Labour flexibility and productivity in the hotel sector

Ph.D. Alejandro García-Pozo [a]
Ph.D. Carlos Benavides-Velasco [b]
Ph.D. José Luis Sánchez-Ollero [c]

University of Malaga, Spain.

[a] *alegcía@uma.es*
[b] *cabv@uma.es*
[c] *jlsanchez@uma.es*

Abstract

In this paper, we analyze the effect of labour flexibility on productivity in the Andalusian hotel industry using raw data of our own database and applying an expanded version of the standard production function by distinguishing between part-time, temporary, and full-time labour inputs. Our results show that productivity is lower the higher the percentage of temporary and part-time workers and there are no differences between the impacts on productivity of both types of labour contract. Future studies should analyze the differential impact of all the types of contracts discussed on the mean cost per employee in this sector.

Introduction

In this paper, we analyze the effect of labour flexibility on productivity in the Andalusian hotel industry. For this purpose, we use the results from the *Quality, Productivity and Competitiveness in the Hospitality Industry for Andalusia* project (PO7/SEJ-02889). The model used distinguishes three employment shares: open-ended contracts, temporary contracts, and part-time contracts. However, it should be borne in mind that the Spanish model of labour flexibility has mainly focused on the use of temporary contracts rather than other human resource management practices, such as internal labour flexibility (Dolado et al., 2002).

Temporary contracts would have positive effects on the Spanish economy, where permanent workers have high levels of employment protection (Ortega and Marchante, 2010). Following Booth et al. (2002), temporary contracts can provide a mechanism that enhances labour market flexibility, since firms can adjust their workforces by varying the number of temporary workers. The use of temporary contracts can also provide the firm with new workers who are employed for a specific probation period in order to test whether they are suitable for an open-ended job. This type of employment can have a positive impact on the firm's performance if temporary workers perceive that the probability of rehiring depends on their aptitude and work effort. Moreover, temporary contracts may provide the firm with workers who replace staff on leave due to maternity, sickness, and so on. This is needed particularly in the service industries, where there is a strong requirement to meet certain standards. These contracts may also encourage entrepreneurship and business start-up by reducing the fixed costs of recruitment, training, and redundancy by using agencies (Green, 2008).

Thus, it is accepted that temporary contracts, whose main distinguishing feature is that they reduce labour costs compared to other types of contract, have led to the creation of jobs, mainly in those economic sectors in which productivity is lower and there is high employee turnover. However, it is also noteworthy that the use of temporary contracts has had a negative impact on both job security and incentives to accumulate human capital and, consequently, on increasing productivity.

On the other hand, a linear relationship does not exist between employee turnover and productivity. When labour turnover is low, productivity will also be low, because the efficient reallocation of the productive factor would occur more slowly, from jobs with lower productivity to those with higher productivity. Conversely, if labour turnover is very high it would discourage both workers and employers to invest in training, thus making the accumulation of human capital more difficult. Therefore, temporary contracts would have marked effects on worker productivity due to their impact on job turnover.

Research on the effects of part-time work on firm productivity is scarce, and theoretical predictions are ambiguous regarding the expected effects (Nelen et al., 2009).

On the one hand, human capital theory suggests that there is a negative relationship between part-time employment and labour productivity. The reason behind this, as already noted, is the low incentive for part-time workers to invest in human capital, which leads to these workers under-performing in terms of productivity compared to full-time workers (Manning and Petrongolo, 2008). On the other hand, hiring part-time workers could be beneficial to the productivity of the company in the event that the hours worked by these employees are more than those established in their contracts or when consumer demand is concentrated in specific certain peak hours (Delsen, 2006; Rosendaal, 2003).

Theoretical model

We extend the standard production function by distinguishing between part-time, temporary, and full-time labour inputs. We follow Nelen et al. (2009) and Ilmakunnas and Maliranta (2005) in the way they model the productivity effects of different employment shares. This so-called share-approach to including heterogeneous labour inputs assumes that different types of employees are perfect substitutes, but may have different marginal productivities. We divide the workforce into three employment shares: part-time (PT), full-time permanent (FT), and temporary employees (TE). Taking the full-time permanent contracts as our reference group, and scaling its productivity to one, the relative productivity of the part-time employment share equals $(\gamma_{pt} - 1)$ and the relative productivity of the temporary employment share equals $(\gamma_{te} - 1)$. The quality-adjusted labour input is therefore:

$$L^* = L\left[1 + \left(\gamma_{pt} - 1\right)PT + \left(\gamma_{te} - 1\right)TE\right] \qquad (1)$$

Equation 1 can be simplified using the following expression:

$$\ln\left[1 + \left(\gamma_{pt} - 1\right)PT + \left(\gamma_{te} - 1\right)TE\right] \approx \left(\gamma_{pt} - 1\right)PT + \left(\gamma_{te} - 1\right)TE \qquad (2)$$

The part-time and temporary employment shares are thereby directly included in a log-form production function. Using the quality-adjusted labour input (L^*), the production function is written as follows:

$$Y = AK^{\alpha}L^{*\beta} \qquad (3)$$

or in logs and using the expression in equation 2:

$$\ln(Y) = \theta + \alpha\ln(K) + \beta\ln(L) + \gamma^*_{pt}PT + \gamma^*_{te}TE \qquad (4)$$

where $\theta = \ln(A), \gamma^*_{pt} = \beta\left(\gamma_{pt} - 1\right)$ and $\gamma^*_{te} = \beta\left(\gamma_{te} - 1\right)$

Database

The database was created as part of the *Quality, Productivity and Competitiveness in the Hospitality Industry for Andalusia* project (PO7/SEJ-02889). It includes representative parameters from 232 Andalusian hotels (3 to 5 stars) representing 28.2% of establishments and 34.99% of the total beds offered by these types of establishments in Andalusia. Given that Andalusia is very large, we took the distribution of the sample into account bearing in mind the relative importance of the hotel sector in each province. In addition, we included control variables to identify establishments according to their location (coastal, inland, or capital city)[1] and other control variables that reflect the establishments' structural and management characteristics. The economic data was obtained directly via questionnaires and the annual accounts filed by firms in the Mercantile Registry[2].

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[1] Of the 8 Andalusian provinces, four (Almería, Málaga, Cádiz, and Huelva) have capital cities on the coast. In such cases, the establishments have been classified as being located in a capital city rather than on the coast.
[2] In Spain, firms are required to file their annual financial accounts in the Mercantile Registry, thus making them an important source of reliable data on Spanish firms.

A directory of the hotels to be surveyed was created using the Turespaña Hotel Guide, which lists certified hotels published by the local government of Andalusia (i.e. the Junta de Andalucía) and Camerdata[3]. After discarding the questionnaires that had not been correctly completed, the final sample consisted of 181 hotels.

Results and Conclusions

Our main descriptive results are shown in Table 1.

Table 1. Apparent labor productivity of the hotels as possible determinants
(Index numbers. Average value of the whole sample = 100)

	GVA / N# of full-time equivalents jobs (prices of 2008)		Number of establishments	% on the total of each group
	Mean	Standard Deviation		
Sample	34311.39	20359.81	181	
Size of the establishment by number of full-time equivalents employees				
up to 20 employees	97.32	142.89	63	(34.81)
from 20 to 49 employees	99.03	64.32	60	(33.15)
over 50 employees	103.92	70.84	58	(32.04)
Size of the establishment by number of rooms				
up to 50 rooms	83.48	91.87	49	(27.07)
from 50 to 99 rooms	94.27	56.09	45	(24.86)
from 100 to 199 rooms	117.37	154.80	40	(22.10)
Over 200 rooms	107.92	71.79	47	(25.97)
Quality of the establishment by number of stars				
rate as 3 star	82.84	52.09	75	(41.44)
rate as 4 star	113.37	124.72	96	(53.04)
rate as 5 star or higher	100.40	33.31	10	(5.52)
Location of the establishment				
Capital	114.23	131.45	78	(43.09)
Coastal	93.47	65.53	74	(40.88)
Inland	78.38	47.67	29	(16.02)
Property belonging to a chain				
Hotel Chain	86.90	118.64	70	(38.67)
No Hotel Chain	108.26	83.84	111	(61.33)
Outsourcing of services by the establishment				
Outsourcing	85.85	50.17	46	(25.41)
No outsourcing	104.82	111.02	135	(74.59)
Property Ownership				
Family ownership	96.92	112.09	117	(64.64)
Business ownership	105.62	72.79	64	(35.36)

Source: Quality, Productivity and Competitiveness in the Hospitality Industry Project [PO7/SEJ-02889].

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[3] Camerdata SA, created in 1985 by the Spanish Chamber of Commerce, is a pioneering company in creating business databases that include the censuses of all Spanish Chambers of Commerce. It also has a permanent program that ensures that the national census is fully updated at least once a year using data from all Chambers of Commerce. This database is complemented by data from other sources or public media, such as the Mercantile Registry. This source was also used to verify which hotels in Andalusia are still currently operating.

Applying the econometric model defined above to the data, our results indicate that productivity in Andalusian hotels is lower the higher the percentage of temporary and part-time workers. Furthermore, there are no statistically significant differences between the negative impacts on productivity of both types of labour contract. However, since the costs associated with both temporary and part-time workers are lower than those of workers with full-time permanent contracts, future studies should analyze the differential impact of all the types of contracts discussed on the mean cost per employee in hotels.

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