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INTELLECTUAL CAPITAL AND COMPETITIVENESS OF INDUSTRIAL ENTERPRISES OF THE BALTIC COUNTRIES

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ABSTRACT

Introduction to the topic under investigation. With the transition to the information economy, intellectual capital is becoming increasingly important and can be considered as a source of formation of the competitiveness of an enterprise. It should also be noted that despite the many approaches to assessing competitiveness, not all of them withstand criticism or are widely used in practice.

Purpose. The purpose of the study is to analyze the intellectual capital and competitiveness of industrial enterprises of the Baltic states.

Methodology. The study uses quantitative and qualitative methods; the value added intellectual coefficient (VAIC) was used to assess intellectual capital, while the dynamic method and rating assessment of financial indicators were used to assess the competitiveness of enterprises.

Main results. The paper analyses the competitiveness of enterprises and calculates the value added intellectual coefficient (VAIC) of industrial enterprises whose shares are listed on the Nasdaq Baltic market. The study confirms that more efficient use of intellectual capital provides higher indicators of competitiveness of an enterprise; however, the competitiveness of an enterprise is influenced by other factors, for example, the sources of financing used.

The theoretical contribution. The dynamic method of assessing the competitiveness of enterprises was employed; it was shown that more effective use of intellectual capital provides an enterprise with competitive advantages.

Practical implications. To assess the competitiveness of an enterprise, we use a refined dynamic method, which is supplemented by the VAIC indicator, which will allow us to take into account in the assessment the effectiveness of the use of the intellectual capital of an enterprise.

Keywords: intellectual capital, competitiveness, value added intellectual coefficient (VAIC), dynamic method of competitiveness, rating assessment of financial indicators

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INTRODUCTION

The relevance of this study is determined by a number of factors. First, the competitiveness of an enterprise is the basis of the competitiveness of the industry and the economic component of the country. Secondly, today intellectual capital is becoming a key factor affecting the competitiveness of any enterprise. And thirdly, until now there has been no unified approach to assessing intellectual capital and the competitiveness of an enterprise, which creates the need to continue research related to assessing the competitiveness of enterprises and intellectual capital and increases their significance from both a theoretical and practical point of view.

The purpose of this study is to analyse the intellectual capital and competitiveness of industrial enterprises in the Baltic countries. To achieve the goal of the study, enterprises whose shares are quoted on the Nasdaq Baltic market were selected for analysis, then the value added intellectual coefficient (VAIC) of the selected enterprises was determined and their competitiveness was analysed, based on a dynamic method and a rating of financial indicators. In the course of the study, the dynamic method for assessing the competitiveness of enterprises proposed by Voronov (2014) was refined.

The study comprised quantitative and qualitative methods of analysis, analysis of statistical data, VAIC assessment, determination of the level of competitiveness based on the dynamic method and the rating of financial indicators. The work used special economic literature on the selected research topic, data from the securities market Nasdaq Baltic, financial statements of enterprises, and other publicly available sources. The analysis will determine whether enterprises that use intellectual capital more efficiently are more competitive, i.e. have a higher VAIC.

The structure of the article is as follows: the introduction is followed by a review of the literature, which sets out the theoretical foundations of this study, as well as the research gaps associated with the study of the competitiveness and intellectual capital of an enterprise. Then, the methodology is discussed, followed by the results and, finally, the concluding remarks.

The materials of this study may be of interest not only for persons studying issues related to intellectual capital and enterprise competitiveness, but also for entrepreneurs interested in assessing the competitiveness of their enterprise.

LITERATURE REVIEW

The growth of competition among enterprises in various sectors of the economy increases the importance of the competitiveness of an enterprise for its successful existence in the market. The competitiveness of an enterprise is understood as the real and potential ability of an enterprise to meet specific needs in the market, as a result of a more efficient use of limited economic resources in comparison with competitors (Krivorotov, 2007). In the scientific literature, there are many different approaches to assessing competitiveness (Alonso-Ubieta et al., 2020; Lafuente et al., 2020; Blinov, 2011; Tikhanov et al., 2016; and others), but not all of them allow for obtaining objective results and finding applications in business practice. The main approaches include the matrix method, methods based on the theory of effective competition, methods based on the evaluation of competitiveness of production enterprises and integrated methods. Each of these approaches has advantages and disadvantages, but a common disadvantage of the existing methods is their static nature. This drawback can be overcome by the dynamic method for assessing the competitiveness of enterprises, proposed by Voronov (2014). The dynamic method is based on two principles of ensuring the

effectiveness of assessing the competitiveness of enterprises: determining key indicators of enterprise activity and applying dynamic analysis to them (Voronov, 2014). It is this approach to assessing the competitiveness of enterprises that is used by the authors in this study. It should also be noted that a number of authors (Pucar, 2012, and others) indicate that the competitiveness of individual companies does not depend on the material resources at their disposal – natural resources, physical and financial capital – but is determined by the quality of human and intellectual capital, i.e. the quality and quantity of knowledge, innovation, creativity, etc. The influence of intellectual capital on increasing the competitiveness of an enterprise was studied both from a theoretical point of view and from a practical point of view in the works of Bontis (2002); Wang and Chang (2005); Kamukama (2013); Chen et al. (2005); and Arenkov and Yaburova (2015). Carlos M. Jardon (2014) called intellectual capital a key resource for competitive advantage.

Scientific publications indicate that there is a wide range of definitions and terms which can be attributed either to intellectual capital or to intangible assets. Originally, a number of researchers defined intellectual capital as the difference between a company's market value and accounting value; the earliest IC definitions focus on the gap between a company's market value and other references such as the replacement cost of its assets (Bontis, 1996) or its book value (Edvinsson and Malone, 1997; Lev, 1997). During the period of 1996–2004, many authors defined intellectual capital in reference to its capacity to generate future benefit and profit (Harrison and Sullivan, 2000), value (Rastogi, 2003, Roos et al., 2010) and wealth. According to Sang (2014) and Lerro et al. (2014), the term intellectual capital (IC) connotes a firm's whole intangible capability that can create future benefits. It includes a firm's unrevealed intellectual and other intangible stock of capital, including intangible assets recognized on the balance sheet, while in an academic context Martín-Alcázar et al. (2019) referred to IC as all the non-tangible assets of the institution, including processes, innovation capacity, patents, tacit knowledge of its members and their abilities. In 2016, Lentjušenkova and Lapina offered an overview of the definitions in the scientific research and a definition of IC as the organization's asset that includes the organization's human capital, business processes (procedures and their descriptions), information and communication technologies, and intangible assets that can be transformed into tangible and intangible value. Stratifying the concept according to Meija, intellectual capital, in contemporary management literature, refers to two elements: (a) the group of intangible assets (resources and abilities) that businesses have, and (b) the contribution that this kind of capital produces in the value creation processes, in competitive improvements and the generation of competitive advantages (cost, quality, time/speed and innovation) (Gallego et al., 2020). With the IC paradigm shifting beyond commercial structures, intellectual capital is also defined by Hatamizadeh et al. (2020) as "the capital that emerges from the interaction of human resources" and the "ability to think" and to "create ideas" with "a favorable internal and external organizational environment" (including the managerial, social, structural, and physical environment, as well as communication between the inside and outside of the organization).

The authors of this study adhere to the following definition of intellectual capital: the ability of a company to transform knowledge and intangible assets into factors that create appropriate value (Edvinsson et al., 2005) and increase the competitiveness of the enterprise.

It should be noted that at present, most researchers (Bontis, 2004; Pike et al., 2005; Mohammad et al., 2018) distinguish three components in the composition of intellectual capital: human, structural and relational capital. Although the components may go by different names – human capital (personnel competencies, human assets, human resources); structural capital (organizational, internal); relational capital (client, external, external structure, social capital); etc. – in any of the classifications there is human capital, which is the main component of intellectual capital (Bontis, 2004). The decisive role of human capital in building up structural and relational capital, as well as in the growth of the financial performance of an enterprise, is recognized by many authors (Cabello-

Medina et al., 2011; Jardon and Martos, 2012; Mention and Bontis, 2013). Since earlier methodology addresses IC through two components only, human capital and structural capital (SC), there are also some studies modifying and extending the methodology to address some other IC components which were neglected by the original approach, such as process capital (PrC (Process Capital)=Net Sales/Fixed Assets) (Scafarto et al., 2016), customer capital (CC) and innovation capital (Ulum et al., 2014; Vishnu and Gupta, 2014; Bayraktaroglu et al., 2019; Gupta and Raman, 2020).

The most important among the contributions to the ongoing debate are the methods developed by Ante Pulic (2000) (VAIC – Value Added Intellectual Coefficient); Thomas A. Stewart (1997) (CIV – Calculated Intangible Value); Baruch Lev (2001) (IDE – Intangible Driven Earning); and Carol Corrado, Charles Hulten and Daniel Sichel (2004) (CHS – Corrado-Hulten-Sichel) (Ståhle et al., 2011). Initially, at the first stage of the research, researchers were concerned with theory building and raising awareness, i.e., the value communication stage, and IC researchers, like Neely, Petty, and Guthrie, successfully accomplished this mission (Serenko and Bontis, 2013). The first stage of ICR is firmly grounded in the work of practitioners in the 1980s and 1990s. The second stage was characterized by gathering evidence to justify the use of IC as a management technology, i.e., the IC measurement model creation and dynamics aspect. It can be defined as a stage where approaches to measuring, managing and reporting IC were created which helped to define and group different methods of IC evaluation. The third stage allowed us to understand IC in practice and is known for wide approbation of the models within organizations and even nation states. And finally, the fourth stage is a big step forward: ecosystems and extended analysis of the company in the environment. Advanced models developed during the third stage adopt an evolved notion of IC as a dynamic, not static, system of intangible resources. The evolution of IC research has gone through a series of stages and is currently entering the fourth stage, as stated by Castro et al. (2014); Chiucchi and Dumay (2015); Buenechea-Elberdin (2017); Secundo et al. (2018); and Castro et al. (2019).

Of all the proposed methods, the VAIC is currently the most widespread, although it is criticized by a number of authors due to the lack of sufficient justification for the calculation formulas and parameters used to assess individual VAIC components (Ståhle et al., 2011; Chu et al., 2011; Vadi et al., 2019; and others). But despite criticism of this indicator, the VAIC remains one of the most advanced tools for analyzing intellectual capital. Chronological analysis of the research on the VAIC according to time scale in the period of 2003–2021 identifies that the VAIC and the modified VAIC model, reacting to criticism and evolving in terms of components and analytical tools, has been used in more than 60 articles in different countries and industries for comparative analysis. Therefore, in this article, the authors also used the VAIC model to assess intellectual capital.

METHODOLOGY

The object of this study is the industrial enterprises of the Baltic countries; therefore, to assess the intellectual value added ratio VAIC and competitiveness of enterprises, enterprises were selected whose shares are quoted on the Nasdaq Baltic securities market and whose activities belong to the Industrials sector. Enterprises were selected from the official list, which includes companies with a history of at least 3 years, a market capitalization of at least EUR 4 million, a free turnover of at least 25% of shares or at least EUR 10 million, and corporate accounts prepared in accordance with International Financial Reporting Standards (IFRS). This choice is explained by the availability of financial statements of companies on the Nasdaq Baltic website, which were the sources of the data required for the study.

The methodology of the research subdivides the analysis into two parts. At the first stage, the intellectual capital of the companies is assessed; at the second, the competitiveness is evaluated to track the influence of the efficiency of intellectual capital.

To assess the intellectual capital of the enterprise, the value added intellectual coefficient (VAIC) was used, calculated by Formula (1) (Mohammad et al., 2018).

$$VAIC = \underbrace{HCE + SCE + CEE}_{ICE} \quad (1)$$

where
HCE – human capital efficiency, see Formula (2)
SCE – structural capital efficiency, see Formula (3)
CCE – capital employed efficiency, see Formula (4)

The efficiency of intellectual capital (ICE) is determined by the value added of human (HCE) and structural (SCE) capital (Mohammad et al., 2018).

$$SCE = \frac{(VA-HC)}{VA} \quad (2)$$

$$HCE = \frac{VA}{HC} \quad (3)$$

$$CCE = \frac{VA}{CE} \quad (4)$$

VA – value added
HC – personnel costs
CE – capital invested

Value added is calculated according to Formula (5):

$$VA = OP + HC \quad (5)$$

where *OP* – operational profit

The value added intellectual coefficient was calculated using data from the financial statements of the companies. The higher the VAIC value, the higher the level of efficiency of the enterprise's intellectual capital (Joshi et al., 2013).

To determine the company that most effectively uses its intellectual capital, a rating was developed based on the results obtained through the VAIC. The most successful companies and the dynamics of the IC components were analysed with the aim to identify the source of impact on the IC side.

Then the competitiveness of the enterprise was assessed based on the dynamic method proposed by Voronov (2014) according to Formula (6).

$$K = K_r \cdot K_i \quad (6)$$

where
K_r – coefficient of operational efficiency
K_i – coefficient of stategic positioning

Based on this method, the competitiveness of an enterprise is determined by operational efficiency (Formula 7) and the strategic positioning of the enterprise (Formula 8).

$$K_r = \frac{r}{R} \quad (7)$$

where
$r = \frac{OP}{N}$; $R = \frac{OP_s}{N_s}$ – coefficient of the operational efficiency of the enterprise and,
N – number of employees

$$K_i = \sqrt{\frac{I}{I_s}} \quad (8)$$

where
$I = \frac{OP}{OP_0}$; $I_s = \frac{OP_s}{OP_{s0}}$ – coefficient of the strategic positioning of the company

The higher the K value, the more competitive the enterprise in question is with respect to the sample (Voronov, 2014).

The calculation of indicators of operational efficiency and strategic positioning of the enterprise, proposed in the work of Voronov (2014), has been employed. To calculate the coefficients of operational efficiency (see Formula 7) and strategic positioning (see Formula 8), this study used operating profit, rather than revenue (income) from product sales, as suggested in the work of Voronov (2014), i.e. it is the level of operating profit that is an indicator of the result of the operating activities of an enterprise and characterizes the strategic position of the enterprise.

A change in the number of employees affects not only the income of the enterprise, but also the costs associated with this, and, consequently, the operating profit.

Based on the statistics and calculations, in the opinion of the authors, the competitiveness of an enterprise more accurately characterizes the operating profit brought by 1 employee or, according to the research methodology, the coefficient of the enterprise's operating efficiency (r).

To exclude the influence of changes in the number of employees and related costs on the coefficient of operational efficiency (r and R), the authors of the study use in the denominator not the costs of production and sales of products (Voronov, 2014), but the number of employees, i.e. we assess what operating profit each employee of the enterprise brings. According to the authors of the study, this assessment of the operational efficiency and strategic positioning of an enterprise more accurately characterizes its competitiveness.

Since many studies have confirmed the impact of intellectual capital on the performance of an enterprise (e.g., Chen et al., 2005; Obeidat et al., 2016), the competitiveness of enterprises was further assessed based on a rating score for financial indicators, such as return on assets (ROA), return on equity (ROE) and the debt-to-equity (D/E) ratio, which characterizes the capital structure of an enterprise.

The source of data for calculating the VAIC and assessing the level of competitiveness is the financial statements of enterprises. We analyzed data for five years, from 2015 to 2019, available at the time of the study in 2020 on the Nasdaq Baltic website.

RESULTS AND DISCUSSION

The enterprises selected for the study (see Table 1) operate in Estonia (1-5), Lithuania (8) and Latvia (6-7) in various industries; the average age of enterprises is 24 years.

Table 1

Description of the enterprises

	Enterprise	Age	NACE	Activity
1	Harju Elekter	27	2712	Electrical equipment manufacturing
2	Merko	12	4299	Construction & engineering
3	Nordecon	24	4299	Construction & engineering
4	Tallink	23	5010	Sea transportation
5	Tallinna Sadam	28	5222	Sea transportation
6	HansaMatrix	21	2612	Manufacture of computers and electronics optical products
7	Rīgas Kuģu Būvētava	29	3011	Manufacture of transportation equipment
8	Panevežio Satybos Trestas	27	4120	Construction & engineering

Source: Nasdaq Baltic and reports of the enterprises

The results of calculating the intellectual value added ratio VAIC of enterprises from 2015 to 2019 are presented in Table 2. During the entire period, the Estonian AS Tallinna Sadam had the highest VAIC (in 2019 the coefficient was 4.44), which means the most efficient use of intellectual capital in comparison with other enterprises analyzed.

Table 2

Dynamics of the VAIC from 2015 to 2019

	Enterprise	2015	2016	2017	2018	2019
1	Tallinna Sadam	5.11	5.34	4.03	4.68	4.44
2	Merko Ehitus	3.09	2.27	3.48	3.35	3.19
3	Tallink	3.97	3.07	3.01	2.76	2.98
4	Hansa Matrix	3.29	2.10	3.01	2.37	2.25
5	Nordecon	2.32	2.20	1.37	2.08	2.10
6	Harju Elekter	2.30	2.30	2.51	1.63	1.73
7	Panevežio Satybos Trestas	1.87	1.42	0.42	0.20	0.78
8	Rīgas Kuģu Būvētava	2.02	1.91	-	-	-

Source: Created by the authors based on the financial reports of the enterprises

The VAIC of JSC Rīgas Kuģu Būvētava was not calculated for 2017-2019 due to the negative value of operating profit. Despite the negative value of the operating profit for AS Panevežio Satybos Trestas for the same period, the VAIC was determined, because the added value (VA) of this enterprise was positive.

Analysis of the dynamics of the VAIC of AS Tallinna Sadam shows a decrease in the indicator for the period under study. In order to understand the reasons for the decrease in the efficiency of the use of intellectual capital in a given enterprise, Table 3 presents the calculation of the efficiency of the components of intellectual capital.

Table 3

Dynamics of the VAIC of Tallinna Sadam

Year	Operational profits (OP), 000 EUR	Personnel costs (HC), 000 EUR	Assets (CE), 000 EUR	VA= OP+HC, 000 EUR	Human Capital Efficiency HCE	Structural Capital Efficiency SCE	Capital employed efficiency CEE	VAIC
2015	40,365	12,416	581,084	52,781	4.25	0.76	0.09	5.11
2016	48,895	14,121	638,708	63,016	4.46	0.78	0.10	5.34
2017	40,317	17,957	597,137	58,274	3.25	0.69	0.10	4.03
2018	52,075	18,420	623,639	70,495	3.83	0.74	0.11	4.68
2019	51,679	19,867	625,532	71,546	3.60	0.72	0.11	4.44

Source: Created by the authors based on the financial reports of the enterprises

The calculations show that a decrease in the VAIC indicator is due to the decrease in the efficiency of the use of human and structural capital (see Table 3).

In order to find out whether the enterprises that use intellectual capital more efficiently are more competitive, i.e. have a higher VAIC, the competitiveness of enterprises was assessed according to the methodology specified by the authors. Table 4 shows the dynamics of the operating profit of the surveyed enterprises from 2015 to 2019. According to Table 4, AS Tallink received the highest profit in 2019 (74,868 thousand euros), followed by AS Tallinna Sadam with an operating profit of 51,679 thousand euros, that is, the company with the highest VAIC is not the leader in terms of operating volume.

Table 4

Dynamics of operational profit from 2015-2019, thsd. EUR

Enterprise	2015	2016	2017	2018	2019
Tallink	103,263	71,607	71,958	63,501	74,868
Tallinna Sadam	40,365	48,895	40,317	52,075	51,679
Merko Ehitus	12,496	7,719	19,539	19,872	19,238
Nordecon	3,933	4,208	1,102	4,031	4,270
Harju Elekter	3,276	3,181	5,442	2,413	3,273

HansaMatrix	1,485	783	1,877	1,395	1,316
Rīgas Kuģu Būvētava	648	516	-2,625	-6,328	-782
Panevežio Satybos Trestas	3,323	1,153	-2,105	-2,251	-799

Source: financial reports of the enterprises

However, if we analyze the change in the number of employees at the surveyed companies, the number of employees at AS Tallinna Sadam increased by 41% over the period under study (from 363 in 2015 to 513 in 2019), while at AS Tallink the number of employees increased only by 4% (from 6,966 to 7,240).

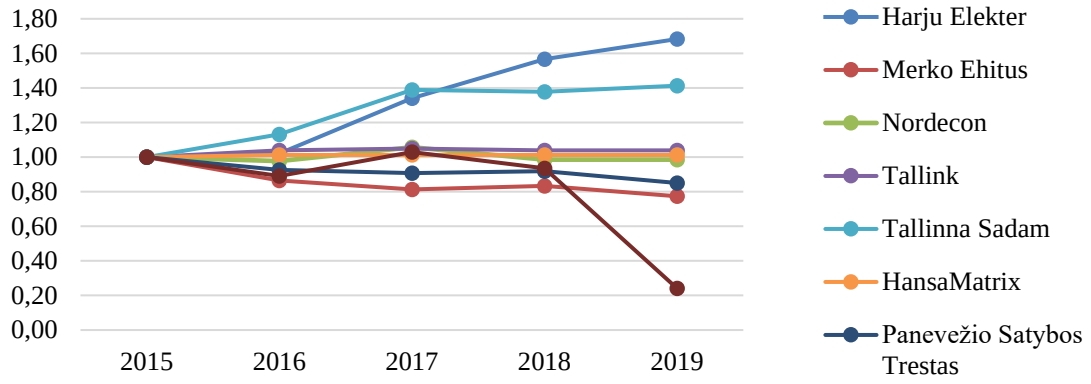

Figure 1 **Dynamics of the number of employees in 2015-2019**

The index of changes in the number of employees at the surveyed enterprises shows different dynamics (see Figure 1). The largest increase in the number of employees from 2015 to 2019 occurred at JSC Harju Elekter, by 68% (from 470 to 791); at the same time, at JSC Rigas Kuģu Būvētava, the number of employees was reduced by 76% (from 477 to 115). Changes in the number of employees has influenced the amount of operational profit per person (see Table 5).

Table 5

Dynamics of operational profit per employee, 2015-2019, thsd. EUR / person

Enterprise	2015	2016	2017	2018	2019
Tallinna Sadam	111.20	118.97	79.99	104.15	100.74
Merko Ehitus	15.80	11.27	30.34	30.11	31.43
Tallink	14.82	9.90	9.84	8.77	10.34
Nordecon	5.62	6.15	1.49	5.84	6.19
HansaMatrix	6.27	3.26	7.82	5.81	5.48
Harju Elekter	6.97	6.63	8.64	3.28	4.14

Panevežio Satybos Trestas	2.89	1.08	-2.02	-2.13	-0.82
Rīgas Kuģu Būvētava	1.36	1.21	-5.35	-14.19	-6.80

Source: Created by the authors based on the financial reports

As follows from the data presented in Table 5, the operating profit generated by one employee is higher for AS Tallinna Sadam, which corresponds to a higher efficiency in the use of labour resources and the company's competitiveness. Since JSC Panevežio Satybos Trestas and JSC Rīgas Kuģu Būvētava have suffered losses since 2017, which characterizes them as uncompetitive, these companies will not participate in further analysis. Tables 6-8 provide an assessment of competitiveness indicators from 2015 to 2019.

Table 6

Evaluation of the coefficient of operational efficiency (Kr)

Enterprise	2015	2016	2017	2018	2019
Tallinna Sadam	6.428	8.490	5.744	7.318	6.570
Merko Ehitus	0.913	0.804	2.178	2.116	2.050
Tallink	0.857	0.706	0.707	0.616	0.674
Nordecon	0.325	0.439	0.107	0.410	0.404
HansaMatrix	0.362	0.233	0.562	0.408	0.358
Harju Elekter	0.403	0.473	0.620	0.230	0.270

Source: Created by the authors based on the financial reports

The assessment of operational efficiency showed that AS Tallinna Sadam took the first position in this indicator, which characterizes the more efficient operation of this company in comparison with other companies (see Table 6).

Table 7

Evaluation of the strategic positioning coefficient (Ki)

Enterprise	2016	2017	2018	2019
Harju Elekter	1.083	1.145	0.609	1.082
Tallink	0.908	1.000	0.934	1.046
Nordecon	1.163	0.493	1.959	0.992
Merko Ehitus	0.938	1.646	0.985	0.984
Tallinna Sadam	1.149	0.822	1.129	0.948
HansaMatrix	0.802	1.553	0.853	0.936

Source: Created by the authors based on the financial reports of the enterprises

On the contrary, the calculation of the strategic positioning coefficient showed that the position of AS Tallinna Sadam in 2019 compared to the group of companies selected for analysis is the most stable. It should also be noted that this indicator has deteriorated compared to 2018, which is associated with a decrease (of 396 thousand euros) in Tallinna Sadam's operating profit in 2019, while other companies were able to increase their profits over this period. For example, JSC Harju Elekter increased its operating profit for 2019 by 860 thousand euros or 35%, which ensured it a leading position in this indicator (see Table 7).

The assessment of the competitiveness of companies showed that the level of competitiveness of AS Tallinna Sadam in 2019 was 6.226, which is significantly higher compared to other companies (see Table 8).

Table 8

Evaluation of the coefficient of competitiveness (K)

Enterprise	2016	2017	2018	2019
Tallinna Sadam	9.758	4.724	8.260	6.226
Merko Ehitus	0.755	3.585	2.085	2.018
Tallink	0.641	0.707	0.575	0.706
Nordecon	0.510	0.053	0.804	0.400
HansaMatrix	0.187	0.872	0.348	0.335
Harju Elekter	0.512	0.710	0.140	0.292

Source: Created by the authors based on the financial reports of the enterprises

If we compare the dynamics of the competitiveness coefficient, it is identical to the dynamics of the VAIC, which indicates the influence of the efficiency of the use of intellectual capital on the competitiveness of the enterprise. The results of assessing the competitiveness of enterprises based on ratings by financial indicators are presented in Table 9.

Table 9

Competitiveness ranking by basic financial indicators in 2019

Enterprise	ROA	Ranking	ROE	Ranking	D/E	Ranking	Average
Merko Ehitus	5.98%	2	12.42%	1	0.49	2	1.67
Tallinna Sadam	7.11%	1	11.93%	2	0.55	3	2.00
Harju Elekter	2.30%	5	3.67%	5	0.29	1	3.67
Nordecon	3.74%	3	10.87%	3	0.90	5	3.67
Tallink	3.28%	4	5.92%	4	0.70	4	4.00
HansaMatrix	0.75%	6	2.43%	6	1.39	6	6.00

Source: Created by the authors based on the financial reports of the enterprises

As follows from the data in Table 9, AS Tallinna Sadam, the leader in terms of VAIC level and competitiveness ratio, ranks second among the analyzed companies in terms of the average value of ratings. The decrease in the average rating of AS Tallinna Sadam was due to the level of ROE and D/E, which took 2nd and 3rd places, respectively. Based on this, we can conclude that although intellectual capital provides competitive advantages for an enterprise, other factors, for example, sources of financing, also affect the results of its activities and, therefore, the competitiveness of the enterprise.

CONCLUSIONS

1. The study confirmed that enterprises that use intellectual capital more efficiently, i.e. those with a higher VAIC, are more competitive.
2. The most efficient use of intellectual capital is observed at AS Tallinna Sadam; in 2019 the intellectual value added ratio VAIC was 4.44, although the dynamics of the indicator for the period under study is negative. The decline in the VAIC resulted in lower efficiency in the use of human and structural capital.
3. When assessing the competitiveness of an enterprise, determining operational efficiency and strategic positioning, according to the authors, it is necessary to use operating profit in the calculations, and not the total income from all types of activities (financial and investment). In addition, in order to exclude the influence of a change in the number of employees on the operating efficiency ratio (r and R), in the calculation of the indicator, it is necessary to apply operating profit per each employee of the enterprise. A refined assessment of the operational efficiency and strategic positioning of the enterprise more accurately characterizes its competitiveness.
4. The competitiveness assessment showed that the most competitive among the analyzed companies is AS Tallinna Sadam, but there is a decrease in competitiveness both due to operational efficiency and due to strategic positioning.
5. Effective use of intellectual capital ensures higher indicators for a company's competitiveness; however, the rating assessment of competitiveness in terms of financial indicators showed that other factors, for example, the sources of financing used, also affect the competitiveness of an enterprise.

RECOMMENDATIONS

The recommendations are addressed to the management of the analyzed enterprises and researchers studying the assessment of intellectual capital and the competitiveness of enterprises.

1. When assessing the competitiveness of an enterprise, in addition to the well-known indicators, use the value added intellectual coefficient, which will supplement the analysis with an assessment of the efficiency of using the intellectual capital of the enterprise.
2. When calculating operational efficiency, use the values of operating profit per employee, rather than the ratio of the company's total income to total costs, which will eliminate the difference between enterprises by type of financing, financial and investment activities, and the number of employees.

Authors' contribution. All authors have equally contributed to this manuscript.

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