

**Thesis of Doctoral ( Ph.D.) Dissertation**

**Comparative Analysis**

**of Financial Performance for Retail Businesses in**

**Hajdú-Bihar and Cluj County**

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# **1. BACKGROUND OF THE RESEARCH, OBJECTIVES AND RESEARCH HYPOTHESES**

My research focuses on measuring and analyzing the business performance of the companies, with special attention on the commercial performance. I'm directly involved in a Hungarian and a Romanian retail business (both family businesses), analyzing and evaluating their achieved results. At the same time, I practice the theoretical background of economic life as a university assistant, and I work and have worked in several and different educational institutions (both in Hungary and abroad). It is interesting to see that, in many cases, the theory does not correspond to reality, and vice versa, reality and practical economic life do not always correspond to theoretical "rules". This controversial situation has encouraged me to deepen my knowledge and carry out higher-level research on measuring and evaluating the business performance of the companies.

In my opinion, the business performance measurement is an indispensable tool for decision-makers. The necessity and significance of performance measurement is indisputable and the methods published in literature offer numerous opportunities to carry out effective performance measurements. Perhaps, the widespread possibilities and the large amount of available information make it difficult for analysts to choose the methods that can adequately show the economic and financial situation of the enterprise, which can detect the causes of the problems and the problematic activities. The often unpredictable changes in economic conditions require effective and immediate responses and responsible decisions, which are possible only with proper information. The topic is analyzed continuously by analysts and researchers from Hungary and abroad, which also confirms the importance and relevance of business performance measurement. Literature offers many good and known business performance methods, but the primary consideration in selecting methods and indicators is the analysis of the given activity, the discovery of the characteristics and the selection of the most typical indicators. I narrowed down my research only to the analysis of retail businesses, an activity that plays a decisive role in every national economy. For a more efficient analysis, I also chose a typical retail activity, with public interest, within the commercial activity, namely measuring the financial performance for companies engaged in core business activities of "Retail Sale in Non-Specialised Stores With Food, Beverages or Tobacco Predominating" (NACE code: 4711).

## **1.1. The most important objectives of the research**

Due to the fact that I was born in Romania (Transylvania), where I obtained an economics degree, I have a family business in Transylvania and I have been living for 13 years in Hungary, I know the theoretical and practical aspects of business life in Hungary as well as in Romania. Using this in my research, I focused on a parallel examination of the Hungarian and the Romanian market, I made a comparative analysis and I sought similarities and differences between the two.

The most important objectives of the research are:

- 1.:** Studying the concept of business performance and its measurement.
- 2.:** Assessing the practical application of methods, models and indicators offered by literature among businesses. Which are the methods used by companies to evaluate their business performance?
- 3.:** Characterizing the international food retail market, with a more detailed examination of the Hungarian and Romanian markets.
- 4.:** In addition to the financial performance analysing and market dominance of supermarkets, the analysis of financial performance for smaller retail food companies, which are in constant danger due to the expansion of the ever-expanding supply chains. I also consider it important to map out the situation of "traditional", smaller retail shops.
- 5.:** Apart from analyzing the Hungarian "modern" and "traditional" retail units, a similar characterization and analysis of a neighboring country (similar by economic, social, cultural and other aspects), retail food, retail market.
- 6.:** Making a comparative analysis based on the financial performance of Hungarian and Romanian food retail businesses.

## **1.2. The hypotheses of the research**

Based on the objectives and the questions to be answered, I have formulated hypotheses for which the justification or refutation is based on examining the databases of the research. During the hypothesis test, I formulate conditional statements about the research topic that I am not convinced of, but during my work, I have found out that these assumptions can be of general relevance. H0 hypotheses are the formulated hypotheses, whereas H1 hypotheses are the opposite of the phrased assumptions.

## **Research hypotheses (H0):**

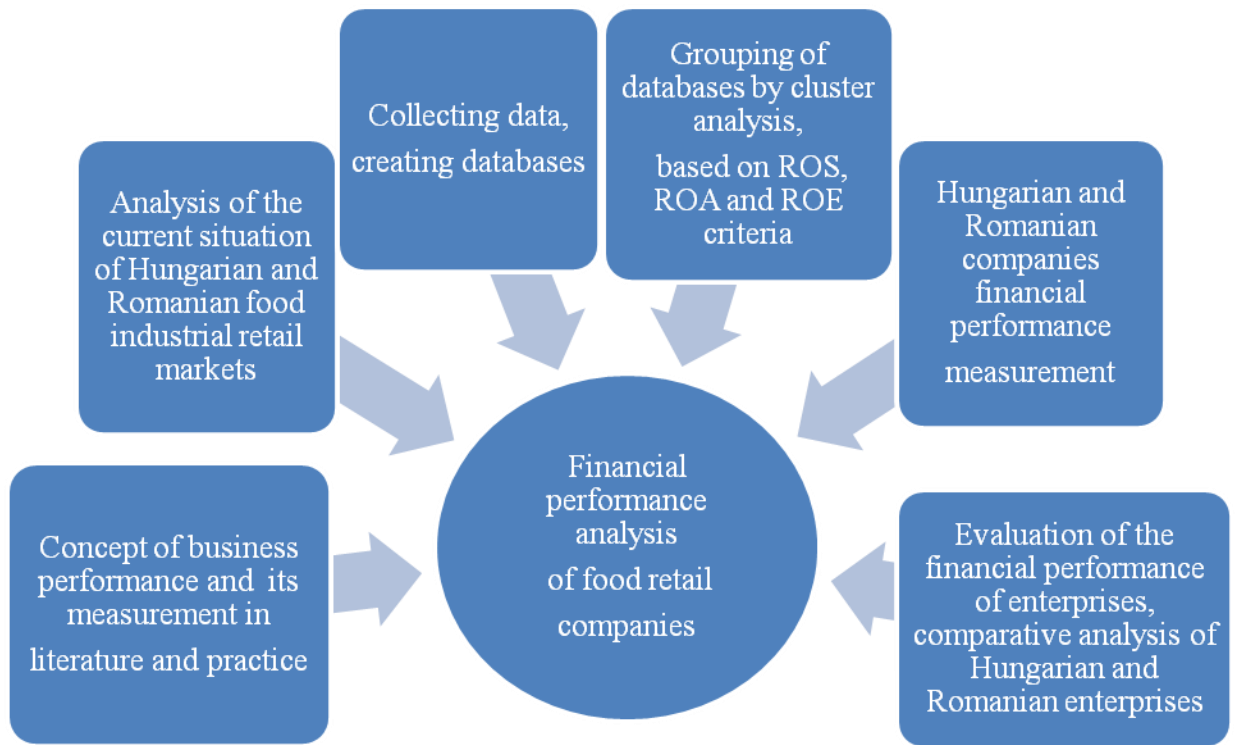
- 1. Hypotheses:** The Hungarian and Romanian food retail market situation is similar, they are dominated by hypermarkets and discount stores, the consumers preferring them for the benefits they give, compared to traditional shops; the concentration is high.
- 2. Hypotheses:** In both countries trading companies are familiar with the performance measurement methods and procedures provided by literature, but in practice, performance measurement usually narrows down the processing of information obtained from Financial Statements.
- 3. Hypotheses:** The data of retail food businesses that are the subject of the analysis (separately in the Hungarian and Romanian counties) differ greatly.
- 4. Hypotheses:** The financial performance of smaller food retail business does not show significant differences between the two countries. Their performance has equal weak points.

Based on the objectives and the hypotheses set out, as well as the applied tools and methods, I set up the following system of relationships (Table 1.) and present the logical structure of the dissertation (Figure 1.):

**Table 1.: The relationship between goals, hypotheses set out, applied tools and methods**

Goals	Hypotheses	Tools and methods
1. Studying the concept of business performance and its measurement.	1. In both countries trading companies are familiar with the performance measurement methods and procedures provided by literature,	Studying international, romanian and hungarian literature.
2. Assessing the practical application of methods and indicators offered by literature among businesses. Which are the methods used by companies to evaluate their business performance?	but in practice, performance measurement usually narrows down the processing of information obtained from Financial Statements.	Questionnaire survey.
3. Characterizing the international food retail market, with a more detailed examination of the Hungarian and Romanian markets.	2. In both countries are also present the globalization and concentration processes; modern supply chains dominate the markets.	Processing of international and Hungarian databases.
4. Financial performance analysis of Hungarian smaller retail food companies.	3. Databases are a complete set of databases, and therefore the data show very large variations.	Creating databases from Hajdú-Bihar and Cluj countys food retail companies Financial Statements.
5. Financial performance analysis of Romanian smaller retail food companies.		If the hypothesis is true, the companies are divided into homogeneous groups and their financial performance analysis.
6. Making a comparative analysis based on the financial performance of Hungarian and Romanian food retail businesses.	4. The financial performance of smaller food retail business does not show significant differences between the two countries.	The same methods (cluster analysis, K-medoid method) and financial indicators are used for databases, making a comparative analysis.

*Source: own editing*



**Figure 1.: Structure of the dissertation**

*Source: own editing*

## **2. DESCRIPTION OF DATABASE AND APPLIED METHODS**

During my research, I did both primary and secondary research.

The processing and analysis of the subject can be divided into two distinct parts:

- In first part, the interpretation of the concept of business performance (based on literature) and its measurement practice used by the Hungarian and Romanian commercial enterprises, through questionnaire assessment;
- In the second part, analyzing the financial performance of both a Hungarian (Hajdú-Bihar) and a Romanian (Cluj) county food retail company, using the data from Financial Statements for the 2011-2015 period.

### **2.1. Description of database**

My research was started by studying the concept of business performance and its measurement methods provided by literature. This has helped me to get to know the subject better. With the knowledge of the theoretical background, arises the following question: „the many well and well-known performance measurement methods provided by the literature are as known and applied in practice too?” To answer the question, I conducted an online questionnaire survey among some Hungarian and Romanian commercial enterprises. The questionnaire survey also had a dual purpose: on the one hand, the interpretation of the concept of business performance, and on the other hand, the assessment of performance measurement practices of companies. The survey included micro, small, medium and large businesses across the whole country. I used only the activity scope (commercial business) as a filter. The questionnaires sent to Romania were made in Romanian language and the translation of the questionnaires from Hungarian into Romanian and the translation of the Romanian responses into Hungarian language were done by myself.

The basis for the primary research was provided by a very comprehensive and extensive database, which means collecting the data from the Financial Statements of the two counties involved in the investigation, for 5 consecutive business years (2011-2015). With the help of the database, I examined the financial performance of the food retail companies in Hajdú-Bihar and Cluj County. For both counties, I have created a complete database, which contains the data of 5 years from Financial Statements for all the companies which have their registered office in the two counties and have 4711-Food Retail Store NACE activity (Table 2.). The collection of Hungarian data did not

pose any particular problem, but the acquisition of Cluj County data has encountered several difficulties: the data of the Romanian enterprises are only partially public, which means that only a shortened version of the Financial Statements can be accessed publicly. Therefore, I asked for help from the Tax Office of the North Western Region of Romania, who provided one-time help in obtaining the data. Later, I tried to update the data again, but I did not succeed. In order to keep the two counties comparable and maintain parallelism, I remained with the analysis of the 2011-2015 period, but the analysis of the national trade industry was expanded by 2016, in some cases with 2017 data (s).

**Table 2.: Number of Hungarian and Romanian enterprises included in database**

<b>Title / Number of enterprises</b>	<b>Hajdú-Bihar county (pcs)</b>	<b>Cluj county (pcs)</b>
<b>Companies meeting the original conditions (pcs)</b>	386	1.807
<b>Number of enterprises excluded for various reasons (eg. liquidation, incomplete data)</b>	140	787
<b>Number of enterprises involved in the analysis (pcs)</b>	246	1.020

*Source: own calculation and editing based on the data from the OPTEN register and the data of the Romanian Tax Administration in Cluj county.*

## **2.2. Description, justification and purpose of the used methods**

### ***2.2.1. The methodology of the questionnaire***

The questionnaire can be a good tool for gathering data in different areas. In order to carry out the questionnaire survey effectively, it is necessary to monitor all the steps required for implementation such as compilation of questions, preparation of the first version, testing content and language review of questions, preparation of the final questionnaire, data collection and data processing (LENGYELNÉ, 2013). I respected all these steps, and followed carefully every stage. With regard to the types of the questionnaire, there were several types, which depended on several factors: the number of interviewees, territorial parameters, material factors, etc. In the present case, the number of the population, the number of locality and the number of persons carrying



out the questionnaire survey determined the type of questionnaire. The most appropriate questionnaire in this case was the online survey.

The questionnaires were first sent with the snowball method. The method is usually used when you do not have full available lists or records, or if you are targeting a salient social layer. If we reached some individuals from the target group, we wanted to investigate and we were able to get them involved, we asked them to forward the questionnaire to the other members of the group (MAJOROS, 2006; SCHLEICHER, 2007). As this method did not have results, I collected various e-mail addresses from hundreds of commercial companies through various databases and searched them online. The questionnaires were sent randomly, from the territorial point of view.

During the construction of the questionnaire, I sought to put simple, easy to understand questions, in accordance with the purpose of the survey. In the questionnaire, mostly closed questions were asked, but in every case I gave "other expressive, self-applicable" response possibilities. I've also used a variety of question types and checkpoints. Before sending out the questionnaires, I conducted a test survey.

Before processing the returned questionnaires, I completed a formal and substantive check. The formal verification covered specific responses and readability; the content control aimed to eliminate contradictory responses. The on-line questionnaire was made in the google drive application where the returned questionnaires are available in tabular form, and can be easily imported into Microsoft Excel. The rows of the table include the answers of the questionnaire and the columns contain the questions of the questionnaire. Consequently, only the control task was left in place of the actual data recording. Auto-response backs eliminated the recording errors. The data was processed in Microsoft Excel, the results were mostly analyzed by descriptive statistical methods and correlation analysis.

### ***2.2.2. The methodology for analyzing databases***

The statistical analysis of databases was done using Microsoft Excel and SPSS softwares.

I began analyzing the databases by calculating the basic statistical indicators (mean, median, standard deviation, minimum, maximum, skew, kurtosis) of the most important variables used in the analysis. The results supported my assumption that the analyzed companies were inhomogeneous and the differences between them were significant.

Therefore, the formation of homogeneous groups was necessary, which was done by cluster analysis. The essence of cluster analysis is to form homogeneous groups, according to a predetermined criterion. Within the group, the individuals resemble each other and differ from those of other groups.

Clustering processes may be hierarchical (tree-like) or non-hierarchical. For larger samples, hierarchical cluster analysis is considerably more difficult, so it is preferable to apply non-hierarchical (K-Mean, K-medoid) methods (SAJTOS-MITEV, 2007). In the present case, I used the K-Medoid method that groups the companies of the multitude by comparing the distance between the data points (TOMPA, 2017). SANDHYA - SURYA (2015) compared K-Mean and K-Medoid procedures: for heterogeneous populations, K-Medoid outperforms the K-Mean application. The method based on the distance between the individuals of the database results in more relevant groups than the K-Mean process, taking into account the average values of the individuals. PARK - JUN (2009) also studied the differences between the two methods and they performed studies on sensitivity to extreme values. It was shown that the K-Mean process is much more sensitive to extremes than the K-Medoid method.

As a grouping criteria, I determined ROS – Return on Sales, ROA – Return on Assets and ROE – Return on Equity. These three indicators together give an insight into cost management, assets efficiency and debt analysis, which play the most important role in the value creation process of the businesses. The optimum number of clusters was made using several experiments. I increased or decreased the number of clusters, depending on the number of companies in the groups, the group averages and the standard deviation. Finally, for Hungarian database, I decided for 5 clusters, while for the Romanian database I decided for 15.

Since the purpose of the analysis was to investigate the financial performance of the companies, only the relative indicators were analyzed. Literature also supports this idea, as the concept of business performance is also identified by professionals with efficiency and profitability (NEELY, 1995; RAPPAPORT, 1998). The determination of these is possible through relative indicators.

The financial performance of the formed groups were analyzed based on the accounting data from Financial Statements (Table 3.). I have started the analysis examining the composition of assets and their funding sources. The efficiency of using the assets can significantly influence the profitability of the company, therefore it is indispensable for the analysis of economic activities to calculate different indicators about the enterprise's

assets and current assets (BIRHER et al., 2006). The composition of the assets suggests the firm's stability, flexibility or even specific activity (MUSINSZKI, 2013). Regarding the asset composition of commercial enterprises, the ratio of stocks and their development is very important. Inventory (stock) management has a significant impact on the enterprise as it greatly influences the amount of the capital invested in inventories, the financial position of the company, the costs associated with stockpiling, material supply, and the profitability of the business (BIRHER et al., 2006). The composition of funding sources highlights the ratio of own and foreign resources, capital tension (to what extent external funding is present in relation to equity), the level of indebtedness.

During the analysis, the financial situation of companies has a key role. It is important to keep track of and assess the company's financial stability, liquidity and ability of the company to meet its obligations (FENYVES - ZSIDÓ, 2014, MUSINSZKI, 2013). Liquidity disturbances can easily cause malfunctions that may even lead to the existence of insolvency situations. In analyzing the financial situation, I examined liquidity, with general liquidity and quick liquidity rate indicators.

Among the indicators of the income situation, the most commonly accepted (popular) indicators are the following three: ROS - Return on Sales, ROA - Return on Assets and ROE - Return on Equity (MUSINSZKI, 2013). These three indicators can uniquely combine business goals. ROS gives you an insight into cost management of the business, to the level of costs, ROA shows assets management, which is especially important for commercial activity and the ROE indicator for debt analysis. I also considered it important to analyse the ratio between material expenses and net sales revenue. Most of the material expenses are made of the purchasing value of the goods sold. As the next profitability indicator, I compared the profit of the operating activity to the net sales revenue. The most important efficiency indicator for trading activities is the rotation speed of stocks. Knowing the speed of rotation is essential for the inventory management, its value showing how many times the average stock was sold during the period under review (BIRHER et al., 2006).

**Table 3.: Indicators selected for financial performance analysis**

	<b>Selected indicators</b>
<b>Assets and founding sources</b>	Assets composition (%): <ul style="list-style-type: none"> <li>• Fixed assets share (Fixed assets/Assets)</li> <li>• Stocks share (Stocks/Assets)</li> </ul>
	Founding sources composition (%): <ul style="list-style-type: none"> <li>• Equity share (Equity/Sources)</li> <li>• Liabilities ratio (Debts/Sources)</li> <li>• Short term liabilities share (Short term liabilities/Liabilities)</li> </ul>
<b>Financial situation</b>	Examination of liquidity <ul style="list-style-type: none"> <li>• General liquidity = Current assets/Short term liabilities;</li> <li>• Quick ratio= (Current assets – stocks)/Short term liabilities.</li> </ul>
<b>Profitability situation</b>	Indicators for profitability situation (%): <ul style="list-style-type: none"> <li>• Material expenses /Net Sales</li> <li>• Profit of the operating activity / Net Sales</li> <li>• ROS = Return on Sales (Profit after tax/Net Sales)</li> <li>• ROE = Return on Equity (Profit after tax/Equity)</li> <li>• ROA = Return on Assets (Profit after tax/Assets)</li> <li>• Stock rotation (Net Sales/Stocks).</li> </ul>

### 3. THE MAIN FINDINGS OF THE DISSERTATION

The main purpose of my research is to analyze the financial performance of retail food businesses and to compile a comparative analysis based on the enterprises from both a Hungarian and a Romanian county.

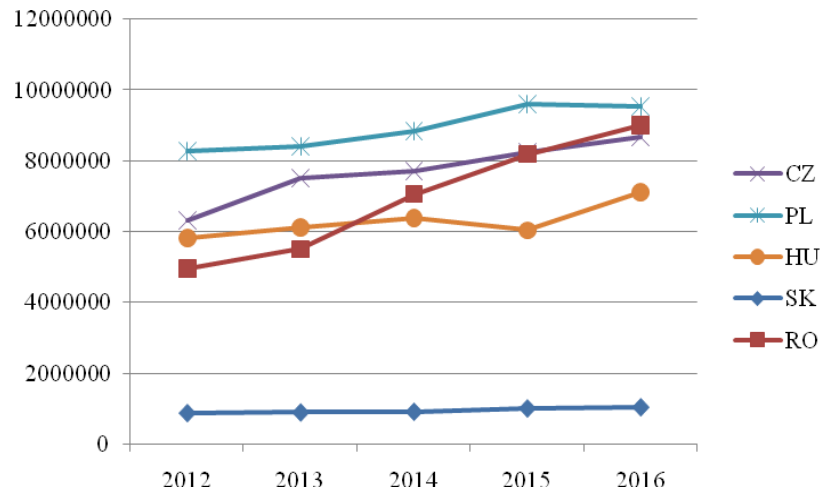
I started my work by studying the concept of business performance and the methods and indicators used to measure business performance. Literature deals with this concept with a lot of definitions, explanations and interpretations, but most professionals connect the notion of business performance to the goals, effectiveness, efficiency, profitability and value-creation concepts (PRITCHARD, 1990, PORTER, 1998, ROLSTADLS, 1995 , NEELY et al., 1995; LEBAS, 1995; RAPPAPORT, 1998; LORINO, 1997; RISTEA; 2003; KOROM, 2007; BÖCSKEI, 2012; NÁBRÁDI- PETŐ, 2009, SAJTOS, 2004).

Business performance methods can be categorized into "traditional" and "new" methods. Traditional methods evaluate the company's business performance mostly based on information obtained from Financial Statements, while "new" methods, besides accounting informations, also take other quality information into performance appraisal.

After studying the literature in the field, I analyzed the real interpretation of business performance concept, and the real practice of applying performance methods, using online questionnaire. The subjects of the questionnaire were the Hungarian and Romanian commercial enterprises, and I was looking for answers on how companies interpret the concept of business performance and how they measure it. In practice, the concept of business performance is linked to profit, growth in sales and achievement of goals, and most of companies use "traditional" performance measurement methods, that is, the processing of accounting data. The questionnaire survey **confirmed my Hypothesis 2**, which states that the performance measurement methods and procedures provided by literature are well-known in the commercial companies of both countries, but in practice, performance measurement is mostly limited to processing information obtained from Financial Statements.

After completing and evaluating the questionnaire survey, I set out to map the current situation of the food retail industry. I can conclude that, at national level, food retail trade industry is similar in both countries: currently supermarkets dominate the food-grade retail market, with the backdrop of smaller, traditional stores. After the change of

the regime, the possibility of inflow of foreign capital was opened up and the privatization process and globalization promoted the emergence of international chains, which already reached 70% of Hungary's market share, while in Romania this is lower, at 60%. Both countries have a high level of concentration, the total turnover being held by some foreign chain stores. I compared the total turnover of the top 10 retail food businesses in the V4 countries and Romania in the 2012-2016 period (Figure 2.).



**Figure 2. Top 10 Food Retail Total Turnover 2012-2016 (Thousand Euros)**

*Source: own editing based on data from the EMIS database*

The analysis of the food retail industry in the national economy **confirmed my Hypothesis 1**, namely that the current situation of the Hungarian and Romanian food retail market is similar, there are no significant differences in consumer habits, but future trends are already present in both markets.

I have examined in detail the five-year Financial Statements of the Hungarian Hajdú-Bihar county and the Romanian Cluj county food retail companies who have NACE 4711-Food retail activities (2011-2015 period). The analysis was started by analyzing the average values of each indicator, but the analysis showed that there is a great deal of standard deviation and relative deviation, while averages can not be considered representative values for such a large population, thus **justifying my Hypothesis 3**. The next step of the analysis, therefore, was the homogeneous group demolition, which was done by cluster analysis using the K-Medoid method. The grouping criterion was the average values of ROS, ROA and ROE indicators. Depending on these, and after the

abolition of the number of outlier companies, there remained 190 companies in the Hungarian database and 640 in the Romanian one.

The analysis of the Hungarian companies was carried out with 5 clusters. I analyzed the five-year average (Table 4.) and yearly values of the clusters too. The indicators values of the 5 clusters are indicated by the values between the favorable (dark green) and unfavorable (dark red) and between these extreme values, according to the color scale, between green and red. I did not categorize the indicators of the assets share (the ratio of fixed assets and stocks) and the ratio of short-term liabilities to good or bad indicators because we can not clearly state what is good or bad for them.

**Table 4.: Average indicator values of grouped enterprises in Hajdú-Bihar county**

<b>Clusters</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Number of companies</b>	56	40	34	37	23
<b>Indicators</b>	<b>Five-year average values</b>				
<b>ROS (%)</b>	0.56	5.48	-2.71	3.56	-14.18
<b>ROA (%)</b>	1.39	16.04	-5.15	5.64	-32.72
<b>ROE (%)</b>	2.89	30.95	-50.43	16.50	-53.73
<b>Fixed assets share (%)</b>	30.73	23.20	18.40	30.62	18.73
<b>Stocks share (%)</b>	45.18	39.91	59.59	35.90	50.64
<b>Equity share (%)</b>	42.58	17.64	5.65	52.17	-104.61
<b>Liabilities share (%)</b>	55.83	80.37	93.60	45.97	203.78
<b>Short-term liabilities share (%)</b>	88.61	87.87	81.67	84.75	75.74
<b>General liquidity</b>	3.54	4.87	6.42	3.74	18.65
<b>Quick liquidity ratio</b>	1.39	3.02	3.48	2.37	15.09
<b>Material expenses / Net Sales (%)</b>	82.10	81.38	86.57	82.82	95.38
<b>Operating profit/ Net Sales (%)</b>	1.00	6.98	-1.90	3.06	-13.94
<b>Rotation speed of stocks (rotation/year)</b>	11.38	14.21	10.74	25.19	45.90

*Source: own editing based on own calculations*

Based on the above values, we can conclude that the most favorable results (mostly green values) are for Cluster 2 and Cluster 4 (40.53% of the population), Cluster 1 (29.48% of the population) has moderate results, while Clusters 3 and 5 (30% of the population) contain the most red marked values (weak results). The ROS, ROA and

ROE indicators for Clusters 1, 2 and 4 are positive, the general liquidity and quick liquidity ratios are good (they can meet the outstanding liabilities without any problems), the stock's rotation speed is approximately 1 rotation per month. In terms of capital strength, Clusters 1 and 4 have a balanced capital structure, the capital strength is weaker for Cluster 2, but the profitability indices are high enough not to cause any difficulty. The financial performance of clusters 3 and 5 (30% of the population) is unfavorable; negative profitability indicators, high indebtedness, and excessive liquidity (unused funds) can lead to inefficiencies.

For the Romanian database (640 enterprises), I divided the companies included in the analysis into 15 clusters and, similar to the Hungarian values, I marked with green and red colors the favorable and unfavorable values of the indicators. For the transparency, I evaluated the most typical groups (cluster 2, 7, 8, 9, 10, 11, 12 and 13) in more detail than all the 15 clusters. The most distinctive ones are the most favorable (Clusters 8 and 11), the weakest (Clusters 9, 10 and 13) and groups with a large number of companies (2, 7 and 12) (clusters with less than 5% of the companies –which means 32 companies– were not analyzed in more detail: Clusters 1, 3, 4, 5, 6, 14 and 15).

The five-year average values of the most characteristic clusters of the Romanian population are shown in Table 5. Clusters 8 and 11 (32.97% of the population) have positive values for ROS, ROA and ROE indicators, while the other groups achieved negative values for each of the three indicators. As regards the level of leverage, they are also unique groups (Cluster 8 and 11), since we can talk about a balanced capital structure that can provide the financial stability of the enterprise. The other groups have negative capital strength. The extremely negative capital strength, can primarily be the effect of the negative result accumulated in the previous years (in Romania, there is no requirement to protect the equity funds such as in the Hungarian Law.). With regard to the financial situation, the general liquidity indicator is considered to be weak for Clusters 9 and 13. At the same time, quick liquidity rate values are more dangerous for several clusters (7, 9, 12, 13). This refers to cash shortages. The rotation speed of stocks are extraordinary (Cluster 10), very good (2, 8, 9, 13), good (7, 11) or weak for Cluster 12. The high values (Cluster liabilities 9 and 13, Cluster 10 rotation speed, etc.) among average values, are due to the extreme values of certain companies (which have passed through the ROS, ROA and ROE filters but with other indicators can reach inaccurate values).



**Table 5.: Average indicator values of grouped enterprises in Cluj county**

Clusters	2	7	8	9	10	11	12	13
<b>Number of companies</b>	51	35	126	48	52	85	36	55
	<b>Five-year average values</b>							
<b>ROS (%)</b>	-13.40	0.05	8.59	-10.29	-54.76	1.94	-2.83	-31.27
<b>ROA (%)</b>	-14.18	-4.95	12.14	-49.15	-30.63	1.95	-7.45	-151.30
<b>ROE (%)</b>	-22.76	-247.36	34.61	-18.72	-28.66	9.48	-30.51	-32.74
<b>Fixed assets share (%)</b>	16.67	22.28	18.18	11.35	25.04	30.25	20.17	9.81
<b>Stocks share (%)</b>	69.30	51.04	49.35	66.35	58.86	52.28	65.12	65.90
<b>Equity share (%)</b>	-93.25	-5.04	46.10	-422.71	-179.39	38.98	-51.98	-851.52
<b>Liabilities share (%)</b>	193.25	104.14	53.70	522.71	278.73	60.82	151.98	951.52
<b>Short-term liabilities share (%)</b>	75.74	82.46	87.60	75.90	66.72	83.97	74.72	72.98
<b>General liquidity</b>	6.84	2.51	10.55	1.19	2.86	3.64	1.43	0.99
<b>Quick liquidity ratio</b>	3.37	0.61	7.67	0.19	0.76	1.98	0.23	0.23
<b>Material expenses / Net Sales (%)</b>	88.43	80.82	78.60	87.92	106.24	83.33	89.27	91.51
<b>Operating profit/ Net Sales (%)</b>	-11.65	1.66	9.81	-8.64	-50.32	1.48	-1.57	-29.60
<b>Rotation speed of stocks (rotation/year)</b>	30.50	19.47	30.73	37.77	151.44	20.00	7.94	51.24

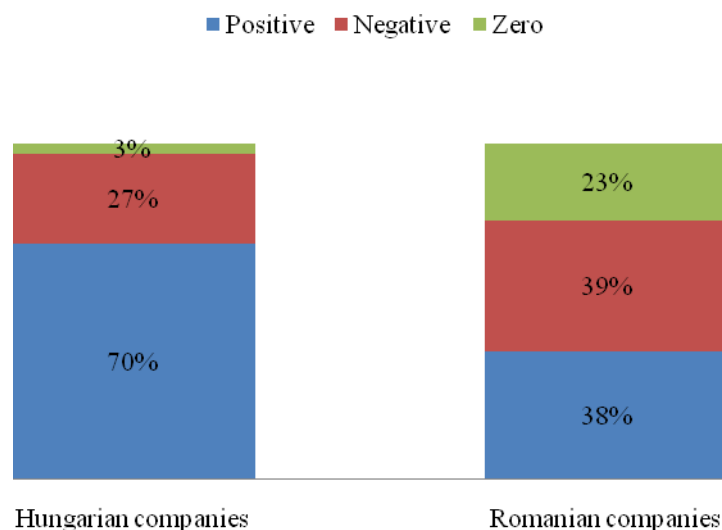
*Source: own editing based on own calculations*

As a result of the financial performance analysis of the two counties food retail companies, I would highlight the following results:

- ❖ In the assets composition of enterprises, long-term investments reach a low level. Looking at the annual values, the proportion of fixed assets in Hajdú-Bihar county ranges from 20% to 30%, in Cluj county, somewhat lower, this ratio is between 10-30%. Considering the average values, this is 24.34% for the Hungarian companies and 19.33% for the Romanian enterprises. In themselves, we can not evaluate this as a good or bad ratio, the fact is that the level is low, as in the case of commercial activities, stocks play the decisive role.
- ❖ The stocks share of the Hungarian companies is at a lower level than the ratio of the Romanian stocks: the Hungarian average is 46.24% (five years average, 35-

60% intervals per year), and the Romanian 60.78% (50-70% ). The question is, to what extent do the stocks contain an outdated inventory? The level of stocks depends, to a large extent, on their rotational speed. There is also a slight difference in rotation speed: the average rotation of stocks at the Hungarian enterprises is 21,49 rotations/year (1,8 rotations/month) and 35,63 rotations/year (2,9 rotations/month) for Romanian companies. Both values refer to a good stock management. For databases, there are some surprisingly high values that raise the average values. Apart from these unrealistical high values, there is still a small difference between the enterprises of the two counties: the stocks rotation speed of the Hungarian companies decreases around 15 rotations/year, while the Romanian enterprises decrease to 20 rotations/year.

- ❖ Looking at the ratio of equity and liabilities, I perceived a greater difference between the two databases. In terms of capital strength, the Hungarian enterprises show a more stable situation, 88% has a strong capital strength, unlike the Romanian companies, where only 33% of the population (Clusters 8 and 11), has positive capital strength. This very high level of negative capital strength is primarily the result of the negative after-tax profit (annual accumulation). Analysing only the After tax profit indicator for 2015 (Figure 3.), there is a significant difference between the enterprises of the two counties (for the whole database):



**Figure 3.: Hungarian and Romanian After tax profit indicator in 2015**

*Source: own editing based on own calculations*

Interestingly, there are many Romanian companies with "zero" result, the question being whether these businesses have any real activity? I noted that for many businesses, not only in 2015 their could be seen zero results, but also year after year. Therefore, many companies with some assets, but without any activity are included in the statistical number of "operating" enterprises (zero-revenue businesses were not included in the companies analyzed in detail).

- ❖ The capital strength is closely linked to the Liabilities ratio, the values of which are shown in Table 6.:

**Table 6.: Average values of the Liabilities ratio for the Hungarian and Romanian enterprises**

Hungarian Clusters	Hungarian companies	Liabilities ratio (%)	Romanian companies	Romanian Clusters
5.	12%	<b>Dangerous above 200%</b>	30%	5., 6., 9., 10., 13
2., 3.	39%	<b>High (80-200%)</b>	37%	1., 2., 3., 4., 7., 12., 14., 15.
1., 4.	49%	<b>Good, acceptable (under 80%)</b>	33%	8., 11.
	100%	<b>Total</b>	100%	

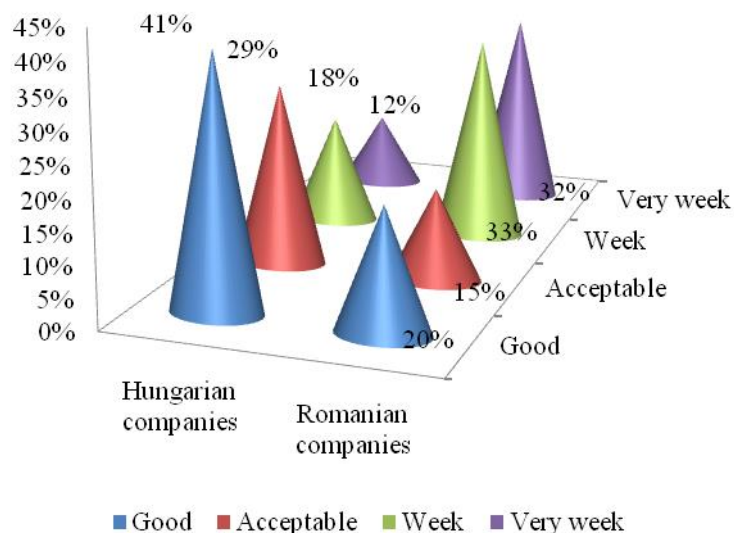
*Source: own editing based on own calculations*

There are only a few Romanian companies (33% of the population), where the level of liabilities is good or at an acceptable level. Indebtedness poses a high risk, even more if it is coupled with low profitability.

- ❖ Regarding liquidity, we mostly see good results for both databases: the Hungarian businesses can meet their obligations without any problems (the results are a bit weaker for Cluster 5 in 2011 and 2012, but they have improved significantly in the next few years); there are minor problems for the Romanian enterprises for Clusters 9, 12 and 13 (21.7% of the population), with a general liquidity value of around 1, which means that current assets are just covering short-term liabilities level. Ensuring adequate liquidity is a priority in the business activities because it can easily be placed in a state of insolvency even with profitable activity. Unfortunately, the situation is worse for the already mentioned Clusters 9, 12 and 13, because these businesses do not have profitability activities either.

- ❖ Comparing the values of ROS, ROA and ROE profitability indicators, I can conclude the followings: only 41% of the Hungarian enterprises and 33% of the Romanian enterprises achieved good profitability indices; week results have been achieved by 29% of the Hungarian enterprises and 5% of the Romanian enterprises; negative profitability indices are for 30% of the Hungarian companies and, unfortunately, 62% of the Romanian enterprises.

Based on these, I can classify the businesses of the two databases according to their financial performance into the following groups: good (all the three profitability ratios are at least +5%, good capital strength and liquidity) and acceptable (profitability indicators are positive, capital strength acceptable, liquidity normal) 70% of the Hungarian enterprises, 35% of the Romanian enterprises; weak profitability indicators (profitability indicators near zero value, operating profit/revenue - positive) were for 18% of the Hungarian enterprises and 33% of the Romanian enterprises, hence with very weak results (all three profitability indicators are well below zero), I can characterize 12% of the Hungarian enterprises and 32% of the Romanian enterprises (Figure 4.).



**Figure 4.: The financial performance of the Hungarian and Romanian companies**

*Source: own editing based on own calculations*

The detailed analysis of the two databases **proved my Hypothesis 4**, that the financial performance of "traditional" food retailers does not show significant differences,

weaker results can be talked about for the Romanian companies. In my opinion, the lack of investment resources (can be seen in the low level of fixed assets) and the low level of profit margins (resulting in ROS, ROA and ROE values) are obstacles to business development. The level of profit margin can not be a real choice for smaller companies, because of the large number of popular hyper- and supermarkets. Perhaps, using external resources, more investments, modernization and new and more consumers by introducing a wider variety of products, can achieve higher revenue.

During the research, the set goals were achieved, the hypotheses proved; a comparative analysis was carried out on the basis of the enterprises of two counties, Hungary and Romania, which showed that there are no significant differences between the financial performance of the food industry in the two countries and the financial performance of their businesses.

#### **4. THE MAIN RESULTS OF THE DISSERTATION, NEW RESULTS**

My research area is the analysis of the financial performance of food retailers, the realistic assessment of the current industry situation and the exploration of cause and effect relationships. The new results of the thesis are as follows:

1. I conclude that it is important for the Hungarian and Romanian commercial enterprises to measure their business performance, the smaller part (mostly foreign-owned enterprises) knows the latest performance methods and systems provided by literature, but for most of them, performance measurement, is limited to processing and analysing data from Financial Statements. A very high percentage of the companies identify the concept of business performance with profitability, higher revenue, and achievement of set goals. All this information was collected through questionnaire, in Hungary and Romania.
2. I conclude that the current situation of the food retail industry in Hungary and Romania is very similar: modern, bigger (mostly foreign-owned) hypermarkets and supermarkets dominate, modern supply chains are popular among consumers, their growth rate is still quite high . "Traditional", smaller shops are in the background, their turnover is diminishing and they are struggling. The development of the current situation in both countries has been facilitated by the same processes and circumstances: privatization, globalization and concentration. Both countries have come up with a series of attempts to focus on "domestic" products and producers to curb the flow of import products ("Hungarian/Romanian product", "stop shopping malls", opening hours, "compulsory" distribution of domestic products, etc.).
3. I conclude that in case of a larger population, the average values of the population can not be treated as representative values for the whole population, the individual values show very large variations in relation to the group average, with high standard deviation and high relative deviation. Therefore, the population should be divided into analyzed homogeneous groups. The average values of the Hajdú-Bihar and Cluj county companies do not characterize the whole population, and the averages of the homogeneous groups obtained from the whole population provide a more realistic picture of the analyzed area. Cluster analysis provides an opportunity to get a clearer picture of the "hidden"

reality from "average" values, and group numbers help to better recognize and judge the situation.

4. I conclude that the financial performance of food retail businesses (except hypermarkets, supermarkets, modern chains of stores, which are so important for the national economy), is of concern. There is a lot of negative performance, low long-term investment willingness and a dangerous level of indebtedness.

Both the Hungarian and Romanian food retail markets have to be separated and analyzed, separately interpreting the performance of super and hypermarkets (modern chain stores), as well as other "more traditional" retail businesses. The smaller food retail companies are still largely present on the market, their necessity being unquestionable, but their survival is risky in the current situation.

In addition, considering that the two counties belong to a border region (Northern Hungarian Region and Northwestern Romanian Region), the survival and development opportunities of the regions and especially border regions have their benefits and opportunities, such as opportunities for trade, promotion of local products and labor migration as required, similar social, cultural values, etc. There are few or inexistent linguistic barriers due to the large number of the Hungarian minorities on the Romanian side. Taking advantage of these, creating a closer and more practical cooperation could lead to an increase in the competitiveness and business performance of the two regions.

## 5. PRACTICAL UTILIZATION OF RESULTS

The main purpose of my research is to analyze the financial performance of food retail businesses. The importance of food trade is undeniable, and this is supported by countless statistical data: turnover values, number of businesses, added value, number of employees in the industry, etc. For this reason, industry analysis, knowledge of the current situation and future trends are of paramount importance for all national economies.

Therefore, I first examined in detail the current situation of food retail trade at national level (in Hungary as well as in Romania), and five years of Financial Statements for companies which have their offices in Hungarian Hajdú-Bihar County and Romanian Cluj County, having also NACE 4711-Food retail activity (2011-2015 period, 246 Hungarian and 1,020 Romanian companies).

Comparing the food retail market in the two neighboring countries and the financial performance of enterprises, I can conclude that similar trends, tendencies and consumer habits prevail in both countries, and I have not noticed any apparent differences in the financial performance of businesses. The expansion of hypermarkets and supermarkets forced the "traditional" food retailers into a difficult situation, with little long-term investments in these businesses (probably because of the funding opportunities). Indebtedness already represents a risky level, firm stability is inadequate, the accumulated losses of previous years are pushing for development and the level of profit margins applied is very low. Taking all these into account, their financial performance is at a low level. Concerning for these results is the fact that in this industry there is a significant number of companies and a large number of employees.

Taking into account the evolution of the food retail market, its characteristics and current trends, perhaps not the last 5 years financial performance of smaller food retailer companies, is the most important issue, but based on the expected performance, survival and survival opportunities over the next period. Which are the development opportunities, how can they be competitive with super-hypermarkets, which are increasingly prioritized by consumers? What are their options, chances, how can these businesses survive on long term run?

It is certain that "traditional" retail businesses are currently in a difficult position, but it is also certain that these small shops will not disappear from the market. In contrast to



large shopping centers, there are advantages that ensure their survival, necessity and usefulness. These "traditional" shops are much more customer-centered, have a more familiar atmosphere and geographical location benefits, offering local products to consumers, and provide more direct relationships. In pricing policy, they can not compete with modern chain stores, but they are offering quality and local products. It is increasingly important and even more important for consumers to buy local and traditional products to focus on the shorter supply chains, and to consume organic products as much as possible.

In my opinion, with a smaller investment (more modern stores, larger and varied offered products, faster service, engagement in local social and cultural life, eg. participation at local fairs, tastings, product presentations, promotions, continuous window art, etc.) traditional, convenience stores could be more attractive, win more consumers and thus achieve better financial performance. At the same time, long-term investments, the renovation of tangible assets, the acquisition of new ones, and the expansion of the business would help businesses to increase their financial performance. As a first and most important step I would suggest is, introducing a measure, regulation in Romania (as it is the Hungarian regulation) aimed to protect the companies' equity, which would make it obligatory for owners to impose different measures in case of longer-term and significant negative equity (the very high level of negative equity is primarily the result of the annual accumulation of the negative after-tax profit).

## REFERENCES

1. Birher I. – Pucsek J. – Sándor L. – Sztanó I. (2006): A vállalkozások tevékenységének gazdasági elemzése, *Perfekt Kiadó*, Budapest
2. Böcskei E. (2012): Pénzügyi eszközmenedzsment a controlling szolgálatában. A Controller, Complex Kiadó Jogi és Üzleti Tartalomszolgáltató Kft. 2012/6-7. pp. 6-12. ISSN 1785-7686
3. Fenyves V. – Zsidó K. E. (2014): Analysis of liquidity risk among a Hungarian and a Romanian region's enterprises, *Közgazdász Fórum*, Vol. 18 (118) pp. 34-56.
4. Korom E. (2007): Teljesítményértékelés a szolgáltató szektorban, Budapesti Gazdasági Főiskola – Magyar Tudomány Napja
5. Lebas, M. (1995): Oui, il faut définir la performance, *Revue Francaise de Comptabilité*, Juillet-août, pp. 66-71
6. Lengyel M. T. (2013): Kutatástervezés, *Médiainformatika kiadványok, Korszerű információtechnológiai szakok magyarországi adaptációja, TÁMOP -4.1.2-A/1-11/1-2011-0021*, Eger
7. Lorino, P. (1997): Méthodes et pratiques de la performance : le guide de pilotage, Paris
8. Majoros P. (2006): A kutatómódszertan alapjai: Tanácsok, tippek, trükkök (nem csak szakdolgozat íróknak). *Perfekt Kiadó*, Budapest, ISBN: 978 963 394 584 1
9. Musinszki Z. (2013): Mit mutat a mérleg? A hányados elemzés alapjai és buktatói I.rész. *Controller Info* I. évf. 12. szám pp. 20-26.
10. Nábrádi A. – Pető K. (2009): Különböző szintű hatékonysági mutatók, Tartamkísérletek a mezőgazdaság szolgálatában. *Debreceni Egyetem Kutató Központja*, Debrecen, pp. 1-21. ISBN 978-963-473-292-1
11. Neely, A. – Gregory, M. – Platts, K. (1995): Performance measurement system design – A literature review and research agenda, *International Journal of Operations & Production Management*. Vol. 15 No. 4. Pp. 80-116. MCB University Press.
12. Park, H. S. – Jun, C.H. (2009): A simple and fast algorithm for K-medoids clustering, *Expert Systems with Applications* 36 (2009) 3336–3341.
13. Porter, M. E. (1998): Competitive Advantage: Creating and Sustaining Superior Performance, *Free Press*, New York
14. Pritchard, R. D. (1990): Measuring and improving organizational productivity: a practical guide, *Prageger*, p. 248, New York
15. Rappaport, A. (1998): Creating Shareholder Value – A Guide for Managers and Investors, 2. ed., *The Free Press*
16. Ristea, M. (2003): Contabilitatea rezultatului intreprinderii, *Ed. Economica*, Bucuresti
17. Rolstadls, A. (1995): Performance Management – A Business Process Benchmarking Approach, *Chapman & Hall*, London

18. Sajtos L. (2004): A vállalati marketingteljesítmény értékelésének többdimenziós megközelítése és alkalmazása a Magyarországon működő vállalatok körében, PhD. értekezés, Budapesti Corvinus Egyetem, Budapest
19. Sajtos L. – Mitev, A. (2007): SPSS kutatási és adatelemzési kézikönyv, *Alinea Kiadó*, Budapest
20. Sandhya, H. – Surya, P.V. (2015): K-medoid clustering for heterogeneous data sets, *4th International Conference on Eco-friendly Computing and Communication Systems (ICECCS)*, *Procedia Computer Science* 70 (2015): pp. 226-237
21. Schleicher N. (2007): Kvalitatív kutatási módszerek a társadalomtudományokban, BKF jegyzet. *Századvég*, Budapest. ISBN: 963 734 053 6
22. Tompa T. (2017): Klaszteranalízis, Miskolci Egyetem, Gépészmérnöki és Informatikai Kar, Miskolc, elérhető: [https://users.iit.uni-miskolc.hu/~tompa/KorszeruInfTech/2\\_CA.pdf](https://users.iit.uni-miskolc.hu/~tompa/KorszeruInfTech/2_CA.pdf) , letöltés dátuma: 2018.08.29



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### List of publications related to the dissertation

#### Articles, studies (11)

1. Kondorosi, F., **Zsidó, K. E.**: Pénzügyi kontrolling a vállalkozások versenyképességének szolgálatában.  
*Controller Info. Különszám*, 157-164, 2017. ISSN: 2063-9309.
2. **Zsidó, K. E.**, Ştefanescu, D.: Sustainability and performance in trade sector.  
*Revista Economica Contemporană*. 2 (3), 228-238, 2017. ISSN: 2537-4222.
3. **Zsidó, K. E.**, Fenyves, V.: Application of "traditional" and "new" approach methods in business performance measurement.  
*Cross-Cultural Management Journal*. 17 (1), 51-57, 2015. ISSN: 2286-0452.
4. Böcskei, E., Fenyves, V., **Zsidó, K. E.**, Bács, Z.: Expected Risk Assessment-Annual Report versus Social Responsibility.  
*Sustainability*. 7 (8), 9960-9972, 2015. EISSN: 2071-1050.  
DOI: <http://dx.doi.org/10.3390/su7089960>  
IF: 1.343
5. Fenyves, V., Tarnóczy, T., **Zsidó, K. E.**: Financial Performance Evaluation of Agricultural Enterprises with DEA Method.  
*Procedia Economics and Finance*. 32, 423-431, 2015. ISSN: 2212-5671.  
DOI: [http://dx.doi.org/10.1016/S2212-5671\(15\)01413-6](http://dx.doi.org/10.1016/S2212-5671(15)01413-6)
6. **Zsidó, K. E.**, Gróf, P.: Gazdasági (kereskedelmi) tevékenységek teljesítménye.  
*Acta Scientiarum Socialium*. 44, 111-118, 2015. ISSN: 1415-6814.
7. **Zsidó, K. E.**: Historical overview of the literature on business performance measurement from the beginning to the present.  
*Apstract*. 9 (3), 39-46, 2015. ISSN: 1789-221X.  
DOI: <http://dx.doi.org/10.19041/apstract/2015/3>
8. **Zsidó, K. E.**: Vállalati teljesítménymérés "hagyományos" és "új" módszerekkel.  
*Controller Info*. 3 (2), 57-61, 2015. ISSN: 2063-9309.





9. **Zsidó, K. E.:** Comparative analysis of Hungarian and Romanian companies liquidity situation.  
In: Challenges in the Carpathian Basin - Global challenges, local answers. Ed.: by Csata Andrea, Fejér-Király Gergely, György Otília, Kassay János, Nagy Benedek, Tánczos Levente-József, RISOPRINT, Cluj-Napoca, 363-371, 2014. ISBN: 9789735312879
10. **Zsidó, K. E.:** Hungarian and Romanian companies financial and liquidity situation in the light of economic crisis.  
*Annals of the University of Oradea Economic Science. 1*, 968-977, 2014. ISSN: 1222-569X.
11. Fenyves, V., **Zsidó, K. E.:** Likviditási kockázat vizsgálata egy magyarországi és egy romániai régió vállalkozásainak körében.  
*Közgazdász Fórum. 17* (4-5), 34-56, 2014. ISSN: 1582-1986.

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