Touristic specialization and returns on human capital in the hospitality sector of the Spanish regions

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Abstract: The aim of our study is to evaluate the existence and degree of specialization in tourism of the Spanish regions from the perspective of the human capital stock and the returns of their education, limiting the scope of study to the hospitality subsector. We use an expanded version of the Mincer wage equation (1974) and data from the 2006 Spanish Wage Structure Survey. All the regions under analysis show lower education returns (and other human capital variables) in the hospitality sector when compared to other private services. There are significant differences in education returns between regions, especially in Catalonia and the Canary Islands.

Keywords: Human capital; Hospitality; Regional Analysis.

Título: Especialización turística y rendimientos del capital humano de las regiones españolas en el sector de la hostelería

Resumen: El objetivo de este trabajo es evaluar la existencia y el grado de especialización en la industria turística de las principales regiones españolas desde la perspectiva del stock de capital humano y de los rendimientos de la educación, centrándose en el subsector de la hostelería. Para ello, se ha utilizado una versión extendida de la ecuación de salarios de Mincer (1974) y datos procedentes de la Encuesta de Estructura Salarial para el año 2006. Todas las regiones analizadas muestran rendimientos de la educa-ción más bajos en el sector de la hostelería que los que se presentan en otros servicios privados. Existen también diferencias significativas en los rendimientos de la educación entre regiones, especialmente en Cataluña y en las Islas Canarias.

Palabras clave: Capital humano, Hostelería, Análisis regional.

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Introduction

In the modernization of the Spanish economy tourism has been a determinant factor. However, many aspects of this sector, such as labour market characteristics and regional differences, have not been widely studied. Tourism is a cross-sectional industry in which highly diverse activities are grouped. This paper analyzes the hospitality subsector which itself is composed of large and well-differentiated subcategories. In Spain, the hospitality industry is characterised by having a higher percentage of women and younger workers, lower educational levels, seasonality in contracts, a smaller percentage of employees, a greater percentage of foreign workers, and higher than average working hours. However, regional differences are highly significant and the more precarious employment conditions tend to disappear in the more consolidated tourist destinations (Fernández and Pena-Boquete, 2007). In this context, we estimate the existence and degree of specialization in tourism of six Spanish selected regions from the perspective of the human capital stock and the returns of their education, limiting the scope of study to the hospitality subsector.

Using data from the Spanish National Institute of Statistics (INE, 2010) we estimate a sectoral specialization index[1]. A value of 1 for this index means that the economy of this region has the same specialization in tourism to the Spanish economy. Based on this index the Spanish regions more specialized in tourism are Andalusia (0.96), Balearic Islands (3.00), Canary Islands (2.17), Catalonia (0.99) and Valencia (0.97). Madrid (0.87) has been included because of its status as Capital of Spain.

The paper is structured as follows: first, basic data that characterize the main tourist destinations in Spain are presented. The methodology is then described and the variables that are included in the wage equations. The next two sections outline the database and present a descriptive analysis of the main variables. Empirical results are detailed in the next section. Finally, a brief description of the evidence obtained is provided and the main conclusions formulated.

A brief regional characterization of the Spanish hospitality sector

Using available data from the Spanish National Institute of Statistics in 2006, the six selected regions[2] encompass 71.5% of total employment in the hospitality sector and more than 74.5% of waged workers. The hospitality sector is particularly important in both Spanish archipelagos as it embraces 19.18% of total employment in the Balearic Islands and 13.82% in the Canary Islands, whereas in Spain as a whole the aggregate is less than 7%. With the exception of the latter, self-employment is significantly high in the hospitality sector (Fernández and Pena-Boquete, 2007).

In terms of Gross Value Added (GVA), the six regions selected represent nearly 73% of the total in Spain, a percentage slightly higher than jobs (71.5%) due to the higher productivity of five of the six regions under analysis. The relative importance of the hospitality sector in the Balearic and Canary Islands is also much higher than the Spanish mean and than other regions under study. Labour productivity is higher in the Balearic Islands and Madrid, whereas the Canary Islands, Catalonia and Madrid are the more competitive regions in terms of unit labour costs.

Hotel bed places are concentrated in these regions (nearly 80% of the total), with 20.22% in the Balearic Islands, 17.15% in Catalonia and 16.58% in Andalusia. In addition, the proportion of hotel bed places per 1000 inhabitants emphasizes the enormous relevance of hotels in the two Spanish archipelagos, especially in the Balearic Islands. Finally, the mean size of the establishments clearly differentiates those destinations mainly specialized in "sun and beach" tourism from Madrid and other regions. In the Canary and Balearic Islands, the hotels are large: average of 375 and 234 bed places per establishment.

The great importance of the hospitality sector in Spain and the differences found between indicators in the different regions justifies analysing each region individually.

Methodology

The wage equation estimated for each region has the following functional form:

$$Log(wr) = \beta_0 + \beta_1 S + \beta_2 Exper + \beta_3 Tenure + \beta_4 Female + \beta_5 Full\_TC + \beta_6 Size + \beta_7 Overedu + \beta_8 Underedu + \varepsilon$$

The dependent variable is the gross real wage per hour expressed as logarithms, discounting the price differential in 2006 in each of the regions stud-

		Andalusia		Balearic Islands		Canary Islands		Catalonia		Com. Valencia		Com. Madrid		Other regions		Spain	
		H	OS	H	OS	H	OS	H	OS	H	OS	H	OS	H	OS	H	OS
Constant	Coefficient	1.741*	1.337*	1.650*	1.381*	1.566*	1.225*	1.600*	1.336*	1.929*	1.468*	1.507*	1.216*	1.801*	1.351*	1.722*	1.326*
	t-ratio	(29.206)	(49.281)	(27.158)	(29.871)	(23.468)	(27.708)	(29.057)	(53.399)	(32.855)	(48.466)	(27.904)	(51.235)	(73.810)	(103.397)	(95.431)	(149.532)
S	Coefficient	0.032*	0.062*	0.047*	0.071*	0.055*	0.082*	0.048*	0.075*	0.018*	0.061*	0.042*	0.075*	0.020*	0.075*	0.032*	0.073*
	t-ratio	(4.612)	(36.506)	(7.759)	(23.481)	(6.967)	(30.251)	(7.554)	(51.731)	(3.275)	(31.894)	(6.688)	(57.617)	(7.648)	(87.769)	(16.203)	(131.541)
Exper	Coefficient	0.000	0.003*	0.005*	0.002***	0.002	0.001	-0.001	0.004*	-0.001	0.002*	0.004*	0.006*	0.002*	0.005*	0.002*	0.004*
	t-ratio	(0.298)	(3.297)	(3.632)	(1.768)	(1.587)	(0.670)	(-0.812)	(6.753)	(-0.411)	(2.709)	(3.229)	(11.298)	(3.420)	(14.261)	(4.976)	(19.274)
Tenure	Coefficient	0.016*	0.023*	0.011*	0.018*	0.011*	0.023*	0.013*	0.020*	0.014*	0.021*	0.014*	0.022*	0.015*	0.021*	0.013*	0.021*
	t-ratio	(7.077)	(26.057)	(5.822)	(12.011)	(6.201)	(17.530)	(6.547)	(29.702)	(7.098)	22.291	(8.391)	(34.104)	(17.321)	(55.920)	(21.928)	(83.187)
Female	Coefficient	-0.088*	-0.164*	-0.136*	-0.132*	-0.089*	-0.158*	-0.139*	-0.233*	-0.154*	-0.192*	-0.065**	-0.216*	-0.096*	-0.185*	-0.113*	-0.196*
	t-ratio	(-4.005)	(-13.219)	(-5.289)	(-5.175)	(-4.338)	(-8.228)	(-5.231)	(-22.440)	(-6.114)	(-14.631)	(-2.408)	(-22.884)	(-8.739)	(-31.003)	(-14.852)	(-49.384)
Full-TC	Coefficient	0.063*	0.118*	0.041	0.025	0.130*	0.093*	0.060*	0.088*	0.039	0.129*	0.074*	0.211*	0.057*	0.022*	0.068*	0.091*
	t-ratio	(2.735)	(8.632)	(1.332)	(1.008)	(5.967)	(4.566)	(2.403)	(7.737)	(1.550)	(8.510)	(3.001)	(20.387)	(5.362)	(3.318)	(8.815)	(20.729)
Size	Coefficient	0.098*	0.245*	0.074*	0.212*	0.122*	0.237*	0.212*	0.135*	0.108*	0.138*	0.088*	0.179*	0.079*	0.190*	0.105*	0.181*
	t-ratio	(3.714)	(16.260)	(2.250)	(8.232)	(5.394)	(10.115)	(8.334)	(10.015)	(4.003)	(9.000)	(3.380)	(12.447)	(7.636)	(28.700)	(14.303)	(39.137)
Overedu	Coefficient	-0.125*	-0.194*	0.084***	-0.293*	-0.183*	-0.366*	-0.124*	-0.300*	-0.122*	-0.250*	-0.122**	-0.301*	-0.020	-0.282*	-0.093*	-0.284*
	t-ratio	(-2.811)	(-12.663)	(-1.651)	(-7.921)	(-3.302)	(-12.970)	(-2.686)	(-21.511)	(-2.825)	(-12.398)	(-2.580)	(-24.980)	(-1.141)	(-34.478)	(-6.695)	(-53.013)
Underedu	Coefficient	0.140*	0.229*	0.170*	0.090*	0.234*	0.235*	0.123*	0.179*	0.142*	0.103*	0.169*	0.201*	0.099*	0.141*	0.140*	0.166*
	t-ratio	(3.425)	(12.824)	(4.142)	(3.286)	(5.235)	(8.972)	(2.945)	(12.976)	(3.640)	(5.992)	(4.370)	(16.145)	(5.514)	(17.179)	(11.202)	(31.026)
Adjusted R²		0.343	0.520	0.310	0.526	0.421	0.564	0.291	0.492	0.207	0.511	0.191	0.510	0.233	0.548	0.254	0.518
F-Statistic*		38.195	576.735	29.412	148.882	56.035	272.107	37.317	850.633	23.887	453.419	23.993	1,123.247	101.487	2,501.12	277.770	5,729.09
Sum-squared residue		34.866	650.128	42.993	141.572	40.862	246.046	75.240	1173.816	72.316	487.496	87.031	1482.336	180.268	2225.509	560.207	6549.940
Obs.		571	4258	506	1068	607	1678	709	7023	703	3466	778	8621	2641	16499	6515	42613

Notes: Statistically significant at: * 1%, ** 5% and *** 10%. The standard errors and covariances are robust for heteroscedasticity.; Source: WSS-2006.

Table 1. Results of the estimations

ied[3]. The right-hand side of the equation includes the constant as well as the characteristics of the workers and jobs. Human capital variables, such as mean schooling years (S), previous experience (Exper) and tenure in the firm (Tenure), and the gender of the employee (Female) are derived from the characteristics of workers (a description of the variables is presented in the Appendix).

In order to control the characteristics of the job we used the dummy variables type of contract, size of the establishment, and the formal education of the worker in relation to the job requirements. Using the variable *full-time and permanent contract (FullTC),* we attempted to assess whether this type of contract involves higher wages than that of workers with temporary or part-time contracts. Both types of contract are aggregated into a single variable because in Spain they tend to be used together in the hospitality sector to help employers adjust the work supply to fluctuations in service demand. This translates into increased precariousness of employment, lower wages, a lack of opportunities for training and fewer chances of promotion among the workers (Nickson, 2007).

The variable firm size *(Size),* takes value 1 when the worker is employed in a firm with 20 or more employees, and zero in any other case. Business size has been taken as an additional explanatory variable of regional wage differences to control for the higher number of hotels in some tourist destinations. In addition, economic theory suggests alternative explanations to the fact that until a certain size is reached, wages increase with firm size.

The variables *overedu* and *underedu* measure the fact that the real wage per hour could be influenced more by the type of job than by having a higher educational level. Finally, ε is a random disturbance term.

Database and descriptive analysis

The information used was taken from the Spanish Survey of Wage Structure 2006 [Encuesta de Estructura Salarial, EES-2006, (INE, 2007)]. The sample is representative at the regional level (NUTS II), thus facilitating the present study.

Data shows that workers in the Balearic Islands are older, have higher previous experience, and higher tenure in the firm. Furthermore, 64% of them have a full-time and permanent contract; this percentage is only exceeded by the Canary Islands (65%). Other labour characteristics of this region include lower percentages of women (47.4%) and higher nominal gross wages per hour. For this reason, the Balearic Islands have been taken as the reference region for wage differentials.

In the hospitality sector, mean schooling years is much lower than in other private service sectors. It should be pointed out that the Balearic and Canary Islands, which are mature destinations for sun and beach tourism, present the lowest mean schooling years of all the regions under consideration. This is probably due to the older mean age of workers who belong to the generation that did not benefit from the current Spanish educational system. In fact, this may account for the high proportion of undereducated workers (higher than 30% in both regions).

With the exception of the Balearic Islands, tenure is lower in the hospitality sector than in other private service industries. This suggests greater worker rotation in this sector, as reported in other studies (Marchante et al., 2005). Except for the Balearic and Canary Islands, 50% of employees are women.

The percentage of workers suitably educated for their job fluctuates between the highest in Valencia (67.3%) and the minimum in the Balearic Islands (51.6%). These results do not substantially differ from the estimations obtained by Strauss and Maisonneuve (2007) using a different database for the Spanish economy as a whole; and are also consistent with Marchante et al. (2005) for the hospitality sector in Andalusia. The percentage of overeducated workers ranges between 12% in the Canary Islands and 22% in Madrid. The highest level of undereducation is found in both Spanish archipelagos (around 33%) and the lowest is found in Catalonia (15%) and Valencia (16%).

The rate per hour received in the hospitality sector is lower than the one received in other private service sectors. In nominal terms, the wage received by employees in the other regions as a whole is almost 19% less than in the Balearic Islands. In real terms, this difference decreases to 14.5% due to the differential in relative prices. The greatest difference is found in Madrid where wages in the hospitality sector employees are 40.1% lower.

Empirical results

The value of the constant term indicates the part of the wage not affected by the independent variables. This component depends on other variables, such as lifestyle, climate and other differentiating characteristics of the regions that have an effect on

the conditions of employment and wages, but which our specification was not able to include. Our data shows that estimated values for the constant in the hospitality sector are greater than in the private sectors of services for all the regions. Furthermore, in the hospitality sector, as in the other private services, the maximum value of the constant term is found in Valencia and the lowest value in Madrid (Table 1).

Personal characteristics

Education returns in these estimations are lower in the hospitality sector. In addition, very significant regional differences are observed between the Canary Islands (5.5%) and Valencia (1.8%). In Catalonia (4.8%), the Balearic Islands (4.7%) and Madrid (4.2%), education returns are higher than the mean for Spain (3.2%). These results reveal regional heterogeneity.

Our results are similar to previous studies that also use variables regarding job characteristics in their specification. Introducing these additional variables reduce educational returns, because these variables capture the indirect effect of education on wage and productivity. Accordingly, the education returns estimated in this work represent the direct effect of education, once the effects derived from the job characteristics are discounted.

The results of previous studies that specified the original Mincer equation showed education returns to be between 4.1% (Pastor et al., 2006) when the estimation method used is ordinary least square and 5.6% (Lillo-Bañuls and Casado-Díaz, 2010) when instrumental variable techniques are used. Nevertheless, in both papers, education returns in the hospitality sector are less than the estimates for most economic sectors.

The returns estimated for previous experience and tenure in the firm are much lower than those for education. Once again, the estimations for the hospitality sector show returns to be quite lower than for the other private service sectors. Thus, the returns from previous experience are not statistically significant in the hospitality sector of four regions (Andalusia, the Canary Islands, Catalonia and Valencia). On the other hand, the returns from tenure in the firm are statistically significant in all the regions, ranging from 1.1% (the Balearic and Canary Islands) to 1.5% (other regions).

The variable gender[4] is statistically significant in all cases, and has a negative coefficient. Gender discrimination in the hospitality sector is greater in Valencia, where women have wages up to 13% lower than men. In the other service sectors, gender discrimination is greater in Catalonia, reaching 20.78%. With the exception of the Balearic Islands, where wage differences due to gender are similar in the hospitality sector and other services in the private sector, the effect of gender on wages is less in the hospitality sector.

Job Characteristics

Except for the Balearic Islands (in all sectors) and Valencia (in the hospitality sector), where the estimated coefficient of the variable is not statistically different from zero, a full-time permanent contract involves increased wages. This increase ranges from 13.91% in the Canary Islands and 5.91% in the other regions. The estimated coefficient for business size is statistically significant and positive in all cases. In the hospitality sector the wage premium of working in an establishment of 20 workers or more ranges from 23.66% in Catalonia to 7.65% in the Balearic Islands. Furthermore, except for Catalonia, wage improvements are greater in other service sectors than in the hospitality sector.

Finally, the estimated coefficients for educational mismatch have the expected signs in all cases and it is only statistically non significant in the aggregate of other regions (hospitality sector) for the overeducated workers. Overeducation involves a strong wage penalty which is greater in other service sectors than in the hospitality sector. On the other hand, undereducated workers earn between 26.40% more (in the hospitality sector in Catalonia) and 9.41% more (in other services in the Balearic Islands).

The results indicate great regional variability both in the hospitality sector and in the other private service sectors. Nevertheless, our estimations for Spain are not substantially different from those of Strauss and Maisonneuve (2007) using a different database that included the public sector. These authors estimate the wage premium associated with undereducation at 13% and wage reductions for overeducated workers at 21%.

Conclusions

This article provides new empirical evidence on human capital returns and regional wage differences in the Spanish hospitality sector. The use of establishment-worker paired data allows us to analyze regional disparities in this context. This analysis focuses on the main tourist regions in Spain.

The differential behaviour of the labour market and the significant structural differences that exist between regions drives the need to study each region individually. Similarly, the regions analyzed present marked differences concerning the tourism segment they have specialized in. Madrid is characterized by being a cultural destination and the Capital of Spain; whereas Valencia, Andalusia and Catalonia are coastal destinations specialized in the sun and beach segments with some cultural tourism. Finally, the Canary Islands and the Balearic Islands are highly specialized insular destinations with consolidated sun and beach tourism.

The estimations obtained for the different regions enable us to quantify the returns of human capital variables, such as schooling years, previous experience and tenure in the firm, as well as to compare their value to those obtained from other private services. In all the regions, returns from education are less in the hospitality sector than in the other private service sectors. Although the returns from education are less than those reported in other studies, they are compatible with them, since we introduced additional control variables related to the job characteristics that reduce returns. Similarly, the estimated returns for previous experience and tenure in the firm are less in the hospitality sector than in other sectors, being in turn lower than those of the education. Gender wage differences are found in all the regions. In general, this problem is more significant in the hospitality sector than other services. These results reveal a situation that can be generalized to most countries, i.e., the hospitality sector is characterized by lower pay to workers with similar characteristics, and women are especially penalised in this regard. The lower wages women receive may be strongly affected by the greater segregation they experience, as women are mainly found in the worst-paid industries, establishments, jobs, functional areas and responsibility levels.

On the other hand, regarding the job characteristics, there is a positive wage premium associated with stability in the type of contracts and establishment size. These results are compatible with other studies, as they point out that mean wages increase in a large company as the number of employees with a contract based on union agreements increases. This could be due to the negotiation system in Spain, where specific worker agreements with the firm are used to improve the labour conditions agreed at regional levels (Aláez et al., 2003). Finally, the effects of the mismatch between educational level and job requirements are compatible with estimates reported in the literature. In particular, overeducation has a negative effect on wages in the hospitality sector, whereas undereducation has a positive effect.

Finally, it is worth noting that there are variables not included in the wage equation specification that can be determinants of regional differences, such as the regional unemployment rate or to what extent the tourism development model has been consolidated, among others. In this regard, it is of interest to note that those regions more specialized in the hospitality sector, such as the Balearic Islands and the Canary Islands, present an employment pattern that is far from the stereotype in this sector regarding precariousness and low returns from education. This analysis may indicate that the level of tourism development in a region could encourage greater stability regarding contracts and better wages as the educational status of the workers increases.

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Appendix

Hourly gross wage

This variable was calculated from the information available in WSS-2006 on the amount of hours annually worked and on the annual gross wages received. It was assumed that one month consisted of 4.2 weeks and 30.42 days.

Human Capital variables

Based on the information contained in the Wage Structure Survey 2006 (WSS-2006), we constructed the human capital variables following Arrazola et al. (2003).

Education

WSS-2006 provides information on the highest level of education completed by individuals. For each level of education it assigns a numeric value approximately equal to the number of years it takes to finish education. Thus, the values of the variables used are as follows: 2 for illiterate individuals or those without education; 5 for people with primary education; 8 for people with general lower secondary education; 9 for people with vocational lower secondary education; 11 for people with vocational upper secondary education; 12 for people with general upper secondary education; 15 for people with short-cycle university studies; and 17 for people with long-cycle university studies and postgraduates.

Length of the working life of the individual

The construction of this variable is based on the following hypotheses. First, people do not work before the age of 16 years. Second, people do not work and study at the same time. Third, the age of retirement is 65 years.

Experience up to the current firm

This variable has been defined on the basis of the information provided by WSS-2006. This variable has been computed as the difference between the age of the individual and the age at which the individual declares he/she began to work minus tenure in the current firm. When generating this variable, we impose the restriction that it must be below the difference between the official age of retirement (65 years) and the years of schooling.

Tenure in the current firm

This variable was obtained directly from WSS-2006, by adding the months of any uncompleted years to the completed years for each individual.

Educational mismatch

The variables overedu and underedu measure the fact that the real wage per hour could be influenced more by the type of job than by having a higher educational level. Although the database used controls for the type of job, there is a high correlation between educational level and occupation, and this creates high multicollinearity. Thus, following Strauss and Maisonneuve (2007), occupation is taken into account indirectly by calculating a mean of the most frequent level of studies in each occupation. The mode is used as the statistical measure. However, this procedure is expanded in cases where the mode represents a percentage lower than 40% of the total number of employees in each occupation, defined at the level of two digits according to the National Classification of Occupations–CNO94 - (INE, 1994). In these cases, the workers considered as appropriately educated are those who have obtained an educational level corresponding to the mode as well as those who have reached an adjacent educational level (immediately lower or higher). Thus, for a given occupation, if the mean number of study years required are 15 (undergraduates) but the mode includes a reduced number of cases (less than 40%), workers with secondary education (12 study years) or postgraduates (17 study years) would be also considered appropriately educated. Choosing the level of studies immediately lower or higher than the mode was done by taking into account which level has a greater percentage of workers in each occupation.

Using this definition of appropriately educated workers, the dummy variables for the workers with a level of studies different from the one required by the occupation are defined as follows. The variable that represents overeducation (Overedu) takes value 1 if the worker has attained an educational level higher than the mode of each occupation (or the higher when two adjacent educational levels are possible); and zero in any other case. Similarly, the variable undereducation (Underedu) takes value 1 if the worker has an educational level lower than the mode of the occupation (or the lower when two contiguous edu-

cational levels are used); it will take value zero in any other case.

Notes

1 For description see Herce et al. (2001)

2 Observations of workers with a wage lower than the interprofessional minimum wage and those younger than 16 or older than 65 years were eliminated from the original simple.

3 Observations of workers with a wage lower than the interprofessional minimum wage and those younger than 16 or older than 65 years were eliminated from the original simple.

4 The impact on the wage of the dummy variables when using a semilog function was calculated by taking the antilogarithm of the corresponding coefficient, subtracting 1 and multiplying by 100 (Halvorsen and Palmquist, 1980).