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ENTREPRENEURS' PERCEPTION OF OUTCOMES FROM INTELLECTUAL CAPITAL INVESTMENTS

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Abstract. *Investments in intellectual capital, such as advertising, R&D, staff training and software, positively affect a company's value. The aim of this research is to evaluate the perceived importance of expected results from intellectual capital investments by Latvian entrepreneurs and reveal the difference in perceptions caused by differing company profiles. Representatives of Latvian companies were surveyed using the questionnaire developed for the research. Respondents' answers were evaluated within groups based on profile criteria such as the company's age, size, financial performance, location and business sector. Data processing was carried out in an SPSS environment using analysis of frequencies, ranking and independent samples t-test.*

Keywords: *intellectual capital investments, survey, Latvian companies.*

JEL: *M10 – Business administration; General, 034 – Intellectual property and intellectual capital.*

1. Introduction

Intellectual capital (IC) is considered a source of competitive advantage and a precondition for the 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 in intellectual capital and knowledge increase a company's power and profitability (Caldăraru *et al.,* 2011).

Intellectual capital is a combination of three components: human capital, structural capital and organisational 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 in which a company's managers plan to invest. The main types of IC investment are those in training employees, R&D and advertising (Komnenic and Pokrajcic, 2012; Corrado, Hulten and Sichel, 2006; Awano, Franklin, Haskel and Kastrinaki, 2010). There are plenty of studies on the relationship between IC investments and companies' financial performance (Javornik *et al.*, 2012; Muhammad and Ismail, 2009; Tan, Plowman and Hancock, 2007; Tseng and Goo, 2005), confirming the positive link between the IC, financial performance and market value of companies.

This study continues a research series conducted in Latvia under the framework of the comprehensive study "Intellectual Capital Investments in Latvia", in order to determine the importance of IC investments for companies and identify the factors affecting their volume in the Latvian business environment (Lentjusenkova and Lapina, 2015a, 2015b).

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

To achieve the established aim, a survey was conducted with representatives of Latvian 203 companies, most of which represent the production, service and trade industries within the national economy. For the survey, the authors developed a questionnaire that includes 14 questions: six of these relate to the respondents' profiles, with the rest aimed at determining the core concepts of intellectual capital from the viewpoint of respondents, the importance that they perceive such capital to have, and the expected results from investments in intellectual capital. Answers to the questionnaire were evaluated within groups of respondents, based on profile criteria such as the company's age, size, financial performance, location and business sector. Data processing was completed in an 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 in intellectual capital.

This paper contributes to the academic literature on the importance of intangibles in a company's value.

2. Understanding 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). Its structural components are human capital, structural capital and customer capital (Stewart, 1998). The term "intellectual capital investments" is used synonymously with the terms "intangible investments" (Young, 1998) and "investments in intangible assets" (Clacher, 2010). Definitions provided in various papers and reports differ widely, depending on the intangible assets to be invested in. Table 1 summarises definitions proposed by different authors, including those for 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	Definition
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 expenditure is "a part of structural capital"
Sydler, Haefliger and Pruksa, 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)" that "increase an individual's productivity"
OECD, 2015	Intangible investments, such as "R&D, software and entertainment, literary and artistic originals and mineral exploration…"

Source: *compilation by the authors*

The difference between "intangible investments" and "IC investments" can be explained by 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 term, "knowledge-based capital" (KBC), which includes "investment in design, new financial products, advertising, and market research, training and organization capital". In its opinion, KBC is a combination of "measured intangibles" and a "broader range of investment-like activities that companies use to create value" (OECD, 2015).

Outcomes from investments in intellectual capital can be classified based on the following structure of the components of intellectual capital (CIMA, 2006):

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

In 2013, the European Commission initiated a comprehensive pan-European study that sought to "explore companies' investment in a range of intangible assets". Based on the results of the survey (EC, 2013), the main priority for European companies is "tailored, customised solutions" (40% of respondents). With regard to motives for investing in intangibles, the summarised statistics of the answers within the Latvian and EU27 samples are presented in Table 2.

Table 2. *Motives for investing in 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 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)*

From the viewpoint of respondents, the largest benefits from IC investments were: 1) the qualifications 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.

3. Research methodology

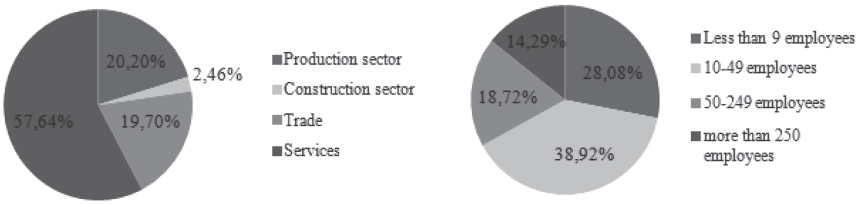
For the purposes of the comprehensive study "Intellectual capital investments in Latvia", an appropriate measurement instrument was developed (Lentjusenkova and Lapina, 2015a). The core questions included in the questionnaire were aimed at providing insight into: 1) respondents' understanding of the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

This study aims to examine respondents' answers to the question "Expected results from IC investments". Respondents were asked to evaluate potential outcomes from such investments using a 4-point scale, in which "1" indicated the most important and "4" the least important outcome.

The answers were analysed within sample groups based on respondents' profile criteria, namely: 1) economic sector; 2) number of employees; 3) annual business volume (turnover); 4) business location; and 5) company age.

The research sample comprised 203 respondents – top managers and owners of Latvian companies operating in different sectors. Most represented sector was the service sector (''Services'') (Fig. 1).

Fig. 1. *Profile of respondents: business sector represented and number of employees*



A total of 28% of the companies represented can be classified as micro-companies with fewer than 9 employees. Big companies with more than 250 employees comprised only 14% of respondents. Most respondents were from small and medium-sized enterprises (SMEs), representing 58% of the entire sample (Fig. 1).

Only 1.97% of companies in the sample were newly established. The rest were almost equally distributed between the groups containing companies aged 1-5 years, 5-10 years and more than 10 years – at proportions of 33.99%, 31.03% and 33%, respectively.

To achieve the research objectives and test its hypotheses, the following statistical analysis methods were applied: analysis of means, ranking and Mann-

Whitney U test to compare responses within two independent groups of respondents. The authors chose the Mann-Whitney U test because the data for the variables in the individual groups was not normally distributed. The procedure for testing for normality was conducted using the Kolmogorov-Smirnov test. Statistical data processing was carried out using MS Excel and the SPSS 19.0 environment.

4. Research results

Initial data processing enabled the identification of the most important outcomes from IC investments from the viewpoint of Latvian entrepreneurs. Growth in profits and customer satisfaction were evaluated as the most important benefits of IC investments, based on the average rate and number of respondents who assigned the rating "critically important" to outcomes (Table 3).

Table 3. *Perceived importance of the outcomes from IC investments*

Outcome from IC investments	Perceived importance	Proportion of respondents who rated the outcome as "critically important"
Profit growth	1,2512	78.3%
Growth in customer satisfaction	1,3498	69.5%
Increase in market share	1,5468	55.7%
Growth in productivity	1,5911	44.8%
Return growth	1,6158	43.3%
Improvements in employee qualifications	1,6256	44.3%
Enhanced company value	1,7537	32.5%
Future cost reductions	1,8276	26.1%
Enhanced customer loyalty	1,8916	23.6%
Enhanced reputation and brand value	1,9113	22.2%
Infrastructure improvements	1,9557	22.7%
Growth in employee loyalty	2,0296	18.7%
Strengthening of collaboration with partners	2,1429	17.2%

Source: *compilation by the authors*

Respondents rated financial outcome in terms of profit growth as the most important outcome from IC investments. Employers also rated growth in customer satisfaction highly. In terms of increase in market share – perceived as the third-most-important outcome – this cannot be viewed unambiguously as a financial or non-financial result, because it was not explained to respondents whether it was being expressed in terms of assets or number of customers.

Table 4 presents the average perceived importance of outcomes from IC investments by economic sector.

Table 4. *Perceived importance of the outcomes from IC investments by sector*

Outcome from IC investments	Production sector	Construction sector	Trade	Services
Profit growth	1.41	1.20	1.15	1.23
Increase in market share	1.54	1.40	1.40	1.61
Future cost reductions	1.61	2.00	1.93	1.86
Growth in productivity	1.24	1.80	1.63	1.69
Return growth	1.37	1.60	1.73	1.67
Enhanced company value	1.10	2.00	1.73	1.77
Infrastructure improvements	2.00	2.20	2.08	1.89
Enhanced reputation and brand value	2.07	2.00	1.98	1.83
Strengthening of collaboration with partners	2.09	2.20	2.23	2.13
Growth in employee loyalty	2.12	2.20	2.15	1.95
Improvements in employee qualifications	1.73	2.00	1.70	1.55
Enhanced customer loyalty	2.02	2.20	1.93	1.82
Growth in customer satisfaction	1.46	1.80	1.33	1.29

Source: *compilation by the authors*

Table 5 presents the average perceived importance of outcomes from IC investments among the sample groups based on number of employees. The authors analysed the statistical significance of differences that arose between representatives of micro-companies and large companies. The critical value was stated at the 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
Increase in market share	1,5439	1,8966	0,113
Future cost reductions	1,9123	1,6897	0,045
Growth in productivity	1,7018	1,6552	0,532
Return growth	1,7018	1,6552	0,630
Enhanced company value	1,8596	1,6552	0,085
Infrastructure improvements	1,9123	1,9655	0,818
Enhanced reputation and brand value	1,9298	1,6552	0,022
Strengthening of collaboration with partners	2,2632	1,6897	0,000
Growth in employee loyalty	1,9825	2,1034	0,497
Improvements in employee qualifications	1,5614	1,7586	0,209
Enhanced customer loyalty	1,8421	2,0000	0,256
Growth in customer satisfaction	1,2456	1,6207	0,002

Source: *compilation by the authors*

There is a statistically significant difference in the perceived importance of outcomes from IC investments between respondents from micro-companies and large companies in the areas of "profit growth", "future cost reductions", "enhanced reputation and brand value", "strengthening of collaboration with partners" and "growth in customer satisfaction".

Table 6 presents the average perceived importance of the outcomes from IC investments among the sample groups based on number of employees. The authors analysed the statistical significance of differences that arose between representatives of companies located in the capital Riga and elsewhere. The critical value was stated at the 0.05 level that indicated a statistically significant difference.

Table 6. *Perceptions of representatives of companies located in Riga and elsewhere*

Outcome from IC investments	Riga	Regions	Mann-Whitney U test Sig.
Profit growth	1,2203	1,2941	0,368
Increase in market share	1,5000	1,6118	0,349
Future cost reductions	1,8983	1,7294	0,042
Growth in productivity	1,6017	1,5767	0,683
Return growth	1,6356	1,5882	0,604
Enhanced company value	1,7373	1,7765	0,590
Infrastructure improvements	1,9068	2,0235	0,137
Enhanced reputation and brand value	1,8136	2,0471	0,003
Strengthening of collaboration with partners	2,1017	2,2000	0,285
Growth in employee loyalty	1,9746	2,1059	0,111
Improvements in employee qualifications	1,6695	1,5647	0,444
Enhanced customer loyalty	1,8390	1,9647	0,096
Growth in customer satisfaction	1,3814	1,3059	0,364

Source: *compilation by the authors*

There is a statistically significant difference in the perceived importance of outcomes from IC investments between representatives of companies operating in Riga and elsewhere in the areas of "future cost reductions" and "enhanced reputation and brand value".

Table 7 presents the average perceived importance of outcomes from IC investments among the sample groups based on company age. The authors analysed the statistical significance of differences that arose between representatives of relatively new and mature companies. The critical value was stated at a 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	More than 10 years old	Mann-Whitney U test Sig.
Profit growth	1,1014	1,5075	0,000
Increase in market share	1,4783	1,7164	0,191
Future cost reductions	1,7826	1,7612	0,724
Growth in productivity	1,5652	1,5821	0,799
Return growth	1,5217	1,6866	0,294
Enhanced company value	1,7826	1,6866	0,126
Infrastructure improvements	1,9565	1,9701	0,840
Enhanced reputation and brand value	2,0725	1,6866	0,000
Strengthening of collaboration with partners	2,3478	1,7910	0,000
Growth in employee loyalty	2,1014	1,9104	0,047
Improvements in employee qualifications	1,6057	1,7313	0,381
Enhanced customer loyalty	1,8986	1,8955	0,682
Growth in customer satisfaction	1,2609	1,6418	0,000

Source: *compilation by the authors*

There is a statistically significant difference in the perceived importance of outcomes from IC investments between representatives of "new" and "old" companies in the areas of "profit growth", "enhanced reputation and brand value", "strengthening of collaboration with partners", "growth in employee loyalty" and "growth in customer satisfaction".

Table 8 summarises the statistics on the volume of IC investments by respondent profile.

Table 8. *Volume of IC investments within the respondent groups*

Respondent profile		<€1,000	€1,000-5,000	€5,000-10,000	>€10,000
Economic sector	Production sector	11.8%	8.2%	44.4%	36.1%
	Construction sector	0.0%	52%	0.0%	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 million	91.2%	73.2%	27.8%	2.8%
	€2-10 million	5.9%	22.7%	50%	22.2%
	€10-50 million	2.9%	2.1%	22.2%	38.9%
	>€50 million	0.0%	2.1%	0.0%	36.1%
Location	Riga	41.2%	62.9%	58.3%	61.1%
	Regions	58.8%	37.1%	41.7%	38.9%

Respondent profile		<€1,000	€1,000-5,000	€5,000-10,000	>€10,000
Company age	Newly established	8.8%	1	0.0%	0.0%
	1-5 years old	52.9%	42.3%	16.7%	11.1%
	5-10 years old	29.4%	42.3%	33.3%	0.0%
	More than 10 years old	8.8%	14.4%	50%	88.9%

The largest volume of IC investments was observed in the service sector. Companies that are most likely to invest in intellectual capital are medium-sized or large entities and those that operate in Riga and are more than 10 years old.

5. Conclusions

This paper aims to reflect the results of research conducted within the framework of comprehensive study "Intellectual capital investments in Latvia". The goal of this study is to identify differences in the evaluation of outcomes from IC investments by representatives of different Latvian companies.

The results from testing the research hypotheses are the following:

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

Within the whole study sample, the most important outcome was viewed as "profit growth". Respondents also rated "growth in customer satisfaction" highly. It is clear that representatives of companies in the service industry rated non-financial outcomes from IC investments as more important, compared with the evaluation provided within other groups of respondents (Table 4).

H2: Larger companies are more likely to invest in intellectual capital – partially confirmed.

Within the sample, medium-sized companies (with an annual turnover of €10-50 million and 50-249 employees) largest volume of investments in intellectual capital.

An unambiguous conclusion can be made on the company age of the most prominent IC investors. Some 88.9% of respondents that reported IC investments of more than €10,000 were representatives of companies with an age of more than 10 years.

Differences of opinion between respondents from different sample groups was observed only with regard to particular outcomes.

A significant difference between evaluations by representatives of micro-companies and large companies was observed with regard to the outcomes of "profit growth", "future cost reductions", "enhanced reputation and brand value", "strengthening of collaboration with partners" and "growth in customer satisfaction" (Table 5).

A significant difference between evaluations by representatives of companies from Riga and elsewhere was observed with regard to the outcomes of "future cost reductions" and "enhanced reputation and brand value" (Table 6).

A significant difference between evaluations by representatives of "new" (1-5 years old) and "old" companies (those more than 10 years old) was observed with regard to the outcomes of "profit growth", "enhanced reputation and brand value", "strengthening of collaboration with partners", "growth in employee loyalty" and "growth in customer satisfaction" (Table 7).

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

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