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THE RELATIONSHIP BETWEEN INTELLECTUAL CAPITAL QUALITY AND CORPORATE PERFORMANCE: AN EMPIRICAL STUDY OF RUSSIAN AND EUROPEAN COMPANIES

ABSTRACT: *The purpose of this research is to develop cost-effectiveness tools for the analysis of company's intellectual resources, in terms of resource-based and value-based approaches. Our study focuses on the evaluation of intellectual capital methods to discover the drivers of company growth. We suppose that the potential effectiveness of intellectual capital resources varies according to different institutional factors. Several statistical methods will be used for the empirical issues in this research, including common cross-sectional and panel data analysis, and the instrumental variables method. The database collected for this purpose will consist of financial and economic indicators underlying the intellectual capital evaluation, such as strategic performance indicators (EVA© and FGV©).*

The dataset includes companies from different countries and industries according to the Knowledge Economy Index of the World Bank. The industries presented in the dataset are selected according to the predominance of several intellectual capital elements. The database includes financial services, wholesale and retail trade, machinery and equipment manufacture, the chemical industry, and transport and communications. As a result of the empirical research, we expect to answer the following questions:

- *Is there a close relationship between intellectual capital quality and company performance?*
- *What are the external and internal factors affecting this relationship? (country, industry, company size, market dynamics, etc.)*

KEY WORDS: *intellectual capital, institutional drivers, company's performance*

JEL CLASSIFICATION: O12, O15, O16, O34, O57

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1. INTRODUCTION

There is no doubt that the new economic institutions set new operating conditions for markets and companies. In view of the growing importance and relevance of intangibles in companies' competitiveness and success, we shall identify the supporting and obstructing factors of intellectual capital transformation. This also applies to the changing role of economic institutions. We suppose that transformation of the intellectual capital in a company's performance also depends on the industry and the country.

We seek to identify a relationship between intellectual capital inputs and outcomes. We are going to consider intellectual capital quality as proxy indicators of intangibles inputs. Meanwhile, in our research intellectual capital outcomes are expressed in value-added terms.

Most of the relevant studies are based on resource- and value-based approaches that separately analyse the intellectual capital from a certain point of view, limiting the number of problems at the concurrence of these concepts. Therefore, to solve the problems of intellectual capital evaluation we are integrating two approaches that are relevant for studying company and industry behaviour.

We will integrate the two approaches to answer the following questions:

- Is there a close relationship between the quality of intellectual capital and company performance: a creation and destruction of enterprise value due to the intellectual capital employed?
- What are the external and internal factors affecting this relationship? (country, industry, company size, market dynamics, etc.)

Thus, our study mostly focuses on the comparison of the conditions of intellectual capital transformation. To solve the problem stated above we need to implement intellectual capital evaluation methods. More than 30 different intellectual capital evaluation methods were developed in recent years (Bontis, 2000; Sveiby, 2010). Despite the extensive empirical background, fundamentally these issues are not well studied. As it is difficult and sometimes impossible to identify the intellectual capital features when analyzing public data, for instance companies' annual reports, we face a problem of lack of empirical information. Despite this fact, some researches are devoted to the analysis of intellectual capital impact. This issue obviously requires empirical study. The researchers are trying to find a connection between indirect characteristics of intellectual capital and

company's performance. Most of the empirical studies essentially assume that an indirect assessment of intellectual capital can be provided by the analysis of financial statements. However the intangible characteristics of a company are very poorly expressed in financial terms. Therefore in order to assess intellectual capital inputs and knowledge management implementation we need to use information that cannot be found in financial statements. Despite the relevance of intellectual capital issues the existing studies show poor development and practical implementation of measuring tools.

It should be emphasized that this paper explores a relatively new management concept, and the implications it has for investment decision-making in a particular company as well as for industry policy development.

The paper is organized as follows. The next section gives a brief overview of the theoretical features of the relationship between intellectual capital, organizational performance, and company attitude. In Section 3 we introduce the paper's research design. Section 4 describes the data employed and the methodology. Section 5 empirically examines the hypotheses using different models, and presents an approach for express analysis of organizational intellectual ability. The last section concludes the paper by briefly summarizing the main findings.

2. LITERATURE REVIEW

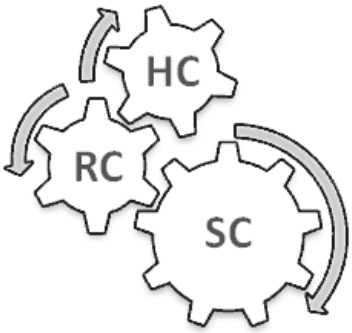
The concept of intellectual capital has become increasingly prominent in academic and business literature. Although this phenomenon is growing in relevance and importance researchers do not agree on the context of intellectual capital.

The key feature of intellectual capital consists in its ability to enhance effectiveness of others resources, including tangible assets. Intellectual capital relates to the ability of an organization to 'add value' to products or services in a manner that offers extraordinary growth or high profits, which may significantly exceed a company's intellectual property. Despite the specific features of intellectual resources, they should be considered as part of the companies' invested capital and characterized according to the common approach to capital identification. This means that we should first identify the amount of intellectual capital employed. Given that the intangibles are largely not reflected in the company's balance sheet, we need to assess this characteristic otherwise, using different proxy indicators.

It should be noted that intellectual capital is a heterogeneous resource. We need to split the intellectual capital into components and analyze each of them separately. A variety of options for the combination of intangibles are currently proposed and reasoned, including two- (Edvinsson & Malone, 1997), three- (Stewart, 1997; Roos et al., 2005), four- (Bontis et al., 1999; Saint-Onge, 1996; Sveiby, 1997) and five-component structures (O'Donnell, O'Regan, 2000). We are following the approach suggested by Roos et al. and Stewart, who identified three components of intellectual capital: human (HC), relational (RC) and structural resources (SC) – Fig.1. This division fits resource-based logic, as it separately describes key areas of company management:

- HC - human resource management;
- RC - marketing (communication with customers, suppliers, partners and competitors);
- SC – processes engineering, organizational culture, innovation and technology.

Figure 1: Three-component structure of intellectual capital



Source: own elaboration from Ross et al. (2005) and Stewart (1997)

All the intellectual capital components are strongly interconnected. However, many studies emphasize the higher importance of human capital, while others pay closer attention to the structural capital. We suppose that the significance of each component is associated with a variety of factors, including those belonging to a particular industry and country. As an example, we suppose that human capital quality could be expressed in employee and executive qualifications, and relational capital quality in terms of client loyalty, the companies' brands, etc.

Many researchers argue that intellectual capital is becoming nearly the only competitive advantage of a company in the new economy. The economic profit or

residual income concepts are based on the fact that the competitive advantages of a particular company only provide additional value creation. Therefore, the close connection of modern value-based management concepts and knowledge management becomes obvious.

Despite the logical relation and theoretical reasonableness of the assumptions mentioned above, testing of this hypothesis brings out contradictory results in empirical studies. We suppose that such results can be explained by shortcomings in the information field as well as unclear objective setting and incorrect choice of research instruments. Our study is based on the critical analysis of the relevant theoretical and empirical researches, and seeks to take into account their experience in drawing a more precise conclusion.

Turning to the main stages of the value-based management analysis, we find many links to the knowledge management concept. Numerous researchers of stakeholder theory agree that the best indicator of the benefits of a company's stakeholders is its economic profit (Meek & Gray, 1988; Donaldson & Preston, 1995) expressed in different performance indicators: SVA© – Shareholder Value Added (Rappoport, 1986), EVA© – Economic Value Added (Stewart, 1991)

According to the applicable studies, the value created by a company, expressed in tangible form, now depends largely on the intangibles employed, such as reputation, relationships with clients, staff competence, etc. In most studies intellectual capital is recognized as knowledge that can be converted into value (Edvinsson & Malone, 1997; Zéghal & Maaloul, 2010).

Taking for granted that intellectual capital should be transformed into company value, we need to reveal key factors that support or obstruct this transformation. Many researchers argue that a number of internal and external drivers affect the efficient employment of intellectual capital. As we have mentioned above, the purpose of our research is related to the identification of such factors, with emphasis on the influence of economic institutions. A number of studies are devoted to these issues. However, the empirical results are contradictory as well. Some papers argue that institutional factors play a crucial role in intellectual capital accumulation and transformation, while others show that the poor development of economic institutions does not significantly affect companies' investment decisions and performance.

American researchers N.Gallini and S.Scotchmer review the economic reasoning that supports intellectual property over funding from general revenue. For those

economic environments in which intellectual property is justified, they review some of the arguments as to why it is designed as it is, especially with regard to extent of protection, and especially where innovation is cumulative. They conclude that the patentee's ability to reorganize rights through licensing and other contractual arrangements should be taken into account in designing the property system. (N.Gallini, S.Scotchmer, 2002).

It could be concluded that several studies seek to identify specific institutional drivers of company and industry behavior in the new economy. In analyzing the impact of economic institutions we face a problem of their identification and assessment. It should be noted that we are more interested in those institutions that are most important to the knowledge economy. To solve this problem we turn to the Knowledge Assessment Methodology (KAM) proposed by the World Bank. The main advantage of this technique is the fact that we can analyze specific numerical indicators that reflect the development of the economic institutions.

The World Bank, on its webpage[1], asserts that "The Knowledge Index measures a country's ability to generate, adopt and diffuse knowledge. This is an indication of overall potential of knowledge development in a given country."

The following pillars, according to the World Bank, are important for the analysis of knowledge economy institutions:

- An **economic and institutional regime** represents the conditions of the efficient use of existing and new knowledge;
- An **educated and skilled population** represents how the economy is able to create, share, and use knowledge;
- An efficient **innovation system** of firms represents how the economy produces and implements innovations and research to local needs, and creates new technology;
- **Information and communication technology** represents the effective creation, dissemination, and processing of information.

1 http://web.worldbank.org/WBSITE/EXTERNAL/WBI/WBIPROGRAMS/KFDLP/EXTUNIKAM/0,,contentMDK:20584278~menuPK:1433216~pagePK:64168445~piPK:64168309~theSitePK:1414721,00.html.

3. RESEARCH DESIGN

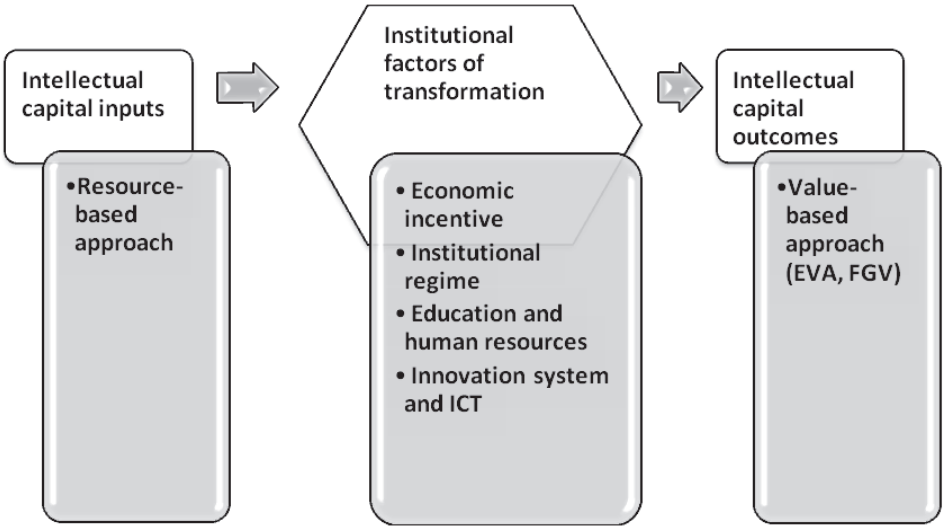
As we have stated above, we are trying to synthesize value- and resource-based approaches to the study of intellectual capital. However, we primarily focus on the value-based approach of goal setting. This means that the idea and main assumption of this research is closely connected with the relevant VBM models, in particular economic EVA© and FGV©. These indicators are considered as proxy indicators of intellectual capital **outcomes** in our research and present **explained variables.** Meanwhile, we are going to implement the principles of the resource-based approach to get a comprehensive and complete description of all intellectual capital components (intellectual capital **inputs**). Moreover, we need to identify institutional **factors** that support or impede intellectual capital transformation in company performance (Figure 2).

Any link between performance outcomes and intellectual capital components is unlikely to be simple. Therefore the following hypothesis has been tested during the research:

Hypothesis: *Positive institutional factors support and enhance transformation of intellectual capital quality in companies' value.*

We have considered company size, and industry and country diversification. We also checked for the robustness of our results to the omission of all control variables. With regard to these assumptions and the literature background, we applied the following research framework:

Figure 2: Framework of intellectual capital analysis (combination of resource- and value-based approaches)



Source: Authors' research design

Provided that all components of intellectual capital are interlinked (Figure 1), we need to analyze some attributes of the intangibles separately. A description of the intellectual capital attributes, as well as examples of some indicators, is presented in Table 1. We suppose that the whole analysis will reveal important proxy characteristics to provide us with adequate estimations of intellectual capital investment and knowledge management effectiveness. These indicators present explanatory (dependent) variables in our study.

This study examines the local economic impact of intellectual capital components on Russian and European companies' performance. To assess the economic impact we use a number of different dependent variables measured at the level of an individual company.

Table 1 provides a brief description of variables used in our study, which were selected based on earlier studies and theoretical models.

Table 1: Variable list

Variable	Variable description
Dependent variables: intellectual capital outcomes	
EVA©	Economic value added
FGV©	Future gross value
Independent variables: intellectual capital inputs and factors of transformation	
Common information	
Age	Years of presence in the market
Belonging to industry (categorical)	Industry membership
Belonging to country (categorical)	Country membership
Belonging to developed country (dummy)	Germany, Great Britain, Spain, Finland or Denmark membership
Institutional factors of the country (KEI components)	
KEI economic incentive regime	Proxy indicator of the common institutional conditions
KEI education	Proxy indicator of the qualifications of the population
KEI innovations	Proxy indicator of the innovation system
KEI IC technologies	Proxy indicator of the information technologies development
Intellectual capital components: human capital	
Proportion of wages in costs	Proxy indicator of the investment in human capital
Earnings per employee	Proxy indicator of the human capital quality
Board of directors qualifications (categorical 0-2)[1]	Proxy indicator of the HC qualification Criteria: • If more than a third of directors have postgraduate level of qualification and more than 5 years experience – 2 points. • If more than a third of directors have postgraduate level of qualification or more than 5 years experience – 1 point. • Another – 0.
Corporate university (dummy)	Proxy indicator of the employee qualification and company's corporate culture

Intellectual capital components: relational capital	
Commercial expenses proportion	Proxy indicator of the investment in relational capital
Foreign capital employed (dummy)	Proxy indicator of the relational capital quantity
Presence of subsidiaries	Proxy indicator of the relational capital quantity
Well-known brand (dummy)	Proxy indicator of the relational capital quality
Citations in search engines (categorical 0-7)	Proxy indicator of the relational capital quality
Integrate indicator of the site quality (categorical 1-4)[1]	Proxy indicator of the relational capital quality Criteria: • Availability of information for investors. • Multi-lingual information. • Amount of information. • Design.
Intellectual capital components: structure capital	
R&D investment	Indicator of investment in structural capital
Intangible assets	Indicator of the company's intellectual property
Patents, licenses, trademarks	Indicator of the company's intellectual property
ERP, quality management systems implementation (dummy)	Context search for the following words: «ERP», «Oracle», «NAVISION», «NAV», «SQL», «SAP»
Stable turnover growth	Proxy indicator of the stable development of the company

1 Each categorical variable was transformed into a dummy variable for linear regression analysis.

Source: elaborated by the authors from analysis of the relevant economic works

Before the results of the empirical study, in the next section we will present the data employed.

4. DATA AND METHODOLOGY

We have investigated companies from Russia and several European countries such as Serbia, Great Britain, Germany, Turkey, Finland, Denmark and Spain, according to country position in the Knowledge Economy Index 2008 [http://data.worldbank.org/data-catalog/KEI]. Meanwhile, we have taken into account data availability. For this reason some of the selected European countries were excluded from the analysis. Also, we have only analyzed companies from

industries with a predominance of diverse intellectual capital components and therefore different intellectual capital configurations. In this way, we have selected the following industries: financial services, wholesale and retail trade, machinery and equipment manufacture, the chemical industry, and transport and communications. We have chosen these particular industries since they represent a wide range of knowledge-intensive manufacturing and service sectors.

The datasets in this study were derived from a combination of several detailed longitudinal databases, FIRA PRO and SPARK-INTERFAX for Russia, and Bureau Van Dijk (Amadeus and Ruslana) for Europe, based on the companies' annual statistical and financial reports. Following the nature of intellectual capital and our objectives, we have used a large bulk of qualitative data from websites, magazines, citation databases, data from patent bureaus, etc.

We have used the following criteria when deciding on the inclusion of companies in the sample:

- Number of employees to be between 500 and 20,000 people (we have excluded small and large companies to make the sample more homogeneous).
- Every firm in our database to be a public company.

As a result, the Russian and European databases include information over the period 2005-2009 on 420 and 332 companies, respectively. The dataset compiled by the authors includes the information given in Table 2.

Table 2 helps us to characterize the type of company that has been used in our research. It presents several descriptive statistics of the sample, where the mean and the standard deviation of the variables are detailed:

Table 2: The sample descriptive statistics

Indicator	Europe			Russia		
	Number of objects under observation	Mean	St. deviation	Number of objects under observation	Mean	St. Deviation
Age(years)	1,595	38.75	32.77	495	36.49	38.50
Number of employees	1,635	4,119.18	4 319.45	359	7,551.90	13,146.85
Invested capital (th. euro)	1,378	521,236.30	1.23E6	491	930,000	2.6E6
Operating margin	1,526	0.03	0.30	490	0.00	0.01
Earnings per employee, (th. euro/person)	1,594	26.51	111.24	355	975.09	3,600
R&D investment (th.euro)	217	24,865.26	34,058.65	281	586.63	1,977.90
EVA© (th.euro)	1,351	-425.89	1.30E5	391	-7,024.27	4.2E5
FGV© (th.euro)	991	1,033,513.54	2,440,411.33			

Source: Authors' estimations

As seen in Table 2, we can detect R&D investment for only 217 out of 1,635 observations for the European database. Others observations in the databases are classified as "system-missing". Despite the importance of these indicators, we have decided to exclude them from our research so as not to reduce the sample.

Let us now turn to the EVA© and intellectual capital indicators in our sample. According to the established approach to the competitiveness theory and the intellectual capital concept, the higher the degree of intellectual capital efficiency, the more competitive and successful the company, as measured by EVA© and FGV©. Analyzing the intellectual capital outcome we could conclude that the average level of EVA is negative for both Russian and European samples. Meanwhile, for the European companies their mean EVA© is less negative than for the Russian ones. This means that on average the companies we have selected for our analysis have not been creating additional value from 2005 to 2009. This fact should be taken into account when we draw conclusions.

5. EMPIRICAL RESULTS

In the empirical part of our study we will test the assumption that a country's institutional environment influences the transformation of intellectual capital in the company's performance. Using indicators collected for this purpose, let us specify this hypothesis, as follows.

$$Perf = \alpha + (\beta 1, ..., \beta n)HC + (\delta 1, ..., \delta m)SC + (\delta 1, ..., \delta k)RC + (\lambda 1, ...,\lambda l)\ IF + \varepsilon, \quad (1)$$

where
Perf –an indicator of the performance of companies;
HC -a vector of variables responsible for human capital component;
SC -a vector of variables responsible for structure capital component;
RC – a vector of variables responsible for relation capital component;
IF -a vector of variables responsible for institutional factors of the country.

As indicated earlier, the interest in the intellectual capital study results from their assumed ability to enhance value creation. We will use EVA© and FGV© indicators to present the companies' performance as intellectual capital outcomes. Meanwhile, the intangible inputs are considered as variables

It should be made clear that we do not combine the Russian and European samples due to the distinctions between the countries and companies, respectively. Therefore, we have constructed separate equations and provided different outcomes. For this reason, we could not use a vector of variables responsible for the institutional factor for Russia. Nevertheless, we try to use the standardized variables wherever possible.

The OLS method is used for the regression equation coefficient estimation. There is no statistically significant spatial correlation existing between the independent variables.

This model is developed in accordance with the concept of financial architecture based on assumptions regarding the exogenous variables of the structure ownership and the capital structure. In this case, the measurement of the companies' performance was conducted in the context of value-added indicators, which has allowed reducing the human factor in deciding on an indicator, and also has enabled comparing the results.

In the case of the analysis of the Russian companies we have constructed two models: for the quantitative and qualitative factors separately, and for these same factors combined, in order to check the robustness of our results. We have considered the EVA© indicator as a proxy for intellectual capital outcomes, because FGV© is rarely used for emerging markets. In the case of the analysis of the European companies we have tested models with EVA© and FGV© as dependent variables. We have tested different specifications of our general model (1) to discover the most valuable of them in terms of robustness and effectiveness of estimates; in this paper we will show the most significant of them only. We will analyze 2 models: Equation 1 is based on the quantitative drivers only; Equation 2 is based on both quantitative and qualitative drivers.

To confirm the hypothesis advanced we expect the statistical significance of models, in general. Furthermore, the variables reflecting the intellectual capital components as well as variables reflecting institutional factors need to be statistically significant. The results of the regression analyses for the Russian companies are given in Table 3.

Table 3: Regression results for the Russian companies

Dependent variable	**Equation1**		**Equation2**	
	EVA		**EVA**	
Predictors	**B**	**Sig.**	**β**	**Sig.**
Age	18,985.62	0.652		
Presence of subsidiaries	**-189,892.87**	**0.000*****	-33,457.27	0.520
Share of wages in costs	1,323,043.12	0.633		
Earnings per employee	**60.68**	**0.000*****	**139.25**	**0.000*****
Commercial expenses share	-6,416,654.11	0.348		
R&D investment	**-114.90**	**0.059****	**-284.92**	**0.000*****
Intangible assets	**11.72**	**0.000*****	**15.84**	**0.000*****
Patents, licenses, trademarks	**58,545.78**	**0.000*****	**100,740.82**	**0.000*****
Belonging to the industry (manufacture)	-1,807,588.61	0.567	-650,181.04	0.818
Board of directors qualifications			-5,791,352.67	**0.048****
High website quality			2,260,022.60	0.437
High citation in search engines			-2,827,511.87	0.382
Well-known brand			-6.85E7	**0.000*****
ERP, quality management			-1,013,999.84	0.71
Stable growth			-2,874,210.52	0.23
Constant	4,343,271.48	0.27	4,619,975.902	0.22

Prob>F	**0.000*** **	**0.000*** **
Adj. R-square	**0.325**	**0.718**
Observation numbers	159	117

Notes: * Significant at p<0.1. ** Significant at p< 0.05. *** Significant at p<0.001.

Source: Authors' estimations

The explanatory models' power is 32.5% for the first equation and 71.8% for the second. They are significant at 1% probability level. Therefore, we can assume that EVA© could be considered as a proxy indicator of the intellectual capital outcomes.

For both models, we have found a positive statistically significant link for dependent variable with earnings per employee, intangible assets, and number of patents, trademarks, and licenses. For R&D investment we have discovered a negative sign; this result can be explained by long-term return and high risk in emerging markets. High risk of R&D investment is associated with poor development of intellectual property protection. Therefore, it is undoubtedly an institutional issue that obstructs the effective transformation of intellectual capital. It is interesting to note that for the European countries we have obtained a positive link between the variables.

The next result that should be emphasized is the significant negative relationship between well-known brand and company performance. This could be explained by the Russian companies' relatively low return on marketing capital. A greater investment volume in brands in the Russian market is not feasible on average for several reasons:

- expenses in building up the brand are not expected to be covered in the short-term period;
- some Russian brands are known in a negative sense;
- inadequate development of marketing infrastructure.

The latter could also be attributed to institutional factors.

Let us now identify the indicators of intellectual components and institutional environment for the European countries. For this purpose we have combined the quantitative and qualitative factors as well as KEI components, and have tried to find the relationship between them and intellectual capital outcomes. We believe

that the variables which will be statistically significant in all equations can be considered as such indicators. The results are given in Table 4.

Table 4: Regression results for European companies: institutional factors analysis

Dependent variable	Equation 1		Equation 2	
	FGV©		EVA©	
Predictors	**B**	**Sig.**	**β**	**Sig.**
KEI: innovations	**6,263,607.613**	**.019****	16,524.940	.278
KEI: economic incentive regime	**-1.008E7**	**.016****	**-17,148.335**	**.004*****
KEI: education	**-1,837,734.539**	**.021****	5623.105	.483
KEI: IC technologies	-39,372.718	.860	9,341.290	.419
Presence of subsidiaries (dummy)	855.174	.110	**-74.624**	**.054***
Fixed assets	**1.176**	**.000*****	**.029**	**.000*****
Earnings per employee	**1,062.564**	**.016****	**405.688**	**.000*****
Share of wages in costs	-31,137.651	.921	9,352.623	.653
Well-known brand (dummy)	**434,426.646**	**.005*****	**25,895.867**	**.023****
Citations in search engines (dummy)	**78,047.248**	**.042****	-3,614.739	.152
Commercial expenses share	122,986.140	.699	**40,814.182**	**.033****
Site quality	**120,328.229**	**.050****	**-8,113.486**	**.026****
Patents, licenses, trade marks	841.946	.154	-32.514	.442
ERP, quality management systems implementation (dummy)	-88,964.550	.450	13,369.377	.117
Corporate strategy implementation (dummy)	**-270,730.196**	**.027****	3,722.979	.621
Constant	5.074E7	.020	-124,195.477	.028
Prob>F	**0.000*****		**.000*****	
Adj. R-square	**.669**		**.344**	
Observation numbers	950		1254	

Notes: * Significant at p<0.1. ** Significant at p< 0.05. *** Significant at p<0.001.

Source: Authors' estimations

As was expected, both models are significant, and the coefficients for well-known brand, presence of subsidiaries, citations in search engines, site quality, as well as commercial expenses indicators, are positively associated with EVA© and FGV©. Meanwhile, the explanatory model power is very high, especially for the FGV© indicator. Moreover, we can partially confirm our hypothesis: the countries' institutional factors play a crucial role in the intellectual capital transformation into the companies' value, but some of the positive factors have a negative link with corporate performance. Therefore we have found a relationship that is not so obvious at first sight: the indicator of the economic incentive regime, as well as the level of education in the country, has a negative link to the value added of a company and its potential growth.

We certainly understand that we cannot make final conclusions on the basis of our analysis. Firstly, to confirm our results they must show their resistance in other samples and models. However, some assumptions can be made. Several empirical studies mentioned herein address the question of losing the motivation to invest in high-risk assets by companies in a highly developed infrastructure, and in developed economies in particular. Investments in intangibles can undoubtedly be attributed to the high-risk ones. We can also assert that a high level of education in the country makes this factor no longer a competitive advantage for a particular company. Potential return on investment in human capital in such conditions is relatively low.

This situation may indeed lead to a relative decrease in the efficiency of intellectual resources employment in stable economies. Therefore, some positive institutional factors do not support the transformation of intellectual capital in the company's value, but in fact obstruct this process.

6. CONCLUSIONS

Our results need to be interpreted with a certain caution. Although we have been careful in trying to ascertain the robustness of the reported results, there are no limits to the number of additional sensitivity tests that could be applied in terms of data, variable definitions, model specification, and econometric techniques.

However we can draw a number of conclusions based on the theoretical and empirical parts of our research.

1. The high explanatory power of the EVA© and FGV© indicators as indicators of the intellectual capital outcomes has been confirmed.
2. A number of significant internal and institutional factors of the intellectual capital transformation have been identified. These include intellectual property protection, market infrastructure development, economic incentive regime, innovation system, and education.
3. However, the impact of some indicators on company's performance is not obvious. For example, there is a negative correlation between positive infrastructure drivers and company's value.

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