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ANALYSIS OF INTELLECTUAL CAPITAL PRACTICES IN SERBIA

The research empirically evaluates the effects of intellectual capital (IC) and its key components (human and structural capital) on financial performance. In order to investigate the present situation regarding IC in Serbia, we observed 100 Serbian companies that achieved the highest net profits in 2010. The data were gathered from the official financial statements, covering a 4-year period. Based on this data, the level of IC, measured by the value added intellectual coefficient, was monitored, as well as the changes in the size of IC over time. The paper also examines the correlation between IC and corporate performance. It is hoped that the research will aid recognition of the importance of investing in IC as a crucial element of competitive advantage in business.

Keywords: *intellectual capital, intangible assets, corporate performance, value added intellectual coefficient (VAIC).*

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АНАЛІЗ ЗАСТОСУВАННЯ ІНТЕЛЕКТУАЛЬНОГО КАПІТАЛУ В СЕРБІЇ

У статті емпірично оцінено вплив інтелектуального капіталу (ІК) та його ключових компонентів (людський і структурний капітал) на фінансові показники підприємств. З метою вивчення поточної ситуації щодо ІК в Сербії проведено аналіз 100 сербських компаній, які отримали найвищий прибуток в 2010 році. Дані було зібрано з офіційної фінансової звітності, що охоплює 4-річний період. На підставі цих даних перевірено рівень ІК, виміряний як коефіцієнт доданої вартості інтелекту, а також динаміка зміни в розмірах ІК. Розглядається кореляція між ІК і корпоративною ефективністю. Дослідження підкреслює важливість інвестицій в ІК як найважливіший елемент конкурентної переваги в бізнесі.

Ключові слова: *інтелектуальний капітал, нематеріальні активи, корпоративна ефективність, коефіцієнт доданої вартості інтелекту.*

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АНАЛИЗ ПРИМЕНЕНИЯ ИНТЕЛЛЕКТУАЛЬНОГО КАПИТАЛА В СЕРБИИ

В статье эмпирически оценено влияние интеллектуального капитала (ИК) и его ключевых компонентов (человеческий и структурный капитал) на финансовые показатели предприятий. С целью изучения текущей ситуации относительно ИК в Сербии проведен анализ 100 сербских компаний, которые получили наивысшую прибыль в 2010 году. Данные были собраны из официальной финансовой отчетности за 4-летний период. На основании этих данных проверен уровень ИК, измеренный как коэффициент добавленной стоимости интеллекта, а также динамика изменения в размерах ИК. Рассматривается корреляция между ИК и корпоративной эффективностью. Исследование подчеркивает важность инвестиций в ИК как важнейший элемент конкурентного преимущества в бизнесе.

Ключевые слова: *интеллектуальный капитал, нематериальные активы, корпоративная эффективность, коэффициент добавленной стоимости.*

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Introduction. Unlike tangible resources, represented by physical objects whose value can be measured with a reasonable level of certainty, intangible resources tend to be invisible, and relate to employee knowledge and skills, relationships with customers and other stakeholders, and components referring to organizational culture, intellectual property and brand equity. Various types of intangible resources make up the substance of intellectual capital (IC). One of the most frequently used synonyms for IC is "intangible assets". The main aspect of IC can be viewed as the application of knowledge, which leads to new knowledge, new organizational forms, and innovations in general.

The most developed market economies base their competitiveness on knowledge, business innovations, strategies, and the sophistication of their business model, and far less on natural resources and cheap labor. It is estimated that investments in intellectual assets among 5 Organization for Economic Cooperation and Development (OECD) countries (USA, UK, Japan, the Netherlands, Finland) each make up between 7.5% and 11.7% of GDP (OECD, 2011). This is particularly important for Serbian economy, where corporate performance depends less on knowledge and skills of employees and more on physical assets (Janosevic and Dzenopoljac, 2012). In the case of Serbia, the transitional output curve is a reverse triple J-shaped curve that never reaches its pretransitional level. At the end of 2011, Serbia's transitional output gap was around 30% (Duricin and Vuksanovic, 2012).

The main aspects of IC in Serbia are described, including the trend of investment in IC over the period of 4 years and the difference in IC exploitation among major industries. We also examine the difference in corporate performance indicators between 3 groups of companies equally categorized according to the values obtained for the value added intellectual coefficient (VAIC). And we attempt to determine the correlation between corporate performance and efficient use of IC in Serbian companies.

Literature review. Because this paper deals with wider aspects of managing IC, with the focus on the situation in Serbia, this section briefly outlines the main contributions in the literature to several crucial aspects of dealing with IC: definitions of IC, the classification of IC components, and measurement methods. One of the first definitions is that IC represents a company's invisible assets that consist of technology, customer loyalty, company image, corporate culture, and management skills (Itami, 1991). Another definition views IC as the assets without physical embodiment but with high importance for business success (Edvinsson and Malone, 1997). Stewart (1998) regarded IC as the "collective brainpower" of an organization. Sullivan (2000) defined IC as knowledge that can be transformed into profit. According to Hsu and Fang (2009, p. 665), IC is "the total capabilities, knowledge, culture, strategy, process, intellectual property, and relational networks of a company that create value or competitive advantages and help a company achieve its goals."

There have been numerous attempts to formulate a suitable system of IC classification. Sveiby (1997) divided IC into employee competencies and internal and external structures. Edvinsson (1997) used categories where IC is the sum of human, organizational, and customer capital. In one of the most often cited IC categorizations in this field, IC consists of human (employee knowledge and skills), structural

(corporate culture, trademarks, patents, software, copyrights, databases, management processes), and relational capital (relations with external stakeholders, such as investors, creditors, customers, suppliers) components (Sveiby, 1997; Bontis, 2002).

Financial statements and business ratios based on these statements do not supply sufficient relevant and timely information for adequate understanding of the impact of IC on future value creation. Accordingly, the measurement and valuation of IC and its disclosure within financial statements have become increasingly important in improving our understanding of how IC contributes to the value-creation process (Janosevic and Dzenopoljac, 2011). Tools for measuring IC have evolved over the past two decades, yet a perfect measure of IC remains elusive, mostly because of its nonphysical nature and behavior. However, some significant progress has been made. For instance, Roos et al. (2005) have classified all IC measurement methods into 4 broad categories: direct methods, market capitalization methods, return-on-assets (ROA) methods, and scorecard models. The most important direct methods include technology broker (Brooking, 1997), citation-weighted patents (Bontis, 1998), and value explorer™ (Andriessen and Tiessen, 2000). Of the market capitalization methods, those that stand out are Tobin's q (Stewart, 1998), and market-to-book value (Stewart, 1997). ROA methods include economic value added™ (Stewart, 1997), calculated intangible value (Stewart, 1998), and value added intellectual coefficient (Pulic, 1998). The most important scorecard models are Skandia navigator (Edvinsson and Malone, 1997), value chain scoreboard™ (Lev, 2003), intangible asset monitor (Sveiby, 1997), and balanced scorecard (Kaplan and Norton, 1996).

Variables used and their definitions. The model proposed by Pulic (1998, 2004) relies on achieved value added (VA) from business as an indicator of efficient exploitation of IC. The basic premise of the model is to measure the contribution of a company's total resources (human, structural, physical, and financial) to the creation of VA, which can be calculated as:

$$VA = OUT - IN. \quad (1)$$

Here, outputs (OUT) are the company's total sales or sales income. Inputs (IN) comprise all management costs, excluding those related to human resources, which in this model are treated as investment.

IC is made up of human capital (HC) and structural capital (SC). Thus, IC efficiency consists of human capital efficiency (HCE) and structural capital efficiency (SCE). When calculating HCE, we must start from salaries and wages (of all forms), which, as mentioned previously, are not regarded here as inputs. The formula for HCE calculation is therefore constructed as the contribution of human resources to VA creation:

$$HCE = VA/HC. \quad (2)$$

HC comprises the total employee salaries and wages in one fiscal year. The next IC component, SC, represents everything that remains in a company when employees go home at the end of a working day. SC includes hardware, software, organizational structure, patents, and trademarks (Bontis, 2001). SCE can now be calculated as:

$$SCE = SC/VA. \quad (3)$$

This rationale for SCE calculation can be explained by the fact that SC is the second component of IC and is obtained by subtracting HC from VA. Therefore, SCE

is the measure inversely proportionate to HCE (VA = HCE + SCE = VA/HC + SC/VA).

Finally, the value for capital employed efficiency (CEE) is obtained through dividing VA by the net book value of assets. In the following equation capital employed (CE) represents the capital invested in the company:

$$CEE = VA/CE. \quad (4)$$

Despite its critics, VAIC methodology is gaining increasing acceptance among researchers as a good indicator of a company's efficient use of IC. Moreover, the VAIC method was used by the former UK government departments for Business, Enterprise, and Regulatory Reform and for Innovation, Universities, and Skills as a measure of companies' IC, thus contributing greatly to the model's validity (Zeghal and Maaloul, 2010). Criticisms were chiefly put forward by Andriessen (2004), who warns that the model's basic assumptions may lead to dissatisfying results, since VAIC is calculated using financial statements of companies, which implies that the coefficient is a measure of value created in the past and not that of value-creation potential. Another criticism (Chiu et al., 2011) entails the inability of the model to incorporate the synergy realized through interactions between different components of IC. In practice, elements of IC interact, and therefore it is not possible to calculate accurately the contribution of each component to the creation of VA. In addition, the model fails to offer adequate analysis of VA creation for those companies that have negative equity in terms of operating profit.

The research model employed involves several variables. The first group of variables relate to the calculation of VAIC, defined above. These are HCE, SCE, CEE, and VAIC. The second group of variables consists of the measures of corporate performance. The measures selected for the purpose of the present paper are IA/TA, ROA, ROE, NP, and EP:

- IA/TA is the ratio of book value of investments in intangible assets (IA) to the value of company's total assets (TA);
- ROA is return on assets, the ratio of pre-tax income to company's total assets;
- ROE is return on equity, calculated by dividing net profit by book value of average stockholders' equity;
- NP represents company's net profit;
- EP is employee productivity, calculated as the ratio of pre-tax income to total number of employees.

Hypotheses development. The research had 3 broad objectives. The first was to determine the trend of investing in IC over the 4-year period. The second aim was to determine whether certain industries in Serbian economy differ in terms of IC and corporate performance. This aspect is important to distinguish between industries that are more IC-intensive and those that are less IC-intensive. The final research objective was to investigate the relationship between IC and the corporate performance of Serbian companies. To accomplish this, the study focused on 2 related challenges. The first was to determine variations in corporate performance between 3 groups of companies, classified by VAIC value. The second challenge was to establish whether there is a positive correlation between IC and corporate performance. We therefore formulated the following hypotheses:

H1. IC performance of Serbian companies increases significantly in the analyzed period. Serbian economy is going through a painful transition. The need for investment in IC is evident. We therefore attempt to determine the trend in IC (quantified through VAIC) over the period from 2007 to 2010 among the top 100 companies with the highest net profit at the end of 2010.

H2. IC performance between major industries does not differ significantly in the analyzed period. A number of studies (Firer and Williams, 2003; Goh, 2005; Seleim et al., 2007; Ting and Lean, 2009) found that industries such as IT, pharmaceuticals, banking, and insurance are more IC-intensive than traditional manufacturing and trade. Since IC-intensive industries in Serbia are at an early stage of development, we therefore make the initial claim that there is no significant difference in IC and corporate performance among these and other analyzed industries.

H3. Corporate performance (IA/TA, ROA, ROE, NP, and EP) varies significantly between the 3 groups of companies categorized by VAIC values. After classifying the companies by their IC performance, measured by VAIC value, we aim to gain insight into the differences in corporate performance between these 3 groups. This issue is particularly important for Serbian companies in terms of orientation of management toward greater IC investment.

H4. There is a positive correlation between IC and corporate performance (IA/TA, ROA, ROE, NP, and EP). Once a link between corporate performance and IC was determined in 3 categories of IC performers, we investigated the level of correlation between corporate performance and IC. If H3 is proven, a positive correlation is likely to be observed. In other words, if there is a significant difference between 3 groups of companies classified by the values obtained for VAIC, this correlation will be seen.

Survey structure. The research sample consists of 100 companies from Serbian industrial sector that achieved the highest net profit levels at the end of fiscal year 2010 according to the data in Report on the Functioning of the Economy in Republic of Serbia in 2010, published by the Agency for Business Registers (2011). The data on VAIC rankings indicate that 45 companies were better positioned in terms of this criterion compared to the net profit rankings. In other words, 45 companies used their capital (intellectual and physical) more efficiently than it would have been expected simply by looking at the levels of net profit. The potential for value creation in these companies is undervalued when analyzing them solely by net profit (Janosevic and Dzenopoljac, 2011).

The sample comprises companies of varying legal form and size. Companies with limited liability (Ltd.) and corporations make up 94% of the sample. Some 92% of the companies are large, 5% are medium-sized, and only 3% are small enterprises. These 100 companies together realized 38% of the total net profit in Serbian economy. Across the whole economy, the 100 most profitable companies made up only 0.1% of all firms in Serbia. The majority of the companies in the sample were in manufacturing (46%), wholesale and retail (21%), traffic and warehousing (6%), and construction (6%).

Empirical findings and discussion.

H1. IC performance of Serbian companies increases significantly in the analyzed period. Based on the collected data using the model proposed by Ante Pulic (1998,

2004) we calculated the VAIC value for 72 of 100 observed companies for each year from 2007 to 2010. Since VAIC is calculated by taking into account certain positions in the income statement and balance sheet, we were not able to calculate VAIC for all 100 companies in those 4 years. Some of the companies had no costs related to human resources, which made it impossible to obtain suitable values for VAIC.

Friedman test ($\chi^2(3, n = 72) = 12.321$, $p = 0.006 < 0.05$) showed significant differences in the observed values of VAIC in the 4-year period (2007-2010). In particular, Wilcoxon tests showed that the values of VAIC differ significantly in 2007 and 2009 ($p = 0.008 < 0.05$), 2007 and 2010 ($p = 0.010 < 0.05$), and in 2009 and 2010 ($p = 0.015 < 0.05$). This confirms one of the basic assumptions of IC management philosophy that tangible effects of investing in intangibles are achieved after a certain period of time.

These results confirm our hypothesis that IC performance of Serbian companies increases significantly during 2007-2010. Figure 1 depicts the positive trend observed in IC, quantified by VAIC, over this period. However, we must stress that IC consists not only of intangibles but also of CEE. Therefore, we can conclude that efficiency of exploiting tangible and intangible assets rose significantly in this 4-year period.

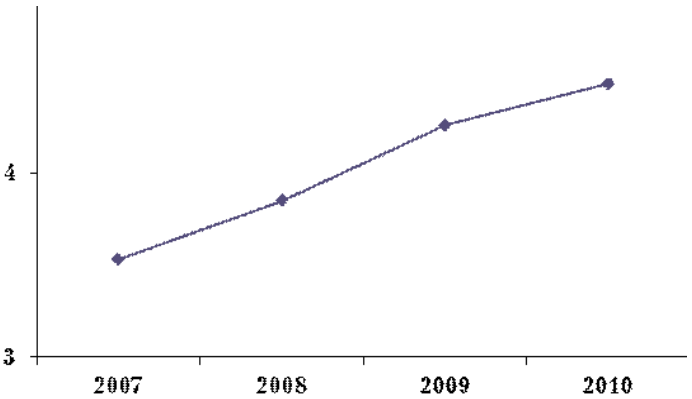


Figure 1. **Median values of VAIC in the analyzed period**

H2. IC performance between major industries does not differ significantly in the analyzed period. Several studies (Van der Zahn, et al., 2004; Kujansivu and Lonnqvist, 2007) have examined whether industries differ by IC. These provided us with the motivation to investigate this issue in Serbian economy. Industry classification was taken from the Serbian Business Registers Agency. This classification comprises 21 industries in total, but only companies from 12 industries are among the top 100 companies in Serbia. However, because out of these 12 industries only 4 (traffic and warehousing, manufacturing, wholesale and retail, and construction) contain more than 5 firms, the analysis involved only these 4 main industries.

The trend observed in the results of analysis was the same across this period. For simplicity, we present the results for 2010 only. Kruskal-Wallis test ($\chi^2(2) = 0.346$, $p = 0.841 > 0.05$) shows no significant difference in the observed values of VAIC in the analyzed industries.

These results confirm our hypotheses that IC performance between the major industries does not differ significantly in the analyzed period (Figure 2). The main reason is that investment in IC remains a neglected aspect of the business model in Serbia.

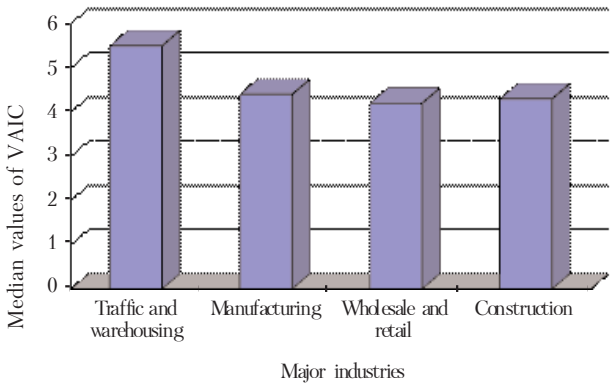


Figure 2. **Median values of VAIC for the analyzed industries, 2010**

H3. Corporate performance (IA/TA, ROA, ROE, NP, and EP) varies significantly between the 3 groups of companies categorized by VAIC values.

We classified the sample into 3 separate equal groups according to VAIC values, and labeled each group high, intermediate, and low IC performers. The first third are companies with the highest values of VAIC. Intermediate performers are those with intermediate VAIC values, and low performers are made up of companies with the smallest values of VAIC. A test of significance between the values for corporate performance was undertaken in order to determine the differences in 2010 between these 3 groups. The results are presented in Figures 3-8.

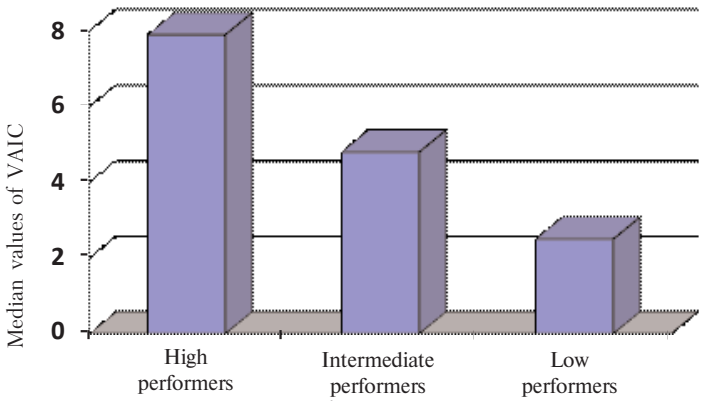


Figure 3. **Values of VAIC for high, intermediate, and low IC performers**

According to the undertaken statistical analyses (Kruskal-Wallis test, Mann-Whitney U test), hypothesis H3 is confirmed for:

1. ROE ($\chi^2(2) = 9.593$, $p = 0.008 < 0.05$). A particularly significant difference is observed between the high and low performers in terms of IC. Companies in the former group (high performers) have greater ROE.

2. NP ($\chi^2(2) = 7.577$, $p = 0.023 < 0.05$). There is a particularly statistically significant difference between high and low performers, and between intermediate and low performers. Companies in the first two groups (high and intermediate performers) tend to have higher net profits as compared to low IC performers.

3. EP ($\chi^2(2) = 20.611$, $p = 0.000 < 0.05$). Employee productivity differs significantly between the analyzed groups, and it increases with increasing VAIC. In particular, a significant difference is observed between high and intermediate performers, and between high and low performers.

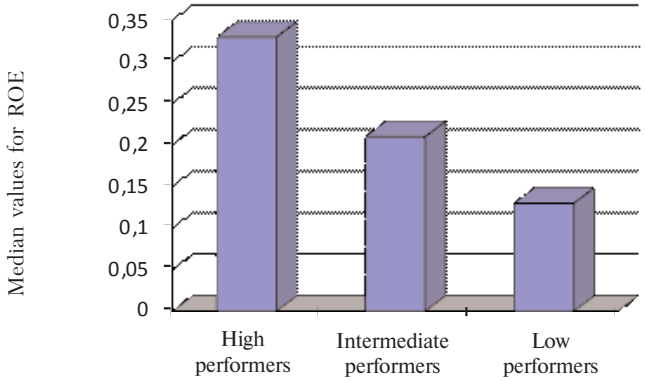


Figure 4. **Median values of ROE for high, intermediate, and low IC performers**

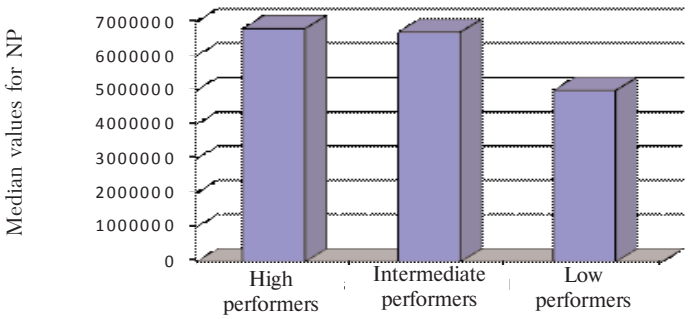


Figure 5. **Median values of NP for high, intermediate, and low performers**

From the statistical analyses (Kruskal-Wallis tests), hypothesis H3 is not confirmed for:

1. IA/TA ($\chi^2(2) = 0.191$, $p = 0.909 > 0.05$).
2. ROA ($\chi^2(2) = 1.492$, $p = 0.474 > 0.05$).

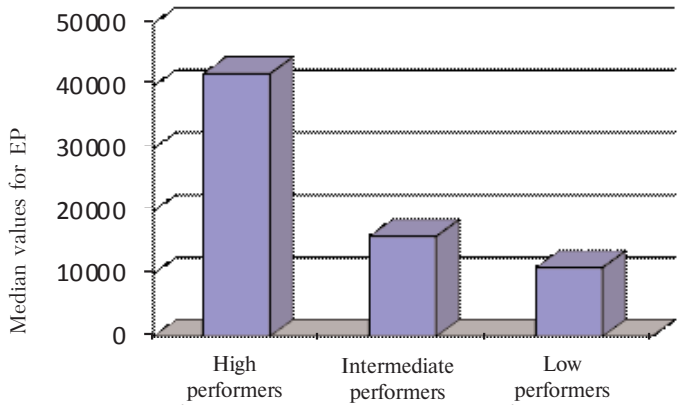


Figure 6. **Median values of EP for high, intermediate, and low IC performers**

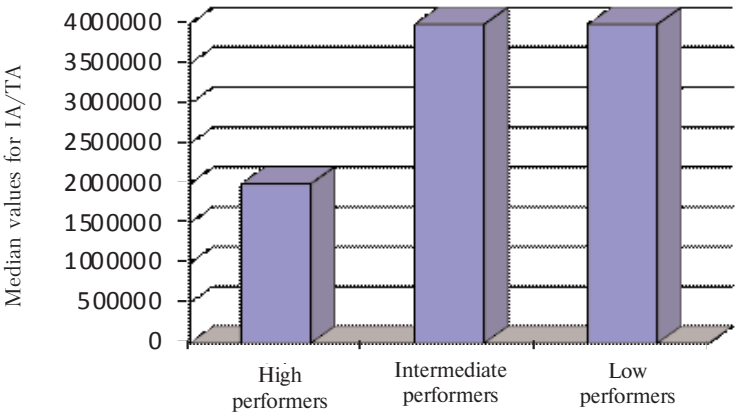


Figure 7. **Median values of IA/TA for high, intermediate, and low IC performers**

H4. There is a positive correlation between VAIC and corporate performance (IA/TA, ROA, ROE, NP, and EP). The correlation between components of VAIC and corporate performance have been tested, along with potential regression models, in several studies (Phusavat et al., 2011; Chen et al., 2005; Firer and Williams, 2003; Goh, 2005; Zeghal and Maaloul, 2010; Ting and Lean, 2009; Bramhandkar et al., 2007; Pulic, 2002; Kujansivu and Lonnqvist, 2004; Shiu, 2006; Seleim et al., 2007). We therefore undertook similar research on 100 companies in Serbia with the highest net profit in 2010, in order to determine this correlation and suitable regression models. Beside the fact that our hypothesis is supported by theory, one more reason for testing it further is that hypothesis H3 has been proven in the majority of cases. For the purpose of statistical analysis, we used the data drawn from the companies' 2010 financial statements. The hypothesis is fully confirmed for ROE, and partially for ROA and EP.

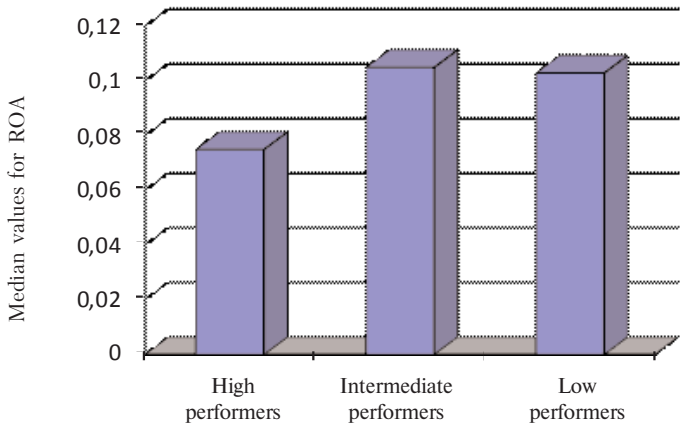
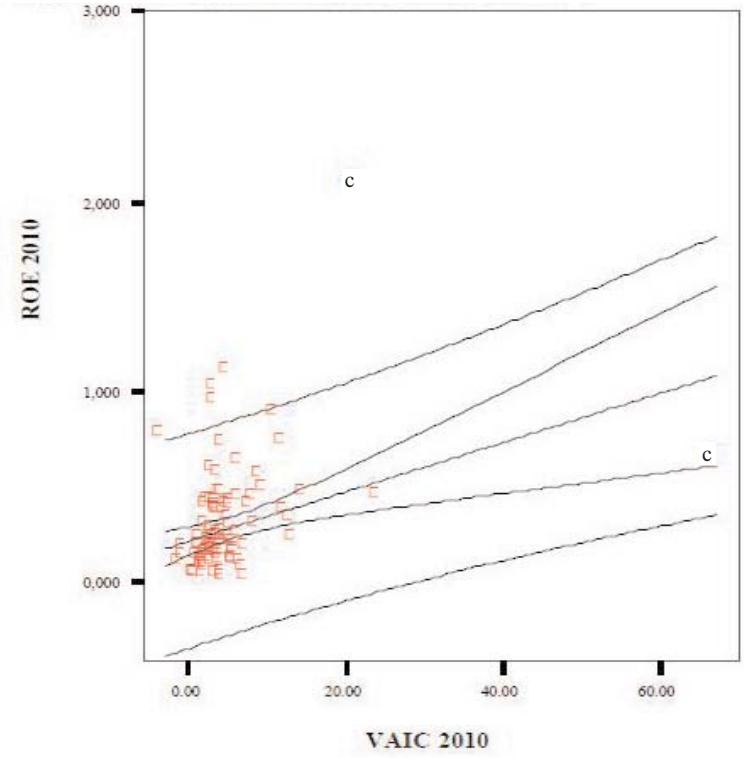


Figure 8. **Median values of ROA for high, intermediate, and low IC performers**



Linear Regression with 95,00% Mean Prediction Interval and 95,00% Individual Predicition Interval
ROE_2010 = 0.21 + 0.01*VAIC_2010
$R^2 = 0.11$

Figure 9. **Regression model for ROA**

ROE: There is a positive correlation with VAIC (Spearman's rho = 0.396, p = 0.000 < 0.05). In addition, the correlation was confirmed for the years 2009, 2008,

and 2007, and the correlation coefficient varied from 0.366 to 0.424. Based on the observed data, we can construct the following regression model:

$$(1)\ ROE\_2010 = 0.215 + 0.013 \times VAIC\_2010$$

The model explains 11% of the variance of ROE in 2010, which is a moderate result (Figure 9).

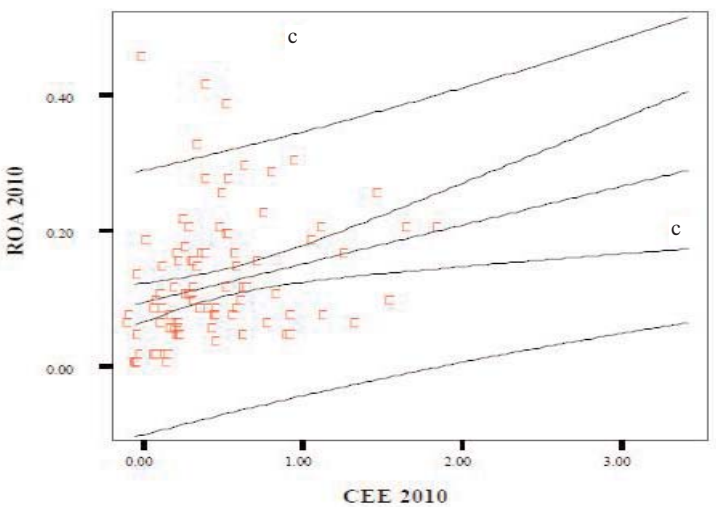
Moreover, a positive correlation between ROE and all 3 VAIC components was confirmed: CEE (Spearman's rho = 0.529, p = 0.000 < 0.05), HCE (Spearman's rho = 0.278, p = 0.007 < 0.05), and SCE (Spearman's rho = 0.216, p = 0.036 < 0.05).

On the basis of the data from the chosen sample, we can define the following regression model:

$$(2)\ ROE\_2010 = 0.225 + 0.134 \times CEE\_2010 + 0.008 \times HCE\_2010 - 0.100 \times SCE\_2010$$

Model 2 explains 62.8% of the variance in the values for ROE in 2010. This model is a better fit than model 1. Another conclusion is that different components of VAIC have different impacts on ROE. The greatest influence is exerted by physical capital, CEE. In addition, correlation among components varied over the observed 4 years, and in some years no correlation is seen.

ROA: In 2010, a positive correlation is observed only for CEE (Spearman's rho = 0.438, p = 0.000 < 0.05).



Linear Regression with 95.00% Mean Prediction Interval and 95.00% Individual Prediction Interval ROA_2010 = 0.09 + 0.06*CEE_2010 $R^2 = 0.08$

Figure 10. **Regression model for ROA**

In the case of ROA in 2010, an acceptable regression model is as follows (Figure 10):

$$(3)\ ROA\_2010 = 0.094 + 0.057 \times CEE\_2010$$

Unfortunately, however, this model succeeds in explaining only 8.1% of ROA_2010 variance.

EP: There is a positive correlation with IC (Spearman's rho = 0.486, p = 0.000 < 0.05), but we were not able to confirm any linear regression. The positive correlation was confirmed for all 4 years, and the correlation coefficient ranged from 0.399 to 0.586 (Figure 11).

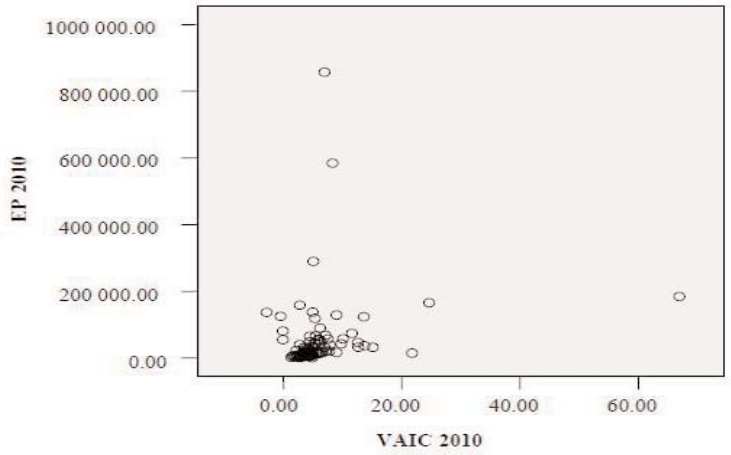
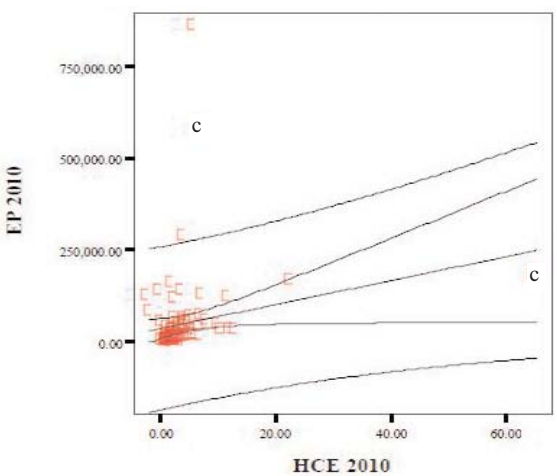


Figure 11. **Scatter plot for EP**

In 2010, there was a positive correlation between EP and two components of VAIC-HCE (Spearman's rho = 0.498, p = 0.000 < 0.05), and SCE (Spearman's rho = 0.595, p = 0.036 < 0.05) while there was no positive correlation with CEE (Spearman's rho = 0.012, p = 0.909 > 0.05). Over the analyzed 4 years, HCE and SCE correlated positively with EP, while CEE showed a positive correlation with EP only for 2007.



Linear Regression with 95.00% Mean Prediction Interval and 95.00% Individual Prediction Interval
EP_2010 = 37,221.61 + 3,241.65 + HCE_2010
$R^2 = 0.04$

Figure 12. **Regression model for EP**

Based on the data from the sample, we can construct the following regression model (Figure 12):

$$(4)\ EP\_2010 = 37\,221.61 + 3241.65 \times HCE\_2010$$

The linear model 4 explains only 4% of EP_2010 variable variance.

The hypothesis was not confirmed for NP and IA/TA.

NP: The hypothesis was not confirmed for VAIC (Spearman's rho = 0.152, p = 0.148 > 0.05) or its elements: CEE (Spearman's rho = 0.013, p = 0.909 > 0.05), HCE (Spearman's rho = 0.159, p = 0.125 > 0.05), and SCE (Spearman's rho = 0.152, p = 0.136 > 0.05).

IA/TA: The hypothesis was not confirmed for VAIC (Spearman's rho = -0.025, p = 0.827 > 0.05), or its components: CEE (Spearman's rho = -0.121, p = 0.265 > 0.05), HCE (Spearman's rho = -0.040, p = 0.721 > 0.05), and SCE (Spearman's rho = 0.010, p = 0.928 > 0.05).

Conclusion and avenues for future research. In the case of Serbian companies in 2010, we found a positive trend in IC's contribution to value creation. As a result of Friedman test and our analysis of median values over the observed 4-year period, we saw that Serbian companies are increasingly reliant on IC. However, in order to shed further light on this, we intend to focus in future research on tracking the level of investment in IC.

Another important conclusion relates to the relative importance and contribution of IC across industries. As we have shown, representatives of only 4 major industries in Serbia managed to achieve net profits that put them in the list of top-100 highest-earning companies. Kruskal-Wallis tests revealed no significant difference in the observed values of VAIC among analyzed industries. However, these industries do not usually rely heavily on IC, and should certainly differ in terms of investment in IC. However, since the economy still relies strongly on tangible assets, we successfully confirmed hypothesis H2 that there should be no statistically significant difference in VAIC between Serbian industries.

In order to determine whether IC significantly affected the level of corporate performance in Serbian companies, we investigated 3 groups of companies categorized according to the VAIC values. The results show that high IC performers usually have comparatively better corporate performance. This was not confirmed in the cases of IA/TA and NP. The findings revealed a positive correlation between VAIC and ROE in 2010. It was also found that ROE was mainly affected by CEE, but that human and structural components also played an important role. However, regarding ROA, a positive correlation was observed only in the case of CEE. Productivity of employees correlates with HCE and SCE during the 4 years in question. CEE correlates with EP only in 2007. However, the presence of a correlation does not necessarily mean there is a strong interdependence between variables. An attempt was made to develop regression models for the analyzed variables. The regression analysis showed that 62.8% of changes in ROE could be explained by changes in HCE, SCE, and CEE. In contrast to regression model 2, 8.1% of ROA variances were affected by IC (chiefly by CEE; model 3), and only 4% of EP in 2010 variable variance could be explained by changes in HCE (model 4). Thus, we can conclude that Serbian companies rely very little on IC in their pursuit for wealth maximization.

Since the VAIC method has a number of disadvantages, some points for future research should include using a different method of measuring IC's contribution to value creation. The method should take into account the specific nature and conditions of Serbian companies. One possibility is to include different nonfinancial measures of performance. By doing this, the scope and validity of the research could be increased. Another option is to analyze the impact of IC on financial performance between companies of different sizes or legal forms or with different market positions and proportions of export revenues to total revenues.

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