

BUSINESS PERFORMANCE OF HEALTH SPA TOURISM PROVIDERS IN RELATION TO THE STRUCTURE OF EMPLOYEES IN THE REPUBLIC OF CROATIA

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SUMMARY – Health spa tourism services are provided in special hospitals for medical rehabilitation and health resorts, and include controlled use of natural healing factors and physical therapy under medical supervision in order to improve and preserve health. Health tourism is a service industry and therefore labor-intensive industry in which human resources are one of the key factors of business success. The aim of this study was to analyze business performance of special hospitals for medical rehabilitation and health resorts in Croatia in relation to the structure of employees, specifically the number of physicians and total medical personnel, as well as the share of physicians and medical personnel in the total number of employees. The assumption was that those who employ more physicians and medical employees are more successful. The empirical research was conducted and the assumption was tested firstly by correlation analysis and afterwards by regression analysis. The total number of employees in the researched health resorts and special hospitals amounted to 2,863, of which the share of physicians specialists accounted for almost 7%, while the share of total medical staff was almost 53%. From the results of our research, it can be concluded that special hospitals for medical rehabilitation and health resorts, which employ more physicians and medical personnel, are achieving better financial business performance. Based on the results obtained, it is possible to provide guidance for further growth and development in the direction of basing the primary offer on medical-health offer, rather than on wellness offer, which is a strong trend in the world. These findings are important for planning the health and tourism policies in Croatia and similar countries.

Key words: *Medical tourism – economics; Health resorts; Hot springs; Balneology; Hospitals, special; Rehabilitation; Medical staff; Croatia*

Introduction

Health is one of the oldest, the most lasting and one of the strongest motives of tourism trips. Tourism has always, in all its forms, conducted a health function¹. The change of physical and social environment, which is the result of tourism, has a healing effect². So, in its broadest sense, almost the entirety of tourism can be considered as health tourism³. People awareness of their own health

and changes in contemporary lifestyle, as well as the increase of free time and of the income of people have all contributed to this fact⁴. That is why it is of special importance to recognize that health tourism is becoming an important pillar in the modern concept of healthy and active living and aging⁵.

The use of natural healing factors in folk medicine for millennium and from the second half of the 18th century in scientific medicine has led to the development of healing medicine through three methods of natural healing: climatology, thalassotherapy and balneotherapy by using natural healing factors of sea, land and atmosphere. Professional use of natural heal-

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ing factors is performed in certain special institutions (spas, institutes, hospitals)⁶. Due to the development of pharmaceutical industry, the natural healing factors are significantly less used in official medicine but their value is ever more recognized by tourism, which is offered primarily through health tourism. Therefore, it can be said that health tourism is a synergy between medical and tourism industry the purpose of which is improvement of health and quality of life. Medical part of the offer of health spa tourism include, under medical supervision, professional and controlled use of natural healing factors and physical therapy to treat, improve, rehabilitate and preserve health⁷.

Besides a long tradition of health tourism in Croatia, the Croatia's offer of health tourism is characterized by skilled workforce, good quality of medical and health services, price competitiveness, proximity to major emitting markets, favorable climate and natural wealth with a number of healing factors. Croatia also has a wealth of natural therapeutic factors at numerous unused locations⁸. There are no reliable statistical indicators that can be used to determine the exact revenue share of health tourism in the total revenue of Croatian tourism. Estimates show a minimum share. Bartoluci and Birkic⁹, for instance, state that health tourism participates with only 1% in the total tourism revenue of the Republic of Croatia. The average daily expenditure during summer months in Croatia is estimated to 66 € *per person*. Out of that amount, 55% is spent on accommodation, 18% on food and beverages outside the accommodation, and 27% for all other services¹⁰. There is effort to increase tourist spending, which is considered the basis of all other economic effects of tourism because without consumption and spending there are no other effects. In addition to direct economic effects of health tourism, indirect economic effects (for example, development of other industries as suppliers to the health spa providers, development of other tourism service providers enriching the destination experience) and social effects recorded in the destination are significantly higher.

Currently, in Croatia there are 13 special hospitals for medical rehabilitation (special hospitals, SH) and health resorts (HR) as health spa tourism providers. Croatia has other spas that are not included in health spa tourism due to their offers based mostly on wellness tourism and they do not provide services through the Croatian Health Insurance Fund (CHIF) in addi-

tion to the free market. With the exception of HR Istria Spa, other health resorts and special hospitals are in the county ownership¹¹. The mentioned health resorts and special hospitals have altogether 4,444 beds, of which 55% are offered for sale on the open market. Some researchers showed that more market-oriented health spa providers had better business performance than those more oriented towards CHIF⁷.

In health resorts and special hospitals, the medical personnel are medical specialists (physicians), nurses and medical technicians and physiotherapists, occupational therapists, and others. Non-medical personnel usually include housekeeping and technical staff, food and beverage staff, receptionists, sales and marketing staff, administrative staff, wellness staff, etc. Generally, the higher total number of employees provide better service, thus ensuring greater satisfaction of health tourists resulting in greater consumption, meaning better financial business performance of health resorts and special hospitals. The aim of our study was to evaluate the relationship between the financial performance of the providers of health spa tourism and the number of physicians and total medical personnel or their share in the total number of employees. We assumed these correlations to be positive.

Subjects and Methods

The sample included 13 health resorts and special hospitals for medical rehabilitation in Croatia: SH Daruvarske toplice, SH Krapinske toplice, SH Lipik, SH Naftalan, SH Stubičke toplice, HR Topusko and SH Varaždinske toplice, HR Istarske toplice, HR Veli Lošinj, SH Thalassotherapia Crikvenica, SH Thalassotherapia Opatija, SH Biokovka Makarska and SH Kalos Vela Luka. Besides these 13 sites, Croatia has other spas with the offers based mostly on wellness tourism. They were not included in this research since they do not provide services through the CHIF in addition to the free market.

Business performance was assessed using the following indicators: revenue in total and revenue *per available bed*. Correlation of the identified business performance indicators was tested for the following variables: share of the medical personnel in the total number of employees, share of non-medical personnel in the total number of employees, number of medical personnel and the number of physicians. The values of

Table 1. Selected variables in the four models of simple linear regression

MODEL 1	Y (dependent variable) X (independent variable)	Total generated revenue <i>per</i> available bed, the original series is given in Croatian kunas <i>per</i> bed Share of medical personnel in the total number of employees
MODEL 2	Y (dependent variable) X (independent variable)	Total generated revenue <i>per</i> available bed, the original series is given in Croatian kunas <i>per</i> bed Share of non-medical personnel in the total number of employees
MODEL 3	Y (dependent variable) X (independent variable)	Total generated revenue, the original series is given in Croatian kunas Number of medical personnel
MODEL 4	Y (dependent variable) X (independent variable)	Total generated revenue, the original series is given in Croatian kunas Number of physicians

1 Croatian kuna = 0.13 €

all tested variables were obtained through a structured questionnaire and refer to the year 2014. The total number of employees in the researched health resorts and special hospitals amounted to 2,863, of which the share of specialist physicians accounted for almost 7%, while the share of total medical staff was almost 53%.

With the aim to analyze the assumptions and to determine the correlation between the variables observed, a correlation analysis was conducted (Pearson's correlation coefficient). Coefficient ranges in the interval $-1 \leq r \leq 1$, where the value of the coefficient indicates the strength of relation, while the sign indicates the direction of the relation (positive or negative). Prior to the regression analysis, logarithmic transformation was conducted on all variables in order to remove a potential problem of heteroscedasticity, or variability of the variance for error in relation. In addition, diagnostic tests were conducted in order to assess the validity of the model. Values of simple linear regression were estimated with the least square method parameter. The existence of autocorrelation and heteroscedasticity problems was tested, as well as whether the assumption of normal distribution of relation errors was satisfied. For this purpose, Breusch-Godfrey test, White test and Jarque-Bera test were used. When concluded that there was no autocorrelation problem of relation error of the first order, and no problem of heteroscedasticity, and the presumption of the normality of relation errors was fulfilled in all regression models, the regression equation was estimated and the relation was established between the variables observed. The variables included in the simple linear regression analysis are shown in Table 1.

After evaluation of the parameter, its interpretation and testing of significance, the representativeness of the regression model with analysis of determination coefficient was performed showing the proportion of variability of the dependent variable explained by the regression model. The model is more representative as the value of coefficient approaches 1. EViews software was used for data analysis. Statistical significance was set at $p < 0.05$. All the financial values are given in Croatian kunas (1 Croatian kuna = 0.13 €).

Results

We tested the association between the total revenue generated with the share of medical personnel and

Table 2. Pearson's correlation coefficient of the share of medical and non-medical personnel in the total number of employees according to business performance

	Share of medical personnel in the total number of employees	Share of non-medical personnel in the total number of employees
Revenue <i>per</i> available bed	0.6319	-0.6109

Table 3. Pearson's correlation coefficient for the number of medical personnel and number of physicians according to business performance

	Number of medical personnel	Number of physicians
Total revenue	0.9162	0.8120

Table 4. Results of regression analysis for model 1 (total generated revenue per available bed and share of medical personnel in the total number of employees)

Variable	Coefficient	SE	t-Statistic	Prob.
C	12.37687	0.323440	38.26630	0.0000
MED_ZAP	1.143318	0.422840	2.703905	0.0205
R-squared	0.399272	Mean dependent var	11.55689	
Adjusted R-squared	0.344660	S.D. dependent var	0.500919	
SE of regression	0.405509	Akaike info criterion	1.173292	
Sum squared resid	1.808815	Schwarz criterion	1.260207	
Log likelihood	-5.626396	Hannan-Quinn criter.	1.155427	
F-statistic	7.311102	Durbin-Watson stat	2.751658	
Prob(F-statistic)	0.020513			

SE = standard error; Prob. = probability; MED_ZAP = medical personnel

Table 5. Results of regression analysis for model 2 (total generated revenue per available bed in Croatian kunas and share of non-medical personnel in the total number of employees)

Variable	Coefficient	SE	t-Statistic	Prob.
C	10.57601	0.400171	26.42873	0.0000
NMED_ZAP	-1.352740	0.528648	-2.558868	0.0266
R-squared	0.373141	Mean dependent var	11.55689	
Adjusted R-squared	0.316154	S.D. dependent var	0.500919	
SE of regression	0.414235	Akaike info criterion	1.215870	
Sum squared resid	1.887495	Schwarz criterion	1.302786	
Log likelihood	-5.903157	Hannan-Quinn criter.	1.198005	
F-statistic	6.547806	Durbin-Watson stat	2.430551	
Prob(F-statistic)	0.026572			

SE = standard error; Prob. = probability; NMED_ZAP = non-medical personnel

the share of non-medical personnel in the total number of employees by using correlation analysis. The results are presented in Table 2.

Pearson's correlation coefficient between the variables of total revenue *per* available bed and share of medical personnel in the total number of employees amounted to 0.6319, suggesting a positive and medium strength of correlation. The correlation coefficient between the total revenue *per* available bed and share of non-medical personnel in the total number of employees was 0.6109, and the connection between the observed variables was negative and of medium strength.

We focused on the number of medical personnel and separately on the number of specialist physicians, and correlation analysis was conducted with the total

realized revenue as an indicator of business performance, which is shown in Table 3.

Pearson's correlation coefficient between the total revenue and the number of medical personnel was 0.9162, indicating a positive and strong correlation. The correlation coefficient between the total revenue and the number of physicians was 0.8120, which also indicates a positive and strong relationship between these variables.

Since the regression models undergo diagnostic tests, the regression equations were estimated and the results are shown in Tables 4, 5, 6 and 7.

The first model of linear regression analyzed total generated revenue *per* bed, depending on the share of medical personnel in the total number of employees.

Table 6. Results of regression analysis for model 3 (total generated revenue in Croatian kunas and number of medical personnel)

Variable	Coefficient	SE	t-Statistic	Prob.
C	14.38860	0.385404	37.33382	0.0000
MED	0.661778	0.087291	7.581257	0.0000
R-squared	0.839358		Mean dependent var	17.24323
Adjusted R-squared	0.824755		S.D. dependent var	0.707928
S.E. of regression	0.296355		Akaike info criterion	0.546121
Sum squared resid	0.966089		Schwarz criterion	0.633036
Log likelihood	-1.549785		Hannan-Quinn criter.	0.528256
F-statistic	57.47545		Durbin-Watson stat	1.487260
Prob(F-statistic)	0.000011			

SE = standard error; Prob. = probability; MED = medical personnel

Table 7. Results of regression analysis for model 4 (total generated revenue in Croatian kunas and number of physicians)

Variable	Coefficient	SE	t-Statistic	Prob.
C	15.69565	0.356134	44.07230	0.0000
DOC	0.653925	0.141729	4.613900	0.0007
R-squared	0.659317		Mean dependent var	17.24323
Adjusted R-squared	0.628346		S.D. dependent var	0.707928
SE of regression	0.431577		Akaike info criterion	1.297898
Sum squared resid	2.048849		Schwarz criterion	1.384813
Log likelihood	-6.436338		Hannan-Quinn criter.	1.280033
F-statistic	21.28807		Durbin-Watson stat	1.619846
Prob(F-statistic)	0.000748			

SE = standard error; Prob. = probability; DOC = physicians

The estimated regression coefficient was 1.1433, and was positive. In other words, by increasing the share of medical personnel in the total number of employees by 1%, it was estimated that the total revenue *per* available bed increased by a mean of 1.1433%. To test whether the independent variable was redundant in the model, the t-test was carried out and its empirical size in this case was equal to 2.7039, while the associated p-value was 0.0205. The coefficient of determination was 0.3992, which means that the estimated regression model interpreted 39.93% of all deviations of the total revenues *per* available bed.

We also analyzed the regression model for the revenue *per* available bed depending on the share of non-medical personnel in the total number of employees.

The value of the regression coefficient was -1.3527, and it was estimated that the increase in the share of non-medical personnel in the total number of employees by 1% would decrease the total generated revenue *per* available bed by a mean of -1.3527%. Regression coefficient was statistically significant. The coefficient of determination was equal to 0.3731, indicating that 37.31% of deviations in the total revenue *per* available bed could be explained by this regression model.

In the third model of linear regression, we analyzed the total revenue generated in dependence on the number of medical personnel. The estimated regression coefficient was 0.6618, which implies that the connection between the variables was positive, as shown in the correlation analysis. In other words, by

increasing the number of medical personnel by 1%, it is estimated that the total generated revenue would increase by a mean of 0.6618%. Empirical size of the t-test was equal to 7.5813, and it demonstrated the significance of the number of medical personnel in the model. The coefficient of determination was 0.8394, meaning that the estimated regression model interpreted 83.94% of all deviations of the total revenue.

The last model of linear regression included the total revenue generated in dependence on the number of physicians/specialists. In this case, the value of the regression coefficient was equal to 0.6539, estimating that the increase in the number of physicians by 1% would increase total revenue by a mean of 0.6539%. Regression coefficient was statistically significant. Determination coefficient was equal to 0.6593, indicating that 65.93% of deviations of the total realized revenue were explained by this regression model.

Discussion

To the best of our knowledge, no study to date has analyzed business performance of health resorts and special hospitals in relation to the structure of employees in Croatia. It is known that tourism is a labor-intensive industry. Notwithstanding continual technological advances, the 'business' of health care will always be people serving people¹². Human resources in the health sector reform aim to improve the quality of services and patient satisfaction¹³. Business performance, measured by economic indicators, will depend on the quality of human resources. Regardless of the adjective 'health', health tourism is a service industry. In addition to the quality of medical services as a primary motivator of tourism demand, important is the quality of other services such as food and beverages services and services in the destination that enrich the stay of tourists in health spa providers in a particular destination. All these services are part of the tourism value chain. In health tourism, the reputation of medical staff, especially physicians, will be important or almost critical. The share of employees with university qualifications is 10%, of which only 2% non-medical employees have university education in health spa providers in the Republic of Croatia¹⁴. Menvielle *et al.*¹⁵ especially emphasize fluency in English and other languages by physicians and staff in communication with patients, additional specialized training that can be seen from the diploma or mentioned in biographies, as

a positive impact on encouragement of patients or tourists in making the purchase decision. Knowledge is the key driver of all human activities and a precondition for success. Therefore, improving the level of expertise at all levels should be encouraged, which is a prerequisite for long-term sustainability of competitiveness of health spa tourism providers.

However, human resources are more often seen as a cost rather than investment and a developing and creative potential, which is used in accomplishing the business objectives. Besides that, the world has a massive shortage of health-care workers, currently estimated at over 4 million¹⁶. While there is an absolute shortage of staff (especially physicians), this is substantially exacerbated by inequitable deployment. This leads to problems in both the quality (when lower categories of staff are expected to perform functions of higher categories of staff) and efficiency (when higher categories of staff are expected to perform functions of lower categories of staff)¹⁷. The reason for this can be found in high labor costs. Staff costs typically account for around 70% of district health expenditure¹⁸. Managers have to ensure an optimal allocation of staff at all levels in order to provide quality and efficient services that will result in highly profitable business.

The Global Wellness Institute¹⁹ estimates that wellness tourism accounts for 71%, thermal spa tourism resorts for 21%, and medical tourism for 8% of total revenue of health tourism. Wellness tends to become a complete health concept in that it implies movement, physical exercise, healthy food, relaxation, and managing stress, aiming at achieving satisfaction and pleasure²⁰, and tends to become a mass-scale form of tourism in the 21st century²¹. Part of service providers in health tourism are strongly turning towards wellness tourism as the additional or even main offer, seeking the possibility of increasing the profitability. This is confirmed by experiences from Austria, Hungary, Slovenia and other countries. The question is whether it is the best strategy for growth and development of health resorts and special hospitals in Croatia and other similar countries that are relatively young and unsufficiently exploited tourist destinations that have wealth of natural healing factors and can provide high-quality and competitive medical service. To answer this question, we assumed, contrary to the foregoing, that these service providers would be more successful if their medical offer was better, if they were employing more physicians and medical personnel,

and had a higher proportion of them in the total number of employees.

The larger number of physicians means higher labor costs, therefore it is recommended for a future research to identify the threshold to which it is possible to increase the number of physicians and medical staff without jeopardizing the desired level of profit.

Apart from economic effects, there are many other benefits of health spa tourism for the national economy. Seasonal employment is less pronounced because health resorts and special hospitals remain open all year round and require continuity in the employment of professional human resources. Tourists that stay in a health resort or special hospital for medical rehabilitation remain longer in order to achieve a preventive or rehabilitation treatment, unlike the stay of leisure 'sun and sea' tourists. It could be said for tourist demand of health services that it is less flexible than some other forms of tourism demand due to its connection to human health, which is one of rare categories in which people do not accept compromises. Considering only these advantages, it is clear why the growth and development of this segment is desirable in all destinations that are naturally predisposed for its development, especially those with high seasonality. Currently, CHIF alone, but in the future other insurance funds should also take these results into account in terms of investment in the health of the population and as a contribution to the survival and development of special hospitals for medical rehabilitation and health resorts.

From the results of our research, it can be concluded that special hospitals for medical rehabilitation and health resorts, which employ more physicians and medical employees achieve better financial business performance. Following this conclusion, it is possible to provide guidelines for further growth and development of health spa tourism providers, with an emphasis on medical offer rather than on wellness offer. These findings are important for planning the health and tourism policies in Croatia and similar countries.

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Sažetak**USPJEŠNOST POSLOVANJA PRUŽATELJA USLUGA LJEČILIŠNOG TURIZMA
PREMA STRUKTURI ZAPOSLENIKA U REPUBLICI HRVATSKOJ***S. Vrkljan i S. Grazio*

Usluge lječilišnog turizma se pružaju u lječilištima i specijalnim bolnicama za medicinsku rehabilitaciju. Uključuju pod liječničkim nadzorom kontroliranu upotrebu prirodnih ljekovitih činitelja i fizioterapije s ciljem očuvanja i unaprjeđenja zdravlja. Zdravstveni turizam je uslužna djelatnost i prema tome radno-intenzivna djelatnost prema čemu su ljudski potencijali jedan od ključnih čimbenika uspješnosti poslovanja. Cilj ovoga istraživanja bio je analizirati uspješnost poslovanja lječilišta i specijalnih bolnica za medicinsku rehabilitaciju u Hrvatskoj u odnosu prema strukturi zaposlenika, konkretno u odnosu na broj liječnika i ukupnog medicinskog osoblja, odnosno udjela liječnika i udjela ukupnog medicinskog osoblja u ukupnom broju zaposlenika. Pretpostavili smo da su uspješniji oni koji zapošljavaju više liječnika i medicinskog osoblja. U dokazivanju tih pretpostavki provedeno je empirijsko istraživanje te su pretpostavke testirane prvo korelacijskom, a potom i regresijskom analizom. Prema rezultatima istraživanja može se zaključiti kako bolje finansijske rezultate poslovanja ostvaruju one specijalne bolnice za medicinsku rehabilitaciju i lječilišta koja zapošljavaju više liječnika i medicinskog osoblja. Ukupan broj zaposlenika u lječilištima i specijalnim bolnicama obuhvaćenim ovim istraživanjem je 2.863, od čega je 7% liječnika specijalista, dok je ukupni udio medicinskog osoblja gotovo 53%. Temeljem dobivenih rezultata moguće je dati smjernice za daljnji rast i razvoj u smjeru baziranja osnovne ponude na medicinsko-lječilišnu ponudu radije nego na *wellness* ponudu kao snažnog trenda u svijetu. Ovi rezultati su važni za planiranje zdravstvene i turističke politike u Hrvatskoj i sličnim zemljama.

Ključne riječi: *Zdravstveni turizam – ekonomija; Lječilišta; Toplice; Bolnice, specijalne; Rehabilitacija; Medicinsko osoblje; Hrvatska*