our analysis we use the Balanced Worth (BW) procedure. The BW was developed from the concept of Net Difference (Lieberson, 1976) and incorporates the economic concepts of value and equilibrium. This methodology has been specifically designed to compare distributions of categorical data (Herrero & Villar, 2013, 2018) to analyze inequality among different population groups.

In recent years, the BW has been successfully used in different areas of the Social Sciences and has proven to be a suitable mechanism for researching happiness and well-being (Herrero & Villar, 2018). In particular, the BW procedure has been applied in studies on human capital and health (Herrero & Villar, 2013), education (Herrero et al., 2014), corporate responsibility (Gallén & Peraita, 2015), nationalist identity (Torregrosa, 2015), research (Albarrán et al., 2017), life satisfaction

(Herrero & Villar, 2018), labor market (Herrero & Villar, 2019), happiness (Ravina-Ripoll et al., 2020), COVID-19 (Herrero & Villar, 2020), and income distributions (Herrero & Villar, 2021).

The paper proceeds as follows. We devote the next two sections to briefly summarizing the methodology and describing the data set. The following sections display our results regarding satisfaction with working conditions and payment in both sectors. The final section summarizes the conclusions of our empirical analysis.

The BW Procedure

Questions regarding job satisfaction are quite similar across surveys, as they ask workers to provide an overall assessment of their job satisfaction and working conditions, offering them several categorical responses. Score methods are commonly used when dealing with ordered categorical data, which consist of giving weights to each of the categories in an appropriate order and evaluating the groups according to their mean values. The problem with these methods is that the choice of weights introduces an exogenous cardinalization in the original information, leading to arbitrary results.

An alternative method is based on the concept of stochastic dominance. This procedure is robust, and only relies on categorical information, without using external weights. But this method provides neither a complete order nor cardinal information about the relative goodness of the distributions (Herrero & Villar, 2018). To amend these problems, Lieberson (1976) posed a procedure to compare any pair of distributions, based on the concept of probabilistic dominance. That is, how likely it is that an individual from one group chosen at random will belong to a higher category than an individual from any other group chosen at random.

Following Herrero and Villar (2013, 2018), let us consider the problem of comparing the distributions of g different groups over a set of k categories. The following table shows the information that we can draw from our data set, where the first row represents different categories. These categories are ordered from best to worst and the first column corresponds to the different groups and x_{ij} denotes the relative frequency in which category j appears in group i, where $\sum_{j=1}^{k} x_{ij} = 1, \forall i = 1, 2, \ldots, g$.

	c_1	c_2	…	c_k
f_1	x_{11}	x_{12}	…	x_{1k}
f_2	x_{21}	x_{22}	…	x_{2k}
⋮				
f_g	x_{g1}	x_{g2}	…	x_{gk}

Our comparison problem consists of evaluating the relative dominance of these frequencies among them. This is an extension of the concept of *Net Difference* introduced by Lieberson (1976) for the case of two groups. Hence, let

$$p_{ij} = x_{i1}\left(x_{j2} + x_{j3} + \cdots + x_{jk}\right) + x_{i2}\left(x_{j3} + \cdots + x_{jk}\right) + \cdots + x_{i(k-1)}x_{jk}$$

be the probability that a randomly chosen individual from group i belongs to a better category than a randomly chosen individual from group j. On the other hand, the probability that the randomly chosen individuals from both groups belong to the same category is

$$e_{ij} = x_{i1}x_{j1} + x_{i2}x_{j2} + \cdots + x_{ik}x_{jk},$$

where $e_{ij} = e_{ji}$ and $p_{ij} + p_{ji} + e_{ij} = 1$. The procedure posed by Herrero and Villar (2018) consists of choosing one individual from each group at random and comparing its category with that of a randomly chosen individual from all the other groups. In the pairwise comparison, when a randomly chosen individual of group i belongs to a higher category than a randomly chosen individual of group j, we say that the distribution of group i dominates the distribution of group j. If both individuals belong to the same category (with probability e_{ij}), each group is declared dominant with a probability of 0.5. Hence, the probability of group i being declared not worse than group j is $q_{ij} = p_{ij} + \frac{1}{2}e_{ij}$. At this point, Herrero and Villar (2013, 2018) introduce the concept of the *worth* of group i, given by v_i, which could be interpreted as the value of not-being dominated by any group. To avoid problems of cycles that may arise in the pairwise comparisons between groups, Herrero and Villar (2018) propose to determine the groups' worth by equating the expected worth of group i not being dominated by the rest of the groups with the expected worth of the rest of the groups not being dominated by group i. That is,

$$\sum_{j \neq i} q_{ij} v_j = v_i \sum_{j \neq i} q_{ji}.$$

Extending this criterion to all the groups, we can write the following homogeneous linear system $Mv = 0$, where

$$M = \begin{pmatrix} -\sum_{j \neq 1} q_{j1} & q_{12} \cdots & q_{1g} \\ q_{21} & -\sum_{j \neq 2} q_{j2} \cdots & q_{2g} \\ \vdots & \vdots & \vdots \\ q_{g1} & q_{g2} \cdots & -\sum_{j \neq g} q_{jg} \end{pmatrix}$$

and $v' = (v_1, v_2, \ldots, v_g)$. Since the sum of each column of M equals zero, the vectors that conform it are linearly dependent, thus M is singular, and the homogeneous system has one degree of freedom. To amend the indetermination of the solution, Herrero and Villar (2018) add an additional equation associated with the normalization of the worth vector, say $\sum_1^g v_i = g$.[2] Herrero and Villar (2018) prove that the solution to this system exists, is unique, and is given by $v^* = \left(v_1^*, v_2^*, \ldots, v_g^*\right)$ such that $\sum_1^g v_h^* = g$, and

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[2] This constraint also allows us to equalize to one the average worth $\left(\bar{v} \equiv \sum_1^g v_i/g = 1\right)$.

$$v_i^* = \frac{\sum_{j \neq i} q_{ij} v_j^*}{\sum_{j \neq i} q_{ji}}, \; i = 1, 2, \ldots, g.$$

We call v^* the BW vector. The main contribution of the BW is that, according to the probability of the domination criterion, it ranks the different groups using a cardinal measure. In contrast to the score methods previously used to compare categorical distributions, the BW procedure does not only rank the dominance of a group, but it also provides endogenous information about the intensity of such dominance using the cardinality of its components. The BW has other desirable properties, such as anonymity, symmetry, and monotonicity (see Herrero & Villar, 2013, 2018).

The website of the Instituto Valenciano de Investigaciones Económicas (IVIE) provides the algorithm to calculate the BWV freely (http://www.ivie.es/balanced-worth/).

The Data

The data set that we use is the sixth wave of the European Working Conditions Survey (EWCS), which was conducted in 2015 by the European Foundation for the Improvement of Living and Working Conditions (Eurofound) and interviewed 43,850 workers whose answers provide an overview of working conditions in Europe. Using the cross-national weights given by the EWCS ensures that each country is represented in proportion to the size of its in-work population.

The EWCS is based on a questionnaire that was administered face-to-face to a random sample of 'persons in employment', both employees and self-employed, who work in the private sector, the public sector, or at other alternatives, such as joint private–public organizations or companies, the not-for-profit sector or non-governmental organizations. Among them, 68.47% of surveyed individuals declare to work in the private sector, while 23.06% declare to work in the public sector. For our purposes, we focus on the private and the public sectors, where 91.53% of workers are employed.

Regarding worker's education, the EWCS classifies the attained educational levels of surveyed individuals according to the categories of the International Standard Classification of Education (ISCED). These categories and their percentages in the EWCS are the following: childhood education (0.58%), primary education (4.75%), lower secondary education (13.37%), upper secondary education (41.55%), post-secondary-non-tertiary education (7.02%), short-cycle tertiary education (9.42%), bachelor or equivalent (13.05%), master or equivalent (9.29%), and doctorate or equivalent (0.95%). For the sake of representativeness, we consider individuals that report levels of education from primary to master or equivalent.[3] Moreover, to keep a unimodal and symmetrical distribution, we gather the groups

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[3] In our analysis, we have discarded the lowest and the highest educational levels because the number of workers that fall into those categories is relatively small.

of post-secondary-non-tertiary education and short-cycle tertiary education in one group called post-secondary-tertiary education (16.43%).

Results

Let us first consider the educational attainment of workers employed in the private and public sectors using the BW procedure. Table 1 shows the distributions of groups for the private and the public sector according to the level of education of their workers and their corresponding Balance Worth Value (BWV).

The BW components in Table 1 indicate that a randomly chosen individual from the public sector is more likely to have a higher education level than a randomly chosen individual from the private sector. In other words, the concentration of educated workers is considerably higher in the public than in the private sector across European countries, as the frequency distributions and the subsequent BW calculation show. Notice the difference between both components of the BW vector, which suggests a high level of inequality in terms of the educational attainment of workers in both sectors. This will be our first finding.

Moreover, we have analyzed whether this result holds in each of the 35 countries of the EWCS. We have also calculated the difference between the BW components and ordered countries according to that difference. These calculations are shown in the Appendix. Figure 1 illustrates the differences in the BW components for the public and the private sectors for each country. As we can observe, in all the countries workers' educational attainment is higher in the public than in the private sector with no exception. Nonetheless, there are differences across countries. The country with greater inequality in both sectors regarding the educational attainment of its workers is Albania, followed by Turkey and Greece. At the other end of the spectrum, we find The Netherlands, where the educational achievement of workers in the public and the private sector is more similar, remaining higher in the public than in the private sector, as in any other country in this data set.

Working in the public sector has been related to higher levels of job satisfaction (Ghinetti, 2007; Heywood et al., 2002). Ghinetti (2007) indicates that public employees differ from private employees in the way they evaluate satisfaction with job security, consideration by colleagues, and safety and health job features. Sánchez-Sánchez and Fernández Puente (2021) conclude that public sector employees are more satisfied in terms of stability but not in terms of wages. According to Clark and Postel-Vinay (2009), permanent public jobs are perceived to be by and

Table 1 Distributions and BW for educational attainment by sectors

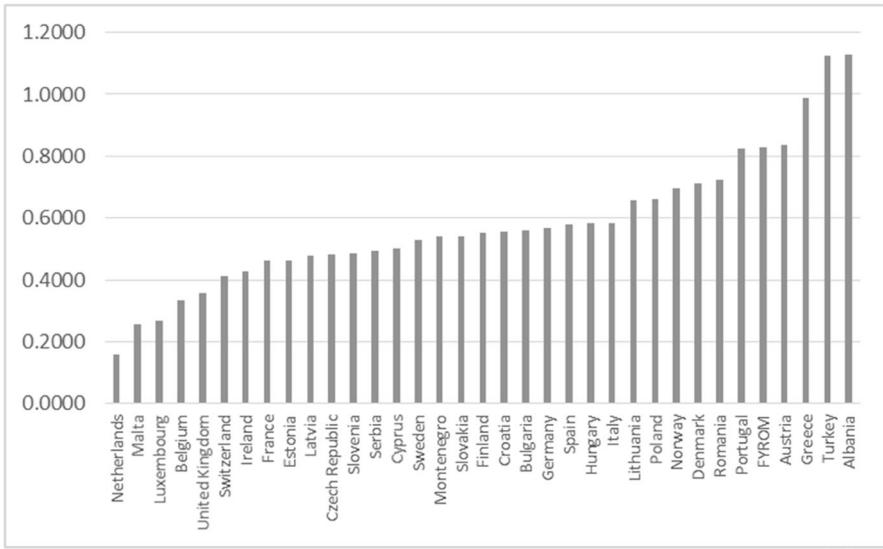|	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV
Private sector	0.0744	0.1070	0.1275	0.4717	0.1621	0.0573	**0.6917**
Public sector	0.1763	0.2223	0.1750	0.3197	0.0891	0.0175	**1.3083**

Fig. 1 Difference between workers' educational attainment in the public and private sector BWV components by countries ranked from the lowest to the highest

large insulated from labor market fluctuations and this may be the reason educated workers prefer to be employed in the public sector of the economy.

We now proceed to analyze and compare the levels of satisfaction with working conditions and payment reported by workers with different levels of educational attainment employed in both sectors.

Satisfaction with Working Conditions

Question Q88 of the EWCS enquires about the worker's satisfaction with working conditions in the following terms: *"On the whole, are you very satisfied, satisfied, not very satisfied, or not at all satisfied with working conditions in your main paid job?"* Overall, 24.79% of workers report being very satisfied, 58.41% report being satisfied, 13.08% report being not very satisfied, 3.02% report being not at all satisfied, and 0.6% report no opinion or refuse to answer this question.[4]

Tables 2 and 3 show the distributions and the satisfaction with working conditions for the different educational levels measured through the BW for the private and the public sectors, respectively.

Results radically differ in both sectors. While in the private sector, we can observe a monotonically increasing relationship between workers' educational attainment and job satisfaction, in the public sector this monotonicity is lost. We can

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[4] In order to make these calculations, we have used the weights provided by the EWCS. Three types of weights needed to be applied to ensure that the results based on the data could be representative for workers in Europe.

Table 2 Distributions and BW for satisfaction with working conditions and educational attainment for the private sector

Private sector	Very satisfied	Satisfied	Not very satisfied	Not at all satisfied	BW
Primary	0.1356	0.6087	0.2036	0.0521	**0.6852**
Lower secondary	0.2344	0.5775	0.1493	0.0388	**0.9001**
Upper secondary	0.2217	0.6348	0.1195	0.0240	**0.9426**
Post-secondary-tertiary	0.2853	0.5650	0.1189	0.0308	**1.0393**
Bachelor	0.3311	0.5620	0.0886	0.0183	**1.1993**
Master	0.3535	0.5338	0.0874	0.0253	**1.2335**

Table 3 Distributions and BW for satisfaction with working conditions and educational attainment for the public sector

Public sector	Very satisfied	Satisfied	Not very satisfied	Not at all satisfied	BW
Primary	0.3280	0.5606	0.0930	0.0184	**1.0919**
Lower secondary	0.2272	0.6184	0.1316	0.0228	**0.8618**
Upper secondary	0.2665	0.5981	0.1115	0.0239	**0.9475**
Post-secondary-tertiary	0.3326	0.5365	0.1172	0.0137	**1.0726**
Bachelor	0.2873	0.5895	0.1117	0.0115	**1.0024**
Master	0.3035	0.5699	0.1071	0.0196	**1.0239**

also observe how the BW components in the public sector are much closer to their mean value,[5] which suggests that the different educational groups are more similar in terms of job satisfaction than within the private sector, where the range of the BW components is larger. Neither lower nor upper secondary education is associated with higher job satisfaction than primary education. In a similar line, having a bachelor's degree does not improve job satisfaction in the public sector. In general, we can assert that there is little difference in terms of satisfaction with working conditions among workers belonging to alternative educational groups in the public sector whereas job satisfaction clearly increases with education in the private sector.

To visualize these results and compare them across sectors, we have calculated the differences between each component of the BW vector and the component of the group of workers with primary education, which we denote as the primary-education normalized BW (PENBW). We have done this for both sectors and our findings are illustrated in Fig. 2. Clear differences can be observed between both sectors.

Adopting an alternative perspective in terms of BW calculations, we can compare workers' job satisfaction in the private and public sectors within each educational group. Table 4 displays these results. As we can observe, workers who have attained the highest levels of education, i.e., bachelor's and master's degrees, report being more satisfied with their working conditions if they work in the private sector whereas workers with lower educational attainment report being happier at work

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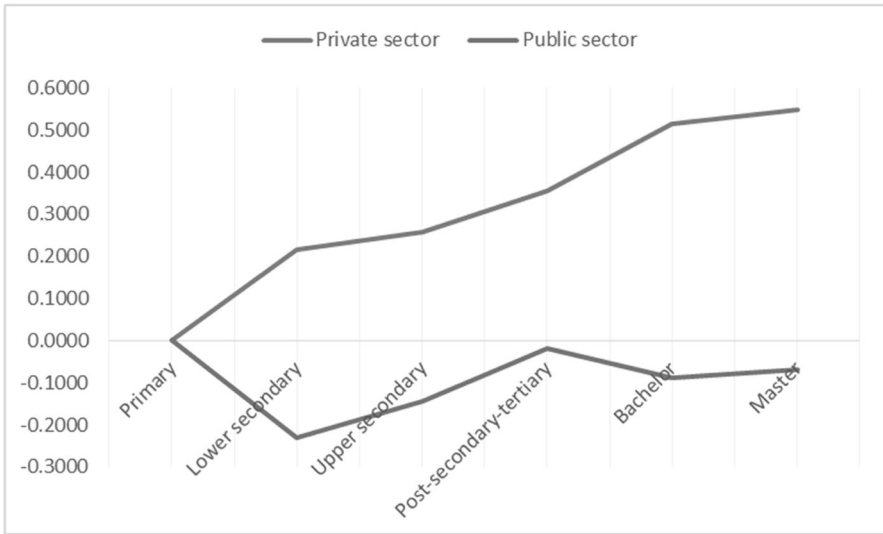[5] The expected value of the BW components is 1 (Herrero & Villar, 2013).

Fig. 2 PENBW for satisfaction with working conditions by sectors

Table 4 BW for satisfaction with working conditions by sector for each level of educational attainment

BW	Primary	Lower secondary	Upper secondary	Post-second-ary-tertiary	Bachelor	Master
Private sector	**0.7310**	**0.9783**	**0.9555**	**0.9444**	**1.0490**	**1.0524**
Public sector	**1.2690**	**1.0217**	**1.0445**	**1.0556**	**0.9510**	**0.9476**
Diff	−0.5381	−0.0433	−0.0890	−0.1113	0.0980	0.1049

when they are employed in the public sector. Notice the relatively larger difference in the BW components for workers with primary education, which suggests that workers with the lowest level of educational attainment report being much more satisfied with their working conditions if they are employed in the public than in the private sector.

Satisfaction with Pay

We proceed to analyze whether workers employed in the private and public sectors feel satisfied with the pay that they receive. The EWCS poses the following question[6]: *Considering all my efforts and achievements in my job, I feel I get paid appropriately*, for which it offers the following options: *Strongly agree; Tend to agree; Neither agree nor disagree; Tend to disagree; Strongly disagree*. Overall, 97.15% of

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[6] This corresponds to Question 89A.

workers answer this question, and the distributions of replies for each level of educational attainment are depicted in Table 5 along with the BW calculation.

The BW results indicate that the higher the level of education attained by workers, the higher the probability of them reporting they receive appropriate payment for their work. Indeed, there is a monotonic relationship between educational attainment and satisfaction with pay in the whole sample, but does this monotonicity hold in each sector?

To answer this question, in what follows, we undertake BW calculations segregating workers into two different subsamples, depending on whether they work for the private or the public sector. Results are shown in Tables 6 and 7, respectively. Figure 2 illustrates the associated PENBW calculations (Fig. 3).

Again, we find a completely different scenario in terms of the workers' feelings toward their pay in the private and public sectors. Whereas workers in the private sector are more likely to report that the pay they receive is appropriate as their level of education increases, a nonmonotonic pattern can be observed for workers in the public sector. Moreover, in this sector, we find a paradoxical result, only the least educated (primary education) and the most educated (master or equivalent) are more likely to report being satisfied with the pay they receive. By contrast, workers with intermediate levels of educational attainment show lower degrees of satisfaction with their pay.

Finally, let us assess the BW calculation for workers' satisfaction with pay in the private and public sectors within each level of educational attainment. Table 8 depicts the results.

Only workers who have attained the lowest levels of education, i.e., primary or lower secondary, consider that they are more appropriately paid in the public sector than their private-sector counterparts. Workers with higher educational attainment feel more appropriately paid if they are employed in the private sector.

Although we are analyzing satisfaction with pay instead of monetary returns to education, we could say that our findings are in line with previous empirical evidence concerning the returns to education in terms of earnings in the public and private sectors. As we stated earlier, previous research has concluded that returns

Table 5 Distributions and BW of education level for the whole sample

Whole sample	Strongly agree	Tend to agree	Neither agree nor disagr	Tend to disagree	Strongly disagree	BW
Primary	0.1700	0.2320	0.1738	0.1781	0.2460	**0.7521**
Lower secondary	0.1646	0.3099	0.1923	0.1751	0.1581	**0.9078**
Upper secondary	0.1436	0.3551	0.2094	0.1730	0.1188	**0.9601**
Post-secondary-tertiary	0.1680	0.3745	0.1602	0.1749	0.1225	**1.0240**
Bachelor	0.1981	0.3708	0.1686	0.1655	0.0969	**1.1305**
Master	0.2362	0.3606	0.1544	0.1554	0.0934	**1.2254**

Table 6 Distributions and BW of education level for the private sector

Private sector	Strongly agree	Tend to agree	Neither agree nor disagr	Tend to disagree	Strongly disagree	BW
Primary	0.1580	0.2370	0.1819	0.1832	0.2400	**0.7215**
Lower secondary	0.1576	0.3063	0.1994	0.1762	0.1604	**0.8650**
Upper secondary	0.1416	0.3598	0.2133	0.1697	0.1157	**0.9411**
Post-secondary-tertiary	0.1753	0.3828	0.1526	0.1618	0.1276	**1.0259**
Bachelor	0.2173	0.3835	0.1703	0.1458	0.0831	**1.2020**
Master	0.2317	0.3837	0.1603	0.1420	0.0823	**1.2445**

to education are higher for private-sector workers than for public-sector workers, at least in higher-income countries (Budria, 2010; Psacharopoulos, 1979, 1983). In our large sample of mainly European workers, we find that workers with higher educational attainment report higher satisfaction with their pay when they are employed in the private sector and workers with lower educational levels report to be more satisfied with their earnings if they work in the public sector. In this sense, it is not surprising to find that the analysis of subjective measures of workers' well-being with their pay is coherent with earlier empirical studies regarding the relative -and objectively measured- monetary returns to education in both sectors.

Concluding Remarks

Understanding how to assess returns to education in the public and the private sectors of the economy should be crucial to implement policy decisions in public sector administration. Just as policymakers can learn from estimates of the monetary

Table 7 Distributions and BW of education level for the public sector

| Public sector	Strongly agree	Tend to agree	Neither agree nor disagr	Tend to disagree	Strongly disagree	BW
Primary	0.3003	0.2668	0.1147	0.2009	0.1173	**1.1728**
Lower secondary	0.1550	0.3214	0.1834	0.1853	0.1549	**0.8852**
Upper secondary	0.1364	0.3463	0.1805	0.2072	0.1296	**0.8898**
Post-secondary-tertiary	0.1556	0.3420	0.1716	0.2173	0.1134	**0.9350**
Bachelor	0.1682	0.3592	0.1665	0.1892	0.1168	**0.9907**
Master	0.2263	0.3443	0.1519	0.1682	0.1093	**1.1265**
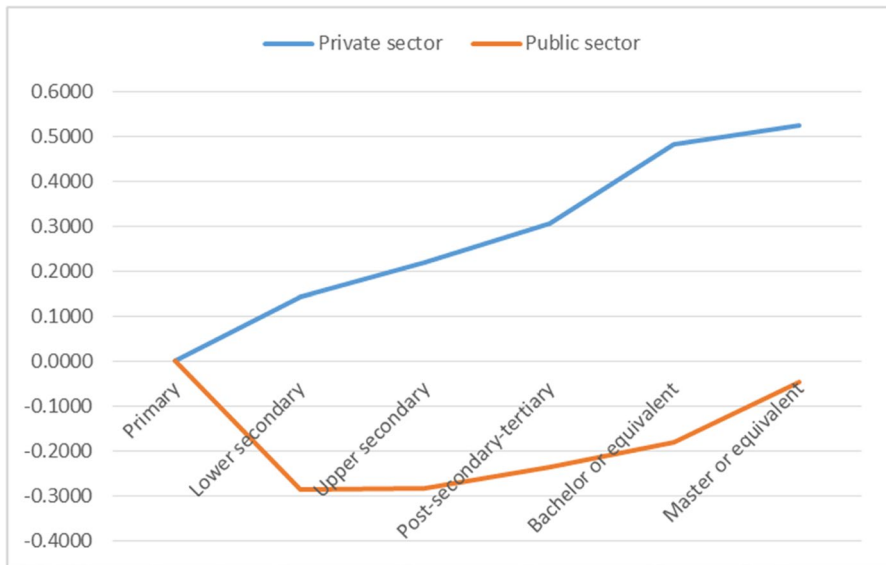
Fig. 3 PENBW for satisfaction with payment by sectors for each level of education

benefits of education, we argue that workers' perceptions of returns to education in both sectors should also be considered. However, while there is an established consensus that education is more profitable -in terms of earnings- in the private than in the public sector, relatively little is known about satisfaction with working conditions and pay in both sectors. In this paper, we have analyzed both issues for public and private sector employees with different educational attainment by applying the BW procedure to a large sample of European workers. We conclude that:

(a) Educational attainment is higher among workers employed in the public sector in each one of the 35 countries of the EWCS data set.
(b) Higher levels of satisfaction with working conditions and pay are related to higher levels of education in the private sector but not in the public sector.
(c) Public-sector workers with lower education levels report higher levels of satisfaction with working conditions and pay compared with their private-sector counterparts.

Table 8 BW for satisfaction with payment by sector for each level of educational attainment

BW	Primary	Lower secondary	Upper secondary	Post-second-ary-tertiary	Bachelor	Master
Private sector	0.7815	0.9944	1.0370	1.0523	1.1022	1.0498
Public sector	1.2185	1.0056	0.9630	0.9477	0.8978	0.9502
Diff	−0.4370	−0.0112	0.0740	0.1046	0.2045	0.0997

(d) Private-sector workers with higher levels of educational attainment declare higher levels of satisfaction with working conditions and pay than their public-sector counterparts.

Given the relatively higher levels of educational attainment of workers employed in the public sector, despite nonincreasing satisfaction with working conditions and pay, other underlying factors, which have not been considered in this paper, must determine the preference -and prevalence- of educated workers for the public sector. While this analysis falls beyond the scope of this paper and more research is needed to unravel this puzzle, one lesson to be learned is that despite the lower levels of satisfaction reported by highly educated people with working conditions and pay in the public sector, the likelihood of finding educated workers is still higher in this sector than in the private sector. Nevertheless, public administration managers should be, in our view, aware of this fact to implement policies that prevent highly educated workers employed in the public sector from quitting their jobs and searching for jobs in the *apparently more rewarding* private sector.

Appendix

Netherlands	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.1799	0.1725	0.0415	0.3373	0.2107	0.0581	0.9198	
Public sector	0.2081	0.2258	0.0415	0.2808	0.2165	0.0273	1.0802	0.1605
Malta	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.0407	0.1109	0.1439	0.2054	0.4552	0.0439	0.8710	
Public sector	0.0761	0.1752	0.1551	0.1811	0.3732	0.0393	1.1290	0.2580
Luxembourg	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.1994	0.0882	0.1013	0.3521	0.2008	0.0582	0.8656	
Public sector	0.2621	0.0985	0.1234	0.3570	0.1167	0.0423	1.1344	0.2688
Belgium	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.1153	0.0707	0.1964	0.4463	0.1428	0.0285	0.8336	

	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Public sector	0.1588	0.0877	0.3205	0.2993	0.1130	0.0207	1.1664	0.3328
United Kingdom	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.0897	0.1999	0.1176	0.2169	0.3711	0.0049	0.8207	
Public sector	0.1568	0.2452	0.1616	0.1873	0.2369	0.0122	1.1793	0.3586
Switzerland	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.0751	0.1419	0.0983	0.5646	0.1035	0.0165	0.7933	
Public sector	0.2123	0.1987	0.0522	0.4633	0.0673	0.0062	1.2067	0.4134
Ireland	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.1127	0.1911	0.3211	0.2565	0.0735	0.0452	0.7859	
Public sector	0.2532	0.2505	0.2336	0.1508	0.0830	0.0290	1.2141	0.4283
France	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.1487	0.0790	0.1666	0.5051	0.0771	0.0235	0.7694	
Public sector	0.2748	0.1489	0.1507	0.3793	0.0321	0.0140	1.2306	0.4611
Estonia	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.0843	0.0681	0.4200	0.2000	0.2253	0.0023	0.7680	
Public sector	0.2341	0.0635	0.4312	0.1394	0.1317	0.0000	1.2320	0.4640
Latvia	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.0885	0.1477	0.4297	0.2440	0.0830	0.0071	0.7613	
Public sector	0.2489	0.2068	0.3164	0.1454	0.0773	0.0053	1.2387	0.4775
Czech Republic	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.0757	0.0357	0.0902	0.7072	0.0896	0.0016	0.7596	
Public sector	0.1951	0.0759	0.1776	0.4737	0.0683	0.0094	1.2404	0.4808

Slovenia	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.0228	0.1816	0.0637	0.6504	0.0782	0.0033	0.7560	
Public sector	0.0480	0.3710	0.0841	0.4406	0.0546	0.0018	1.2440	0.4880
Serbia	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.0472	0.1086	0.1072	0.6534	0.0659	0.0177	0.7524	
Public sector	0.1132	0.2110	0.1510	0.4949	0.0242	0.0057	1.2477	0.4953
Cyprus	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.0956	0.1852	0.1997	0.4174	0.0777	0.0244	0.7486	
Public sector	0.1540	0.3894	0.1193	0.2797	0.0274	0.0301	1.2515	0.5029
Sweden	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.1205	0.1079	0.1024	0.5840	0.0832	0.0021	0.7357	
Public sector	0.1947	0.1899	0.2094	0.3713	0.0348	0.0000	1.2643	0.5287
Montenegro	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.0129	0.1590	0.0491	0.7071	0.0619	0.0100	0.7302	
Public sector	0.0477	0.2941	0.1245	0.5168	0.0170	0.0000	1.2698	0.5395
Slovakia	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.0792	0.0250	0.0561	0.8140	0.0247	0.0011	0.7302	
Public sector	0.2942	0.0524	0.0952	0.5120	0.0405	0.0057	1.2698	0.5396
Finland	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.1076	0.0488	0.4154	0.3233	0.0721	0.0328	0.7239	
Public sector	0.2349	0.0777	0.4745	0.1633	0.0439	0.0058	1.2761	0.5521

Croatia	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.0467	0.0974	0.0625	0.7204	0.0670	0.0060	0.7218	
Public sector	0.1638	0.1712	0.1239	0.5098	0.0313	0.0000	1.2782	0.5564
Bulgaria	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.2003	0.0610	0.0193	0.5884	0.1236	0.0074	0.7208	
Public sector	0.3552	0.1474	0.0760	0.3440	0.0714	0.0061	1.2792	0.5584
Germany	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.0612	0.0624	0.1116	0.6875	0.0697	0.0077	0.7167	
Public sector	0.1836	0.1514	0.1523	0.4742	0.0366	0.0019	1.2833	0.5666
Spain	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.0370	0.1214	0.3626	0.1853	0.2074	0.0863	0.7093	
Public sector	0.0352	0.2794	0.4563	0.0972	0.0969	0.0351	1.2908	0.5815
Hungary	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.0580	0.0612	0.1857	0.5966	0.0975	0.0011	0.7082	
Public sector	0.1275	0.2324	0.1820	0.4150	0.0431	0.0000	1.2918	0.5835
Italy	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.0125	0.0901	0.0834	0.5168	0.2631	0.0342	0.7081	
Public sector	0.0251	0.2436	0.1335	0.4600	0.1295	0.0084	1.2919	0.5837
Lithuania	Master	Bachelor	Post-secondary-tertiary	Upper secondary	Lower secondary	Primary	BWV	Diff
Private sector	0.0780	0.1734	0.2464	0.4448	0.0575	0.0000	0.6719	
Public sector	0.1550	0.3766	0.2180	0.2269	0.0235	0.0000	1.3282	0.6563

Poland	Master	Bachelor	Post-sec-ondary-tertiary	Upper sec-ondary	Lower sec-ondary	Primary	BWV	Diff
Private sector	0.1678	0.0583	0.0331	0.6711	0.0592	0.0104	0.6685	
Public sector	0.4241	0.0771	0.0729	0.3918	0.0341	0.0000	1.3315	0.6630
Norway	Master	Bachelor	Post-sec-ondary-tertiary	Upper sec-ondary	Lower sec-ondary	Primary	BWV	Diff
Private sector	0.1197	0.1453	0.1854	0.4114	0.1207	0.0175	0.6526	
Public sector	0.2671	0.2999	0.1549	0.2253	0.0415	0.0112	1.3474	0.6947
Denmark	Master	Bachelor	Post-sec-ondary-tertiary	Upper sec-ondary	Lower sec-ondary	Primary	BWV	Diff
Private sector	0.1062	0.0724	0.2893	0.3391	0.1821	0.0109	0.6449	
Public sector	0.2524	0.0949	0.4073	0.2168	0.0286	0.0000	1.3551	0.7102
Romania	Master	Bachelor	Post-sec-ondary-tertiary	Upper sec-ondary	Lower sec-ondary	Primary	BWV	Diff
Private sector	0.0265	0.1608	0.0581	0.6561	0.0810	0.0174	0.6387	
Public sector	0.0882	0.3501	0.1509	0.3780	0.0259	0.0070	1.3613	0.7226
Portugal	Master	Bachelor	Post-sec-ondary-tertiary	Upper sec-ondary	Lower sec-ondary	Primary	BWV	Diff
Private sector	0.0321	0.1328	0.0184	0.2658	0.2353	0.3157	0.5878	
Public sector	0.1108	0.3408	0.0117	0.3002	0.1361	0.1003	1.4122	0.8243
FYROM	Master	Bachelor	Post-sec-ondary-tertiary	Upper sec-ondary	Lower sec-ondary	Primary	BWV	Diff
Private sector	0.0238	0.1298	0.0511	0.4766	0.0856	0.2332	0.5852	
Public sector	0.0922	0.3708	0.0928	0.3227	0.0516	0.0698	1.4148	0.8296
Austria	Master	Bachelor	Post-sec-ondary-tertiary	Upper sec-ondary	Lower sec-ondary	Primary	BWV	Diff
Private sector	0.0619	0.0144	0.1507	0.6854	0.0779	0.0097	0.5815	
Public sector	0.1753	0.0737	0.3738	0.3545	0.0227	0.0000	1.4185	0.8370

Greece	Master	Bachelor	Post-sec-ondary-tertiary	Upper sec-ondary	Lower sec-ondary	Primary	BWV	Diff
Private sector	0.0338	0.1467	0.1881	0.4516	0.1188	0.0610	0.5059	
Public sector	0.0424	0.5118	0.2484	0.1621	0.0150	0.0202	1.4941	0.9883
Turkey	Master	Bachelor	Post-sec-ondary-tertiary	Upper sec-ondary	Lower sec-ondary	Primary	BWV	Diff
Private sector	0.0086	0.1252	0.0652	0.2994	0.2169	0.2847	0.4368	
Public sector	0.0645	0.5353	0.1027	0.1574	0.0484	0.0918	1.5632	1.1263
Albania	Master	Bachelor	Post-sec-ondary-tertiary	Upper sec-ondary	Lower sec-ondary	Primary	BWV	Diff
Private sector	0.0333	0.2063	0.0850	0.3242	0.3427	0.0085	0.4350	
Public sector	0.1944	0.5106	0.1104	0.1137	0.0708	0.0000	1.5650	1.1300

Data Availability The data used in this paper was provided by Eurofound which has been cited in the references.

Declarations

Conflicts of Interest The authors declare no conflicts of interest associated with this manuscript.

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