

Relationship Between Investments Intellectual Capital and Financial Performance: Evidence from Serbian Hotel Industry 2013–2017

Milos Petkovic¹

Abstract:

The purpose of this study is to identify the relationship between the investments in intellectual capital and company’s financial performance based on the Serbian evidence of Hotels. Various studies proved the presence of positive relationships between intellectual capital and company’s performance. Developing such a relationship shows the transformation process from investments in intellectual capital into value. Intellectual capital is a strategic resource that plays an important role in value creation process. The intellectual capital topic has been interesting last few decades taking into account that the twentieth century is a century of ideas, knowledge, innovations, information and changes. Parallely, the financial market became influential in the global market, so the intellectual capital found very important role for itself. Analysis covered 42 Serbian hotels in the period from 2013 until 2017. Financial information are obtained from the financial database “CUBE Team”. In the study was used descriptive statistics, stepwise method of correlation analysis and complex regression statistical analysis on three main research models in order to identify relation between dependent, independent and control variables, precisely investments in intellectual capital and financial performance. The study confirmed high positive link between investments in intellectual capital components and financial performance on a sample of Serbian hotels. The study contributes to the literature of the management sciences by confirming that investments in intellectual capital components improves the Serbian hotels’ financial performance.

Key Words:

Intellectual capital, financial performance, hotel industry, value creation

¹ Berlin School of Business and Innovation, Berlin, Germany.

I. Introduction

Company’s goal is to improve its performance. Taking into consideration that the global market is highly dynamic, competitive and uncertain, improving and increasing company’s current performance is not an easy task. In the last two decades, the measurement methods have been changed dramatically. Current national accounting frameworks cannot follow adequately value creation processes as before because of the high importance and role of intangibles. Traditional measures are highly unsuitable mainly because they are based on conventional accounting principles (Gan, 2008). After traditional financial measurement, it was necessary to include non-financial – qualitative measures of performance. There was a need for balanced approaches that will include both financial and non-financial, quantitative and qualitative measurements of performance in one unique system (Burgess et al., 2007; Ghalayini and Noble, 1996; Olve et al., 2000). In the last few decades growing awareness and importance of intangible assets are coming directly from the increasing difference between market and book value of companies (Lev, 2001). In the current global economy, intellectual capital creates future company’s value (Edvinsson and Malone, 1997). Bontis et al. (2000) proved that the intellectual capital is a significant contributor to the company’s performance despite different types of industry. Because of the importance of intangible assets, companies’ investments are about 50% only in the sphere of intangible assets, precisely in research and development, personnel development, infrastructure (Fuller, 2002).

The aim of this study is to make an empirical investigation of effects of investments in intellectual capital on the company’s financial performance by implementing the model of Molodchik et al. (2012).

The analysis is composed of 42 Serbian hotels over the period from 2013 to 2017. In the research paper, the following quantitative methods of research are implemented: descriptive statistics, stepwise method of correlation analysis and complex regressions on all three research models.

The paper is organized as follows. Section 2 develops literature review related to existing literature and the most prominent authors from the topic. Section 3 explains developed research methodology. Section 4 presents empirical findings, whereas Section 5 concludes the paper.

Review of Literature: For Dzinkowski (2000) the most important company’s intangible asset is the intellectual capital that will enhance performance and that is defined as company’s knowledge-based equity. The importance of intellectual capital is emphasized in the revolution in information technology and the information society, the rising importance of knowledge-based economy and knowledge in general, the changing requirements and the network society of innovation as the principle determinant of competitiveness (Petty and Guthrie, 2000).

Investing in intellectual capital is highly important for companies that want to realize operationally their strategies and achieve its performance (Riahi-Belkaoui, 2003). Rodriguez-Castellanos et al. (2011) proved that companies who invest in intellectual capital have better economic result than those that do not. Very often investments in intellectual capital do not generate immediate results and returns. The intermediate period is necessary to produce effects on the company’s performance. The results today must come from the investments made in previous periods (García-Zambrano et al., 2018). The potential influence on corporate values differs from industry to industry. For instance, the positive link exists

mostly in high technology companies, financial institutions (Ting and Lean, 2009), pharmaceutical and hotel industry (Mehralian et al., 2012). Tourism industry is a fast, growing and vibrant industry (Fishbin & Roth, 2015). In 2017, it was estimated that every 10th person in the world has been working in the field of tourism. (UNWTO, 2018). Investments in hotel personnel impacts their job satisfaction. (Costen & Salazar, 2013). Involving company’s employees improve final performance (Owolabi and Abdul-Hameed, 2011). Satisfied employees in a hotel tend to provide a better service quality to a customer as they feel more enthusiastic and inspired with their job (Kong et al., 2010). Apart from the fact that satisfied employees provide better service, they also show a higher intention to stay in the company and impact the final financial result of the company (Chiang et al. 2008).

Serbian tourism and hotel industry follow international trends when it comes to the increasing number of participants in international travels. Furthermore, in the last five years, the growth rates in the tourism industry are higher than global and European average (Statistical Office of the Republic of Serbia, 2018, World Travel & Tourism Council, 2018, Government of the Republic of Serbia, 2016). Along with the increased number in arrivals and overnight stays, a dynamic growth in the number of hotels has also been recorded (Ministry of Trade, Tourism and Telecommunications, 2018). The tourism economic impact on the local economy in Serbia was estimated to 2,3% directly to GDP and 6,7% of total contribution to GDP, which is still significantly lower than global average (direct 3,2% and total 10,7%) (World Travel & Tourism Council, 2018).

There are many studies that prove the strong positive relationship between the intellectual capital and organizational performance (Bontis, 1998; Bontis et al., 2000; Kamukama et al., 2010; Cabrita and Bontis, 2007; Seggie et al., 2007). If an organization wants to achieve its performance, it is not possible without an existence of intellectual capital (Sydler et al., 2014). Pucci et al. (2015) shows that there is a positive link between the company’s performance and intellectual capital. The intellectual capital plays an important role in the value creation process in a company (Powell, 2003). Even though, the intellectual capital does not exist in the balance sheet, it influences without a doubt on a company’s performance (Brooking, 1997).

II. Material and Methods

The present paper is a modern attempt to determine investments in intellectual capital on one side, seen as input, and final performance and value-creation, seen as output on the other side. The main model used in this study was developed by Molodchik et al. (2012) and it is called the Intellectual Capital Transformation Evaluating Model (ICTEM) that investigates the process of intellectual capital transformation in a company’s performance.

This study is based on the financial data obtained from the financial statements of 49 Serbian hotels for the period from 2013 until 2017. The financial data was collected from the financial database provided by the company “CUBE Team”. The selection criteria required all companies to have demanded variables for the last 5 years. Companies that failed to meet these requirements were excluded from the sample. Furthermore, only companies that operate four-star hotels were selected for this study. As hotels are classified within the same scale, we assumed they should provide a comparable quality of accommodation and services. To justify

the selection of only four-star hotels further on is due to the fact that Serbian hospitality market is polarized with four-star hotels. The dependent and independent variables are justified in the following order by the literature:

The size of companies was fairly balanced, comprising 11 mid-size, 18 small and 14 micro companies. There are no large companies that operate with hotels in Serbia. Descriptive statistics from the sample is provided in the table below:

For the purpose of this study, three multiple regression models were developed. All models demonstrated significant effects and showed a significant explanation of the dependent variables. We used stepwise method to run the analysis with the estimation in the r2 change. Results from the research are presented in the following section.

III. Results

First model, as showed in table number 3 estimated the impact of Personnel Costs, Cost of product development and Intangible costs on Operative Income. Stepwise method used Personnel costs as a primary variable which explained roughly, 0457 of the variance in Operative Income. With the addition of next independent variable i.e. Cost of product development, the model showed explanation of, 503 with statistical significance demonstrated on the degree of freedom of 95% but not at the level of 99%. Additional variables were excluded from the first model as they didn't show any statistical significance. As for the regression coefficients, in the table number 4, it is evident that investments in human capital significantly explain the variation in Operative income. When combined with Cost of product development, Personnel Costs still explain over 40% of the variance, while Costs of product development remain at, 367. The second model was developed by using Net Result as dependent variable, while same variables as in the previous model were used as independents. Model summary is presented in table number 5. Again, stepwise linear regression was the method to run the test. This time, only personnel costs and company size showed significant effects. However, even though size showed statistical significance at 0,05, adjusted R Squared for the sample size showed less explanation of the variance and no statistical significance at level ,001. Once again, investments in human capital explained over 0,5 of the variances of Net Result indicating a strong relationship between investments in human capital and company's performance. Table number

6 composed of the regression coefficients are presented in model number 2. This table shows that Personnel costs have a Beta of ,827 while Company Size has a negative relationship at a very low level of statistical significance. Finally, Table number 7 where we used Operating Revenue as a dependent variable showed the best model fitness from all model developed for this study. Results from table number 7 indicate that investments in intellectual capital explain over, 94 of the variance in Operating Revenue. As in the first two models, Personnel costs showed highest coefficients with Beta over, 65 followed by Intangible costs and Costs of product development.

IV. Conclusion

The research covered in total 42 Serbian hotels over the period from 2013 to 2017. For the purpose of this study three regression models were developed using stepwise method in an attempt to provide the empirical investigation of the impact of investments in intellectual capital on the hotel's revenue, operating income and net result, seen as the company's financial performance. Results from this research confirm the findings from previous studies that demonstrated that investments in intellectual capital explain and lead to positive financial performance. However, the significant contribution of this study was demonstrated that investments in intellectual capital influence most significantly hotel's Operating revenue, while there are significant space left to explain in Operating income and Net Result. These findings should benefit hotel managers, who put their efforts daily to stay competitive in a fast growing and turbulent hospitality market that Serbia is at the moment. Limitations from this research fall to the sample size that was limited due to the number of hotels that had available data and operate in Serbia, as well as a multicollinearity that was encountered during the statistical tests. However, previous research brought us to the opinion that variables tested, in reality, are quite independent, and that they could be used in the model. Further research should confirm the findings from this study on hotels from different scales and different markets.

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Figure 1



Justification of Variables (Table 1)

Variables — Dependent	• Operating Revenues (OpeRevenue) (Edvinsson and Malone, 1997; ICM Group, Inc., 1998)
	• Operating Income (OpelIncome) (Edvinsson and Malone, 1997; ICM Group, Inc., 1998; Lu et al., 2014)
	• Net Gain or Loss (NetResult) (Baroroh, Niswah, 2013; Bontis, 2001, 1998; Edvinsson and Malone, 1997; Kamukama et al., 2010; Maria do Rosário Cabrita and Nick Bontis, 2007; Seleim et al., 2004; Wang and Chang, 2005)
Variables — Independent	• Personnel Costs (PersoCosts) (Ballester et al., 2002; Bontis and Fitz-enz, 2002; Bukowitz and Petrash, 1997; García-Zambrano et al.,2018; Koch and McGRATH, 1996; Lajili, K. and Zeghal, D., 2005; Martín-de-Castro et al., 2011; Ordóñez de Pablos, 2003)
	• Costs of Product Development (CostsProduct) (Martín-de-Castro et al., 2011; Ordóñez de Pablos, 2003)
	• Intangible Costs (IntaCosts) (Allen and Wilburn, M., 2002; Cohen and Kaimenakis, 2006; Corrado, C. et al., 2006; Ordóñez de Pablos, 2003)

Descriptive Statistics (Table 2)

	N	Statistic	Min. Statistic	Max. Statistic	Mean Statistic	Mean Std. Error	Std. Deviation Statistic	Variance Statistic
OpeRevenu	44		0	93883520	166152511,	30539641,2	202577062,5	41.037.466.262.325.
PersoCosts	44		6400	23139660	44915432,1	8528231,15	56569885,74	3.200.151.972.747.
CostsProdu	44		0	19895720	27271787,1	5821733,56	38617011,75	1.491.273.596.666.
IntaCosts	44		34200	17619620	19501533,7	4523074,67	30002683,19	900.160.999.089.120
OpelIncome	44		0	15828020	23360945,8	5430762,53	36023603,33	1.297.699.997.111.9
NetResult	44		0	24110340	23455546,2	6558475,52	43504005,01	1.892.598.452.426.5
AvgSalary	43		179923	2333000	776300,33	67703,169	443959,369	197.099.921.564
AvgNumEmp	44		0	196	48,98	7,265	48,189	2.322
Size	44		1	3	1,95	,117	,776	1
Valid N (listwise)	43							

Model 1. Summary with Operating Income as Dependent (Table 3)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	,685a	,470	,457	26725802,670	,470	36,343	1	41	,000	
2	,726b	,527	,503	25556233,895	,057	4,839	1	40	,034	
3	,729c	,532	,496	25745909,361	,005	,413	1	39	,524	2,714

Model 1. Regression Coefficients (Table 4)

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1 (Constant)	3790618,480	5267076,210		,720	,476
1 PersoCosts	,438	,073	,685	6,029	,000
2 (Constant)	2361538,906	5078308,332		,465	,644
2 PersoCosts	,262	,106	,411	2,481	,017
2 CostsProduct	,340	,155	,364	2,200	,034

Model 2. Summary with Net Result Dependent (Table 5)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	,738a	,544	,533	29980532,518	,544	48,927	1	41	,000	
2	,741b	,550	,527	30171096,705	,005	,484	1	40	,491	2,204

Model 2. Regression Coefficients (Table 6)

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1 (Constant)	-2182999,674	5908512,891		-,369	,714
1 PersoCosts	,570	,081	,738	6,995	,000
2 (Constant)	7698722,044	15402206,485		,500	,620
2 PersoCosts	,639	,129	,827	4,952	,000
2 Size	-6610436,249	9504642,591	-,116	-,695	,491

Model 3. Summary with Operating Revenue Dependent (Table 7)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	,944a	,891	,889	67858520,446	,891	336,095	1	41	,000	
2	,966b	,933	,930	53985080,817	,042	24,781	1	40	,000	
3	,973c	,946	,942	49104142,549	,013	9,347	1	39	,004	
4	,973d	,946	,940	49745999,728	,000	,000	1	38	,993	2,558

Model 3. Regression Coefficients (Table 8)

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1 (Constant)	14709607,226	13373443,003		1,100	,278
1 PersoCosts	3,379	,184	,944	18,333	,000
2 (Constant)	8198826,970	10719379,129		,765	,449
2 PersoCosts	2,717	,198	,759	13,729	,000
2 IntaCosts	1,852	,372	,275	4,978	,000
3 (Constant)	5336058,108	9795069,850		,545	,589
3 PersoCosts	2,342	,218	,654	10,749	,000
3 IntaCosts	1,529	,355	,227	4,313	,000
3 CostsProduct	,951	,311	,182	3,057	,004

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