

ENTREPRENEURS' PERCEPTION OF OUTCOMES FROM INTELLECTUAL CAPITAL INVESTMENTS

Oksana LENTJUSHENKOVA

Riga Technical University
E-mail: oksana@augstskola.lv

Jelena TITKO

University College of Economics and Culture
E-mail: jelena.titko@eka.edu.lv

Abstract. Investments into intellectual capital, e.g. advertising and R&D expenditures, staff training and software, positively affect company's value. The goal of the current research is to evaluate the perceived importance of the expected results from the intellectual capital investments by Latvian entrepreneurs, and reveal the difference in perceptions caused by the differences in companies' profiles. For research purposes representatives of different Latvian companies were surveyed, using the developed questionnaire. Respondents' answers were evaluated within the respondents' groups, based on the profile criteria, such as company's age, size, financial performance, location and business sector. Data processing was completed in SPSS environment, using analysis of frequencies, ranking and independent samples T-test.

Keywords: intellectual capital investments, survey, Latvian companies.

JEL classification:

M10 – Business administration; General

034 – Intellectual property and intellectual capital

Introduction

Intellectual capital (IC) is considered to be a source of a competitive advantage and a precondition for sustainable development of companies (Naidenova and Parshakov, 2013), as well as a driver of innovations that “leads to wealth generation” (Starovic and Marr, 2003). In turn, investments into intellectual capital and knowledge increase company's power and profitability (Caldăraru *et al.*, 2011).

Intellectual capital is a combination of three components: human capital, structural capital and organizational capital (Stewart, 1998). Considering the comprehensive structure of the concept, definitions of the term “intellectual capital investments” may vary depending on the type of intangible assets, which company's managers plan to make investments in. The main types of IC investments are investments into employees' training, R&D and advertising (Komnec and Pokrajcic, 2012; Corrado, Hulten and Sichel, 2006; Awano, Franklin, Haskel and Kastrinaki, 2010). There is a plenty of studies on the relationship between IC investments and financial performance of companies (Javornik *et al.*, 2012; Muhammad and Ismail, 2009; Tan, Plowman, and Hancock, 2007; Tseng and Goo, 2005), confirming positive link between IC, financial performance and market value of companies.

The current study continues a research series, conducted in Latvia within the framework of the comprehensive study “Intellectual Capital Investments in Latvia”, in order to determine the importance of IC investments for companies, as well as to detect the factors affecting the volume of IC investments in Latvian business environment (Lentjusenkova and Lapina, 2015a, 2015b).

The goal of the current research is to evaluate the perceived importance of the expected results from the intellectual capital investments by Latvian entrepreneurs, and reveal the difference in perceptions caused by the differences in companies’ profiles.

To achieve the established goal the survey among representatives of Latvian 203 companies is conducted. The most companies represent production, service and trade industries of the national economy. Survey instruments is the authors’ developed questionnaire that involves fourteen questions: six of them are respondent profile questions, and the remaining are aimed to determine the core of the concept of intellectual capital on the viewpoint of respondents, the importance of the intellectual capital perceived by respondents, the expected results from the intellectual capital investments. Respondents’ answers were evaluated within the respondents’ groups, based on the profile criteria, such as company’s age, size, financial performance, location and business sector. Data processing was completed in SPSS environment, using analysis of frequencies, ranking and independent samples T-test. Research hypotheses were stated, as follows:

H1: Financial benefits from IC investments are mostly expected by Latvian companies.

H2: Large companies are more likely to invest into intellectual capital.

The current paper contributes to the academic literature on investigation of the importance of intangibles for the company’s value.

The Understanding of Intellectual Capital Investments

Intellectual capital is defined as “intellectual material that has been formalised, captured and leveraged to produce a higher valued asset” (Kok, 2007). The structural components of Intellectual capital are human capital, structural capital and customer capital (Stewart, 1998). The term “intellectual capital investments” is synonymously used with the terms “intangible investments” (Young, 1998) or “investments in intangible assets” (Clacher, 2010). Definitions, provided in various papers and reports differ widely, depending on the intangible assets to be invested into. Table 1 summarizes definitions proposed by different authors, including definitions of IC investments, intangible investments, human capital investments, and structural capital investments.

Table 1: Definitions of the term “intellectual capital investments” and related concepts

Author, source	Definitions
Blundell, Dearden, Meghir and Sianesi, 1999	Human capital investments involve “an initial cost (tuition and training course fees, forgone earnings while at school and reduced wages and productivity during the training period) which the individual or firm hopes to gain a return on in the

	future (for example, through increased earnings or higher firm productivity)”
Moulton, 2004	Intangible investments are “activities in which producers devote resources in one period with the intention of improving products, processes, or knowledge for use in future production”
European Commission, 2006	“...research intensive enterprises invest not only in R&D and innovation, but also in other forms of Intellectual Capital. Empirical studies provide evidence for the tight link and contingency between investments in R&D, innovation, human resources and relational capital”
Boujelben and Fedhila, 2011	“Two types of expenditures can be regarded as alternative forms of intellectual capital investments that contribute to shareholder value: advertising and R&D expenditures“
Gaol, Kadry, Taylor and Li, 2013	R&D expenditures is “a part of structural capital”
Sydler, Haeffliger and Prukša, 2014	“Investors view labor costs as a rough metric for human capital investments”.
Goldin, 2014	Human capital investments are “investments in people (e.g., education, training, health)”, which “increase an individual’s productivity”
OECD, 2015	Intangible investment, such as “R&D, software and entertainment, literary and artistic originals and mineral exploration...”

Source: Authors’ compilation

The difference between “intangible investments” and “IC investments” can be explained, citing Fincham and Roslender (2003): “Intellectual capital refers to a much wider range of assets than those normally recognized as intangible, e.g. goodwill, brands, company reputation, etc.” OECD experts use another one term – “knowledge-based capital” (KBC) that includes “investment in design, new financial products, advertising, and market research, training and organization capital”. On their opinion, KBC is a combination of “measured intangibles” and “broader range of investment-like activities that companies use to create value” (OECD, 2015).

Outcomes from the investments into intellectual capital can be classified, based on the componential structure of the intellectual capital (CIMA, 2006):

3. Human capital outcomes: revenue generated per employee, employee satisfaction, educational level of staff, value added per employee;
4. Organisational capital outcomes: income per R&D expense, number of patents, IT expenditure as a percentage of administration spend;
5. Customer capital outcomes: revenues per customer, brand loyalty, customer satisfaction.

In 2013, the European Commission initiated a comprehensive pan-European study that was aimed to “explore companies' investment in a range of intangible assets”. Based on the results of the survey (EC, 2013), the largest priority for European companies is “tailored, customized solutions” (40% of respondents). As for motivation to invest into intangibles, summarized statistics of the answers within Latvian sample and EU27 sample is presented in the Table 2.

Table 2: Motives to invest into intangible assets

Motive	EU27	Latvia
Better relationships with customers and business partners	55%	55%
Greater efficiency of internal business processes	43%	36%
Better economic returns or larger market shares	42%	48%
Improvement of the internal skills of the intangible assets	33%	31%
More rapid development of new company services and products	33%	33%
Regulatory framework of an industry	23%	20%
Public financial support for intangible assets	13%	14%

Source: European Commission (2013)

The largest benefits from IC investments from the viewpoint of respondents are: 1) qualification of employees, 2) new or significantly improved products, services, or processes, 3) new or significantly improved organisational structures and management methods, and 4) new or significantly improved marketing strategies or distribution methods.

Research Methodology

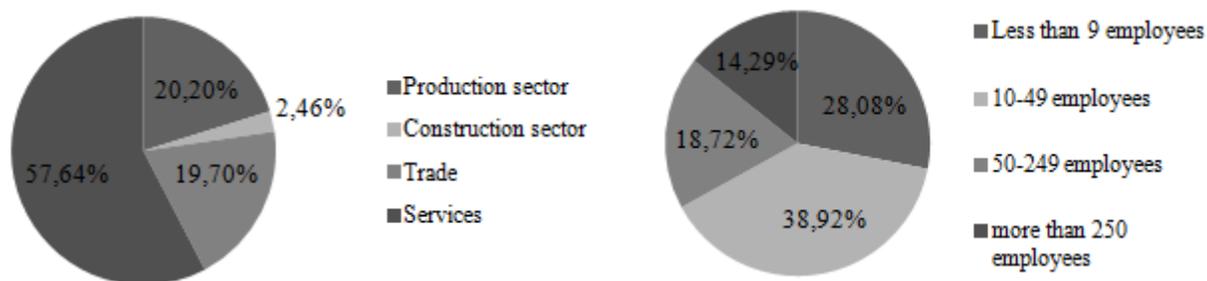
For the purposes of the comprehensive study “Intellectual capital investments in Latvia”, the appropriate measurement instrument was developed (Lentjusenkova and Lapina, 2015a). The core questions included into the questionnaire were aimed to provide an insight into 1) respondents’ understanding of the concept of IC, 2) perceived importance of the IC components, 3) respondents’ understanding of the concept „IC investments”, 4) perceived importance of the IC investments, 5) perceived importance of the outcomes from the IC investments, and 6) perceived importance of factors affecting the decisions on IC investments.

The current study is aimed to study the respondents’ answers on the question “Expected results from IC investments”. Respondents were offered to evaluate potential outcomes from IC investments, using 4-points scale, where “1” – indicated “the most important outcome”, while “4” meant “the least important outcome”.

The respondents answers were analyzed within the sample groups, based on the respondent profile criteria: 1) sector of economy, 2) number of employees, 3) annual business volume (turnover), 4) business location, and 5) business age.

Research sample consisted of 203 respondents - top managers and owners of Latvian companies operating in different sectors. Most represented sector was service sector ("Services") (Fig. 1).

Figure 1: Respondent profile: business sector represented and number of employees



28% of represented companies can be classified as micro companies with number of employed persons less than 9 employees. Big companies with more than 250 employees were represented by only 14% of respondents. The most of the respondents were from small and medium-sized enterprises (SME) – 58% of a whole sample (Fig. 1).

There was only 1,97% of newly established companies within the sample. The rest companies were almost equally distributed among the groups “1-5 years old”, “5-10 years old” and “over 10 years old” – 33,99%, 31,03% and 33%, respectively.

To achieve the research objectives and to test the research hypotheses, the following statistical analysis methods were applied: analysis of means, ranking, and Mann-Whitney U test to compare the responses within two independent groups of respondents. The authors have chosen the Mann-Whitney U test, because data of variables in the individual groups was not normally distributed. The procedure of the testing for normality was performed applying Kolmogorov-Smirnov test. Statistical data processing was done in MS Excel and SPSS 19.0 environment.

Research results

Initial data processing allowed detecting the most important outcomes from IC investments from the viewpoint of Latvian entrepreneurs. Profit growth and customer satisfaction growth were evaluated as the most important benefits of IC investments, based on the average rate and on the number of respondents, who assign the rate “critically important” to the outcomes (Table 3).

Table 3: Perceived importance of the outcomes from IC investments

Outcome from IC investments	Perceived importance	Number of respondents rated the outcome as “critically important”
Profit growth	1,2512	78,3%
Customer satisfaction growth	1,3498	69,5%

Market share increase	1,5468	55,7%
Productivity growth	1,5911	44,8%
Return growth	1,6158	43,3%
Employees' qualification improvement	1,6256	44,3%
Company's value enhancement	1,7537	32,5%
Cost reduction in the future	1,8276	26,1%
Customer loyalty growth	1,8916	23,6%
Reputation and brand value enhancement	1,9113	22,2%
Infrastructure improvement	1,9557	22,7%
Employees' loyalty growth	2,0296	18,7%
Strengthening of collaboration with partners	2,1429	17,2%

Source: Authors' compilation

Financial outcome – profit growth – was rated as the most important result from the IC investments by the largest number of respondents. However, the employers also highly evaluated customer satisfaction growth. Regarding market share increase – the third most important outcome – it cannot be viewed unambiguously as a financial or as a non-financial result, because it was not explained to the respondents – whether market share is expressed in terms of assets or in terms of number of customers.

Table 4 presents the average evaluation of the outcomes from IC investments within the represented sectors of economy.

Table 4: Perceived importance of the outcomes from IC investments within the sector

Outcome from IC investments	Production sector	Construction sector	Trade	Services
Profit growth	1,41	1,20	1,15	1,23
Market share growth	1,54	1,40	1,40	1,61
Cost reduction in the future	1,61	2,00	1,93	1,86
Productivity growth	1,24	1,80	1,63	1,69
Return growth	1,37	1,60	1,73	1,67
Company's value enhancement	1,1	2,00	1,73	1,77
Infrastructure improvement	2,00	2,20	2,08	1,89

Reputation and brand value enhancement	2,07	2,00	1,98	1,83
Strengthening of collaboration with partners	2,09	2,20	2,23	2,13
Employees' loyalty growth	2,12	2,20	2,15	1,95
Employees' qualification improvement	1,73	2,00	1,70	1,55
Customer loyalty growth	2,02	2,20	1,93	1,82
Customer satisfaction growth	1,46	1,80	1,33	1,29

Source: Authors' compilation

Table 5 presents the average evaluation of the outcomes from IC investments within the sample groups, based on the number of employees. The authors analyzed a statistical significance of the difference in evaluation, provided by the representatives of micro-companies and large companies. Critical value was stated at 0,05 level that indicated a statistically significant difference.

Table 5: Perceptions of representatives of micro-companies and large companies

Outcome from IC investments	< 9 employees	> 250 employees	Mann-Whitney U test Sig.
Profit growth	1,1579	1,6552	0,000
Market share growth	1,5439	1,8966	0,113
Cost reduction in the future	1,9123	1,6897	0,045
Productivity growth	1,7018	1,6552	0,532
Return growth	1,7018	1,6552	0,630
Company's value enhancement	1,8596	1,6552	0,085
Infrastructure improvement	1,9123	1,9655	0,818
Reputation and brand value enhancement	1,9298	1,6552	0,022
Strengthening of collaboration with partners	2,2632	1,6897	0,000
Employees' loyalty growth	1,9825	2,1034	0,497
Employees' qualification improvement	1,5614	1,7586	0,209
Customer loyalty growth	1,8421	2,0000	0,256
Customer satisfaction growth	1,2456	1,6207	0,002

Source: Authors' compilation

There is a statistically significant difference in evaluation of the importance of the outcomes from IC investments provided by the respondents within the groups of representatives of micro- and large companies regarding the items “profit growth”, “cost reduction in the future”, “reputation and brand value enhancement”, “strengthening of collaboration with partners” and “customer satisfaction growth”.

Table 6 presents the average evaluation of the outcomes from IC investments within the sample groups, based on the number of employees. The authors analyzed a statistical significance of the difference in evaluation, provided by the representatives of the companies located in Riga and out of Riga. Critical value was stated at 0,05 level that indicated a statistically significant difference.

Table 6: Perceptions of representatives of companies located in Riga and out of Riga

Outcome from IC investments	Riga	Regions	Mann-Whitney U test Sig.
Profit growth	1,2203	1,2941	0,368
Market share growth	1,5000	1,6118	0,349
Cost reduction in the future	1,8983	1,7294	0,042
Productivity growth	1,6017	1,5767	0,683
Return growth	1,6356	1,5882	0,604
Company’s value enhancement	1,7373	1,7765	0,590
Infrastructure improvement	1,9068	2,0235	0,137
Reputation and brand value enhancement	1,8136	2,0471	0,003
Strengthening of collaboration with partners	2,1017	2,2000	0,285
Employees’ loyalty growth	1,9746	2,1059	0,111
Employees’ qualification improvement	1,6695	1,5647	0,444
Customer loyalty growth	1,8390	1,9647	0,096
Customer satisfaction growth	1,3814	1,3059	0,364

Source: Authors’ compilation

There is a statistically significant difference in evaluation of the importance of the outcomes from IC investments provided by the respondents within the groups of representatives of companies operating in Riga or regions regarding the items “cost reduction in the future” and “reputation and brand value enhancement”.

Table 7 presents the average evaluation of the outcomes from IC investments within the sample groups, based on the criterion “business age”. The authors analyzed a statistical significance of

the difference in evaluation, provided by the representatives of relatively new and mature companies. Critical value was stated at 0,05 level that indicated a statistically significant difference.

Table 7: Perceptions of representatives of new and mature companies

Outcome from IC investments	1-5 years old	Over 10 years old	Mann-Whitney U test Sig.
Profit growth	1,1014	1,5075	0,000
Market share growth	1,4783	1,7164	0,191
Cost reduction in the future	1,7826	1,7612	0,724
Productivity growth	1,5652	1,5821	0,799
Return growth	1,5217	1,6866	0,294
Company's value enhancement	1,7826	1,6866	0,126
Infrastructure improvement	1,9565	1,9701	0,840
Reputation and brand value enhancement	2,0725	1,6866	0,000
Strengthening of collaboration with partners	2,3478	1,7910	0,000
Employees' loyalty growth	2,1014	1,9104	0,047
Employees' qualification improvement	1,6057	1,7313	0,381
Customer loyalty growth	1,8986	1,8955	0,682
Customer satisfaction growth	1,2609	1,6418	0,000

Source: Authors' compilation

There is a statistically significant difference in evaluation of the importance of the outcomes from IC investments provided by the respondents within the groups of representatives of "new" and "old" companies regarding the items "profit growth", "reputation and brand value enhancement", "strengthening of collaboration with partners", "employees' loyalty growth" and "customer satisfaction growth".

Table 8 summarizes the statistics on the volume of IC investments, depending on the respondent profile.

Table 8: Volume of IC investments within the respondent groups

Respondent profile criteria		<1000 euro	1000-5000 euro	5000-10000 euro	>10000 euro
Sector of economy	Production sector	11,8%	8,2%	44,4%	36,1%
	Construction sector	0	5,2%	0	0
	Trade	11,8%	26,8%	13,9%	13,9%
	Services	76,5%	59,8%	41,7%	50%
Number of employees	<9 employees	79,4%	29,9%	2,8%	0
	10–49 employees	8,8%	58,8%	44,4%	8,3%
	50–249 employees	8,8%	10,3%	36,1%	33,3%
	>250 employees	2,9%	1%	16,7%	5,3%
Annual turnover	<2 mln euro	91,2%	73,2%	27,8%	2,8%
	2–10 mln euro	5,9%	22,7%	50%	22,2%
	10–50 mln euro	2,9%	2,1%	22,2%	38,9%
	>50 mln euro	0	2,1%	0	36,1%
Location	Riga	41,2%	62,9%	58,3%	61,1%
	Regions	58,8%	37,1%	41,7%	38,9%
Business age	Newly established	8,8%	1	0	0
	1–5 years old	52,9%	42,3%	16,7%	11,1%
	5–10 years old	29,4%	42,3%	33,3%	0
	Over 10 years old	8,8%	14,4%	50%	88,9%

Source: Authors' compilation

The largest volume of IC investments was observed within the service sector. The companies, which are more likely to invest into intellectual capital, are medium or large entities, operating in Riga more than 10 years.

Conclusion

The current paper was aimed to reflect the results of the research, conducted within the framework of comprehensive study “Intellectual capital investments in Latvia”. The goal of the given study is to detect the difference in evaluation of outcomes from IC investments, provided by representatives of different Latvian companies.

The results of testing of the research hypotheses are the following:

H1: Financial benefits from IC investments are mostly expected by Latvian companies. – Partially confirmed

Within the whole sample the most important outcome was “profit growth”, however the respondents highly evaluated also “customer satisfaction growth” (Table 3). It is obvious that representatives of the companies from service industry evaluated non-financial outcomes from IC

investments as more important, comparing with the evaluation provided within other groups of respondents (Table 4).

H2: Larger companies are more likely to invest into intellectual capital. – Partially confirmed

Within the current sample medium-sized companies (annual turnover is 10-50 mln euro; 50-249 employees) largest volume of investments into intellectual capital.

The unambiguous conclusion can be made regarding the age of IC investors. 88,9% of respondents, who reported IC investments over 10000 euro, were representatives of the companies aged more than 10 years.

Difference of opinions between respondents from different sample groups was observed only regarding particular outcomes.

Significant difference between evaluations of representatives of micro- and large companies was observed regarding the outcomes “profit growth”, “cost reduction in the future”, “reputation and brand value enhancement”, “strengthening of collaboration with partners” and “customer satisfaction growth” (Table 5).

Significant difference between evaluations of representatives of companies from Riga and out of Riga was observed regarding the outcomes “cost reduction in the future” and “reputation and brand value enhancement” (Table 6).

Significant difference between evaluations of representatives of “new” (1-5 years old) and “old” (over 10 years old) companies was observed regarding the outcomes “profit growth”, “strengthening of collaboration with partners”, “reputation and brand value enhancement”, “employees’ loyalty growth” and “customer satisfaction growth”.

The current study has a potential to be extended, using the larger and more representative sample. For benchmarking it could be interesting to conduct a survey with application of the developed questionnaire in other CEE markets.

References

- Awano, G., Franklin, M., Haskel, J., and Kastrinaki, Z. (2010). Measuring investment in intangible assets in the UK: results from a new survey. *Economic & Labour Market Review*, 4(7): 66-71.
- Blundell, L., Dearden, R., Meghir C. and Sianesi, B. (1999) Human Capital Investment: The Returns from Education and Training to the Individual, the Firm and the Economy. *Fiscal Studies*, 20(1): 1-23.
- Boujelben, S., & Fedhila, H. (2011). The effects of intangible investments on future OCF. *Journal of intellectual capital*, 12(4): 480-494.
- Caldăraru, E. A., Radu, A. L., Pirnea, I. C., and Parpandel, D. (2011). Intellectual Capital Investment, Key Factor In Achieving Organizational Performance In Pharmaceutical Companies. In *Proceedings of the International Conference Investments and Economic Recovery*, 10(1): 253-259.

- Clacher, I. (2010). National accounting for intangible assets in the knowledge economy. *Journal of Financial Regulation and Compliance*, 18(2), 106-119.
- Corrado, C., Hulten, C., and Sichel, D. (2009). Intangible capital and US economic growth. *Review of income and wealth*, 55(3): 661-685.
- European Commission (2013). *Flash Eurobarometer 369 "Investing in Intangibles: Economic Assets and Innovation Drivers for Growth"*. Retrieved June 25, 2016 from http://ec.europa.eu/public_opinion/flash/fl_369_en.pdf
- European Commission. (2006) *Encourage corporate measuring and reporting on research and other forms of intellectual capital*. Luxembourg: Office for Official Publications of the European Communities, 2006.
- Fincham, R. and Roslender, R. (2003) *The Management of Intellectual Capital and It's Implications for Business Reporting*. Edinburg: The Institute of Chartered Accountants of Scotland, 2003.
- Gaol, F. L., Kadry, S., Taylor, M. and Li, P. S. (2013). Recent trends in social and behaviour sciences. In *Proceeding of the 2nd International Congress on Interdisciplinary Behaviour and Social Sciences, (ICIBSoS 2013)*, Jakarta, Indonesia: 4-5.
- Goldin, C. (2014) *Human capital*. Harvard University, National Bureau of Economic Research, 2014.
- Young, A. (1998) *Measuring Intangible Investment. Towards an Interim Statistical Framework: Selecting the Core Components of Intangible Investment*. OECD, 1998.
- Javornik, S., Tekavcic, M., and Marc, M. (2012). The efficiency of intellectual capital investments as a potential leading indicator. *The International Business & Economics Research Journal (Online)*, 11(5): 535-558.
- Kok, A. (2007). Intellectual Capital Management as Part of Knowledge Management Initiatives at Institutions of Higher Learning. *The Electronic Journal of Knowledge Management*, 5(2): 181-192.
- Komnencic, B. and Pokrajcic, D. (2012). Intellectual capital and corporate performance of MNCs in Serbia. *Journal of Intellectual Capital*, 13(1): 106-119.
- Lentjusenkova, O. & Lapina, I. (2015a). Factors Influencing Investments in Intellectual Capital: Case of Latvia. In *Proceedings of the 19th World Multi-Conference on Systemics, Cybernetics and Informatics (WMSCI 2015)*. Vol.1, USA, Orlando, July, 2015: 82-87.
- Lentjusenkova, O. & Lapina, I. (2015b). Intellectual Capital Investments: Company's Additional Expenditures or Creating Shared Value?. In *Perspectives of Business and Entrepreneurship Development: Economic, Management, Finance and System Engineering from the Academic and Practitioners Views: Proceedings of Selected Papers*, Czech Republic, Brno, May, 2015: 207-216.
- Moulton, B. R. (2004). *The system of national accounts for the new economy: What should change?* Washington: Bureau of Economic Analysis, U.S. Department of Commerce. Retrieved May 15, 2016 from http://www.bea.gov/about/pdf/sna_neweconomy_1003.pdf
- Muhammad, N. M. N. and Ismail, M.K.A. (2009). Intellectual capital efficiency and companies' performance: study on Malaysian financial sectors. *International Journal of Economics and Finance*, 1(2): 206-212.
- Naidenova, I., and Parshakov, P. (2013). Intellectual capital investments: evidence from panel VAR analysis. *Journal of Intellectual Capital*, 14(4): 634-660.

OECD. (2015) *OECD Economic Outlook*, 2015(1). Paris: OECD Publishing. DOI: 10.1787/eco_outlook-v2015-1-en

Sydler, R., Haefliger, S. and Pruksa, R. (2014). Measuring intellectual capital with financial figures: Can we predict firm profitability? *European Management Journal*, 32(2): 244-259.

Starovic, D., and Marr, B. (2003). Understanding corporate value: managing and reporting intellectual capital. CIMA. Retrieved May 2, 2016 from www.cimaglobal.com

Stewart, T. and Ruckdeschel, C. (1998). *Intellectual capital: The new wealth of organizations*. New York: Nicholas Brealey Publishing, Business Digest.

Tan, H. P., Plowman, D., and Hancock, P. (2007). Intellectual capital and financial returns of companies. *Journal of Intellectual Capital*, 8(1): 76 - 95.

The Chartered Institute of Management Accountants (CIMA). (2003). *Understanding corporate value: Managing and reporting intellectual capital*. Retrieved June 3, 2016 from http://www.cimaglobal.com/Documents/ImportedDocuments/tech_techrep_understanding_corporate_value_2003.pdf

Tseng, C. and Goo, Y.J. (2005). Intellectual capital and corporate value in an emerging economy: empirical studies of Taiwanese manufacturers. *R&D Management*, 35(2): 187-201