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**INTELLECTUAL CAPITAL ELEMENTS  
AND ORGANIZATIONAL PERFORMANCE  
OF RUSSIAN MANUFACTURING  
COMPANIES**

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**Abstract:** Intellectual Capital (IC) has been argued to be the key element of value creation in the contemporary economy, and this argument has been widely supported by empirical research, but mainly based on the data from developed markets. The questions of how IC and its elements work in emerging markets remains under-researched, and limited empirical evidence that exists contrasts the conclusions drawn from developed countries. The aim of this study is to provide empirical insight into the relationship between three main elements of IC (human, relational and organizational) and organizational performance of Russian companies. The sample includes 240 Russian companies. The data is collected with the survey using the scales that have been already validated in international context. The paper contributes to further development of IC theory by investigating its application in anew institutional and cultural context.

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## **Introduction**

Many authors argue that in XXI century the value of a company is created mainly by intangible assets (Edvinsson, Malone, 1997; Furman et al., 2002; Guthrie, 2001; Sveiby, 1997). People and their knowledge, knowhow, ability to innovate, licensing agreements, organizational culture and other intangible assets have been widely demonstrated to be the most important assets for company's development. Hence, the main competence of companies in the knowledge-based economy becomes the ability to manage these intangible assets.

But is that true for the emerging Russian market? The questions of how IC and its elements work in emerging markets remains under-researched, and the limited empirical evidence that exists contrasts the findings drawn from developed countries (e.g., Garanina, 2011). Furthermore, some authors argue that Russia represents a specific context where knowledge-based processes work differently in comparison to the Western or Japanese companies (Andreeva, Ikhilchik, 2009; May, Stewart, 2013). While some research has been done on the applicability of foreign management theories in Russia in general (Elenkov, 1998; Fey and Denison, 2003; Andreeva, 2008), the applicability of IC concepts in the Russian context has been addressed to a very limited extent. Despite few studies on IC in Russian companies have been published recently (Molodchik, Teplykh, 2013; Garanina, 2011; Shakina, Blinov, 2010; Volkov, Garanina, 2008), the questions concerning the overall relevance of intellectual capital for performance of Russian companies, as well as the role of different IC elements, are still open. There are several reasons for that.

First, the existing studies rely on desperately small samples of companies (the biggest one involves 43 companies, (Garanina, 2011) and, therefore, have limited predictive power. Second, they use different financial proxies for estimating the elements of IC, while such proxies have been criticized (Coombs and Bierly, 2006) as being not very accurate in reflecting real situation in a company. Furthermore, while all these studies demonstrate that IC has some positive impact on company performance (Molodchik, Teplykh, 2013; Garanina, 2011; Shakina, Blinov, 2010; Volkov, Garanina, 2008), their findings regarding the role of different elements of IC are both controversial and difficult to compare across studies, as different proxies for IC elements were used. To summarize, both the empirical data on how IC works in Russian context and the understanding of what elements of IC are the most important in Russian context are still very limited. At the same time, the need to improve competitiveness of Russian business and the increasing pressure for Russian companies to compete with the companies from developed markets, puts the question of managing intangible resources to the forefront of managerial discussions (Dumay, Garanina, 2013).

This paper aims to address these gaps by analyzing how various elements of intellectual capital impact organizational performance in the Russian manufacturing companies. It is based on the sample of 240 companies from different industry sectors and regions, and uses company survey-based measures of IC. The findings of this study contribute to further development of IC theories by investigating its application in a different institutional and cultural context (in line with May, Stewart, 2013).

## **Intellectual capital and performance**

The IC theory started to develop in the 1980s of the XX century. At that time managers, researchers and consultants paid attention to the fact that companies from the same industry performed differently. There were several approaches to explain this fact, but the key one was that intangible assets that are not reflected on the balance sheet are the main resources that

create competitive advantage to a company [Barney, 1991; Grant 1991]. Though more than 20 years have passed since the beginning of IC theory, there is still no one single definition of IC. In this paper, we follow the definition of Roos and Roos (1997), suggesting that IC is a set of intangibles (resources, capabilities and competences) that drives the organizational performance and value creation.

IC can be treated as a resource that helps organisation to transform the existing knowledge into economic benefits (FASB, 2007). This suggests that there are causal relationships between intellectual capital and organizational value creation (Marr and Roos, 2005). Indeed, a number of studies have addressed the relationship between intellectual capital and performance of companies (e.g., Bayburina, 2007; Garanina, 2008; Kianto et al., 2013; Kimura et al, 2010; Molodchik at al., 2012; Molodchik, Teplykh, 2013; Naydenova, Oskolkova, 2012; Pulic, 2000; Puntillo, 2009; Riahi-Belcaoui, 2003; Shakina, Barajas, 2012). Nevertheless, there is still a lack of research that not just defines the relationship between intellectual capital as a whole and companies' performance, but explores the role of different elements of IC. While this is one of the most debated question in developed economies [Bontis, 2001; Dumay, 2012] it is absolutely under-researched on emerging markets [Garanina, 2010].

### Elements of Intellectual Capital

Researchers are not unanimous about the elements that constitute intellectual capital (Molodchik et al., 2014). Yet the dominant approach, supported by a lot of researchers in the field (Edvinsson, Mallone, 1997; Sveiby, 1997; Stewart, 1997; Roos et al., 1998; Bontis, 1998; Molodchik et al., 2014) is reflected in IC classification by the International Federation of Accountants (IFAC, 1998). It distinguishes three blocks of IC: human, relational and structural (organizational) capital (Table 1).

Table 1: The structure of Intellectual Capital

<u>Human capital</u>	<u>Relational capital</u>
<p>Organization's ability to benefit from knowledge, skills and experience of employees who immanently own them. In particular, such knowledge and skills are:</p> <ul style="list-style-type: none"> <li>— creativity,</li> <li>— know-how and experience,</li> <li>— ability to work in team,</li> <li>— motivation,</li> <li>— ability to learn,</li> <li>— educational and professional background,</li> <li>— loyalty, etc.</li> </ul>	<p>Organization's ability to benefit from resources related to its external relations (customers, suppliers, other counteragents). In particular, such resources are:</p> <p><i>Internal Relational capital:</i></p> <ul style="list-style-type: none"> <li>— cooperation between employees,</li> <li>— cooperation between departments;</li> </ul> <p><i>External Relational capital:</i></p> <ul style="list-style-type: none"> <li>— cooperation with suppliers,</li> <li>— customer loyalty,</li> <li>— supply chains,</li> <li>— business arrangements,</li> <li>— brands,</li> <li>— alliances and cooperation,</li> <li>— license and agreements, etc.</li> </ul>

<u>Organizational (structural) capital</u>
Organization's ability to benefit from knowledge kept within. Such knowledge can be:
<ul style="list-style-type: none"> <li>— corporate culture,</li> <li>— management procedures,</li> <li>— information systems,</li> <li>— management philosophy,</li> <li>— decision-making systems, etc.</li> </ul>

According to IFAC, **human capital** is defined as the knowledge, skills and experience that employees take with them when leaving. Human capital is considered to be the primary component of intellectual capital (Edvinsson and Malone, 1997; Stewart, 1997), because human interaction is the critical source of intangible value in the intellectual age (O'Donnell et al., 2003).

Yet we define human capital as an organization's ability to benefit from knowledge, skills and experience of its employees who immanently own them, rather than a complex of their intellectual capabilities such as innovative potential, creativity, know how and experience, ability to work in team, motivation, ability to learn, educational and professional background, loyalty, etc.

IFAC considers **relational capital** as the resources related to an organization's external relations, i.e. those with customers, suppliers, and other stakeholders. Our relational capital is defined as organization's ability to benefit from the resources related to organization's internal and external relations rather than the resources themselves.

**Organizational (structural) capital** is identified by IFAC as the knowledge kept within the organization. Organizational capital is the skeleton and the glue of an organization because it provides the tools (management philosophy, processes, culture) for retaining, package and move knowledge. Organizational resources belong to and controlled by a company. For us, it is not simple knowledge alone, but rather the organization's ability to benefit from it. In turn, structural capital can be divided into two subgroups: intellectual property objects and infrastructure assets (corporate culture, management procedures, etc.).

## METHOD

### *Sample*

The data for this project was collected in January – March 2015 within the frames of the international research project titled “Managing intellectual capital for organizational performance: do knowledge management practices matter?”. As the research questions of this project covered a number of formal management practices, we focused on companies with at least 100 employees, to ensure that such management practices are formalized in the target companies. Conceptually we were interested in companies from different sectors of economy, however, we found out that in Russia, services companies were typically relatively small in size, in particular, in the peripheral regions. Therefore, it would have been much more difficult to recruit for our research companies with over 100 employees from services sector, as compared to manufacturing. Targeting both manufacturing and service companies might have resulted in a dataset both strongly biased towards manufacturing sector and having not very typical selection of services companies. At the same time, the previous research has suggested that manufacturing and service companies may have different

configurations of intellectual capital elements that, in turn, might have different contributions to their performance (Kianto et al., 2010). The unbalanced dataset that we expected would not allow comparing two sectors properly. Therefore, we decided to focus on manufacturing companies only.

To ensure relative representativeness and variety in our data, we intended to cover 24 regions of Russia for data collection, and target manufacturing companies in 11 sectors (see tables 1 and 2 for the lists of regions and industries, respectively). The publicly available lists of the companies in these regions were screened to identify the companies with more than 100 employees in 11 target industries. Then 615 companies were randomly selected from the list of all eligible ones (more or less evenly distributed across industries and regions) and contacted by an external research company by telephone. The person in charge of the human resources, CEO or other top-manager was asked to respond to the questionnaire. Confidentiality was emphasized and a summary of the results was promised to the respondents. 240 companies responded to the survey, resulting in 39% response rate. This response rate is quite high for Russia, as Russian companies are typically reluctant to participate in any research due to the culture of the information secrecy (Andreeva, Kianto, 2012). Such high results can be explained by the involvement of the external research company whose employees are specially trained in negotiating and “selling” techniques, and by usage of telephone interviews (rather than mailing) as a data collection method.

Tables 1, 2 and 3 represent details of the resulting sample. The most represented regions were Moscow and Moscow region (12.5 %), Ekaterinburg and Sverdlovsk region (10%) and St.Petersburg and Leningrad region (8,8%). Most represented industry sector was manufacturing of machines and equipment (including electric machines and equipment, 17.5%). Other notable sectors were manufacturing of transportation machines (11.7%), food manufacturing (10.4%) and consumer goods manufacturing (9.6%).

Table 1. Regional diversity of the sample

<b>No</b>	<b>Region</b>	<b>Number of companies</b>	<b>% of sample</b>
1	Moscow and Moscow region	30	12,5%
2	Sverdlovsk region	24	10,0%
3	St.Petersburg and Leningrad region	21	8,8%
4	Tula region	10	4,2%
5	Yaroslavl region	10	4,2%
6	Nizhny Novgorod region	10	4,2%
7	Chuvashia republic	10	4,2%
8	Volgograd region	10	4,2%
9	Samara region	10	4,2%
10	Krasnodarsky krai	10	4,2%
11	Rostov region	10	4,2%
12	Chelyabinsk region	10	4,2%
13	Krasnoyarsky krai	10	4,2%
14	Irkutsk	10	4,2%
15	Voronezh region	9	3,8%
16	Penza region	9	3,8%



17	Perm region	9	3,8%
18	Kostroma region	5	2,1%
19	Belgorod region	5	2,1%
20	Kursk region	5	2,1%
21	Uljanovsk region	5	2,1%
22	Bashkortostan republic	5	2,1%
23	Omsk region	2	0,8%
24	Lipetsk region	1	0,4%
	<b>Total</b>	<b>240</b>	<b>100,0%</b>

Table 2. Industry sectors surveyed

#	<b>Manufacturing of:</b>	<b>Number of companies</b>	<b>% of sample</b>
1	Machines and equipment (including electric machines and equipment)	42	17,5
2	Vehicles (transport)	28	11,7
3	Food	25	10,4
4	Consumer goods	23	9,6
5	Rubber and plastic goods	19	7,9
6	Wood processing , wood products , paper, paperboard and articles thereof	18	7,5
7	Chemicals (pharmaceuticals excluded)	17	7,1
8	Publishing and printing	14	5,8
9	Metallurgy	13	5,4
10	TV, radio and telecommunication equipment	9	3,8
11	Metal goods	8	3,3
12	Furniture	7	2,9
13	Coke (carbon), oil products and nuclear fuel	5	2,1
14	Medical and optical equipment, watches	5	2,1
15	Recycling of secondary raw materials	4	1,7
16	Pharmaceutical products	2	,8
17	Computers and office equipment	1	,4

Most of the respondents held senior positions (see Table 3), indicating their expertise and key position in the organization to evaluate its current performance and management practices used.

Table 3. Positions of the survey respondents

<b>Position of respondent</b>	<b>Number of companies</b>	<b>% of sample</b>
Deputy CEO	93	38,8
Other managerial positions	58	24,2
Head of HR department	56	23,3
CEO	33	13,8

## *Measures*

The problem of measuring the components of intellectual capital is polemic and difficult. The first approach is based on practitioner-focused guidelines for measuring IC, such as Skandia Navigator (Edvinsson and Malone, 1997) or the Intangible Asset Monitor (Sveiby, 1997) that provide algorithms for defining IC components. Due to the lack of theoretical basis of uniform approach in identification and measuring IC indicators, these models cannot be applied to any company. Therefore, these guidelines are not applicable for quantitative studies that compare and aggregate data from multiple organizations.

The second approach suggest to measure IC components with proxies – indicators, based on publicly available data. For example, the most commonly used indicator for human capital is labor costs (Sydler et al., 2013; Pulic, 2000, Tseng, Goo, 2005; Edvinsson, 1997), for structural capital – selling, general and administration or R&D expenses (Edvinsson, Malone, 1997; Roos, Roos, 1997; Stewart, 1997; Van Buren, 1999; Sydler et al., 2013), and for relational capital – commercial expenses (Edvinsson, Malone, 1997, Wu, 2004, Johnson, Soenen, 2003). The main limitation of this approach is that indicators from financial reporting actually do not reflect real value of different elements of intellectual capital as balance sheet and income statement are prepared on the base of conservative accrual accounting that actually does not reflect real expectations of the market.

The third approach suggests using a questionnaire to estimate IC. St-Pierre and Audet (2011) argue that such a method may provide deeper and broader insight into the studied phenomenon, so we chose to follow it. . The survey was developed by the international team of experts, as a part of the international project, aimed to study the impact of intellectual capital on performance in different countries, and validated in Finland (Kianto et al., 2014). After that, the survey was translated to Russian.

**Independent variables.** Measures for IC categories were adapted from the previous literature where applicable and also developed by the lead project team. The ideas for the *internal relational capital* scale were adapted from Kianto (2008) and Yang and Lin (2009). The *external relational capital* scale was adapted from Kianto (2008), and the *structural capital* scale from Kianto and her colleagues (2008; 2010). The scale for the *human capital* was based on the conceptual ideas of Bontis (1998) and Yang and Lin (2009).

**Organizational performance.** The measure for organizational performance was borrowed from Delaney and Huselid (1996).

All of the measures were based on a five-point Likert scale (1-strongly disagree, 5-strongly agree).

## **RESULTS**

As a first step of our analysis, we performed exploratory factor analysis to check for the reliability and validity of the measurement scales (Hurley *et al.*, 1997). Table 4 introduces the scale items with respective factor loadings and internal consistencies of the scales. Cronbach's  $\alpha$  of all scales are over 0,7, indicating good internal consistency and validity of the scales. Table 5 presents descriptive statistics for resulting latent variables.

Table 4 Reliability of measurement scales of the study variables

<i>Survey items</i>	<i>Factor loadings</i>
<b>Performance:</b> <i>Compared to other companies in its sector, how do you think your company has succeeded in the following areas over the past year?</i> Cronbach's $\alpha = 0,908$	
Net sales growth	0,904
Profitability	0,868
Market share	0,871
<b>Human capital:</b> <i>To what extent do the following statements on employee competence apply to your company?</i> Cronbach's $\alpha = 0,824$	
Our employees are highly skilled at their jobs.	0,759
Our employees are highly motivated in their work.	0,695
Our employees have a high level of expertise.	0,852
<b>Structural capital:</b> <i>To what extent do the following statements on internal structures apply to your company?</i> Cronbach's $\alpha = 0,752$	
Our company has efficient and relevant information systems to support business operations.	0,586
Our company has tools and facilities to support cooperation between employees.	0,65
Our company has a great deal of useful knowledge in documents and databases.	0,578
Existing documents and solutions are easily accessible.	0,751
<b>Relational capital:</b> <i>To what extent do the following statements apply to your company?</i> Cronbach's $\alpha = 0,832$	
Different units and functions within our company – such as R&D, marketing and production – understand each other well.	0,598
Our employees frequently collaborate to solve problems.	0,751
Internal cooperation in our company runs smoothly.	0,703
Our company and its external stakeholders – such as customers, suppliers and partners – understand each other well.	0,633
Our company and its external stakeholders frequently collaborate to solve problems.	0,679
Cooperation between our company and its external stakeholders runs smoothly.	0,761

Table 5. Descriptive statistics for the study variables

#	<i>Latent variable</i>	<i>Mean</i>	<i>SD</i>	<i>Correlations</i>			
				1	2	3	4
1	Human Capital	4,12	0,71	1	,563***	,583***	,444***
2	Relational Capital	4,08	0,60	,563***	1	,490***	,309***
3	Structural Capital	3,83	0,74	,583***	,490***	1	,468***
4	Organizational Performance	3,24	1,06	,444***	,309***	,468***	1

\*\*\* correlation is significant on the 0,000 level (two-tailed)

As a next step, we performed regression analysis to test the impact of different IC elements on organizational performance. We used the size of the company (number of employees as a control variable). Results of this model are provided in Table 6. They indicate that only structural capital and human capital have an impact on the organizational performance in our sample, with B-coefficients 0,313 and 0,249 respectively. Relational capital has no impact on performance. Our model explains 25,6% of variation in organizational performance.

Table 6. Results of regression analysis

<i>Independent variables</i>	<i>B</i>	<i>Significance</i>
Constant	-,362	,717
Human Capital	,249	,001
Relational Capital	,016	,819
Structural Capital	,313	,000
N_employees	,058	,307
<i>Adjusted R2</i>	,256	

## References

- Andreeva, T. (2008) “Can organizational change be planned and controlled? Evidence from Russian companies”, *Human Resource Development International*, Vol. 11, No. 2, pp. 119–134.
- Andreeva, T., Ikhilchik, I. (2011) “Applicability of the SECI Model of Knowledge Creation in Russian Cultural Context: Theoretical Analysis”, *Knowledge and Process Management*, Vol. 18, No. 1, pp. 56-66.
- Andreeva, T., Kianto, A. (2011) “Knowledge processes, knowledge-intensity and innovation: a moderated mediation analysis”, *Journal of Knowledge Management*, Vol. 15, No. 6, pp. 1016 – 1034.
- Andreeva, T., Kianto, A. (2012) “Does knowledge management really matter? Linking knowledge management practices, competitiveness and economic performance”, *Journal of Knowledge Management*, Vol. 16, No .4, pp. 617–636.
- Barney, J.B. (1991) “Firm Resources and Sustained Competitive Advantage”, *Journal of Management*, Vol. 17, No. 1, pp. 99 – 20.
- Bayburina, E.R. (2007) “Metody analiza intellektualnogo kapitala dlya sovremennogo ustoychivogo razvitiya kompanii”, *Korporativnye financy*, Vol. 3, No. 3, pp. 85 – 101.
- Bontis, N. (1998), “Intellectual capital: An exploratory study that develops measures and models. *Management Decision*, Vol. 36 No. 2, pp. 63-76.
- Chen, M. C. (2004). *Intellectual capital: theories and practices*, 1st edition, Tsang Hai.
- Coombs, J.E. and Bierly, P.E. (2006) “Measuring technological capability and performance”, *R&D Management*, Vol. 36, No. 4, pp. 421 – 437.

Delaney, J. and Huselid, M. A. (1996) "The impact of human resource management practices on perceptions of organizational performance", *Academy of Management Journal*, 39 (4), 949-969.

Dumay, J. and Garanina, T. (2013). "Intellectual capital research: a critical examination of the third stage", *Journal of Intellectual Capital*, Vol. 14, No. 1, pp. 10 – 25.

Edvinsson, L. and Malone, M. (1997) *Intellectual capital: realising your company's true value by finding its hidden brainpower*. Harper Collins, New York.

Edvinsson, L., (1997) "Developing intellectual capital at Skandia", *Long Range Planning*, Vol. 30, No. 3, pp. 366–373.

Elenkov, D.S. (1998) "Can American management concepts work in Russia? A cross-cultural comparative study", *California Management Review*, Vol. 40 No. 4, pp. 133-56.

FASB. (2007) Financial Accounting Standards Board report.

Fey, C., Denison, D. (2003) "Organizational culture and effectiveness: can American theory be applied in Russia?", *Organization Science*, Vol. 14, No. 6, pp. 686–706.

Furman, J. L., Porter, M. E. and Stern, S. (2002) "The determinants of national innovative capacity", *Research Policy*, Vol. 11 No. 6, pp. 899-933.

Garanina, T. (2010) "Nematerialnye aktivyi i intellektualnyi kapital: rol v sozdanii cennosti kompanii", *Vestnik SPbSU. Seria Menedzhment*, Vol. 2, pp. 17 – 44.

Garanina, T. (2011). "Intellectual capital structure and value creation of a company: evidence from Russian companies", *Open Journal of Economic Research*, Vol. 1, Iss. 2, pp. 22–34.

Grant, R.M. (1991) "The resource-based theory of competitive advantage: Implications for strategy formulation", *California Management Review* Vol. 33, No. 3, pp. 114 – 135.

Guthrie, J. (2001) "The management, measurement and the reporting of intellectual capital", *Journal of Intellectual Capital*, Vol. 2, No. 1, pp. 27 – 41.

Hurley, A.E., Scandura, T.A., Schriesheim, C.A., Brannick, M.T., Seers, A., Vandenberg, R.J. and Williams, L.J. (1997), "Exploratory and confirmatory factor analysis: guidelines, issues, and alternatives", *Journal of Organizational Behavior*, Vol. 18, pp. 667–683.

Johnson, R. and Soenen, L. (2003) "Indicators of successful companies", *European Management Journal*, Vol. 21 No. 3, pp. 364-369.

Kianto A, Hurmelinna-Laukkanen P, Ritala P. 2010. Intellectual capital in service- and product-oriented companies. *Journal of Intellectual Capital* 11(3): 305–325.

Kianto, A. (2008) "Development and validation of a survey instrument for measuring organizational renewal capability", *International Journal of Technology Management*, Vol. 42 Nos 1/2, pp. 69-88.

Kianto, A., Andreeva, T., Pavlov, Y. (2013) "The impact of intellectual capital management on company competitiveness and financial performance", *Knowledge Management Research and Practice*, Vol. 11, No. 2, pp. 112-122

Kianto, A., Hurmelinna-Laukkanen, P. & Ritala, P. (2010) Intellectual capital in service- and product-oriented companies. *Journal of Intellectual Capital*, Vol. 11, No. 3, 305-325.

Kimura, H., Cruz Basso, L.F., Nogueira, S.G., de Barros L.J. (2010) “The impact of intellectual Capital on value added of Brazilian companies traded at the BMF-Bovespa”, *Journal of International Finance and Economics*, Vol. 10, No. 2, pp. 1 – 11.

Marr, B. and Roos, G. (2005) “A strategy perspective on intellectual capital”, *Perspectives on intellectual capital – mul-tidisciplinary insights into management, measurement and reporting*, Butterworth-Heinemann, Oxford.

May, R.C., Stewart, W.H. (2013) “Building theory with BRICs: Russia’s contribution to knowledge sharing theory”, *Critical perspectives on international business*, Vol. 9, No. 1/2, pp. 147-172.

Molodchik, M., Shakina, E., Barajas, A., (2014) "Metrics for the elements of intellectual capital in an economy driven by knowledge", *Journal of Intellectual Capital*, Vol. 15, No. 2, pp. 206 – 226.

Molodchik, M., Teplykh, G. (2013) “Obosnovanie strukturnogo sodержaniy intellektualnogo kapitala kompanii v ramkah cennostno-orientirovannogo podhoda”, *Financy i kredit*, Vol. 4, No. 532, pp. 73 – 84.

Molodchik, M.A., Shakina, E.A., Bykova A. (2012), “Intellectual Capital Transformation Evaluating Model”, *Journal of Intellectual Capital*. Vol. 4, No. 13, pp. 1-13.

Naydenova, Y., Oskolkova, M. (2012) “Vzaimodeystvie komponentov intellektualnogo kapitala v processese sozdaniya stoimosti firmy”, *Korporativnye financy*, Vol. 4, No. 24, pp. 100 – 112.

O’Donnell, D., O’Regan, P., Coates, B., Kennedy, T., Keary, B. and Berkery, G. (2003) “Human interaction: The critical source of intangible value”, *Journal of Intellectual Capital*, Vol 4, No.1, pp. 82-99.

Petty, R. and Guthrie, J. (2000) “Intellectual capital literature review: measurement, reporting and management”, *Journal of Intellectual Capital*, Vol. 1 No. 2, pp. 155-76.

Pulic, A. (2000) “VAIC – an accounting tool for IC management”, *International Journal of Technology Management*, Vol. 20 No. 5-8, pp. 702-714.

Pulic, A. (2000) “VAIC – an accounting tool for IC management”, *International Journal of Technology Management*, Vol. 20, No. 5-8, pp. 702 – 714.

Puntillo, P. (2009) “Intellektualnyi kapital i effektivnost’ deyatelnosti kompanii. Rezultaty issledovaniya po dannym italyznskih bankov”, *Korporativnye financy*, Vol. 4, No. 12, pp. 96-115.

Riahi-Belkaoui, A. (2003) “Intellectual Capital and firm performance of US multinational firms”, *Journal of Intellectual Capital*, Vol. 4, No. 2, pp. 215 – 226.

Roos, G. and Roos, J. (1997) “Measuring your company’s intellectual performance”, *Long Range Planning*, Vol. 30, No. 3, pp. 413-426.

Shakina, E., Blinov, S. (2010) “Otsenka doli intellektualnogo kapitala v stoimosti kompanii”, *Korporativnye financy*, Vol. 2, No. 14, pp. 47-61.

Shakina, E.A., Barajas, A. A. (2012) “The Relationship between Intellectual Capital Quality and Corporate Performance: An Empirical Study of Russian and European Companies”, *Economic Annals*, Vol. 47, No. 192, pp. 79-98

Stewart T. (1997) *Intellectual capital: the new wealth of organizations*. Doubleday: New York.

St-Pierre, J. and Audet, J. (2011) “Intangible assets and performance: analysis on manufacturing SMEs”, *Journal of Intellectual Capital*, Vol. 12 No. 2, pp. 202-223.

Sveiby, K.E. (1997) *The New Organizational Wealth: Managing and Measuring Knowledge Based Assets*, Berrett Koehler Publisher, San Francisco, CA.

Sydler, R., Haefliger, S. and Pruksa, R. (2014) “Measuring intellectual capital with financial figures: can we predict firm profitability?”, *European Management Journal*, Vol. 32 No. 2, pp. 244-259.

Teece, D.J. (1996) “Firm organization, industrial structure and technological innovation”, *Journal of Economic Behavior and Organization*, Vol. 31, No. 2, pp. 193 – 224.

Tseng, C.Y. and Goo, Y.J., (2005) “Intellectual capital and corporate value in an emerging economy: empirical study of Taiwanese manufacturers”, *R&D Management*, Vol. 35, No. 2, pp. 187–201.

Van Buren, M. E. (1999) “A yardstick for knowledge management. American Society for Training and Development, Inc.”, *Training and Development*, Vol. 53, No. 5, pp. 71-78.

Volkov, D., Garanina, T. (2008) “Value creation in Russian companies: the role of intangible assets”, *Electronic Journal of Knowledge Management*, Vol. 6, No. 1, pp. 63 – 74.

Yang, C., & Lin, C. (2009). “Does intellectual capital mediate the relationship between HRM and organizational performance? Perspective of a healthcare industry in Taiwan”. *International Journal of Human Resource Management*, Vol. 20, No. 9, pp. 1965-1984.