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UDK 338.48:640.4(497.5)
JEL Classification J24, L83
Prethodno priopćenje

LABOUR PRODUCTIVITY MODEL FOR THE HOTEL INDUSTRY

The paper investigates the influence of selected human capital variables on labour productivity in the Croatian hotel industry. The research was performed by using a regression model based on the Cobb-Douglas production function with constant returns to scale (Bartel, 1992; Black and Lynch, 1997). The independent variables used explain 65% of the variation in labour productivity. Given the assumptions of the standard Gaussian regression model as the theoretical framework for model testing, the results of the performed research suggest the absence of autocorrelation, heteroscedasticity and multicollinearity.

The authors elaborate the specific characteristics of labour productivity in the hotel industry and emphasize the necessity to introduce additional variables in the model in order to manage labour productivity. The paper aims to encourage the rethinking of productivity measurement and management systems with the goal of enabling hotel organizations to more effectively meet the changing demands and the challenges of the competitive environment.

Keywords: labour productivity model, hotel industry, Croatia

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The paper was received on Feb 15th 2013. It was accepted for publication on July 10th 2013.

1. Introduction

Productivity is a concept predominantly used in production activities. In service activities, due to the very nature of the service itself, the use of this concept can be significantly limited. Namely, the productivity of the process explains how efficiently inputs are transformed into economic results, and as a result of the high productivity the profit for the producer increases. Such a productivity concept is commonly, and in simple terms, formulated as the efficiency of transformation of inputs into outputs, with constant quality. Hence, in production, productivity is a concept related to production efficiency. But, in the efficient service organization, productivity and the perception of quality are an inseparable phenomenon. (Grönroos and Ojasalo, 2005: 4).

Measuring productivity in tourism requires capturing both qualitative and quantitative dimensions. Quality (of service) is a complex construct, which implies to possible measurement problems.

In a simplified way, labour productivity in tourism can be presented in the following way:

$$labour\ productivity = \frac{quantity\ and\ quality\ of\ services}{quantity\ and\ quality\ of\ work}$$

While the measurement of inputs, although very complex, is still in a manageable issue, most of the problems connected with labour productivity measurement in tourism stem from the quantification of the output, its multidimensional nature and the difficulties of its quality assessment (Guerrero and Rubio, 2003: 8).

The more important the quality of the service, the less adequate is the physical (quantitative) measurement of the output. Broader than quantitative measures, financial measures are more suitable for the measuring of outputs in services (Guerrero and Rubio, 2003: 17), although they do not take into account all relevant factors. Most commonly used output measures for tourism and hotel industry are: number of overnights, number of tourist arrivals, tourism revenue and income from hospitality services.

Inputs are most commonly classified into three groups: labour, capital and raw material. Difficulties in measuring quality of input are especially accentuated with labour inputs. Labour employed, for instance, can be expressed as: working hours, number of employees, standard number of employees or salaries paid. The quality of labour input is especially important in tourism due to its high labour intensity. The qualitative dimension of labour is a part of the human capital theory, which encompasses an individual's knowledge, skills, health and values (Becker, 1994: 3). When measuring labour inputs, each of these elements should be considered.

The goal of this paper is to investigate the impact of selected human capital variables on labour productivity in the Croatian hotel industry. Human capital variables included are: education and age structure of employees, investment into education and training, absenteeism and loyalty.

The paper is divided into four sections. After the introduction a review of existing research is presented, labour productivity and explored variables are defined, and the measurement specifics for the service industries, especially the hotel industry, are analysed. The third chapter presents the research results. The final chapter includes main conclusions and limitations of the research as well as recommendation for future work.

2. Review of the research on labour productivity

There are numerous empirical researches in the area of labour productivity, but most of them deal with productive activities. Considering the relative shares of services in the GDPs of developed countries, this is completely unjustified. Interest in labour productivity in the service sector has increased only recently (see e.g. Li and Prescot, 2009, 2010; Wölfl, 2003; Sharpe, 2000). Research on productivity in Croatian tourism has, unfortunately, followed this negative trend and authors that deal with this topic and their research papers are very rare in spite of the importance that tourism has for the Croatian economy as a whole (Avelini Holjevac, 2010: Mojzeš, 1988).

The quality of labour input in tourism, tourism being very labour intensive, is of great importance. Educated, qualified and motivated employees are imperative in tourism development planning. Investments in tourism should at the same time be directed into the improvement of the quality of the tourism infrastructure and into the improvement of the quality of human capital. It is necessary to bear in mind that human capital is created in the long run and that it is the result of coordinated effort of institutions, tourism companies and employees themselves. Previous research has confirmed the theoretical assumptions about the impact of human capital variables on tourism labour productivity (Blake, Sinclair and Soria, 2006; Li and Prescott, 2010). Researches especially emphasize the importance of education and training, age structure and employee loyalty and satisfaction on their productivity.

According to the human capital theory, investments into *education* increase human capital and consequently increase labour productivity. Li and Prescott's (2010: 27) research on tourism labour productivity also indicates the significant increase of labour productivity associated with the share of employees with higher education level. Having that in mind, the data on the educational structure of employees in Croatian hotel industry is worrisome. Namely, the data for 2010 show

that in tourism, or more precisely in accommodation and food production and service activities, out of 36,571 employees only 11.4% have high education, 52.8% middle and 35.8% lower education levels (DZS: 2011). Bartoluci and Budimski (2010: 11) point out that unqualified or low-qualified employees present one of the biggest problems of Croatian tourism.

Li and Prescott (2010:29) studied the relationship between *work experience* and labour productivity in tourism. As a measure of work experience the employees' age was used. Employees were divided into four age groups. By using regression analysis the impact of each age group's share in the total number of employees on labour productivity was examined. Their results are in line with the theory that says that the youngest and oldest employees are less productive, i.e., employees between 25 and 44 years of age are the most productive age groups. In the Croatian HORECA sector this age group accounts for 58.7% of all employees (DZS: 2011)

Various empirical researches show that human capital in the form of employees' *training* significantly improves labour productivity (Bartel, 1992; Barret and O´Connell, 1999; Konings and Vanormelingen, 2009). The results of the study carried out in the Croatian hotel industry in 2008 show that only 33.3% of hotel companies invest in the education and training of their employees or that in average only 0.99% of companies' revenue is invested in education and training (Pološki Vokić, 2008: 33).

Health, as a component of human capital, significantly contributes to the individual's productivity. An employee's ill health impacts the output and labour productivity mainly through absenteeism and 'presenteeism' (Grossman, 1972: 15). Although there are numerous researches about the influence of health on labour productivity, this aspect of human capital has remained neglected in researches in the field of tourism. Nevertheless, the very nature of tourism and its high labour intensity allows us to intuit serious implications of health on labour productivity.

Green (2000: 4) believes that organizational *loyalty* is a social skill and that it is associated with behaviour in the workplace that is in line with the achievement of the company goals. Accordingly, it is to be expected that such social skills could be positively related with employees' efforts leading to improved company business results. Loyalty is most usually measured through behaviour analysis, i.e., by measuring turnover and retention rate and absenteeism, although, for the comprehensive approach the employees' attitudes analysis would be much more meaningful. Namely, the very fact that an employee has been with the same company for years does not necessarily reflect his/her loyalty, but, sometimes (especially in the present constellation on the labour market) only the lack of an appropriate alternative (Maškarin, 2005: 205). Due to the high unemployment rate and traditionally low labour mobility, Croatian hotel companies have very low turnover rates and, accordingly, employees' loyalty measures stand very low on their priority lists.

3. Empirical research and results

To investigate the labour productivity in the hotel industry and to describe the existing relationships between variables, a linear multiple regression model is conceived.

Data and model

Hotels and hotel resorts in Croatia have a share of 17% in the number of beds and realize 31% of total overnight stays (DZS, 2012:412).

Croatia has 588 categorised hotels that make the basic dataset of this research. One hundred hotels were selected for the survey sample. The sample is random and stratified with respect to the distribution of hotel capacities in the coastal and continental part of the country. Eighty-seven per cent of hotel bed places are situated in the coastal and only 13% in the continental part of the country (Institut za turizam, 2010: 7). Accordingly, the sample consisted of 87 hotels (87% of the sample) in the coastal and 13 hotels (13% of the sample) in the continental part of the country.

A structured questionnaire was sent to the hotels in order to collect data that was then used for the calculation of the following variables:

Table 1.

VARIABLES USED IN THE MODEL

Variable	**Mode of calculation**	***Symbol***
Labour productivity	Total revenue per worked hour	*Y/L*
Capital	Total value of tangible and intangible assets	*K*
Employees education level	Share of employees with higher education level	*edu*
Investment in education and training	Investment in education and training per worked hour	*inv*
Employees age	Share of employees under the age of 35	*age*
Employees' health	Hours of sick leave per worked hour	*abs*
Employee turnover rate	Number of full time employees that left the organization related to the average total number of employees	*flu*
Employee retention	Number of employees that spent 3 and more years in the organization related to the average total number of employees	*ret*

The research was conducted in the period between March and June 2010. A total of 37 valid questionnaires was collected (37% return rate).

The regression model is based on the Cobb-Douglas production function with constant returns to scale (Bartel, 1992; Black and Lynch, 1997):

$$Y=AK^{\alpha}(LH)^{\beta} \quad (1)$$

where A stands for total factor productivity, K for capital, L for labour, and H represents selected variables of human capital (education, age, training, health, employee loyalty).

The regression parameters, α and β, refer to the elasticity of the labour and capital substitution. Function (1) can be transformed in the linear form as follows:

$$lnY = lnA + \alpha lnK + \beta \ln L + \beta lnH \quad (2)$$

Starting from the function (2) the work productivity equation can be deducted as follows:

$$ln\,{}^{Y}/_{L} = lnA + \alpha lnK + (\beta - 1)\ln L + \beta lnH \quad (3)$$

$$ln\,{}^{Y}/_{L} = lnA + \alpha lnK + \alpha \ln L + \beta lnH \quad (4)$$

After determining the mathematical model, the econometric model can be specified. Based on equation (4) the following regression model is conceived:

$$y = \beta_0 + \beta_1 K + \beta_2(edu) + \beta_3(inv) + \beta_4(age) + \beta_5(abs) + \beta_6(flu) + \beta_7(ret) + \varepsilon \quad (5)$$

where y is labour productivity – dependent variable explained by the value of long-term tangible and intangible assets (K), employees education (edu), investment in education and training (inv), age structure of employees (age), absenteeism (abs) and loyalty (flu, ret). The last variable, ε is the stochastic error.

Methodology

Table 2 shows descriptives for the sample used in the model. For example, this table shows that the average value for labour productivity is 187.21 HRK

per worked hour, while standard deviation, i.e., average deviation from average, amounts to 85.28 HRK per worked hour. Additionally, Table 3 shows the correlation matrix. Analysis of correlation matrix shows that there is no strong correlation between predictors, i.e., there is no multicollinearity problem.

Table 2.

DESCRIPTIVE STATISTICS

	Mean	**Std. Deviation**	**N**
Y_L	187.2143	85.28209	37
K_L	834.5600	44.44108	37
edu	0.1692	0.07174	37
inv	0.3030	0.27647	37
age	0.2657	0.13588	37
abs	0.0438	0.04380	37
flu	0.0719	0.09046	37
ret	0.7349	0.26038	37

Source: output of the statistical programme SPSS

Table 3.

CORRELATION MATRIX

		Y_L	**K_L**	**edu**	**inv**	**age**	**abs**	**flu**	**ret**
Pearson Correlation	Y_L	1.000	0.564	0.475	0.301	0.156	-0.192	0.251	-0.045
	K_L	0.564	1.000	0.281	0.670	0.309	0.080	-0.021	-0.193
	edu	0.475	0.281	1.000	0.444	0.127	-0.209	0.112	-0.242
	inv	-0.301	0.670	0.444	1.000	0.391	-0.107	0.031	-0.480
	age	0.156	0.309	0.127	0.391	1.000	-0.404	-0.280	-0.585
	abs	-0.192	0.080	-0.209	-0.107	-0.404	1.000	0.413	0.454
	flu	0.251	-0.021	0.112	0.031	-0.280	0.413	1.000	0.347
	ret	0.045	-0.193	-0.242	-0.480	-0.585	0.454	0.347	1.000
Sig. (1-tailed)	Y_L	.	0.000	0.001	0.035	0.179	0.128	0.067	0.396
	K_L	0.000	.	0.046	0.000	0.032	0.319	0.452	0.126
	edu	0.001	0.046	.	0.003	0.227	0.107	0.254	0.075
	inv	0.035	0.000	0.003	.	0.008	0.265	0.427	0.001
	age	0.179	0.032	0.227	0.008	.	0.007	0.047	0.000
	abs	0.128	0.319	0.107	0.265	0.007	.	0.006	0.002
	flu	0.067	0.452	0.254	0.427	0.047	0.006	.	0.018
	ret	0.396	0.126	0.075	0.001	0.000	0.002	0.018	.

Source: output of the statistical programme SPSS

Table 4 shows the model summary. This table shows the determination coefficient $R^2 = 0.656$ which means that 65.6 per cent of labour productivity variations are explained by the model. Thus, 65.6 % of all labour productivity variations in the hotel industry can be explained by the variations of the variables used in the model. Results of the regression analysis show that there is strong positive relationship between variables used in the model and labour productivity, which is also shown by the multiple correlation coefficient R = 0.810.

Table 4.

MODEL SUMMARY

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.810[a]	0.656	0.573	55.75994	2.175
a. Predictors: (Constant), RET, K_L, OBR, FLU, APS, DOB, OBU					
b. Dependent Variable: Y_L					

Source: output of the statistical programme SPSS

Table 5 shows analysis of variance. The table contains the F ratio, which shows the significance of the predictors of the model. The value of the F ratio leads to the conclusion that at least one of the predictor is significant (with a significance level of $\alpha < 0.01$).

Table 5.

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	171663.287	7	24523.327	7.887	0.000[b]
	Residual	90165.952	29	3109.171		
	Total	261829.239	36			
a. Dependent Variable: Y_L						
b. Predictors: (Constant), ret, K_L, edu, flu, abs, age, inv						

Source: output of the statistical programme SPSS

Table 6 shows the parameters of the model. With help of B coefficient, the equation of the model can be specified:

$$Y/L = 37.62 + 0.15\ K/L + 364.60\ edu - 127.76\ inv - \\ -5.3\ age - 822.52\ abs + 383.62\ flu + 10.46\ ret \quad (6)$$

The equation shows the impact of each predictor on labour productivity. For example, if the value of capital per worked hour is increased by 1 HRK, labour productivity will increase by 0.15 HRK per worked hour.

The table contains the t-ratios. The t-ratios show the significance of each predictor in the model. The results show that the following predictors are significant: capital per worked hour, the share of higher educated workers, training expenditures, sick leave hours per worked hour and fluctuation rate. The variables - share of workers under the age of 35 in total number of workers and retention rate - are not significant in the model.

Beta coefficients can be used for analysis of significance of each predictor in the model. Beta coefficients show by how many standard deviations will labour productivity change if one of the predictors changes by one standard deviation. Because all beta coefficients are measured in standard deviations the impact of each predictor on labour productivity can be compared. If, for example, capital per hour worked increases by one standard deviation, labour productivity will increase by 0.8 standard deviation. In addition, it shows that the predictor capital per hour worked is more significant than the predictor share of higher educated workers.

Table 6.

MODEL PARAMETERS

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	37.619	59.799		0.629	0.534
	K_L	0.154	0.030	0.806	5.090	0.000
	edu	364.604	151.840	0.307	2.401	0.023
	inv	-127.756	55.752	-0.414	-2.291	0.029
	age	-5.302	90.748	-0.008	-.058	0.954
	abs	-822.528	271.734	-0.422	-3.027	0.005
	flu	383.622	122.779	0.407	3.125	0.004
	ret	10.458	52.425	0.032	0.199	0.843

Source: output of the statistical programme SPSS

Hereinafter, some of the assumptions of the multiple linear regression model will be tested: homoscedasticity of residuals, independence of residuals, multicollinearity of predictors and normal distribution of residuals.

Table 4 shows the result of Durbin-Watson test of independence of residuals. Because the value of the test is very close to 2 (2.175) it can be concluded that there is no autocorrelation of the residuals (Gujurati, 2004: 469).

Multicollinearity exists if at least two of the predictors are linearly dependant (Šošić, 2004: 519). As a measure of multicollinearity VIF values, which are shown in Table 7, will be analysed. Because all values are below 10 and above 0.2, it can be concluded that there is no multicollinearity, as pointed out earlier in the text when analysing the correlation matrix.

Table 7.

MULTICOLLINEARITY DIAGNOSTICS

Model		**Collinearity Statistics**
		VIF
1	(Constant)	
	K_L	2.112
	edu	1.374
	inv	2.751
	age	1.761
	abs	1.640
	flu	1.428
	ret	2.157

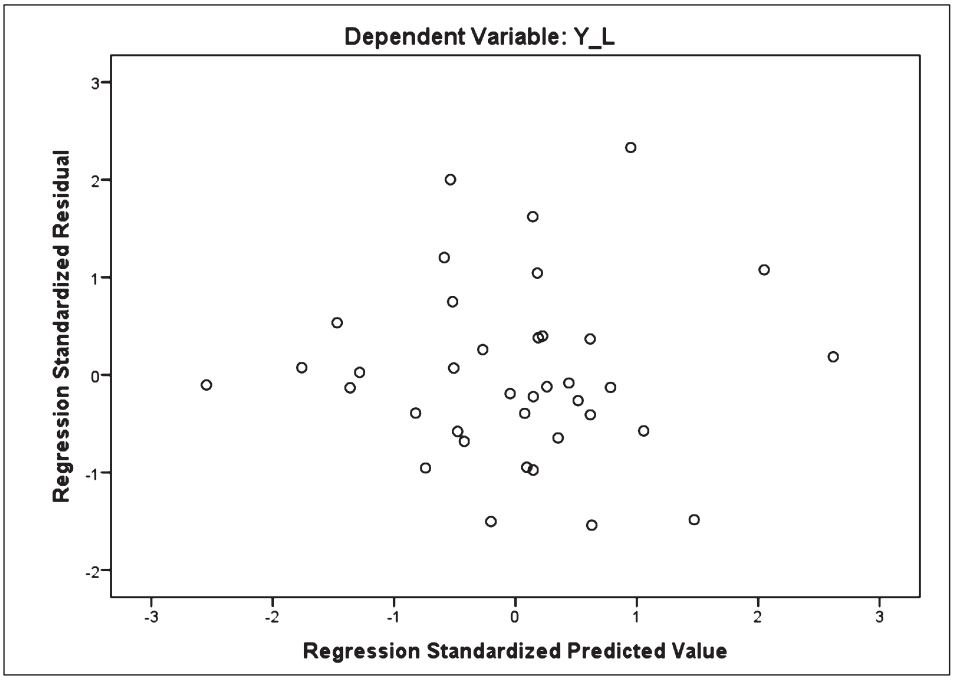
a. Dependent Variable: Y_L

Source: output of the statistical programme SPSS

Also, the assumption of homoscedasticity of variance is tested. Heteroscedasticity is present when the assumption of invariability of random variable variance in linear regression model is validated (Bahovec and Erjavec, 2009: 171). Figure 1 shows a scatterplot of residuals. The points on the plot are randomly and evenly dispersed around zero, meaning that the assumption of homoscedasticity of variance is not validated.

Figure 1.

SCATTERPLOT OF RESIDUALS

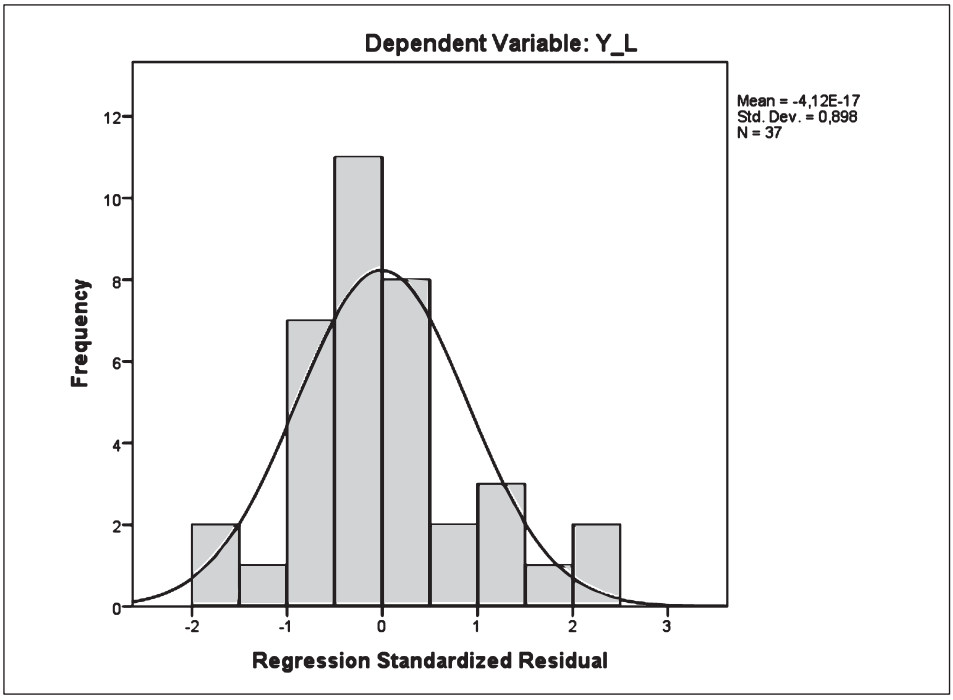


Source: output of the statistical programme SPSS

To test the assumption of normal distribution of variance, histogram and normal probability plot (figure 2 and 3) will be analysed. Histogram shows normal distribution. Probability plot shows that points are distributed around the straight line which leads to conclusion of normal distribution of variance.

Figure 2.

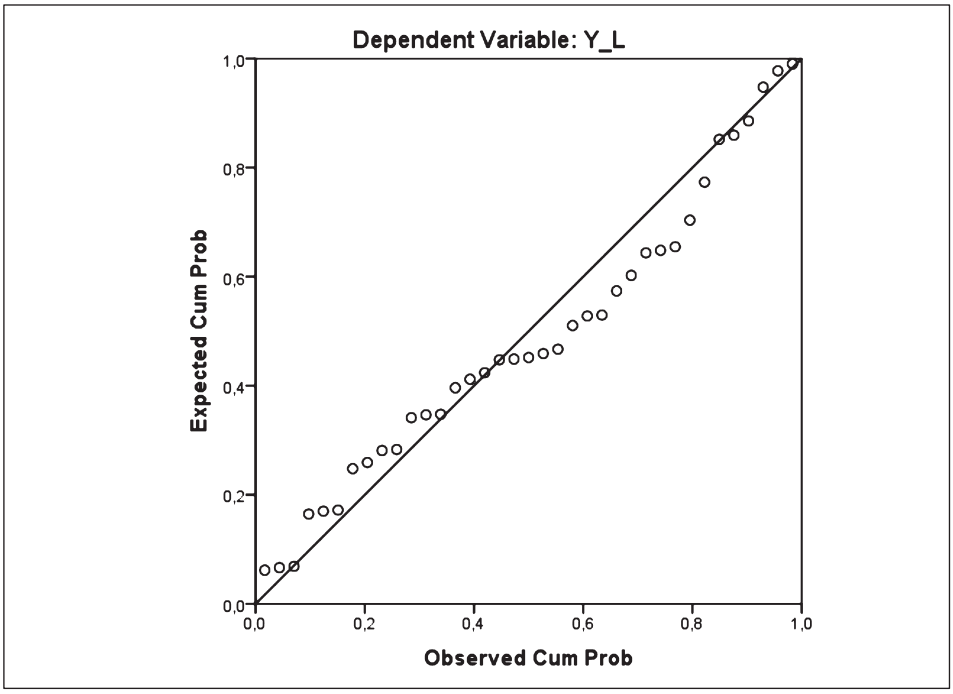
HISTOGRAM OF STANDARDIZED RESIDUAL



Source: output of the statistical programme SPSS

Figure 3.

NORMAL PROBABILITY PLOT

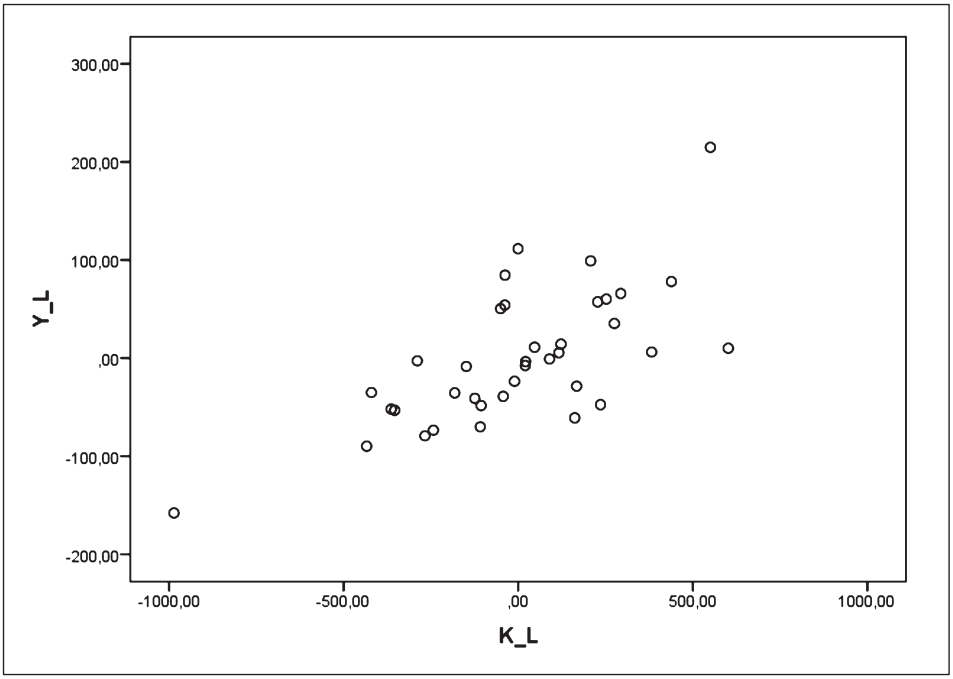


Source: output of the statistical programme SPSS

The following figures show partial regression scatterplots for the predictors of the model. Figure 4 shows partial regression scatterplot for the independent variable capital per worked hour. Scatterplot shows that the relationship between the variables labour productivity and capital per worked hour is linear. Furthermore, the relationship between variables is strong and positive (0.564).

Figure 4.

PARTIAL REGRESSION SCATTERPLOT FOR VARIABLE K/L

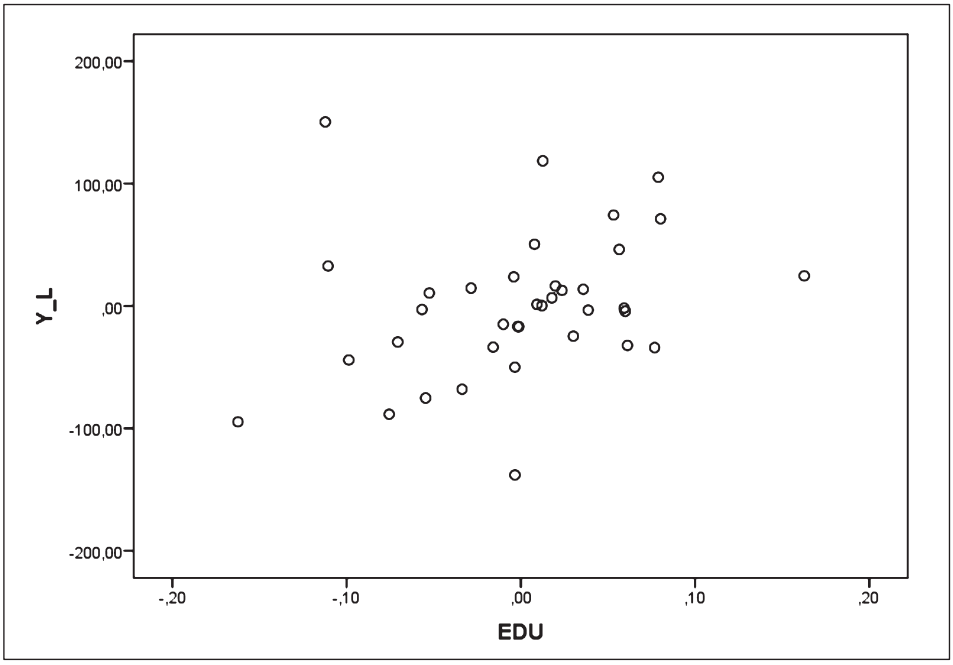


Source: output of the statistical programme SPSS

Figure 5 shows partial regression scatterplot for the independent variable education. Scatterplot shows that the relationship between the variables labour productivity and education is linear. Furthermore, the relationship between variables is strong and positive (0.475).

Figure 5.

PARTIAL REGRESSION SCATTERPLOT
FOR VARIABLE EDUCATION (*EDU*)

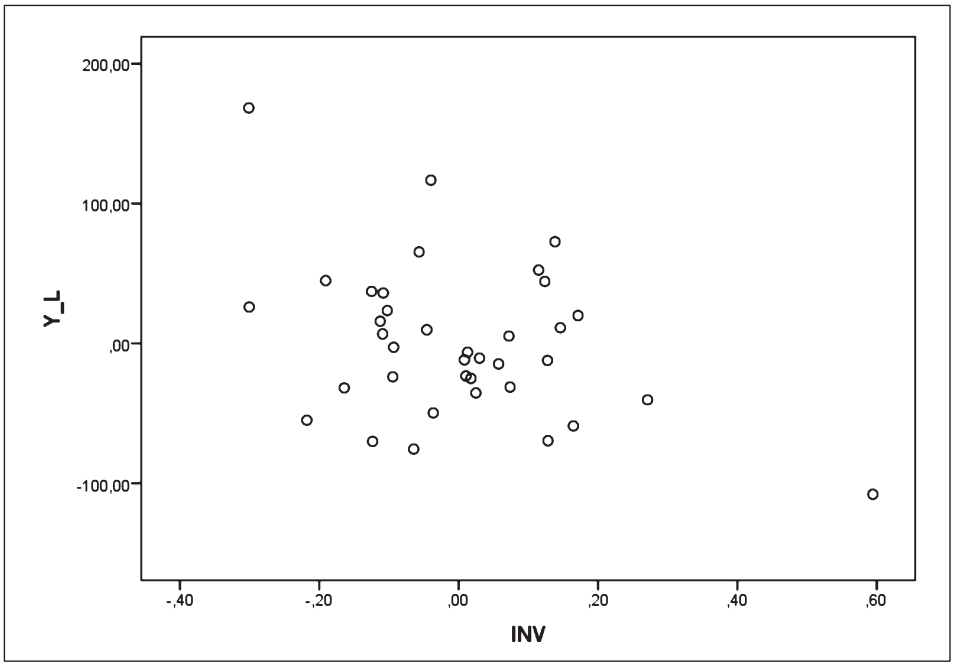


Source: output of the statistical programme SPSS

Figure 6 shows partial regression scatterplot for the independent variable training. Scatterplot shows that the relationship between the variables labour productivity and training is linear. Furthermore, the relationship between variables is moderate and negative (-0.301).

Figure 6.

PARTIAL REGRESSION SCATTERPLOT
FOR VARIABLE INVESTMENT IN EDUCATION (*INV*)

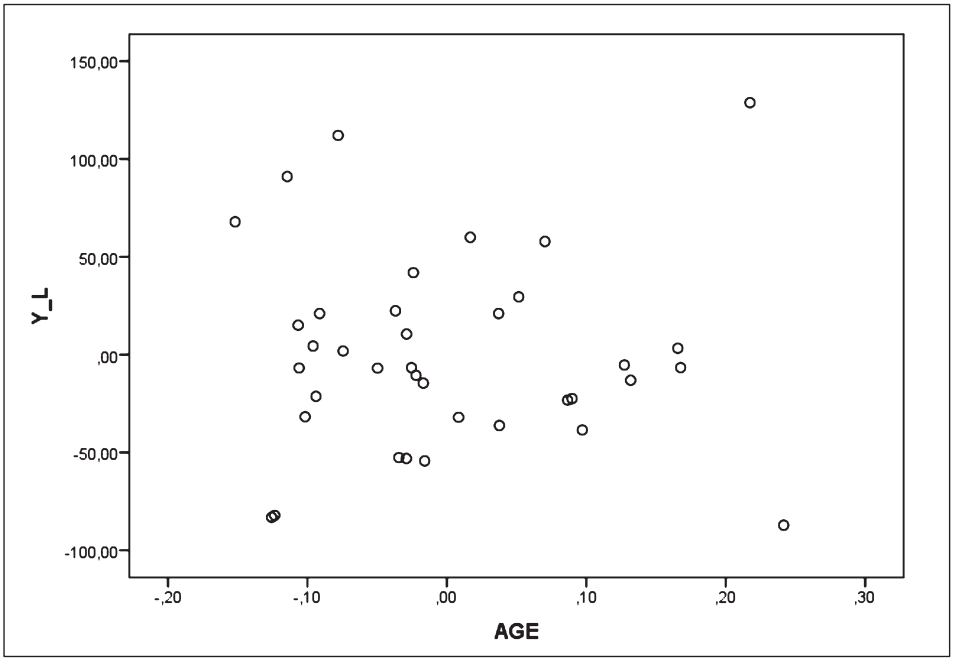


Source: output of the statistical programme SPSS

Figure 7 shows partial regression scatterplot for the independent variable age. Scatterplot shows that the relationship between the variables labour productivity and age is linear. Furthermore, the relationship between variables is weak and negative (-0.156).

Figure 7.

PARTIAL REGRESSION SCATTERPLOT FOR VARIABLE AGE (*AGE*)

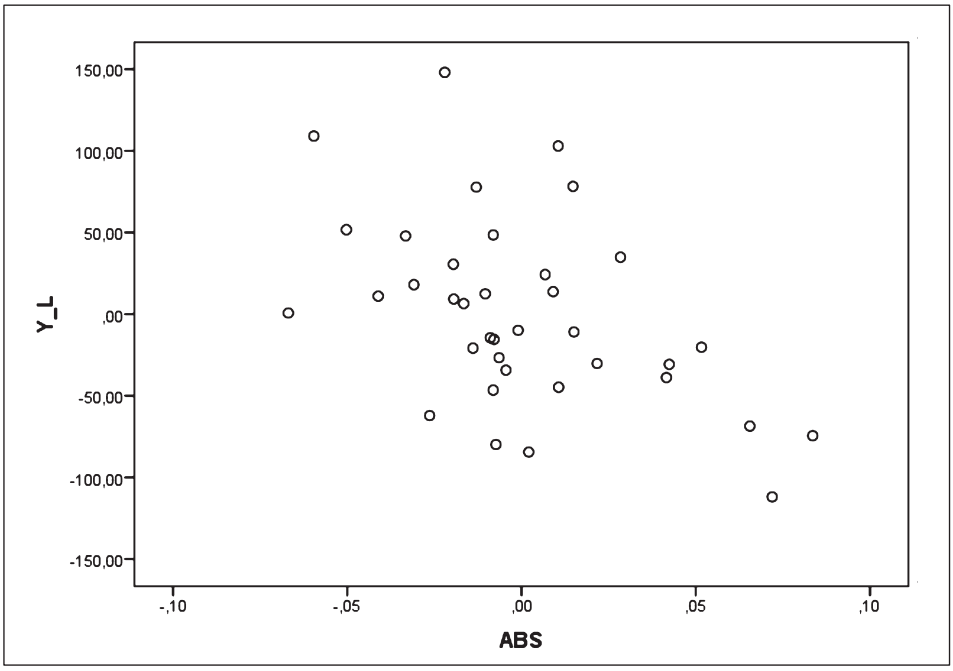


Source: output of the statistical programme SPSS

Figure 8 shows partial regression scatterplot for the independent variable absenteeism. Scatterplot shows that the relationship between the variables labour productivity and absenteeism is linear. Furthermore, the relationship between variables is negative (-0.192).

Figure 8.

PARTIAL REGRESSION SCATTERPLOT
FOR VARIABLE ABSENTEEISM (*ABS*)

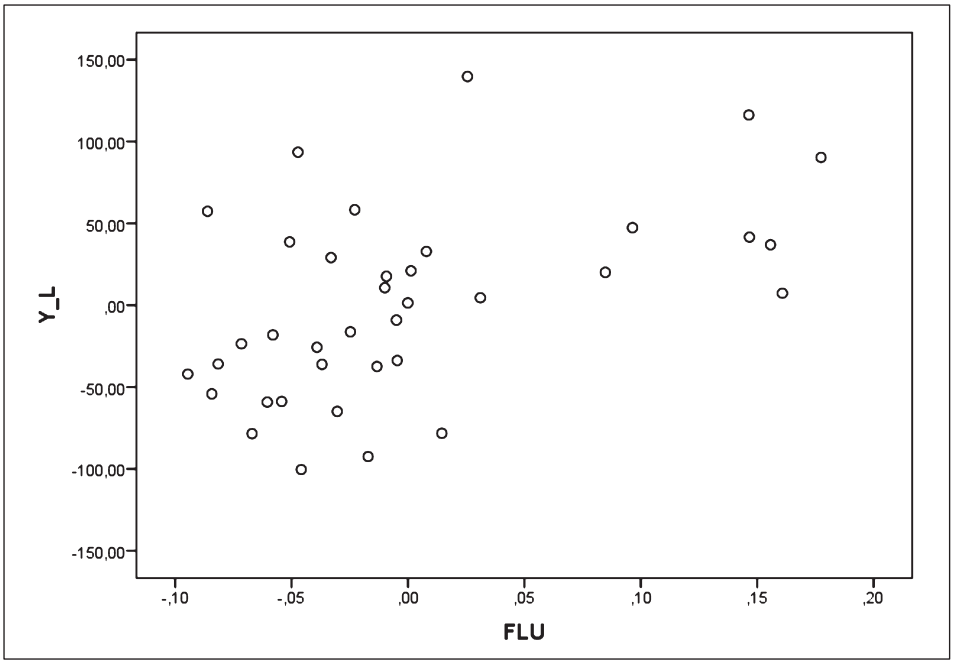


Source: output of the statistical programme SPSS

Figure 9 shows partial regression scatterplot for the independent variable fluctuation. Scatterplot shows that the relationship between the variables labour productivity and fluctuation is linear. Additionally, the relationship between variables is positive (0.251).

Figure 9.

PARTIAL REGRESSION SCATTERPLOT
FOR VARIABLE FLUCTUATION (*FLU*)

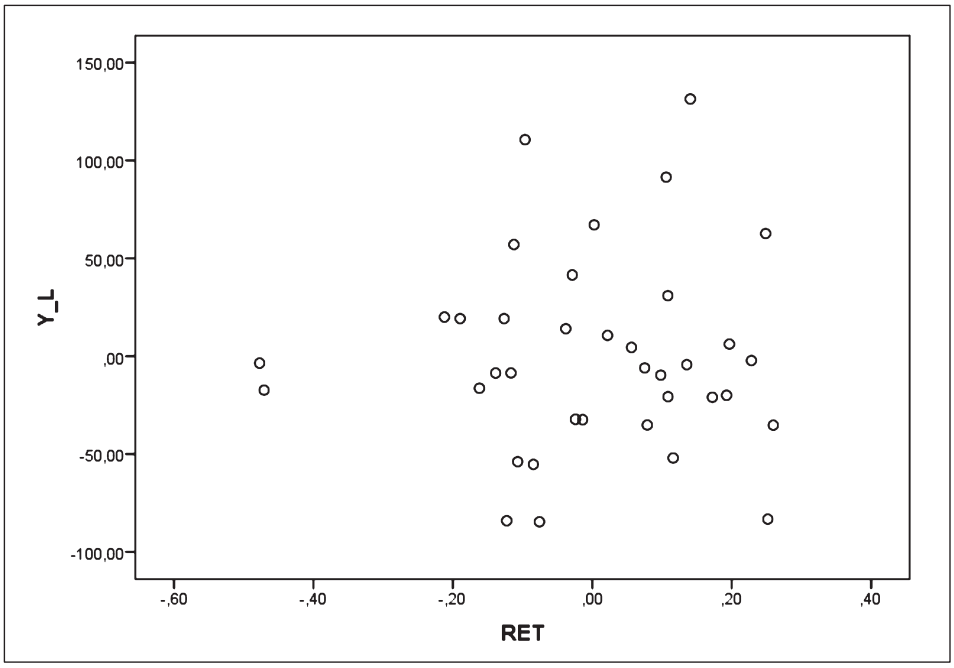


Source: output of the statistical programme SPSS

Figure 10 shows partial regression scatterplot for the independent variable retention. Scatterplot shows that the relationship between the variables labour productivity and retention is linear. Furthermore, the relationship between variables is weak and positive (0.045).

Figure 10.

PARTIAL REGRESSION SCATTERPLOT
FOR VARIABLE RETENTION (*RET*)



Source: output of the statistical programme SPSS

Results

The paper investigates labour productivity in the Croatian hotel industry. The research was performed by using a multiple regression model on the sample of 37 hotels (return rate of 37%). The regression significance was tested by F-test, and the significance of individual parameters by t-test. The results show that the vari-

ables capital per worked hour, education, investment in the education, employees' health and turnover rate have significant impact on labour productivity.

The independent variables used explain 65% of the variation in labour productivity. Given the assumptions of the standard Gaussian regression model as the theoretical framework for model testing, the results of the performed research are the following: (a) no presence of autocorrelation; (b) there is also no heteroscedasticity; (c) no presence of multicollinearity; (d) residuals are normally distributed.

The results of the analysis showed that four independent variables were significant for the model (education, investment in education and training, absenteeism, turnover rate) while two proved not to be significant (employees' age and retention rate).

4. Conclusion and implications

In many a productivity research (and not only in them), it very often occurs that the research is started in order to look for the empirical evidence of some commonly known and accepted 'truth' – e.g., that a satisfied employee is a productive employee, that education raises the level of productivity, and so on. However, when empirical evidence proves just the opposite, than the errors in researches or models are tracked down and research limitations are elaborated. Equally, this study found that for labour productivity age or time spent in the organization is not significant. In the manner of past and current (good or bad?) practice, it is here deemed necessary to elaborate and comment on proved and not proved relationships.

According to the theory, educated workers should raise labour productivity (Temple 2000; Schultz 2003; Šošić 2004; Romer 1989; Ciccone and Papaioannou 2005; Barro 2001). Research shows the same is true for tourism (Li and Prescot 2010). The results of the regression model presented in this paper prove the positive relationship between the education level of workers and labour productivity for the Croatian hotel industry.

The results suggest that the variable *age* is not statistically significant in the model, although there is a slightly negative correlation between labour productivity and the share of employees under the age of 35. The results of various empirical studies of employees' age and labour productivity are not unanimous (Li and Prescott, 2010; Blake, Sinclair and Soria, 2006; Thrane, 2008).

Regression analysis shows that the variable *investment in education and training* is statistically significant in the model. However, opposite to the hypothesised, the correlation between investment in education and labour productivity is

negative. The obtained result is contradictory to most of the known empirical studies' results (Blake, Sinclair and Soria, 2006; Thrane, 2008; Georgiadis and Pitelis, 2008 in Li and Prescott 2009).

Future research should be focused on the effects of specific forms of education (e.g., general and specific education). Additionally, it should be taken into consideration that even though the immediate effects of education are 'visible' in the same period when education is executed in the form of higher motivation, the real effects of education are evident in the long run.

The variable *absenteeism* is significant in the model and negatively correlated with labour productivity in the hotel industry. The employees' *loyalty* is measured by turnover rate and retention rate. The results of the regression analysis for the variable turnover rate show that it is statistically significant and positively correlated with labour productivity. Retention rate is not a significant variable, although it is positively correlated with labour productivity.

Apart from the already elaborated study limitations it is important to consider the possibility of introducing in the model some new variables. This study has primarily encompassed human capital variables – education, health, training, age and loyalty, whereas other variables, significant to labour productivity such as the use of IT or innovativeness (Jorgenson and Stiroh 2000; Stiroh 2002; Daveri 2003) were not considered. The relevant limitation of this research is the timeline alteration of productivity. For future research it would be important to monitor the impacts of variables continuously, i.e,. periodically and over a longer time span.

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PRODUKTIVNOST RADA U HOTELSKOJ INDUSTRIJI

Sažetak

U radu se istražuje utjecaj odabranih varijabli ljudskog kapitala na produktivnost rada u hrvatskoj hotelskoj industriji. Istraživanje je provedeno korištenjem regresijskog modela baziranog na Cobb-Douglasovoj proizvodnoj funkciji s konstantnim prinosima na opseg (Bartel, 1992; Black, Lynch, 1997). 65% svih varijacija u proizvodnosti rada u hotelskoj industriji moguće je objasniti varijacijama varijabli koje su korištene u modelu. S obzirom na postavke klasičnog Gaussovog modela, kao teorijskog okvira za testiranje modela, istraživanje je ukazalo na odsustvo autokorelacije, heteroskedastičnosti i multikolinearnosti.

Autorice obrazlažu specifičnosti produktivnosti rada u hotelskoj industriji i naglašavaju potrebu uvođenja dodatnih varijabli u model u svrhu upravljanja produktivnošću rada. Ovim se radom potiče i preoblikovanje mjera produktivnosti i sustava upravljanja produktivnošću kako bi se hotelskim organizacijama omogućilo djelotvornije prilagođavanje potrebama i izazovima konkurentskog okruženja.

Ključne riječi: model produktivnosti rada, hotelska industrija, Hrvatska