Analysis of the factors influencing investments in intellectual capital

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ABSTRACT

The role of intellectual capital investments on company level is increased in last thirty years. According to OECD data tangible assets investments decreased and intangible assets investments increased. Despite of these trends the amount of intellectual capital investments is not significant in Latvia. The aim of the paper is to describe the aspects for the research and survey development in order to prepare sound theoretical basis, as well as to describe and validate solid development of the research. To achieve the aim the previous research and scientific literature are studied and entrepreneurs from certain sectors of national economy are interviewed. In the result of the current research a questionnaire for entrepreneurs was developed and a data base of respondents was created.

Keywords: intellectual capital investments, factors influencing investments, enterprise.

1. INTRODUCTION

In last thirty years companies' investment structure has changed. Tangible assets investments decreased and intangible assets investments increased. For example, in USA between 1972 and 2011 tangible assets investments decreased from 12% till 8% and intangible assets investments increased from 8% till 15%. In Australia, since 1974 -75, the annual growth of investment in intellectual capital has been around 1.3 times bigger than a growth of investments in physical assets such as machinery, equipment and buildings. Also in EU countries the intangible assets investments increased. For instance, in Finland, Denmark, Sweden, France and Netherlands the largest part of enterprise's investments is in intangible assets investments [24]. In some countries the amount of intellectual capital investments is not significant because of different reasons. For example, in Latvia the share of R&D expenditures in GDP is one of the smallest in EU (0.70% in 2011) [11]. R&D intensive sector as % of all sectors was 5.4% in 2008 (9.2%- in Estonia, 7.9% in Lithuania, 12.1% in EU 28 and 20.2% in South Korea) [7]. One of the main funds for these investments is state budget, not private funds.

The main aim of the research is to determine factors influencing investments in intellectual capital at enterprises in Latvia.

The research questions are:

1) What are the factors influencing investments in intellectual capital at an enterprise in Latvia?
2) What is the important weight of each factor?

The following research hypotheses were developed by the authors:

H1: One of the disincentives of intellectual capital investments is lack of funds.

H2: Entrepreneurs will invest in intellectual capital, if they see financial benefits from these investments.

To achieve the research aim the following tasks are determined:

1) To determine most important factors positive or negative influencing intellectual capital investments;
2) To develop a questionnaire for factor determination;
3) To create a data base of respondents;
4) To collect a certain number of statements and interpret results.

The aim of the current paper is to describe the aspects for the research and survey development in order to prepare sound theoretical basis, as well as to describe and validate solid development of the research. The general research structure is described below (see Fig. 1).

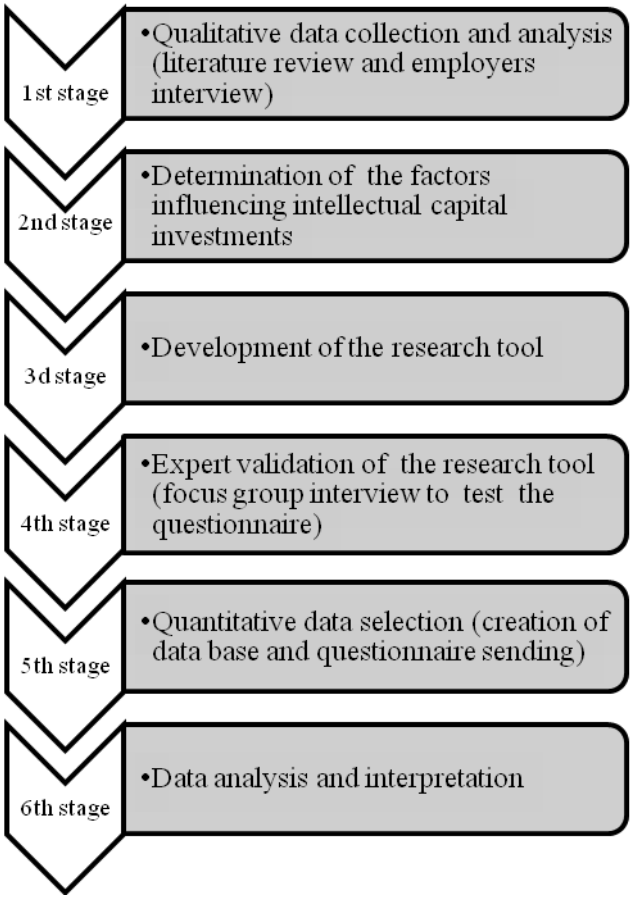

Figure 1. Research structure

The current article includes research stages from the first till the third. The next stages will be presented in the next article. The research will be made at enterprise level: the author will determine main factors, which influence enterprise intellectual capital investments.

2. LITERATURE REVIEW

There are many researches about intellectual capital investments influence on enterprise performance. Some of them disclose positive effects of investments, some research disclose a negative effect. But there are not enough researches about factors influencing intellectual capital investments. Most of researchers are focused on the intellectual capital measurement methods or performance at the enterprise or national level.

Due to studying literature the authors found that there are several factors influencing an intellectual capital investment, which could be divided in different groups:

1) Internal factors. These factors are under enterprise control and the enterprise could change its;
2) External factors. These factors could influence the enterprise and decision making process, but the enterprise could not control or change them.

The authors determine main internal factors on the basis of previous researches:

1) Human resource qualification. Well educated and qualified employees encourage new knowledge and technology implementation at the enterprise. As a result the enterprise invests more in staff training program and technology modernization [10], [27]. At the same time in some studies it is found that investments in training have no significant effect on enterprise performance [1]. It means, that some enterprise could attract qualified employees not invest in staff training.
2) Employee's low wage. According to employees' point of view this factor could hinder investments.
3) The management and business process organization. An effective resource management, including intellectual resources, could be one of key drivers for value creation at the enterprise. Some researchers distinguish synergy and multiplier effects between intellectual capital components [8], [9], [12], [13], [19]. These effects change intellectual capital investments influence on the enterprise results. For instance, if an enterprise separately invests in technologies, there is no significant positive influence on enterprise performance. Enterprises do not have an optimal assets combination very often. There is no balanced structure of intellectual capital either. Because of these reasons the investments influence on enterprise results is not positive [23]. Some researchers tested the relationship between intellectual capital components in microfinance industry in Uganda. They conclude that positive and strong relationship exists between human capital, structural capital, relational capital and financial performance. This signifies the improvement of intellectual capital components and boosts their association with financial performance [17].

Poor management of intellectual capital decreases the efficiency of intellectual capital investments [16].

4) An enterprise ability to absorb investments. The intellectual capital investments are connected with knowledge flows to enterprise. The knowledge stocks and flows model predicts that competitive advantage depends on the continual accumulation of relevant knowledge stocks from knowledge flows [4], [6]. After a certain point, additional investments and knowledge flows may lead to diminishing returns and, as a result, firm performance. The main task for managers is to make a decision about the type and timing of knowledge flows between potential flows and existing knowledge stocks [21]. At the same time countries with greater accumulated knowledge and human capital stocks tend to see greater productivity gains than those that have smaller knowledge and human capital bases. Countries like the US and Germany achieve higher productivity gains from their pool of R&D stocks and human capital than countries such as Spain and New Zealand [20].
5) Rate of return from investments. There are many different method for calculating rate of return, for example, ROI, profit per employee, Value Added Intellectual Capital Index (VAIC index) etc. [2], [25], [26]. Many researchers use VAIC index for rate of return calculation. For VAIC index calculation simple information from statistic and balance sheet is necessary. Some authors criticize this method: in different researches it is used as intellectual capital measurement and this coefficient shows effectiveness of both capitals: intellectual and physical. For instance, employees need a certain set of resources for work. So their effectiveness depends on these resources effectiveness also.

According to literature review the main external factors are:

1) Partnership and cooperation. According to OECD report cooperation encourages experience and information exchange and declines each partner costs. The established networks increase availability of information, resources and funds. In some countries cooperation is not developed because of different reasons. For example, R&D activities in different countries are done in cooperation at national level or international level (in Estonia approx. 20% R&D activities were done within international partnership in 2006) [24]. Some enterprises develop their own research, but some use created new knowledge and technologies (in Norway the share of enterprises, who used ready R&D results, and the share of enterprises with in-house R&D is quite similar). The biggest part of innovative enterprises has in-house R&D.
2) State support for innovation and knowledge based economy. In different countries governments use direct support and indirect support for R&D. For example, in Canada indirect support through tax policy is bigger, but in Iceland government uses only direct support.
3) Disclosure recommendations about reports preparation on of intellectual capital at the enterprise. There are many different enterprise intellectual capital measurements. For example, MERITUM, EFFAS, InCas, ESG guidelines, GRI guidelines, Danish guidelines etc. These guidelines are voluntary and enterprises do not use them without certain needs. However, since 2009 Danish Commerce and Companies Agency has required the country's largest companies, state-owned enterprises, and institutional investors to state in their annual reports whether they have corporate responsibility policies and how they implement them. Since 2007 Sweden government has required all state-owned companies to produce sustainability reports in accordance with the GRI Guidelines [3]. More than 6000 organizations over the world use these Guidelines In April 2014 the European Parliament adopted the long-awaited Directive on the disclosure of non-financial and diversity information by certain large companies. It means that more than 6000 EU large companies will prepare reports and become more transparent for society.

   Availability of information on intellectual capital could encourage investments. Potential investors need this kind of information. For example, investors of 23 countries examined in one study were shown to access ESG metrics provided by Bloomberg an estimated 34 million times in only two quarters of 2011; there has been a significant increase in the number of times this data is accessed. Investors in Switzerland, the United Kingdom, Canada, and Spain are the most interested. In contrast, investors in the Netherlands, Hong Kong, China, Belgium, and Finland are the least interested [5].
4) Accountancy standards. The valuation of intellectual capital investments within

accountancy framework raises several problems relating to their identification, measure and control [28]. According to IASB rules, the accounting treatment of internally generated intangible assets is less rigid but it remains deficient. Indeed, IAS 38 details necessary stages for the creation of an intangible asset by specifying at every stage whether it is possible to predict future economic benefits associated with the asset. The development phase allows an entity to bring proof of existence of an intangible asset's capacity to generate revenue. In this setting, the development costs must be capitalized provided such costs comply with certain conditions. These conditions are: (a) the technical feasibility of completing the intangible asset so that it will be available for use or sale; (b) its intention to complete the intangible asset and use or sell it; (c) its ability to use or sell the intangible asset; (d) how the intangible asset will generate probable future economic benefits; (e) the availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset; and(f) its ability to measure reliably the expenditure attributable to the intangible asset during its development [15].

5) An enterprise location. An enterprise location and concentration in one region influence human capital investments decision. If enterprise (competitors) concentration in one region is high, the effectiveness of investments will be lower. The competitors could entice the enterprise employees and the return from investments will be low [22].
6) Protection of intellectual property rights. This factor hinders investments if there is no mechanism for implementation of law in the country and consumer culture and income are at a low level.

The literature review results show, that the factors influencing intellectual capital investment are studied from different points of view. The authors described the factors more often studied in previous researches.

3. FACTORS INFLUENCING INTELLECTUAL CAPITAL INVESTMENTS

According to literature review and employers interview the authors have determined factors influencing intellectual capital investments. All factors are divided into two main groups and subgroups as follows:

1) Factors which are related to financial benefits:
   a. Internal factors: rate of return, profitability, enterprise value, availability of resources, availability of funds;
   b. External factors: state financial support, non-state funds availability, tax policy, accountancy standards (opportunity to include investments into balance sheet)
2) Factors which are related to non-financial benefits:
   a. Internal factors: productivity, availability of infrastructure, business process organization, motivation and loyalty, product quality, competitive advantage;
   b. External factors: protection of intellectual property rights, intellectual capital obligatory reports, economic development in the country, partnership and networks.

These factors will be used for research tool design.

4. DEVELOPMENT OF THE RESEARCH TOOL

The authors select a questionnaire as a research tool for research aim achieving. The questionnaire consists of few sections:

Section A: Respondent profile. The authors used some criteria for respondents. The main criteria are: the sector of national economy; number of employees.

Section B: information about activities in the intellectual capital investments field. The purpose of this section is to disclose the aims of the intellectual capital investment, main investments objects and sources of funds.

Section C: statements about which factors encourage investments.

Section D: statements about which factors hinder investments.

Sections C and D are designed on the basis of literature review. To evaluate each statement respondents will be offered to use 4-point Lykert type scale. The opportunities for evaluation will be: 1 – not important, 2 – relatively important, 3 – average importance, 4 – very important.

In order to test the developed questionnaire the authors will organize a focus group interview. The participants of the interview will be representatives of employers from certain sectors of economy

(managers) and researchers from Riga Technical University and Alberta College.

The authors will research factors influencing intellectual capital investments in two sectors of national economy: industry (B-E according to NACE 2 red.) and wholesale and retail trade (G according to NACE 2 red.).

The respondent's data base is created on the basis of Latvian Chamber of Commerce and Industry (LCCI). Representative number of respondents is calculated as follows:

$$n = \frac{t^2 w(1-w)N}{\Delta^2 N + t^2 w(1-w)} \quad (1)$$

where n – representative number of respondents; t – 1,96 (if validity is 95%); w – relative frequency 0,5; N – general sample; Δ - sampling error [14].

The estimated general sample is 920 respondents. The calculated representative number of respondents is 271 enterprises. It will be enough for survey results validity [18].

5. CONCLUSIONS

Nowadays the role of intellectual capital on company level has increased. Intellectual capital, its amount and quality become a key driver for sustainable development. For creating and effective usage of intellectual capital investments are needed.

The decision about intellectual capital investments depends on different factors. Most of researchers study intellectual capital investments on enterprise performance. The number of researches about factors influencing investments is limited.

Due to literature review the authors determine internal and external factors. Designing the research tool the authors divided the factors into two main groups: related to financial performance and related to non-financial performance. Each group was divided into two subgroups: internal and external factors (from the enterprise point of view).

The authors developed a theoretical basis for the survey and described the development of the research about factors influencing intellectual capital investments.

The next stage of current research is quantitative data collection and survey preparation. The survey results will be used for decision making about intellectual capital investments methodology development at the enterprise.

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