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Diversity of human capital attributes and diversity of remunerations

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Introduction

The purpose is to provide some empirical evidence for promoting new insights into the economics of education. Particular attention is paid to the concept of competence and its influence on employee reward. The paper aims at comparing the impact on fixed earnings and flexible pay of the traditional human capital theory variables (education and experience) on the one hand and of specifically identified and assessed competences, on the other hand. The objective is to test if the HCV (years of schooling, years of labour market experience) and competences substitute or complement each other in the definition of earnings. If they are substitutes, competences may constitute a more explicit vision of what HCV concretely represent. If they are complements, one can assume that they refer to two different dimensions:

- HCV are used in an "anonymous" way to determine the average level of earnings corresponding to given levels of education and experience, in accordance with social rules;
- competences indicate the effective use of different knowledge and skills acquired and are used when individual and contingent criteria are required.

This paper is made up of four parts. First of all, basic considerations will be presented in order to relate our approach to other researches and to expose some limits of human capital theory (HCT). Section 2 describes how the data have been collected. In a third part, methodological considerations are discussed. The fourth part presents the main results of the empirical analysis.

1. Basic considerations on limits of the traditional human capital approach

Our approach is close to the one developed by Green (1998), by Allen and Van der Velden (2000), by Paul (2002) and by Heijke, Meng and Ramaerkers (2002) in trying to find the "value of skills" through hedonic earnings equations. The aforementioned research works represent new approaches of HCT, which propose the use of a checklist of competences to define the individual level of competence.

Our research offers two original features:

a) the use of competences assessed by direct supervisors, this is to say an hetero evaluation, and not a self evaluation, as used by the above-mentioned authors;

b) the use of profit shares benefited by employees and in addition to the earnings, to assess the impact of human capital variables and competences.

1.1. Traditional human capital variables and competences

Arguing from the point of view of the emerging "*economics of competences*", one could enforce the claim that the HCV are not sufficient for defining the level of individual competence and its reward in the labour market (Suleman, 2004). Following this line of reasoning, we can formulate the main restrictions of HCT for defining this level of competence.

Firstly, according to the HCT, years of schooling and experience are a proxy for individual competence. The theory has paid little attention to the specific knowledge and skills acquired. Usually, the HCT assumes the stock of human capital homogeneous for a given amount of years of study, or a given degree. New approaches of HCT suggest that the portfolio of competences could differ for a same level of traditional human capital variable.

A limit left by HCT is the confusion between the process and the product. That is to say, when the number of years of schooling is considered, there is confusion between the source of acquisition of the competence and the competence itself. In addition to this, the HCT does not specify the kinds of knowledge and skills acquired through the investments in schooling and experience.

Thus it is assumed that the individual competence refers to qualification or the resources acquired through HC investments. However, the importance of the contextual use of knowledge and skills play an important role. The job matching theory explicitly takes into account this effective use of individual knowledge and skills.

According to Heijke and Ramaekers (1998), the job matching theory differs from HCT because it does not presuppose that individual knowledge and skills are productive in all available jobs. The main premise of the job matching theory is that jobs and individuals are both heterogeneous. Consequently, if there are differences between jobs, individuals can have comparative advantages in accessing and performing particular activities (Heijke and Ramaekers, 1998).

For the sake of clarity, this paper puts forward a definition of individual competence, which takes into account the following: the qualification acquired through investments in human capital; the effective use of the knowledge and skills; and the assessment of the knowledge and skills acquired and used (Suleman, 2004).

1.2. The diversity of human capital rewards

HCT usually does not take into account the whole reward system. The theory studies how individuals are rewarded through fixed salary or wage. Nevertheless, someone as Armstrong refers to fixed salary as the base pay and suggests that there may also be additional payments related to performance, competence, contribution, skills (Armstrong, 1999). These represent the contingent component of the pay. In his book "Employee Reward", Armstrong (1999) defines competence-related remuneration as a method of remunerating individuals according to their ability to perform: "competence-related pay does not confine itself to the acquisition of competence. It is about the effective use of competence to generate added value" (Armstrong, 1999: 294).

However, Armstrong maintains that pay is in fact "*related*" to competences rather than "*based*" upon them. Indeed, according to Armstrong, it would seem impossible to base remuneration directly upon competences, since the evaluation of competences remains extremely difficult. Other factors, such as those linked to the market, can also influence remuneration.

In accordance with this concept, we will introduce the human resource management concept of "remuneration" to refer to all cash payments and benefits received by employees. The remuneration includes the fixed salary and any additional pay, as well the contingent or flexible pay, such as profit shares.

Our main objective is to underline the heterogeneity of human capital reward, which is, to some extent, the result of employer wage policies. The moral hazard problem employers face calls for some reward rules, which can contribute to leading the employees to cooperate. The question is how firms can configure their wage policies to guarantee the effective use of convenient competences, as well as to face institutional constraints.

2. The data

The data were supplied by an original survey of five large banking companies in Portugal. Six hundred clerks (not in a supervising position) were interviewed regarding their individual characteristics (age, gender, education, experience in the labour market, experience in the company). Their respective supervisors were asked to assess their competences using a list of thirty competences. The list of competences had been previously checked with the help of human resources managers of the main banking companies and some branch managers. In this paper, because of some missing values, only 443 employees will be considered, located in a total of 77 agencies.

There are four main reasons why the banking sector was chosen for the survey:

a) it is a sector in which the concept of competence finds widespread use in human resources management;
b) following the restructuring process in the sector, there is a need for competences to carry out commercial functions;
c) the organisational structure of companies based on branches with small teams and direct supervision by the branch manager;
d) the geographical distribution of branches throughout the Portuguese territory.

Their average number of school years is 12.7, the number of years of total experience is 17.4 and the number of years of experience within the bank is 11.3.

A proportion of 61% of the population gets a flexible pay, which represents on average about one month pay.

Profit sharing as a proportion of the total annual earnings

Size	N	%
<5%	55	20.7
5%-10%	146	54.5
10%-15%	51	19.2
15%-20%	13	4.9
>20%	2	.8
Total	267	100.0

The records of the assessment by supervisors for each of the thirty competences were synthesised using a principal component analysis. Four main factors were produced, making it possible to define four groups of competences: cognitive competences, strategic competences, behaviour towards the organisation, general knowledge.

The four clusters of competences built on the principal components

Cognitive competences	Specific technical knowledge
	Autonomy
	Responsibility
	Adaptability
	Innovation
	Planning and organising
	Ability to organise
	Ability to selection and to process information
	Ability to solve problems
	Ability to learn
	Ability to transfer knowledge and experiences
	Capacity to understand the specificities of the banking activity
Strategic competences	Negotiation
	Persuasion
	Perseverance and orientation towards results
	Orientation towards the client
	Understanding of the strategy of the bank
Behaviour towards the organisation	Readiness to learn
	Effort to learn
	Following the rules and procedures
	Cooperation
	Adaptation to the working hours
	Punctuality
General knowledge	General technical knowledge
	Knowledge of foreign languages
	Computer literacy
NB: the loadings are presented in annex	

3. Methodological considerations

The objective is to compare to what extent the structure of remuneration differs when either basic pay or profit sharing are considered.

Since only part of the workers receive a flexible salary, we need to test if they differ from the others and if any difference can affect the value of the regression coefficients. The earnings models have to take potential selectivity biases into account.

The second question arises from the hierarchical structure of the data, since workers are grouped under the responsibility of one supervisor, who has been asked to assess their skills and competences. Several problems can arise when such phenomenon and variables are studied: first, since the evaluation is a subjective appreciation of workers by their supervisor, it can be supposed there is some endogeneity. Two factors may cause such an endogeneity: the supervisor may anticipate the consequence of his/her judgement in sub-estimating or super-estimating the mark, if this mark has an impact on the employee's reward. In our survey, the evaluation of skills and competences has been conducted for the specific purpose of the research, without any link with the remuneration strategy. The other factor may be linked to the subjectivity itself of the supervisor. A given worker, with the same level of skill/competences, may be assessed differently by two different supervisors. The method used for building the four dimensions of skills/competences, using a long list of items, may limit this bias, if we consider the supervisors may assess differently the various items. Nevertheless, some supervisors may systematically have high marks, and others low marks. Introducing random effects through multilevel modelling may allow controlling for this endogeneity. An additional method is to consider not the raw values of the competences, but the values centered around the mean of the grades given by each evaluator, as well as the mean of the grades itself.

Let us note the following variables.
HC, for human capital variables: number of schooling years, experience, square of experience and gender (for convenience, gender is considered together with the human capital variables)
CV, for competence variables: cognitive competences, strategic competences, behaviour towards organization, general knowledge.

Let be FW and PS the fixed wage and the profit share of the individual i.

Actually, three families of models will be tested.

Simple OLS models will be tested in order to assess the proportion of variance of the two types of reward explained by the two families of variables
Ln (FW) = f(HC)
Ln (PS)= f(HC)
Ln (FW) = f(HC, CV)
Ln (PS) = f(HC, CV)

Then a Heckman model will be considered to assess to what extent the restriction of the modelling to the workers who get a flexible pay can modify the results. For simplicity, only the human capital variables will be considered.

Ln (FW) = f(HC, λ)
Ln (PS) = f(HC, λ)
Where λ is the inverse of the Mills ratio, estimated with the following selection equation:
Proba (PS>0)= f(HC, type of contract)

And finally a multilevel approach is used to take into account the multilevel structure of the data. Two different expressions are considered, one with the individual ratings and one with the ratings centred around the evaluator mean and the evaluator mean itself.

$Y_{ij} = \beta_{0j} + \sum_{l=1}^{4} \beta_{lj} x_{ij} + \sum_{m=1}^{4} \delta_{mj} z_{ij}$ with Y_{ij} either the fixed part or the flexible part of the wages of the individual i assessed by the supervisor of the branch j, x_{ij} the HC variables and z_{ij} the competence variables

$$Y_{ij} = \beta_{0j} + \sum_{l=1}^{4} \beta_{lj} x_{ij} + \sum_{m=1}^{4} [\delta_{mj} (z_{ij} - \bar{z}_{.j}) + \gamma_{mj} \bar{z}_{.j}]$$

The inverse of Mills ratio will also be included in the multilevel models, together with the individuals variables.

4. Results

In order to get a first sight on the respective influence of the two groups of variables on the two types of remuneration, simple OLS regressions may be run. These regressions allow to undertake a variance analysis and to estimate the significance of the regression coefficient of the different variables taken into account. They consider the individuals who get a flexible income, on top of their fixed income (267 workers).

Regression: logarithm (fixed earnings) = fn (number of school years, experience, experience square, gender/male=1)

```
      Source |       SS       df       MS              Number of obs =     267
-------------+------------------------------           F(  4,   262) =   48.80
       Model |  5.20352953     4  1.30088238           Prob > F      =  0.0000
    Residual |  6.98426929   262  .026657516           R-squared     =  0.4269
-------------+------------------------------           Adj R-squared =  0.4182
       Total |  12.1877988   266  .045818793           Root MSE      =  .16327

------------------------------------------------------------------------------
   Lg (fixed)|      Coef.   Std. Err.      t     P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    Sch.years|   .0244576   .0057371      4.26   0.000     .0131609    .0357542
    Exp      |   .0297862   .0041649      7.15   0.000     .0215854    .0379871
    Exp²     |  -.0003294    .000085     -3.88   0.000    -.0004966   -.0001621
    Gender   |   .0189675   .0203765      0.93   0.353     -.021155      .05909
    Intercept|    11.5448    .103725    111.30   0.000     11.34056    11.74904
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Regression: logarithm (fixed earnings) = fn (number of school years, experience, experience square, gender/male=1, cognitive, strategic, behaviour towards organization, general knowledge)

Source	SS	df	MS		
Model	5.95326424	8	.744158031	Number of obs =	267
Residual	6.23453457	258	.024164863	F(8, 258) =	30.80
Total	12.1877988	266	.045818793	Prob > F =	0.0000
				R-squared =	0.4885
				Adj R-squared =	0.4726
				Root MSE =	.15545

Lg (fixed)	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Sch.years	.0220692	.0056976	3.87	0.000	.0108494	.0332889
Exp	.0304333	.003997	7.61	0.000	.0225623	.0383042
Exp2	-.0003099	.0000814	-3.81	0.000	-.0004702	-.0001496
Cognitiv	.0338933	.0091985	3.68	0.000	.0157797	.052007
Strategi	.034207	.0093696	3.65	0.000	.0157564	.0526577
Organiza	.016866	.0097443	1.73	0.085	-.0023225	.0360544
Gen. know	.0132104	.0112723	1.17	0.242	-.008987	.0354078
Gender	.0177514	.0195033	0.91	0.364	-.0206544	.0561572
Intercept	11.55543	.1005307	114.94	0.000	11.35747	11.7534

Regression: logarithm (flexible income) = fn (number of school years, experience, experience square, gender/male=1)

Source	SS	df	MS		
Model	4.33416229	4	1.08354057	Number of obs =	267
Residual	67.6171437	262	.258080701	F(4, 262) =	4.20
Total	71.951306	266	.270493632	Prob > F =	0.0026
				R-squared =	0.0602
				Adj R-squared =	0.0459
				Root MSE =	.50802

Lg (flex)	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Sch.years	.0407481	.0178508	2.28	0.023	.0055988	.0758974
Exp	.0061882	.0129589	0.48	0.633	-.0193286	.031705
Exp2	-.0000921	.0002643	-0.35	0.728	-.0006126	.0004284
Gender	.2006493	.0634011	3.16	0.002	.0758088	.3254899
Intercept	11.58785	.3227388	35.90	0.000	10.95236	12.22334

Regression: logarithm (flexible income) = fn (number of school years, experience, experience square, gender/male=1, cognitive, strategic, behaviour towards organization, general knowledge)

Source	SS	df	MS		
Model	18.9055821	8	2.36319776	Number of obs =	267
Residual	53.0457239	258	.205603581	F(8, 258) =	11.49
Total	71.951306	266	.270493632	Prob > F =	0.0000
				R-squared =	0.2628
				Adj R-squared =	0.2399
				Root MSE =	.45344

Lg(flex)	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Sch.years	.0307107	.0166194	1.85	0.066	-.0020163	.0634376
Exp	.0098855	.011659	0.85	0.397	-.0130734	.0328443
Exp2	-.0000597	.0002375	-0.25	0.802	-.0005274	.000408
Cognitiv	.1651529	.0268311	6.16	0.000	.112317	.2179889
Strategi	.1065639	.0273303	3.90	0.000	.052745	.1603829
Organiza	.1049102	.0284232	3.69	0.000	.0489392	.1608812
Gen.know	.034289	.0328802	1.04	0.298	-.0304588	.0990367
Gender	.1963396	.0568893	3.45	0.001	.0843132	.308366
Intercept	11.63519	.293239	39.68	0.000	11.05774	12.21263

Two main conclusions can be drawn from these results: the human capital variables explain better, as expected, the fixed part of the earnings, whereas the competence variables explain better the flexible part of the earnings. This statement can be expressed in a symmetrical way: the human capital variables hardly explain the flexible part of the earnings, whereas the competences are weakly related to the fixed part of the earnings.

In the models with the fixed earnings, the adjusted R square amounts 42% with only the three human capital variables and gender, but increased only to 47% when the four competences are taken into account. When the models with the flexible part of earnings are considered, the human capital variables contribute only to 5% of the total variance, whereas the introduction of the competences increases the proportion of explained variance to 24% (a proportion multiplied by near 5 times).

These first simple results can be challenged since they don't take into account the characteristics of the data. Workers who get a flexible income on top of the fixed part represent a part of the total of workers: the question of a potential selectivity bias has to be considered. On the other hand, the workers are grouped into branches under the responsibility of a supervisor. That means that the residuals at a same level may not be independent and that the competence grades can depend partly on the subjectivity of the supervisors.

In order to test any selection effect on the coefficient, two Heckman selection models have been run, with the fixed earnings and the variable pay respectively. The main equations include the four previous human capital and gender variables, whereas the selection equations consider the three human capital variables and the type of contract (permanent versus short term).

Heckman selection model

Main regression: logarithm (fixed earnings) = fn (number of school years, experience, experience square, gender/male=1)
Selection: proba(flexible income>0)= fn (number of school years, experience, experience square, permanent/short term contract)

Number of obs = 443 (regression model with sample selection) Censored obs = 176
Uncensored obs = 267 Wald chi2(4) = 187.64
Log likelihood = -167.2443 Prob > chi2 = 0.0000

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Lg (fixed)						
Sch.years	.0268937	.005942	4.53	0.000	.0152477	.0385398
Exp	.0313383	.0043062	7.28	0.000	.0228982	.0397783
Exp2	-.0003565	.000088	-4.05	0.000	-.0005289	-.000184
Gender	.0212862	.0201472	1.06	0.291	-.0182016	.060774
Intercept	11.67	.1062231	109.86	0.000	11.46181	11.8782
P(flexinc>0)						
Sch.years	-.0507686	.0336195	-1.51	0.131	-.1166615	.0151244
Exp	-.0477653	.0257301	-1.86	0.063	-.0981954	.0026649
Exp2	.0008196	.0005481	1.50	0.135	-.0002547	.0018938
Long term	1.538656	.2514613	6.12	0.000	1.045801	2.031511
Intercept	-.0102041	.6143514	-0.02	0.987	-1.214311	1.193902
/athrho	-.5487456	.1932891	-2.84	0.005	-.9275852	-.169906
/lnsigma	-1.752728	.0646744	-27.10	0.000	-1.879488	-1.625969
rho	-.4995795	.1450481			-.7294661	-.1682897
sigma	.1733005	.0112081			.1526683	.196721
lambda	-.0865774	.0295467			-.1444878	-.0286669

LR test of indep. eqns. (rho = 0): chi2(1) = 6.25 Prob > chi2 = 0.0124

Heckman selection model

Main regression: logarithm (flexible income) = fn (number of school years, experience, experience square, gender/male=1)
Selection: proba(flexible income>0)= fn (number of school years, experience, experience square, permanent/short term contract)

Number of obs = 443
(regression model with sample selection) Censored obs = 176
Uncensored obs = 267
Wald chi2(4) = 20.33
Log likelihood = -467.1934 Prob > chi2 = 0.0004

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------------------------------------------------------------------------------
             |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Lg (flex)    |
    Sch.years|   .0541769   .0199931     2.71   0.007     .0149912    .0933627
    Exp      |   .0151369    .014396     1.05   0.293    -.0130789    .0433526
    Exp2     |   -.000249   .0002969    -0.84   0.402    -.0008309    .0003329
    Gender   |   .2051175   .0599438     3.42   0.001     .0876298    .3226052
    Intercept|   11.64914   .3595608    32.40   0.000     10.94441    12.35387
-------------+----------------------------------------------------------------
P(flexinc>0) |
    Sch.years|  -.0558431   .0331763    -1.68   0.092    -.1208675    .0091813
    Exp      |  -.0244458   .0249331    -0.98   0.327    -.0733136    .0244221
    Exp2     |   .0003436   .0005239     0.66   0.512    -.0006833    .0013705
    Long term|   1.132214   .2172395     5.21   0.000     .7064324    1.557995
    Intercept|   .2272738   .6014733     0.38   0.706    -.9515922     1.40614
-------------+----------------------------------------------------------------
     /athrho |  -1.246145   .1949602    -6.39   0.000     -1.62826   -.8640298
    /lnsigma |  -.4548512   .0668475    -6.80   0.000    -.5858698   -.3238325
-------------+----------------------------------------------------------------
         rho |   -.847199   .0550283                     -.9258134   -.6983281
       sigma |   .6345424   .0424176                      .5566215    .7233714
      lambda |  -.5375837    .066271                     -.6674725   -.4076949
------------------------------------------------------------------------------
LR test of indep. eqns. (rho = 0):   chi2(1) =    12.49   Prob > chi2 = 0.0004
```

In the two models, there appears a clear selection effect, since the correlation between the errors of the two equations is significant as well as the lambdas. To get a permanent contract makes more eligible to the flexible pay regime. But this selection does not affect the significance of the coefficients, which remain highly significant in the fixed earnings equation and poorly significant in the flexible pay equation.

In the following models, the hierarchical structure of the data will be taken into account, using a multilevel approach (the GLLAMM procedure, under STATA, has been used). In order to take care of potential endogeneity issues, two measures of the competences have been considered. In a first stage, the initial grades of the competences have been introduced into the models. In the second one, the competences have been decomposed into two parts, a measure of each respective competence centred around the mean of the branch and the mean of the branch (i.e. the mean for each supervisor). Such a method allows assessing to what extent an influence of the branch (or of the supervisor) has to be considered. But the limit of such an approach relies on the impossibility of estimating the proportion of the variance explained by the variables of a same level. The Mills ratios have been introduced into the models.

Multilevel models with competence ratings

log likelihood = 211.06339

Lg(fixed)	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Sch.years	.0294777	.0039863	7.39	0.000	.0216648	.0372906
Exp	.0324899	.0026494	12.26	0.000	.0272973	.0376826
Exp2	-.0003259	.0000565	-5.77	0.000	-.0004367	-.0002151
Cognitiv	.0469219	.0069138	6.79	0.000	.0333712	.0604726
Strategi	.0335977	.0072838	4.61	0.000	.0193217	.0478737
Organiza	.0004173	.0073963	0.06	0.955	-.0140792	.0149137
Gen.know	.0191005	.0096405	1.98	0.048	.0002056	.0379955
Gender	.0007558	.0142146	0.05	0.958	-.0271043	.0286159
M. ratio	-.0975894	.0289648	-3.37	0.001	-.1543593	-.0408195
Intercept	11.51098	.0704144	163.47	0.000	11.37297	11.64899

Variance at level 1

.01741961 (.00127149)

Variances and covariances of random effects

***level 2 (branch)

var(1): .01197069 (.00221272)

log likelihood = -122.69539

Lg(flex)	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Sch.years	.0245298	.014312	1.71	0.087	-.0035213	.0525809
Exp	.015133	.0093863	1.61	0.107	-.0032638	.0335298
Exp2	-.0001119	.0001865	-0.60	0.548	-.0004775	.0002536
Cognitiv	.1565578	.0214105	7.31	0.000	.1145939	.1985216
Strategi	.1286861	.0226224	5.69	0.000	.0843469	.1730252
Organiza	.1194324	.0240566	4.96	0.000	.0722824	.1665824
Gen.know	.0373343	.0285075	1.31	0.190	-.0185393	.0932079
Gender	.1194597	.0455114	2.62	0.009	.0302591	.2086604
M. ratio	-.2926602	.1724554	-1.70	0.090	-.6306667	.0453462
Intercept	11.83707	.2347778	50.42	0.000	11.37691	12.29723

Variance at level 1

.1064908 (.01036833)

Variances and covariances of random effects

***level 2 (branch)

var(1): .07784365 (.01487941)

With the two models, the level 2 (the branch) appears to be significant. In the fixed pay model, the level 2 represents 41% of the total variance, and 42% with the flexible pay model. But the main important result regards the significance of the coefficients which is not affected by the new structure of the models. Human capital variables remain more significant in the fixed pay model, whereas the competence variables remain more significant in the flexible pay model.

A different treatment of the competence variables (centred variables and supervisor means) does not affect neither the significance nor the value of the competence variables.

Multilevel models with competence ratings centred around the supervisor mean and with the supervisor mean

log likelihood = 212.46926

Lg(fixed)	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Sch.years	.0291607	.0040151	7.26	0.000	.0212913	.0370302
Exp	.0324606	.0026477	12.26	0.000	.0272712	.03765
Exp2	-.0003237	.0000571	-5.67	0.000	-.0004356	-.0002117
Cognicen	.0455654	.0071518	6.37	0.000	.031548	.0595827
Stratcen	.0308722	.0074491	4.14	0.000	.0162723	.0454722
Organcen	.0007594	.007778	0.10	0.922	-.0144851	.0160039
Knowcen	.0217666	.0098003	2.22	0.026	.0025583	.0409748
Cognitiv_mn	.0613109	.0314619	1.95	0.051	-.0003533	.1229751
Strategi_mn	.0651679	.0249293	2.61	0.009	.0163073	.1140284
Organiza_mn	.0035742	.0249896	0.14	0.886	-.0454047	.052553
G.know_mn	.0072967	.0235097	0.31	0.756	-.0387816	.0533749
Gender	-.0012411	.0140765	-0.09	0.930	-.0288305	.0263484
M.ratio	-.099597	.0293705	-3.39	0.001	-.1571621	-.0420319
Intercept	11.63496	.0705599	164.89	0.000	11.49667	11.77326

Variance at level 1

.01727457 (.00125411)

Variances and covariances of random effects

***level 2 (branch)
var(1): .01347566 (.00322022)

log likelihood = -121.18478

Lg(flex)	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Sch.years	.0280625	.0144724	1.94	0.052	-.0003028	.0564279
Exp	.01705	.0100796	1.69	0.091	-.0027057	.0368057
Exp2	-.0001438	.0001986	-0.72	0.469	-.000533	.0002454
Cognicen	.1593973	.0222211	7.17	0.000	.1158447	.2029498
Stratcen	.1355739	.0233343	5.81	0.000	.0898395	.1813083
Organcen	.1175191	.0248877	4.72	0.000	.0687402	.1662981
Knowcen	.0177641	.0307913	0.58	0.564	-.0425857	.078114
Cognitiv_mn	.2010293	.0746673	2.69	0.007	.0546841	.3473746
Strategi_mn	.060795	.078178	0.78	0.437	-.092431	.2140211
Organiza_mn	.1207897	.0731855	1.65	0.099	-.0226513	.2642307
G.know_mn	.1474563	.084725	1.74	0.082	-.0186017	.3135143
Gender	.125276	.0458549	2.73	0.006	.0354021	.2151499
M.ratio	-.2805877	.1710712	-1.64	0.101	-.615881	.0547056
Intercept	11.7364	.2517328	46.62	0.000	11.24301	12.22978

Variance at level 1

.1052111 (.01058723)

Variances and covariances of random effects

***level 2 (branch)
var(1): .08977852 (.01905066)

Conclusion

This paper could use an original database which provided together with traditional human capital variables ratings of individual competencies estimated by the direct supervisors of banking employees. Along with these attributes, the data inform on two different components of the earnings: a fixed part corresponding to the traditional definition of wage and a flexible part corresponding to the profit sharing. It tried to take into account the complexity of such data, according to selectivity and multilevel issues.

The results, whatever the structure of the model used, confirm that the traditional human capital variables explain better the traditional way of remunerating workers, whereas the competence variables explain better the performance based remuneration. Two different patterns of remuneration are related to such findings. Traditional wages are mainly decided through conventional rules, where education and experience are basic ingredients. On the other hand, when performance based remuneration is considered, the effective engagement of the worker, as assessed by his/her supervisor, becomes pre-eminent. The question which then arises is to know to what extent the second way of remunerating workers will expand or not. If yes, education systems will probably more directly questioned about the competences they developed rather than about the format of the sheepskins they provide.

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Annex: Results of the principal component analysis

	Factor 1	Factor 2	Factor 3	Factor 4
Technical general knowledge	0.443	0.117	8.593E-02	0.647
Technical specific knowledge	0.680	0.106	6.477E-02	0.317
Foreign languages	4.633E-02	0.172	1.617E-02	0.783
Relations with colleagues	0.243	0.196	0.259	0.161
Working in team	0.263	0.370	0.388	0.220
Communication	0.366	0.480	5.847E-02	0.246
Willingness to help others	0.248	0.323	0.457	0.173
Negotiation	0.325	0.794	0.132	0.159
Persuasiveness	0.368	0.751	7.588E-02	0.126
Perseverance and orientation towards others	0.452	0.619	0.323	0.112
Orientation towards the client	0.329	0.661	0.267	0.218
Autonomy	0.760	0.309	0.131	-5.625E-02
Responsibility	0.709	0.271	0.200	-6.342E-02
Adaptability	0.528	0.365	0.300	0.368
Innovation	0.587	0.454	0.190	0.290
Readiness to learn	0.381	0.353	0.526	0.434
Effort to learn	0.373	0.385	0.489	0.413
To follow the rules and procedures	0.479	0.244	0.490	7.102E-02
Cooperation	.362	0.522	0.487	0.224
Adaptation to the working hours	0.113	0.245	0.738	0.187
Punctuality	0.155	8.281E-03	0.789	-8.025E-02
Planning and organising	0.609	0.349	0.304	0.207
Ability to use computing systems	0.520	0.168	0.231	0.472
Capacity to analyse	0.743	0.285	0.191	0.273
Ability to select and to process information	0.641	0.398	0.185	0.315
Ability to solve problems	0.728	0.324	0.235	0.173
Ability to learn	0.559	0.289	0.333	0.417
Ability to transfer knowledge and experiences	0.690	0.322	0.180	0.253
Capacity to understand the specificities of the banking activity	0.589	0.474	0.235	0.253
To understand the strategy of the bank	0.458	0.575	0.350	0.280

Note: variance explained by factors: 1st factor = 56.3%; 2nd factor = 5.4%; 3rd factor = 4.0%; 4th factor = 3.5%; KMO = 0.974; Bartlett test= 13715.154; significance = 0.000 Varimax rotation