**University doctoral (PhD) dissertation abstract**

# COMPLEX ANALYSIS OF TOURISM COMPANIES' COMPETITIVENESS IN THE NORTHERN GREAT PLAIN REGION

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# 1. A KUTATÁS ELŐZMÉNYEI, CÉLKITŰZÉSEI ÉS A KUTATÁSI HIPOTÉZISEK BEMUTATÁSA

The growing importance of the tourism sector was highlighted several decades ago by several authors (COHEN, 1972; AFFELD, 1975; KRIPPENDORF, 1986; ALLCOCK, 1986; LENGYEL, 1987; GERGELY, 1989; SIMPSON, 1993), which has been a major area of research ever since. The region of Europe and the territory of the European Union itself is a popular destination, tourism has outstanding importance due to its economic, employment and social and environmental impact, a sector that has been growing steadily since 2010 following the 2009 global crisis.

Experts think 2018 to be the best year in the industry at both European and domestic level. This year, the contribution of the tourism sector to GDP was more than 10.3% and 11.7% of total employment in the European Union (around 27.3 million people) was due to its indirect relationship with other economic sectors (EUROSTAT, 2021a). In Hungary, the sector contributed 10.7% to GDP in 2018, taking into account the indirect effects, and 13.2% of employment in the national economy was related to tourism (KSH, 2020). However, it cannot be ignored that this process came to a halt as a result of COVID-19, declared a pandemic by the World Health Organization (WHO) on 11 March 2020, which has halted further growth in tourism worldwide, at least for a while. Companies in the sector are still trying to recover from the crisis, but this process is extremely fragile.

Recognizing its importance, the European Union is focusing on the tourism sector. Every year, tourism businesses receive billions of euros in funding from the European Union's development programs. From 2007, tourism has emerged as a separate priority within regional operational programs. There have been several research results (CSOMA, 2017; BÁNAI et al., 2017; KPMG, 2017; VIA CREDIT, 2018; HAJNALKA et al., 2020), which confirm the support and the positive correlations between corporate competitiveness, and the increase in profitability experienced in empirical studies. In addition, BANAI et al. (2017), KPMG (2017), VIA CREDIT (2018), HAJNALKA et al., (2020) also found that with the increase in the size of the company, the effect of the development aid received increased.

I think the tourism sector is a priority area for development, because of the multisectoral nature, as a result of its horizontal expansion, it is related to several sectors of the economy. It follows that its development also improves regional competitiveness and through its multiplier effect dynamises other areas of the economy. Through the development tourism companies' competitiveness the infrastructural background of the region will improve, this effect will continue, and the developed infrastructure will attract further investments. New jobs are being created, the living standards of the population are rising, and regional fragmentation is declining (NEMES, 2008).

These thoughts, author's positions, and connections was the basis of my dissertation, according to which I analyse the "hard" competitiveness factors of 103 companies, located in the Northern Great Plain Region, operat in the sector of accommodation and food service activities, which has received support under a tourism tender in the second seven-year development cycle of the EU (2007-2013) based on public balance sheet data and income statement data. Complementing the analysis, I explore the "soft" factors of competitiveness along a questionnaire conducted among the same companies.

The database originally included 170 companies, but 67 winner applicants were screened. As a result of the screening, all of the examined companies continue to operate in a profit-oriented form, with a purely tourist profile, did not change during the period under review, did not change their size classification, did not cease to exist or was not in liquidation.

**The main objectives of the research are:**

1. *Analytical exploration of the conceptual background of competitiveness, clarification of the concept at each level of competitiveness (national, regional, industrial, corporate).*

Many researchers have tried to define competitiveness conceptually, but the resulting concepts are in many cases contradictory, there is no single, universally accepted definition. The complexity of the chosen topic requires the analytical presentation of the competitiveness literature, a resolution related to each author's point of view, especially with regard to the company level, which serves as a basis for subsequent research.

*2. Critical evaluation of models measuring national and corporate competitiveness, analytical exploration the theoretical background of competitiveness measurement with financial indicators, highlighting the existing difficulties and the importance of "soft" competitiveness factors.*

In studying the literature, my focus has been on measuring corporate competitiveness. I have found that the financial approach is still more prevalent at the corporate level. Typically, the analyzes are based on balance sheet and income statement data, the focus is on the generated sales revenue, profit, various profitability and productivity indicators. *Table 1* summarizes the indicators used to measure competitiveness in this dissertation, indicating the method of calculation.

**Table 1: Indicators used to measure competitiveness**

| Name of indicator | | Nature | Calculation |
|---|---|---|---|
| **ROS** | PROFITABILITY INDICATORS | Return on sales | Profit / Net sales |
| **ROA** | | Return on Assets) | Profit / Total assets |
| **ROE** | | Return on Equity | Profit / Equity |
| **ROCE** | | Return on Capital Employed | Profit / Working capital |
| **General liquidity** | LQUIDITY INDICATORS | | Current assets / Current liabilities |
| **Quick liquidity** | | | (Current assets - Inventories) / Current liabilities |
| **Prompt liquidity** | | | (Current assets - Inventories - Receivables) / Current liabilities |

Source: Own editing based on LAÁB, 2009; MUSINSZKI, 2013a; BREALEY – MYERS, 2005

However, in measuring competitiveness with financial indicators, it is becoming increasingly common to take into account the "soft" factors of competitiveness. Figure 1 shows the defining points of my definition of corporate competitiveness.

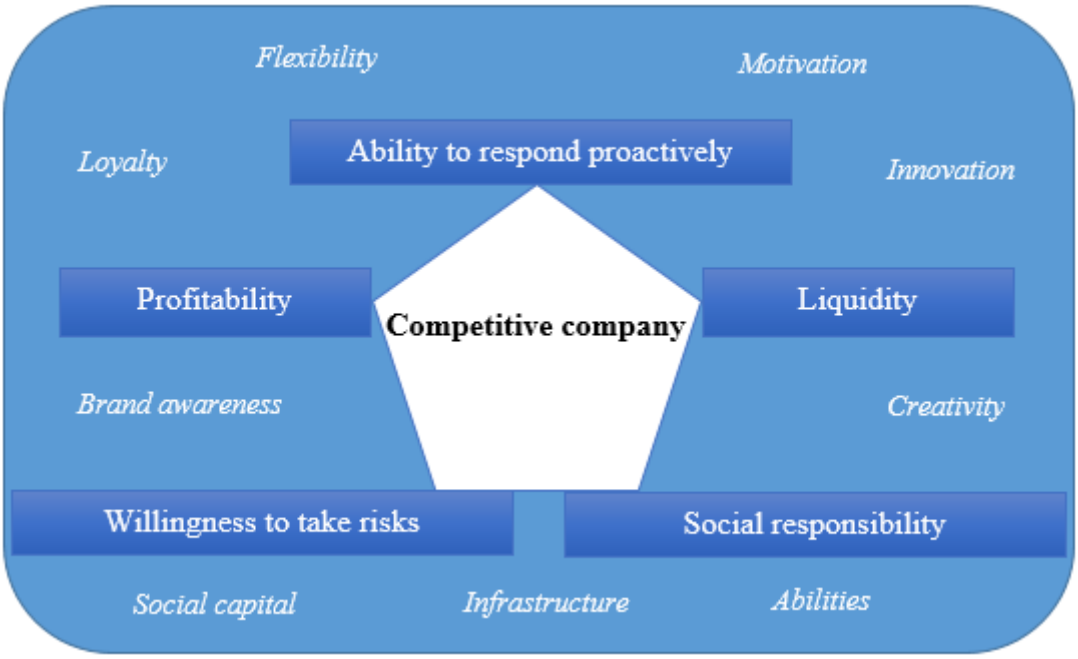


**Figure 1: Aspects of corporate competitiveness**

Source: Own editing based on KOZMA, 1995; CHIKÁN et al., 2006; HORVÁTH, 2001; NÁBRÁDI, 2015

Based on the contexts presented above, I define corporate competitiveness as follows: corporate competitiveness is the ability of a company to generate income and liquidity in the course of its activities with an appropriate risk appetite. The condition of competitiveness is that, in addition to social responsibility, it can react proactively to changes in the economic environment, be able to anticipate changes, paying more and more attention to the so-called "soft" factors of competitiveness.

### *3. Analytical presentation of the the tourism sector' situation of, proof of its significance in the European Union and in Hungary, in the light of the related EU subsidies.*

In my dissertation, I narrowed my competitiveness study to a company group, with a specific activity (accommodation services, and food service sector), with the same geographical location (Northern Great Plain Region) and which are in the same development cycle supported (in the second seven-year development cycle of the EU, 2007-2013, in a tourism tender). I narrowed it to analyse a homogeneous corporate circle.

*4. Assessing the competitiveness situation of the Northern Great Plain Region, proving that it is an area to be developed based on its tourism potential.*

The choice of the sector was justified by its economic weight and the choice of the region by its importance in terms of tourism.

*5. The main objective of the dissertation is to prove that the competitiveness of the surveyed companies which*

*received tourism support is improved in the medium term, and to show which areas were affected by the improvement.*

My goal is to prove the positive correlation between the subsidies and the company's competitiveness detected by CSOMA (2017), BÁNAI et al. (2017), KPMG (2017), VIA CREDIT (2018), HAJNALKA et al. (2020) in the case of 103 enterprises located in the Northern Great Plain Region, which received support in the framework of the EU tourism competition in the second seven-year development cycle (2007-2013).

**A kutatás hipotézisei:**

*H1: There is a significant relationship between perceived competitiveness by the surveyed companies and the size of the company, larger companies perceive a higher level of competitiveness.*

In the questionnaire survey, I examined how managers judge a company's competitiveness based on various aspects. Any common feature of the mentioned competitiveness index is that they are differentiated according to the size category of the companies, none of the source work examined it in the context of perceived competitiveness and company size, but I consider it worthwhile to examine, because the connection between competitiveness and adequate knowledge of strengths and weaknesses is indisputable (BARAKONYI, 2002; GÁSPÁR, 2005; CHIKÁN – CZAKÓ, 2008).

*H2: There is a significant relationship between the size of the company and the values of the financial ratios, larger companies have more favorable financial ratios.*

Typically, better competitive characteristics are associated with a larger company size, such as a more formalized strategy, greater tender activity, economies of scale, more R&D, better access to resources and information, less typical financing problems, and increasing foreign market activity, which competitiveness characteristics also lead to more favorable financial

ratios (CHIKÁN et at., 2006; BODÓ et al., 2007; SZERB et al., 2014; NÉMETNÉ GÁL, 2010). My aim is to examine whether the connection revealed by the cited authors can be verified in the case of the special sample of companies I have examined.

*H3: The values of the financial indicators will improve during the support period.*

The purpose of formulating Hypothesis 3 is to examine the proven correlation by CSOMA (2017), BÁNAI et al. (2017), KPMG (2017), VIA CREDIT (2018), HAJNALKA et al. (2020), there is also a positive correlation between subsidies and competitiveness in the case of the special sample of companies I examined, whether there is an improvement in the financial ratios in the 3rd year after disbursement.

*H4: There is a significant relationship between the size of the company and improvement the values of the financial ratios, the financial ratios of the larger companies are improving to a greater extent.*

It has been stated in several studies (BANAI et al., 2017; KPMG, 2017; VIA CREDIT, 2018; HAJNALKA et al., 2020) that with the increase the size of the company the effect of the received development support also increases, in the case of medium-sized enterprises and large companies a larger increase in revenue and profit was observed.

The aim of the fourth research question and the related hypothesis is to examine whether this correlation can be demonstrated in the case of the special sample of companies I examined, whether a larger improvement in financial ratios can be observed in the case of a larger company size.

*H5: There is a significant relationship between the size of the company and the amount of support received, larger companies receive a higher amount of support.*

This connection was confirmed by BANAI et al. (2017), KPMG (2017), VIA CREDIT (2018), HAJNALKA et al. (2020). The purpose of formulating my Hypothesis 5 is to examine whether this correlation can be demonstrated in the case of the special sample of companies I examined, that the amount of support also increased with the growth in the size of the company, too.

## 2. DESCRIPTION OF DATABASE AND USED METHODS

### 2.1. Presentation of data collection' conditions and the database

The data collection is complete based on the range of data collected, ie in my research all elements of a finite number of discrete populations were observed.

The possibility of full-scale data collection was provided by the fact that the observed population is limited and the number of items is not very large. The population I examine in the analysis are 170 enterprises, operating in accommodation and food service national economy, in the Northern Great Plain Region, which received support within the framework of a tourism tender in the second seven-year development cycle of the EU (2007-2013).

I considered the delimitation necessary in order to ensure the transparency of the analysis and the correctness and comparability of the conclusions.

I narrowed down the examined group of companies to those operating in the same branch of the national economy (due to my research topic, to those operating in the accommodation and food service sector), including those that received support within the framework of a tourism tender in the same development cycle.

Although the third seven-year development cycle was completed in 2020, the examination of the dissertation is still related to the second seven-year development cycle (2007-2013). This is due to the fact that the time interval of the study was set at 5 years, the first year being the year before the aid was paid and the last year being the third year after the aid was paid, which is long enough to show the effects of the aid. In connection with the third development period, the first year after its completion can be considered this year, and the last 2 years can be considered atypical, so the epidemiological situation would make it difficult to show the impact of subsidies. In the case of the analysis, I also carried out a territorial delimitation, the reason is that the identification of the effects resulting from regional differences does not belong directly to my research topic.

Out of the group of companies to be examined, 67 successful applicants were excluded due to one of the following reasons: it operated in a non-profit-oriented form, with not purely tourism profile, changed in size during the period under review, ceased to exist or was liquidated.

The narrowing was performed on the basis of the information in the additional notes to the companies' financial statements.

In terms of business classification, 50 applicants qualify as micro-enterprises, 33 as small enterprises and 18 as medium-sized enterprises. Only 2 companies were classified as large companies.

The two databases created contain data from secondary and primary data collection for the 103 enterprises surveyed:

- in the framework of secondary data collection: relevant application data from the Regional Development Agency database,
- in the framework of primary data collection: financial indicators (data on "hard" factors of corporate competitiveness) and data on the exploration of "soft" factors of competitiveness were compiled from the data of the accounting report of the Business Information and Electronic Business Procedure Service of the Ministry of Justice.

The possibility of measuring corporate competitiveness with financial indicators is supported by a number of scientific works (SÁPINÉ DUDUK – BARANYI, 2011; HÁGEN – HOLLÓ, 2017; SZILÁGYI, 2008; WIMMER, 2002; ZOLTAYNÉ et al., 2007; CHIKÁN, 2017; SCHMUCK, 2008; SZERB, 2010; AUERBACH et al., 1999; NÉMETHNÉ GÁL, 2010; BALLANTINE et al., 1988; GRABOWSKA, 2014; JASINIAK – PASTUSIAK 2014; KATITS – SZALKA 2014; RIDEG, 2019; FAZEKAS, 2001). However, in addition to corporate competitiveness as measured by financial ratios, the importance of exploring "soft" competitiveness factors is also highlighted in a number of scholarly works (GARAMHEGYI – RÉVÉSZ, 2000; LENGYEL, 2003; SZERB, 2010; VARGA, 2017; PALÁNKA, 2012; SZERB et al., 2019; CSATH et al., 2019).

Regarding the "soft" factors of competitiveness, I based on CHIKÁN et al. (2006), BODÓ et al. (2007), NÉMETHNÉ GÁL (2010), SZERB (2014) the data collection using the questionnaire method. It should be emphasized that the cited authors also used a questionnaire survey method to explore the "hard" company characteristics, but in my opinion the questionnaire survey of these data from the financial statements may result in inaccuracies, so I created two databases in my research. On the one hand, a database contain the data from accounting report and related tender data, and on the other hand, a database contain the data from the questionnaire survey.

## 2.2. Presentation of the applied methods

### *2.2.1. Creating relationumbers*

The financial ratios generated from the data of the companies' accounting reports are created by comparing the data with each other. In general form, they can be written as: V = A / B. Where “A” is the relative data and “B” is the basis of the comparison (ÁCS – PINTÉR, 2011).

Among the liquidity indicators used in the study, as well as the profitability indicators, the ROA and ROCE indicators are both horizontal in their approach, as the liquidity indicators concern both sides of the balance sheet, and the ROA and ROCE indicators are also linked to the balance sheet and income statement. The ROS and ROE profitability indicators are vertical, as they contain only data from the income statement (BÍRÓ et al., 2016). Each indicator analyzed is a coordination ratio. In the case of the creation of coordination ratios, data with the same unit of measure and characteristic data of two subsets are compared (ADORJÁN et al., 2002).

### *2.2.2. Component analysis*

Principal component analysis forms the basis of my hypothesis studies. My aim is to combine the value of the 11 financial indicators and the answers to the questionnaires of the evaluated competitiveness with principal component analysis, in order to carry out the statistical tests and to interpret the results obtained. Based on the competitiveness factors created as a result of mergers, my hypotheses become testable.

Principal component analysis is a multivariate statistical procedure that can be used to perform data reduction. Principal component analysis is a special type of factor analysis. The aim of the method is to reduce the number of variables so that the content of the observation information is not reduced. The method is suitable for aggregating variables if the variables have a coherent, overlapping information content. That is, the purpose of factor analysis is to create factors that are uncorrelated with each other (SZŰCS, 2002).

The condition for the applicable of principal component analysis is the aggregation of data. We can merge variables between which a sufficient degree of correlation can be detected. The correlation matrix expresses the relationship between each variable. Consolidation requires a strong correlation, but over-correlation is not appropriate either, as it would result

in all the variables examined being merged into a single factor. The Kaiser-Meyer-Olkin (KMO) criterion is one of the most suitable metrics for expressing the correlation between variables.

Let rij be the correlation coefficient of the i-th and j-th variables, and let be the partial correlation coefficient of the i-th and j-th variables. The following formula can then be used to calculate the KMO value:

$$KMO = \frac{\sum_{i=1}^{p}\sum_{\substack{j=1 \\ i \neq j}}^{p} r_{ij}^2}{\sum_{i=1}^{p}\sum_{\substack{j=1 \\ i \neq j}}^{p} \rho_{ij}^2 + \sum_{i=1}^{p}\sum_{\substack{j=1 \\ i \neq j}}^{p} r_{ij}^2}$$ (VARGHA, 2015).

The value of the indicator is between 0 and 1. Its interpretation shows Table 1.

**Table 1: Interpretation of the KMO indicator**

| KMO value | Mean |
|---|---|
| 0,9 ≤ KMO ≤ 1,0 | wonderful |
| 0,8 ≤ KMO <0,9 | commendable |
| 0,7 ≤ KMO <0,8 | medium |
| 0,6 ≤ KMO <0,7 | moderate |
| 0,5 ≤ KMO <0,6 | pathetic |
| 0,0 ≤ KMO <0,5 | unacceptable |

Source: Own editing based on KÁSA, 2014 alapján

Based on Table 1, it is clear that the closer the value of the indicator is to one, the more suitable the variables are for aggregation, and below 0.5 it is not worth aggregating or applying the variables.

With the appropriate KMO value, principal component analysis can be done, and there is an appropriate level of correlation between the variables included in the study. The result of the principal component analysis shows the number of factors into which the variables can be compressed. The number of factors is determined on the basis of eigenvalues. It is assumed that the variance of variables is explained by the same number of background variables, also known as principal components, from which the principal components that explain the major part of the variance of the variables can be selected. Of the principal component values, those whose eigenvalue (variance and standard deviation) are above average, ie greater than 1, can be considered significant (NYITRAI, 1996). Furthermore,

aggregation into a factor is expected to explain at least 60% of the variance (LEHOTA, 2001). The resulting factors are standardized and follow a normal distribution. These common background variables are the main components.

### *2.2.3. Analysis of variance*

The statistical method of analysis of variance, also known as ANOVA (initials of analysis of variance), is suitable for comparing the mean of a normally distributed population with more than two equally standard deviations. The variance of the analysis of variance is broken down by two factors. In connection with the analysis of variance, it is important to define the factor. The factor is the qualitative property whose effect on the quantitative factor is measured by analysis of variance.

In dissertation, the method of one-way analysis of variance is used to examine the relationship between firm size and perceived competitiveness (Hypothesis H1) and the relationship between firm size and financial ratios (Hypothesis H2). According to the null hypothesis, we always assume that there is no difference between the averages of groups by firm size. The alternative hypothesis (H1) assumes that there is a difference between the averages of groups by firm size.

The analysis of variance is actually a pairwise comparison. Analysis of variance is based on the calculation of a common significant difference, which is the significant difference between the means.

There are several conditions for the analysis of variance:

- the variance of the created groups is the same;
- groups are numbered from a normally distributed population;
- the groups are independent of each other.

The different variance as well as the non-fulfillment of the normal distribution would skew the value of the significant difference determined to compare the means. In addition, the independence of the groups is also expected, ie there can be no connection between the individual groups (SZŰCS, 2002).

The decision is always made based on the value of the F-test statistics. An alpha value of 0.05 is most often considered. To determine the correctness of the null hypothesis, the range of possible values of the test function can be divided into two parts, an acceptance range and

a rejection range. α (alpha) expresses the probability of falling into the rejection range, 1-α (alpha) expresses the probability of falling into the acceptance range.

Statistical programs calculate an empirical significance value (Sig.), i.e. a p-value, based on the F-test statistic value. Depends on the p-value, the following decision can be made:

- If the p-value is greater than the specified alpha value (p> 0.05), the null hypothesis (H0) is accepted. There is no significant difference between the means of the studied groups
- Amennyiben a megadott alfa értéknél kisebb a p-érték (p<0,05), akkor az egyezést feltételező nullhipotézist (H0) elvetjük. Van szignifikáns eltérés a vizsgált csoportok átlagai között. If the p-value is less than the specified alpha value (p <0.05), the null hypothesis (H0) is rejected. There is a significant difference between the means of the studied groups.

It should be emphasized, however, that the decision made during the hypothesis test is not always correct. In the case where the null hypothesis is correct, but the value of the test statistics still falls within the rejection range, i.e. it is rejected, a so-called first-order error is made, the probability of occurrence of which is α (alpha). 1-α (alpha) is the probability of not rejecting the correct null hypothesis, which can also be called the confidence level of the test. And in the case where the null hypothesis is erroneous but is still accepted based on the value of the test statistics, then a second type of error is made, the probability of occurrence of which is β (beta). 1-β (beta) is the probability that we will not commit the second type of error, which is called the strength of the test (PINTÉR – RAPPAI, 2007).

### *2.2.4. T-test*

The basic aim of my hypothesis tests is to show the differences between the properties of the observed population. In the comparison, we basically assume that there is no significant, i.e. significant, difference between the properties of the samples, in this case the whole population. This assumption is called the null hypothesis (H0).

Several types of t-tests can be distinguished. In the case of the one-sample t-test, the null hypothesis is that the mean of our sample does not deviate from a predetermined value. In the case of a two-sample t-test from each other and in the case of a pair-sample t-test, it is assumed that the average of the pre-measurement and the post-measurement do not differ.

In connection with the dissertation, I use a pair-sample t-test to show whether the generated competitiveness variables show a difference, ie whether the value of the factors improved in the 5th year examined in the groups created on the basis of each company size (Hypothesis H3). According to the null hypothesis, it was always assumed that there was no difference between the averages of groups by firm size. The alternative hypothesis H1 assumes that there is a difference between the averages of groups by firm size.

The null hypothesis of t-tests is that there is no significant difference between the means of the samples, i.e. the value of the test statistics (t-value) follows the Student's t-distribution, it is in a given interval. The decision criterion is therefore whether or not our result is included in a predetermined interval of the Student's t-distribution (KERÉKGYÁRTÓ et al., 2001). If the sample value is found in a predetermined interval of the Student's t-distribution, then the null hypothesis is acceptable, i.e., there is no significant difference between the means of the samples. Otherwise, the alternative hypothesis (H1) is chosen.

In addition to the t-value, a so-called p-value can be calculated in parallel. When evaluating the results, both values can be taken into account, resulting in the same decision. The t-value and p-value are evaluated relative to the error limit at the α (alpha) level, α (alpha) expresses the probability of falling into the rejection range, and 1-α (alpha) expresses the probability of falling into the acceptance range. The statistical programs, including the SPSS program I use, generate the p-value, the level of empirical significance. The p-value is the lowest level of significance where the null hypothesis can be rejected (SZŰCS, 2002).

The decision criteria related to the p-value are:

- If the p-value is greater than the specified alpha value ($p > 0.05$), the null hypothesis (H0) is accepted. There is no difference.
- If the p-value is less than the specified alpha value ($p < 0.05$), the null hypothesis (H0) is rejected. There is difference.

A general precondition for the applicability of t-tests is that the samples are continuous variables derived from a normal distribution (PINTÉR – RAPPAI, 2007).

## 3. AZ ÉRTEKEZÉS FŐBB MEGÁLLAPÍTÁSAI

I present the main findings of the dissertation in the order of the hypotheses.

*H1: There is a significant relationship between perceived competitiveness by the surveyed companies and the size of the company, larger companies perceive a higher level of competitiveness.*

- The hypothesis was confirmed in the questionnaire survey 6-12. based on the responses to the request and the analysis of variance in the SPSS program. Table 2 shows the companies' own assessment of competitiveness according to different aspects.

**Table 2: Companies' assessment of their own competitiveness according to different aspects**

| Competitiveness aspects | Scale average value |
|---|---|
| Based on accounting reports | 3,65 |
| According to the management skills of company managers | 4,58 |
| Based on the skills of employees working in the enterprise | 3,68 |
| Based on the motivation of employees working in the enterprise | 3,69 |
| In terms of sustainability | 3,61 |
| Based on forward planning | 3,59 |
| Based profitability | 3,53 |

Source: Own editing based on the results of the questionnaire survey

In terms of assessing one's own competitiveness, measured according to the various parameters, on a scale of 5, managers of the companies consider it to be the best according to the management skills (4.58). Least for profitability (3.53). The leadership skills of company managers are followed by employee motivation (3.69) and employee skills (3.68). The fourth line is the competitiveness according to the accounting reports (3.65). This is followed by sustainability (3.61) and forward planning (3.59). The line is closed by the value of profitability (3.53). It should be noted that all answers are above the mean of the scale.

*H2: There is a significant relationship between the size of the company and the values of the financial ratios, larger companies have more favorable financial ratios.*

- The hypothesis was rejected based on the evaluation of the financial indicators and the analysis of variance performed in the SPSS program. Table 3 shows the average values of the financial indicators of the companies for the first year under review, broken down by company size.

**Table 3: Average values of financial indicators of companies by company size in the first year examined**

| Financial indicators | OP/PAT[1] | Micro n=50 | Small n=33 | Medium n=18 | Large n=2 |
|---|---|---|---|---|---|
| **Profitability indicators** | | | | | |
| ROS (%) | OP | 11,64 | 10,88 | 0,86 | 3,35 |
| | PAT | 10,45 | 10,55 | 1,47 | 3,24 |
| ROA (%) | OP | 6,77 | 3,27 | 1,57 | 0,98 |
| | PAT | 6,15 | 3,15 | 1,36 | 0,95 |
| ROE (%) | OP | 23,47 | 17,38 | 5,84 | 2,63 |
| | PAT | 21,34 | 16,04 | 4,10 | 2,55 |
| ROCE (%) | OP | 18,15 | 13,39 | 3,80 | 1,46 |
| | PAT | 16,47 | 12,75 | 3,23 | 1,41 |
| **Lquidity indicators** | General | 12,93 | 2,71 | 10,45 | 0,64 |
| | Quick | 12,63 | 2,49 | 10,13 | 0,60 |
| | Prompt | 8,37 | 0,83 | 1,45 | 0,38 |

Source: Own editing based on my own calculation

- In terms of profitability, micro-enterprises had the most favorable indicators in the 1st year, and with the increase in company size, profitability deteriorated. This is due to the fact that, in addition to the large increase in sales revenue, personnel expenses and depreciation have increasingly appeared in the structure of expenses. An increase in the size of the company necessarily involves an increase in the number of

[1]OP: operating profit, PAT: profit after tax

employees, a higher amount of any payouts, and the recognition of depreciation related to the growing assets. As the size of the company increased the projection funds also increased, the increasing value of the moved assets, equity, also resulted in a deterioration of the indicators with the increase in the corporate size category.

- Based on the values of the liquidity ratios, it can be stated that in the case of micro-enterprises and medium-sized enterprises a significant over-coverage was observed in the examined year 1, ie excessive asset-backing was realized compared to the value of short-term liabilities. The reason for this, based on the accounting reports, is that in addition to the dominance of current assets characteristic of the asset structure, the proportion of short-term liabilities in the liability structure did not represent a significant proportion. In the case of large companies, the general and quick liquidity ratio was under-covered, only prompt liquidity showed adequate coverage. In this group of companies, in addition to fixed assets, current assets are less dominant due to high-value, typically self-owned real estate. In addition, short-term funding sources are more pronounced. The relatively high cash position had a positive effect on prompt liquidity.

In the case of small companies, an adequate level of liquidity was characteristic, the principle of matching was fulfilled to a greater extent, and short-term assets within the asset structure were in proportion to short-term liabilities. This is due to the fact that self-owned, high-value properties were less common, and higher inventory levels characterized this group of companies. The structure of liabilities was characterized by a higher proportion of trade receivables.

*H3: The values of the financial indicators will improve during the support period.*

- A hipotézis elvetésre került a pénzügyi mutatószámok kiértékelése, valamint az SPSS programban végzett párosmintás t-próbák alapján. *A 4. táblázat* a vállalatok 1. és az 5. vizsgált évre vonatkozó átlagos mutatóértékeit és a közöttük lévő eltéréseket mutatja. The hypothesis was rejected based on the evaluation of the financial indicators and the pair-sample t-tests performed in the SPSS program. Table 4 shows the average indicators of the companies for the 1st and 5th year studied and the differences between them.

**Table 4: Average indicators of the companies for the 1st and 5th year and the differences between them**

| Financial indicators | OP/PAT | 1st year n=103 | 5th year n=103 | Change n=103 |
|---|---|---|---|---|
| **Profitability indicators** | | | | |
| ROS (%) | OP | 9,05 | -2,95 | -12,00 |
| | PAT | 8,26 | -3,32 | -11,58 |
| ROA (%) | OP | 4,63 | 1,39 | -3,24 |
| | PAT | 4,25 | 1,22 | -3,03 |
| ROE (%) | OP | 18,03 | 9,56 | -8,47 |
| | PAT | 16,26 | 8,02 | -8,24 |
| ROCE (%) | OP | 13,80 | 4,79 | -9,00 |
| | PAT | 12,67 | 5,35 | -7,32 |
| **Lquidity indicators** | General | 8,99 | 2,87 | -6,11 |
| | Quick | 8,71 | 2,27 | -6,44 |
| | Prompt | 4,59 | 0,96 | -3,63 |

Source: Own editing based on my own calculation

- The deterioration of the average values of the profitability indicators was caused by the significant increase in expenses in parallel with the rising sales revenue. Based on the data of the accounting balance sheets, income statements, additional notes and the macroeconomic changes during the period under review, I found that the companies made significant wage improvements, and material expenses also increased significantly as a result of the combined volume and price effect, which decrease. In addition, the projection funds also increased significantly as a result of the investments made from them, which also caused a deterioration in profitability in the period under review.
- The normalization of liquidity ratios was caused by the restructuring of the asset structure and the increase in short-term liabilities.

*H4: There is a significant relationship between the size of the company and improvement the values of the financial ratios, the financial ratios of the larger companies are improving to a greater extent.*

- A hipotézis elvetésre került a pénzügyi mutatószámok kiértékelése, valamint az SPSS programban végzett párosmintás t-próbák alapján. Az *5. táblázat* a vállalatok 1. és az 5. évi mutatószámainak átlagai közötti abszolút eltéréseket muta The hypothesis was rejected based on the evaluation of the financial indicators and the pair-sample t-tests performed in the SPSS program. Table 5 shows the absolute differences between the averages of the companies' indicators for years 1 and 5.

**Table 5: Absolute differences between the averages of the 1st and 5th year indicators of the companies**

| Financial indicators | OP/PAT | Micro n=50 | Small n=33 | Medium n=18 | Large n=2 |
|---|---|---|---|---|---|
| **Profitability indicators** | | | | | |
| ROS (%) | OP | -21,52 | -8,59 | 6,37 | 4,30 |
| | PAT | -20,68 | -8,70 | 6,66 | 4,17 |
| ROA (%) | OP | -6,28 | -2,34 | 2,99 | 1,93 |
| | PAT | -5,78 | -2,46 | 2,99 | 1,86 |
| ROE (%) | OP | -17,15 | -4,85 | 7,67 | 3,43 |
| | PAT | -15,58 | -8,76 | 8,72 | 3,32 |
| ROCE (%) | OP | -17,04 | -5,80 | 6,16 | 2,64 |
| | PAT | -13,66 | -5,75 | 6,30 | 2,56 |
| **Lquidity indicators** | General | -9,82 | 0,70 | -8,99 | 0,22 |
| | Quick | -10,33 | 0,44 | -8,98 | 0,18 |
| | Prompt | -6,90 | -0,27 | -1,09 | 0,15 |

Source: Own editing based on my own calculation

- There are specific reasons for the deterioration of profitability in the case of micro-enterprises. The sales revenue among the examined companies decreased in several

cases compared to the 1st year under review. The lower-value investments made led to an increase in corporate indebtedness, but the increase in the value of fixed costs was not accompanied by a corresponding change in revenue. In most cases there was no real need for the implemented investment, the given settlement did not have a sufficient tourist attraction, typically local needs were met.

- With the increase in the size of the company, the volume of realized investments also increased, however, the expansion of the capacity of accommodation establishments and the creation of new accommodation means such a rapid return is not expected within the. In addition, however, we cannot ignore the positive effects of the implemented investments on the region, which can be felt through expanding employment, improving infrastructure and increasing the well-being of the local population.
- In the group of medium-sized companies, I identified 12 outstandingly performing companies in the course of the investigations, whose financial indicators developed extremely favorably in terms of both profitability and liquidity for the 5 years under review. The common feature of the implemented projects is that they have already been implemented in connection with an existing, profitable tourism activity for several years and are under HUF 100 million. Another common feature is that the tourist attraction capacity and brand value of the settlement serving as the place of the project implementation, as well as its competitiveness, are significant, the health tourism based on medicinal water is especially characteristic of the given settlements. The smaller investments paid off in the case of the 12 companies in Debrecen and Hajdúszoboszló in the period under review.

*H5: There is a significant relationship between the size of the company and the amount of support received, larger companies receive a higher amount of support.*

- The hypothesis was accepted based on the database of the Regional Development Agency.
- The increase in the size of the company has necessarily resulted increaseing of the size of the projects, as more resources are needed to restructure and significantly change an already larger volume of operations.

## 4. NEW AND NOVEL RESULTS OF THE DISSERTATION

1. Defining a new definition of corporate competitiveness:

*Corporate competitiveness is the ability of a company to generate income and liquidity in the course of its operations with an appropriate willingness to take risks. The condition for its competitiveness is that, in addition to social responsibility, it can react proactively to changes in the economic environment, be able to anticipate changes, paying more and more attention to the so-called "soft" factors of competitiveness.*

2. Approach and methodology of competitiveness research:

*A primer kutatás során a versenyképesség „puha" és „kemény" tényezőinek együttes feltárása, ezek alapján az elemzett turisztikai vállalatok teljesítményének értékelése. A „puha" tényezők közül kiemelt figyelmet kell fordítani a humán tőke, innovativitás, hatékony intézményrendszer, motiváltság, kreativitás, rejtett, nem iskolában szerzett tudás, vezetői, munkavállalói, társadalmi és fenntarthatósági szempontokra. In the course of the primary research, a joint exploration of the "soft" and "hard" factors of competitiveness, based on this the performance of the analyzed tourism companies is evaluated. Among the "soft" factors, special attention should be paid to human capital, innovation, efficient institutional system, motivation, creativity, hidden, out-of-school knowledge, leadership, employee, social and sustainability aspects.*

3. The following findings based on analysis of the financial indicators and the questionnaire survey:

- *In the case of the examined companies, the measured financial indicators are more favorable in the case of smaller company sizes, on the one hand due to the increase in personnel expenses and depreciation, and on the other hand due to the increase in projection funds. The deterioration in the average values of the profitability indicators was caused by the significant increase in expenses, the significant wage developments and the increase in the projection funds, which appeared in parallel with the rising sales revenue. Despite the growing brand value and the dynamically rising revenues, the return on investments in the sector, such as the expansion of accommodation capacity and the possible creation of new accommodation, is not expected within the period under review, but only over a longer period. In addition,*

*however, we cannot ignore the positive effects of the implemented investments on the region, which can be felt through expanding employment, improving infrastructure and increasing the well-being of the locals.*

- *Based on the questionnaire survey, the surveyed companies judge their competitiveness to be the best on the basis of the management skills of the company managers, and the least good on the basis of profitability. Overall, medium and large companies rate their competitiveness better. Entrepreneurs who receive support, regardless of their size, consider their own competitiveness to be better than that measured by financial indicators*

4. Identification of 12 outstanding companies in the medium-sized company circle:

*In the group of medium-sized companies, I identified 12 outstandingly performing companies in the course of the investigations, whose financial indicators developed extremely favorably in terms of both profitability and liquidity for the 5 years under review. The common feature of the implemented projects is that they have already been implemented in connection with an existing, profitable tourism activity for several years and are under HUF 100 million. Another common feature is that the tourist attraction capacity and brand value of the settlement serving as the place of the project implementation, as well as its competitiveness, are significant, the health tourism based on medicinal water is especially characteristic of the given settlements. The smaller investments paid off in the case of the 12 companies in Debrecen and Hajdúszoboszló in the period under review.*

## 5. PRACTICAL USE OF THE RESULTS

One of the objectives of the dissertation is the detailed theoretical foundation of the research, the definition of the conceptual framework of competitiveness and the individual levels of competitiveness. Presentation of the theory of measuring competitiveness with financial indicators, highlighting the existing difficulties and the importance of soft competitiveness factors. A significant part of the research was the presentation of the situation of the tourism sector in the European Union and in Hungary, narrowing it to the Northern Great Plain Region.

Based on the secondary data collection, I found that there are numerous possibilities for competitiveness studies, which, however, do not necessarily rest on the same foundations. In most cases, data is collected along hard factors, with a few competitiveness analysis taking into account so-called soft factors.

In line with the objective of the research, it is strongly recommended to take into account the hard and soft factors in the competitiveness studies, which will give a much more complex picture of the companies from the point of view of competitiveness.

The verification of the dissertation hypotheses was partially fulfilled, the hard factors of the examination of competitiveness did not give clear answers in the case of the examined enterprises of the Northern Great Plain Region. However, taking into account the soft factors, a more complete picture of the actual and perceived competitiveness of the companies emerged.

Overall, it is very difficult to quantify, but even to estimate, the extent to which the resources invested in each program, the support given to economic operators, are reflected in the development of the region, and how they affect competition between regions. On the one hand, the development of the economy, transport and the settlement, but also the improvement of environmental conditions have an impact on tourism. On the other hand, the companies appearing in the field of tourism generate demand for other sectors of the economy, local economic actors, and thus contribute to the development and increase of the competitiveness of the region.

I recommend to the decision-makers in connection with the tourism sector that, while maintaining the priority of the sector, it should be treated as a priority area to be supported and developed in the coming period as well. In addition to major, larger-scale pull projects,

there should be increased support for projects that promote the well-being of locals and the improvement of the infrastructure of the countryside, and that training for tourism businesses should be even more emphasized at both managerial and lower levels. In my opinion, the acquisition of the appropriate level of theoretical knowledge and “best practices” especially in the tourism sector would increase the financial stability and profitability of enterprises in the shorter term. The University of Debrecen, as a higher education institution training tourism professionals, can be a suitable partner for the government in terms of cooperation through the outstanding work of the Institute of Rural Development, Regional Economics and Tourism Management.

# 6. PUBLICATIONS IN THE SUBJECT OF THE DISSERTATION

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## List of publications related to the dissertation

Articles, studies (13)

1. **Nagy, T. O.**, Darabos, É.: Turisztikai célú támogatás hatásának vizsgálata a vállalati versenyképességre.
   *International Journal of Engineering and Management Sciences. 5* (1), 603-616, 2020.
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2. Darabos, É., **Nagy, T. O.**: Turisztikai célú támogatások jövedelmezőségi helyzetre gyakorolt hatásának vizsgálata az Észak-alföldi Régióban.
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11. **Nagy, T. O.**: SME sector, a crucial area corporate competitiveness measurement.
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Conference presentations (3)

14. **Nagy, T. O.**: Kihívások a vállalati versenyképesség-mérés területén.
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