COMPARATIVE ANALYSIS OF THE FINANCIAL PERFORMANCE OF HOTELS IN ROMANIA AND HUNGARY[1]

Annamária Lőrincz[2]

ABSTRACT

Research on the financial responses of the tourism sector to crises is lacking in cross-country analyses for Central and Eastern Europe that offer an integrated assessment of sectoral performance before, during and after the COVID-19 pandemic, using cluster analysis to account for the heterogeneity of the sector. The comparative cluster analysis of Romanian and Hungarian hotels provided in this study fills that gap.

It compares the financial performance of businesses in the hotel industry (NACE 5510) in Romania and Hungary, focussing on the period between 2018 and 2022. The reference period covers the prelude to the economic recession induced by COVID-19, the crisis itself, and the early recovery period thereafter. The analysis relies on financial data from the EMIS international company database (N=1029; 793 Romanian and 236 Hungarian companies), three comprehensive profitability indicators (ROA, ROE, ROS) and cluster analysis techniques. Based on the results, seven clusters were distinguished in each country and classified across three performance categories (good, medium and poor). Romanian companies show higher deviation and more pronounced inter-cluster differences, while the Hungarian sample is characterised by more balanced but relatively poorer performance. Analysing clusters in terms of assets and equity structure reveals that companies with a lower asset base but a stronger capital base were more resilient to the crisis. The study also reveals that accommodation providers in the two countries responded differently to the economic recession, suggesting deeper structural differences. Although the Hungarian sector had a more advanced tourism infrastructure to rely on, it was hit harder by the effects of the crisis owing to a greater dependence on foreign tourist flows. As a consequence, the turnover of Hungarian companies was below 2018 levels even in 2023 in real

---

2   *Annamária Lőrincz* PhD Student, University of Debrecen, Faculty of Economics and Business, Doctoral School of Management and Business; Assistant Lecturer, Sapientia Hungarian University of Transylvania, Faculty of Miercurea Ciuc, Department of Economic Sciences. E-mail: lorinczannamaria@uni.sapientia.ro

terms, while Romanian companies adapted more quickly and performed better in the early post-crisis period.

JEL codes: L83, G30, C38, Z32

Keywords: financial performance, cluster analysis, hotels, comparative analysis, Romania, Hungary

1   INTRODUCTION

Security and stability are fundamental conditions for the smooth operation of tourist accommodation establishments (Alreahi–Bujdoso, 2024)especially on tourism sector. Both domestic and international tourism have suffered from the consequences to confront this pandemic, but the recovery and the adoption was not at the same level. This study aimed to give a closer view of both domestic and international tourism performance regarding covid-19 based on touristic accommodation facilities data of Hungary. The SPSS program was adopted to conduct the necessary statistical analysis, where the paired Student's t test was applied to analyse the data. The P-values of the test were significant for almost all of hypotheses. This study revealed that: (i. These conditions encompass many different dimensions, including the environmental, social, health and economic. Their absence may have a profound impact on the financial performance of businesses in the sector. However, periods of crises have been a constant in human history. Natural disasters generally hit harder in economically less advanced regions, while more developed countries are faster and more resilient to respond (Rosselló et al., 2020). At the same time, research highlights an interesting paradox, namely that visitor numbers may temporarily rise after crises (Smeral, 2010), which is potentially explained by the compound effect of a change of consumer mindset, promotional discounts and media coverage. However, not every crisis is followed by short-term recovery. Tourism is often halted completely by conflicts at the level of the entire society, such as terrorist attacks and war (Baker, 2014; Tomej–Bilynets, 2024). The sector is also severely impacted by health crises, like the COVID-19 pandemic during the reference period of this study (Donthu–Gustafsson, 2020; Droj–Droj, 2021; Farkas et al., 2022; Kumar, 2021; Mihalciuc, 2022; Nguyễn Thị Xuân, 2022; Nugroho et al., 2023)like other rarely occurring catastrophes, have happened in the past and will continue to happen in the future. Even if we cannot prevent dangerous viruses from emerging, we should prepare to dampen their effects on society. The current outbreak has had severe economic consequences across the globe, and it does not look like any country will be unaffected. This not only has consequences for the economy; all of society is affected, which has led to

dramatic changes in how businesses act and consumers behave. This special issue is a global effort to address some of the pandemic-related issues affecting society. In total, there are 13 papers that cover different industry sectors (e.g., tourism, retail, higher education. Of financial crises, the 2008 global crisis was felt strongest in the tourism sector. Although it caused significant recession (Smeral, 2010; Song–Lin, 2010), some studies show that it has in parallel fostered a revival in domestic tourism (Sheldon–Dwyer, 2010). The economic crisis induced by COVID-19 in Romania led to similar developments (Orîndaru et al., 2021) – the market for domestic tourism expanded but the entire sector has been hit severely by the consequences of the crisis.

The effects of crises are crucial to analyse for decision makers at destinations to be able to take effective measures regarding restoration, reconstruction and marketing (Rosselló et al., 2020), and to be more responsive to future situations of crisis. Appropriate responses are especially important since tourism is closely connected with other sectors of the economy, and therefore, crisis effects are not isolated, but amplify or reduce each other (Arie–Nagy, 2023; Dedkova–Gudkov, 2020). For the reasons above, this study examines and compares the performance of tourist accommodation establishments in Hungary and Romania over the 2018–2022 period, which also encompasses the public health crisis. The analysis is based on financial and sector-specific indicators in the reference period and also for 2023 in the case of the latter metrics.

While the economic development path of Romania and Hungary, two post-socialist countries in Central and Eastern Europe, has been similar, the structure of their tourism sector is different. In Hungary, the sector is characterised by a strong international orientation, while domestic tourism predominates in Romania. The resulting structural differences imply divergent adaptation and crisis management mechanisms, a comparative analysis of which may provide valuable insight into the resilience of businesses in tourism, and also expands comparative financial analyses available on the tourism sector of Central and Eastern Europe, to underline regional heterogeneity.

At the level of the national economy, one in ten Hungarian businesses were pursuing tourism-related activities in 2019, with the sector providing 8.3% of GDP. In comparison, the Romanian sector's contribution was 2.3 percentage points lower (WTTC, 2022). Based on employment figures, this branch accounted for 9.3% of all economic activity in Hungary, and 2.6 percentage points less in Romania. These macroeconomic indicators already show that the relative weight of tourism is greater in the Hungarian economy. However, in a European comparison, the figures are below EU averages in both countries. Contribution to the GDP is 1.2 percentage points and sectoral employment is 1.9 percentage points higher in the EU than in Hungary (UNWTO, 2019). By 2020, the COVID-19 pandemic re-

duced the share of tourism in GDP by 50.4% globally. The sector shrank by 53.8% in Hungary, but 9.6 percentage points less in Romania. This means that decline in the Hungarian sector exceeded the global average (WTTC, 2022). A similar pattern is observable in sectoral employment, which decreased 3.4 percentage points more in Hungary than in Romania.

The recovery process resulted in an upturn of 6.27% in Hungary's GDP by 2023, yet this stood 2 percentage points below pre-crisis levels. In Romania, the same figure was 1.8 percentage points (WTTC, 2024). It can be inferred that the sectoral impact of the crisis was more pronounced in Hungary and the pace of recovery was also slower. The labour market impact of the COVID-19 pandemic varies significantly across sectors. While knowledge-based industries could quickly switch to remote work, in tourism and hospitality, personal presence remained essential (Szenderák et al., 2025). Accordingly, businesses in tourism proved less resilient to the crisis compared with other sectors.

This study applies the most comprehensive indicators quantifying financial performance (ROE, ROA, ROS), also widely accepted in the literature on the tourism sector (Panno, 2019)and how they measure and monitor businesses' achievements. Actual performance measurement activities are expected to show how (and if.

Based on the objective of the study, the following research questions were formulated:

Q1: What are the differences and similarities between industry-specific indicators for the Romanian and Hungarian sector of accommodation services in the reference period, and what are the underlying reasons?

Q2: What performance categories can be identified by cluster analysis among hotels based on the profitability indicators (ROA, ROE, ROS)?

Q3 What structural differences are observable between the clusters identified in Romania and Hungary regarding the financial performance of businesses?

The following parts of the study provide a sectoral overview of accommodation service providers in the NACE 55 category in Hungary and Romania based on metrics on tourism nights, tourism intensity, turnover in real terms, tourism density, tourism carrying capacity and capacity utilisation in the 2018–2023 period. The overview is followed by the materials and methods used for the comparative analysis based on financial performance, where the performance of hotels is examined by cluster analysis along three profitability indicators (ROA, ROE, ROS) in a cluster analysis in the 2018–2022 period. The Results section comprises the comparison by clusters, providing a detailed description of performance profiles and structural differences. The final section of the study summarises main findings, outlines practical and strategic recommendations as well as directions for further research.

2 THE PERFORMANCE AND COMPOSITION OF THE TOURIST ACCOMMODATION SECTOR IN HUNGARY AND ROMANIA

In this section, accommodation businesses belonging to TEÁOR 55 in Hungary and to CAEN 55 in Romania according to the uniform classification of economic activities are presented and compared based on sector-specific indicators in the 2018–2023 period. Globally, 2019 was an exceptionally good year in tourism (Elitzur et al., 2021; Millaku et al., 2022) and can be regarded as a baseline. It was followed by a severe downturn due to the economic and health crisis triggered by COVID-19 (Donthu–Gustafsson, 2020; Droj–Droj, 2021; Kumar, 2021; Mihalciuc, 2022; Nguyễn Thị Xuân, 2022).

In Hungary, the turnover of businesses in the accommodation service sector fell behind the 2018 reference value by 59.7% in real terms. In comparison, recession in the sector was 19.2 percentage points lower in Romania. After the crisis bottomed out, in the period of recovery that followed, real turnover in Hungary rose by 26.3% by 2021 and by 22.1% by 2022. In 2023, however, no further increase was realised in real terms, owing partly to the high inflationary environment. In fact, a recession of 1% was recorded over the previous year.

In Romania, real turnover was higher by 8.1 percentage points in 2021, by 1.9 percentage points in 2022, and by as many as 29 percentage points in 2023 compared with Hungarian figures – a sign of a faster pace of convergence. As a result, Romania returned in 2023 to the 2019 reference figure in real terms, which was not the case in Hungary.

Tourism nights in Hungary decreased by 56% in 2020, followed by a 19% and a 69% increase in 2021 and 2022, respectively. The rate of growth slowed down considerably by 2023 when the number of tourism nights increased by only 3.5% (KSH, 2023). Romanian data reflect the same pattern that was observable in turnover figures. In 2020, recession was 4 percentage points lower than in Hungary, while in 2021, a 37 percentage points higher increase was recorded. In the following year, growth in Romania lagged behind Hungarian figures, only to perform 4.5 percentage points better in 2023 (*Figure 1*).

It should be noted, however, that while Romania could return to 2019 turnover levels by 2023, both countries remained under their pre-crisis performance in the number of tourism nights (INSSE, 2025).

Figure 1
Tourism intensity and real turnover (tourism nights/1 000 residents; %)
in Romania and Hungary from 2018 to 2023
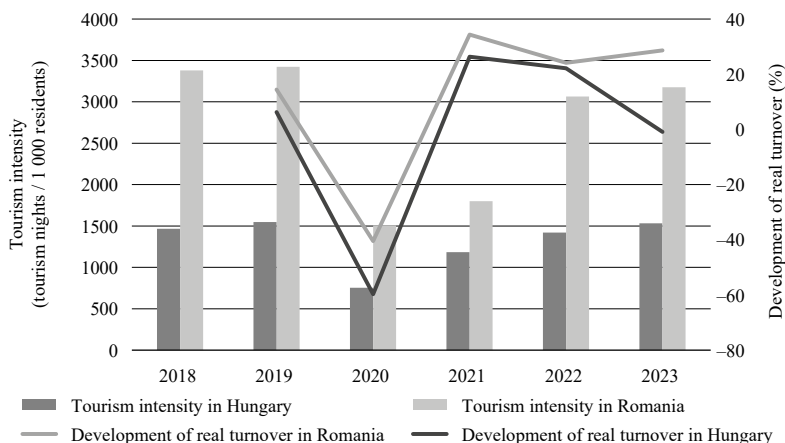
Source: author's elaboration based on KSH, INSSE 2025

As the two countries differ significantly in territorial features and demography, it is important to evaluate their tourism performance based on density and ratio indicators as well. The analysis of tourism intensity, i.e. the number of registered nights spent in a given region per a thousand permanent resident, clearly shows that the relative weight of accommodation services within the sector is considerably higher in Hungary than in Romania, with a 2.3 times greater intensity reported for 2018. Sector contribution to GDP is also in line with that difference. In Hungary, it was 2.3 percentage points higher in 2019 than in Romania (WTTC, 2022), reflecting a more advanced tourism infrastructure and a stronger appeal to international tourists.

The crisis, however, eroded some of Hungary's edge in tourism intensity, which was only double the Romanian figure in 2020 and decreased further to a 1.52 times difference in 2021. In 2023, Hungary still lagged behind its 2018 performance in tourism intensity, while Romania, just like in the case of turnover, has recovered to pre-crisis intensity levels.

Tourism density, or tourism nights per unit of land area, should also be considered as the basis for comparison, having regard to the geographical size of the two countries. In the pre-crisis period (2018–2019), average density in Romania was 123 nights spent/km², while it was 355 nights spent/km², i.e. 2.87 times higher in Hungary. After the onset of the crisis, density values fell to 61 in Romania and 157 in Hungary in 2020. In 2023, the density indicators showed a relatively lower

2.68 times difference between Romania and Hungary, indicating that Romania could slightly improve its baseline position relative to Hungary.

Similar to other normalised ratio indicators, the crisis decreased the difference between the two countries to the benefit of Romania, indicating structural adjustment towards convergence.

Disparities between the tourism indicators of these two Central and Eastern European countries are rooted in multiple economic and structural factors. In its starting position, Hungary had a more advanced and diversified tourism architecture, which, however, proved more vulnerable to the crisis. By contrast, Romania, that was originally at a disadvantage, followed a shorter and more balanced recovery trajectory.

Figure 2
Distribution of tourists (%) in Romania and Hungary, 2018-2023
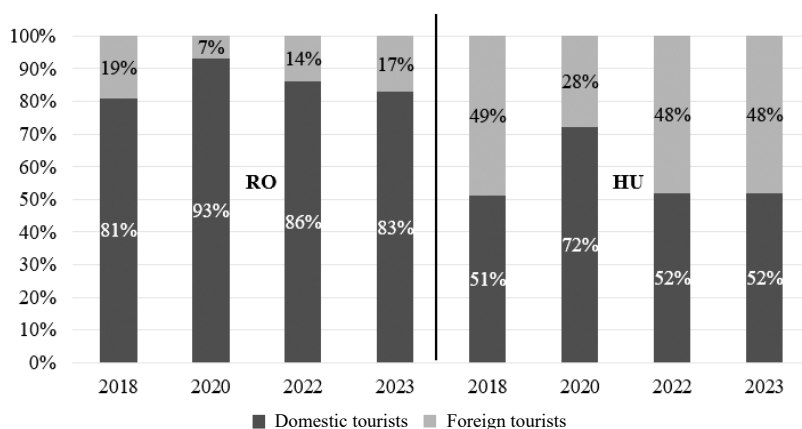
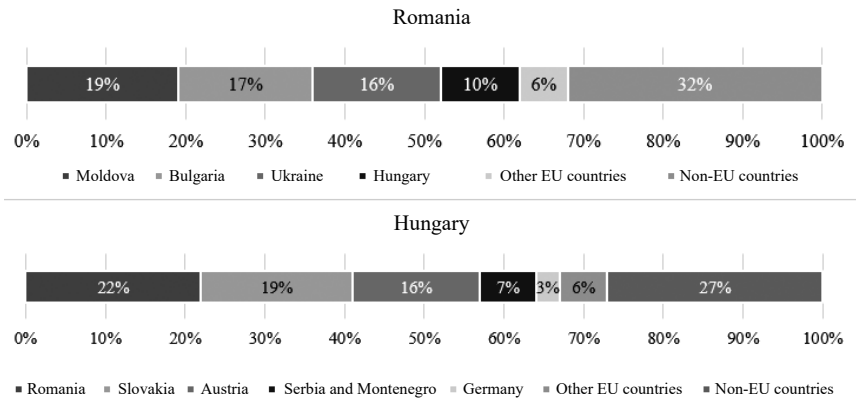

Source: author's elaboration based on KSH, INSSE 2025

One of the most decisive factors in the resilience of the tourism sector to crises is the nationality of service users, or in other words, if they are domestic or foreign tourists. Restrictions introduced due to the COVID-19 pandemic substantially curtailed international travel and exerted an especially strong impact on inbound tourism.

In the 2018–2019 pre-crisis period, the distribution of nights spent by visitors at commercial accommodation establishments was almost evenly distributed among Hungarian (50–51%) and foreign nationals (49–50%). After the outbreak of the pandemic in 2020–2021, the share of foreign tourists dropped to 28–31% (*Figure 2*). However, by 2022–2023, the ratio of foreign tourists was again only

1 percentage point below 2018 figures, at 48–52%, indicating an almost complete structural regeneration in tourist arrivals.

The structure of tourism in Romania, by contrast, is markedly different. Even before COVID-19, only 19% of visitors arriving in the country were foreign nationals, which decreased further to 7–8% in 2020–2021. Although the share of foreign tourists increased to 17% by 2023, it remained below the 2018 figure (*Figure 2*). At the same time, domestic tourism in Romania expanded to such an extent that it could compensate for halted inbound tourism and secure a complete recovery in real turnover. The literature also mentions that the pandemic had in fact a positive effect in Romania, namely the reinforcement of domestic tourism (Orîndaru et al., 2021). By contrast, in Hungary, the predominance of foreign tourists meant that the domestic market was less able to offset the downturn.

Figure 3
Distribution of tourists (%) in Romania and Hungary, 2018-2023

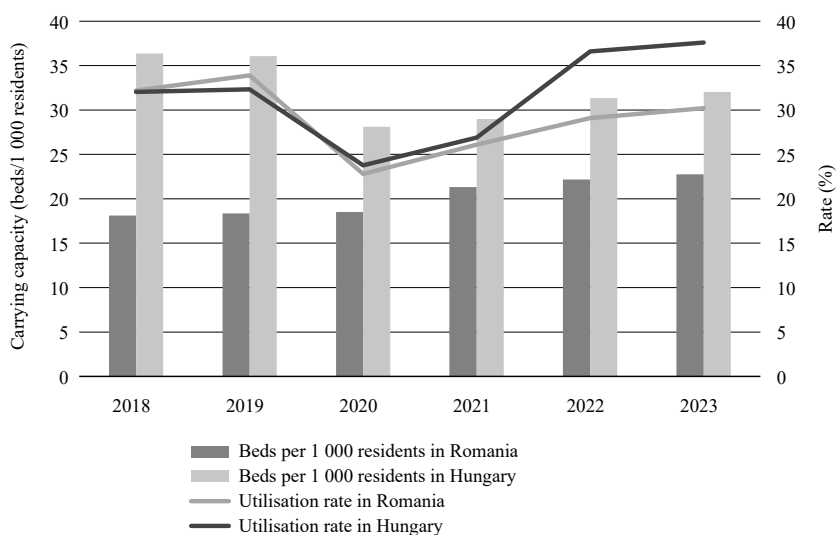*Source:* author's elaboration based on KSH, INSSE 2025

Considering the origin of foreign tourists visiting Hungary in the reference period, 97% of international guests arrived from Europe (*Figure 3*). Their share was 3 percentage points lower on average in Romania, indicative of a more diversified international demand composition. The largest share of foreign tourists to Hungary arrives from Romania, Slovakia and Austria. As for Romania, as a consequence of the war, Ukraine advanced in the ranking of sending countries in 2022 and overtook Hungary. Based on 2022 data, tourists from Ukraine accounted for 26% of foreign tourist arrivals.

Tourism carrying capacity, defined as the number of beds available for visitors at accommodation establishments in a given country, was almost at the same level

in the two countries in 2018. They have, however, set out on a different path in this respect after the crisis. By 2023, there was a 22.5% increase in the number of beds available in Romania, compared with the 2018 baseline. Hungary has not seen a similar increase in capacity. Romanian businesses seem to have leveraged the recessionary period for capacity expansion and infrastructural development relying on domestic demand, while such strategic steps were not typical among Hungarian accommodation providers.

Figure 4
Carrying capacity and capacity utilisation (beds/1 000 residents; %) in Romania and Hungary, 2018-2023

Source: author's elaboration based on KSH, INSSE 2025

Capacity ratio indicators show considerable differences between the two countries. In 2018, the number of beds per 1 000 residents was 36 in Hungary, while Romania could offer only half that number. Although there was an increase in this value to 23 by 2023 in Romania, it still lagged behind the corresponding figure for Hungary by 9 beds (*Figure 4*).

As to territorial distribution, tourism density, measured as number of beds per square kilometre, was 3 797 in Hungary in 2018, and only 39% of that figure in Romania. During the period of the crisis, Romanian figures improved also for this indicator to 1 818 beds/km² by 2023, which is 55% of the corresponding Hungarian value.

Both countries started from a capacity utilisation rate of 32% at the beginning of the reference period. At the trough of the crisis in 2020, utilisation rates dropped below 25% and stayed under 40% even in the recovery period. Low utilisation encouraged accommodation service providers to invest future development funds into more efficient capacity management.

The structure of the market also developed differently in the two countries. The Hungarian market is characterised by greater concentration. In 2022, the largest market operator was Danubius Hotels Zrt., accounting for 8% of retail turnover in the sector, which is 5 percentage points higher than the corresponding Romanian figure. Further major market players include Marriott International Inc. (7.41%), Accor-Pannonia Hotels Zrt. (6%), New York Palace Kft. (3.23%) and Four Seasons Hotels Ltd. (2.53%). The remaining 63.69% is contributed by other accommodation establishments. By comparison, micro and small enterprises are more prevalent in Romania's tourism sector (Droj et al., 2021), pointing to a more decentralised market structure.

It can be concluded from the analysis of the two countries in the 2018–2023 period that Hungary was hit harder by the adverse effects of the recession in terms of turnover and nights spent. That can be explained by the structural difference in the two countries' tourism sectors. Domestic tourism accounts for 81% of demand in Romania, while Hungary is more reliant on international tourism, with 49% of visitors arriving from across its borders. Carrying capacity expanded in Romania in the reference period while it was stagnant in Hungary. The utilisation rate in Romania was 2 percentage points higher on average but remained below 35% in both countries on an annual basis.

Real turnover in Romania was close to the 2018 baseline by 2022, but could not reach the 2019 value. Hungary could not fully achieve a return to its 2018 performance by 2023, but turnover levels showed a positive trend. These findings demonstrate that even though Hungary disposed of more advanced tourism structures before the crisis, recovery after the recession was more dynamic in the Romanian sector, which will most probably be reflected in financial performance indicators.

In an empirical study, Droj et al. (2021) examined businesses of a turnover between EUR 1 and 50 million in the tourism sector of four Central and Eastern European countries (Romania, Croatia, Hungary and Slovenia), using information from the Amadeus database. In 2020, turnover, cash flow and employment decreased on average by 54.85%, 103.94% and 23.04%, respectively. Among profitability indicators, the sharpest decline was recorded in ROE, especially in Hungary and Croatia where the sector's weight in GDP had been comparatively higher. A similar trend was observable in ROA. The authors of the study stress the importance of their findings in identifying relevant factors and key indicators in

revitalising tourism in the region. They developed a complex performance index for the same countries, incorporating the most widely used financial indicators of ROE, ROA, ROS and SOL to provide a comprehensive overview of the businesses' profitability and liquidity focusing on the period of recession to create a multidimensional basis for cross-country comparison.

Level of indebtedness is especially important to consider during periods of crisis (Gomoi; 2021), as it is a decisive factor in tourism businesses' resilience. Darabos (2024) conducted a comparative analysis of the effects of the 2008 global economic crisis and COVID-19 in the Hungarian tourism and catering sector. The findings reveal that the two crises affected domestic and inbound trips for tourism purposes differently. The 2008 crisis spiralled into Hungary with a delay. Accordingly, visitor numbers dropped earlier in foreign than in domestic tourism, yet the extent of the decrease was similar. By contrast, the 2020 crisis struck inbound tourism to Hungary almost instantly and more severely. As to territorial effects, while the global economic crisis left no 'big losers' in the sector, during the COVID-induced crisis, losses were more unevenly distributed depending on area, with the capital Budapest suffering the most in Hungary. In their study on businesses in thermal, spa and health tourism, Kővári et al. (2024) concluded that regional differences also play a role in the development of financial performance, which substantiates the chosen cluster-analysis approach, grounded in the sector's heterogeneity.

Based on the results presented above, the next section is centred on an empirical cluster-based analysis of the financial performance of hotels through a comparative assessment of ROA, ROE and ROS indicators.

3   MATERIALS AND METHODS

In this study, we analyse and compare financial and accounting data from Romanian and Hungarian accommodation service providers under the CAEN 5510 and TEÁOR 5510 economic activity codes which correspond to the NACE 5510 'Hotel services' (hotels and similar accommodation) category. The analysis is based on the EMIS international company database, comprising only businesses with a turnover of at least 1 million US dollars.

Only companies with comprehensive annual reports available for all years within the observed five-year period (2018–2022) were retained in the research. After applying this exclusion criterion, the final sample consisted of $N_{RO} = 793$ Romanian and $N_{HU} = 236$ Hungarian businesses, resulting in a database of N=1029 businesses used for the empirical analysis.

The size, turnover, staff numbers and financial indicators of businesses in the sample were highly heterogeneous, as corroborated by measures of variability, in particular variance and standard deviation values. The data therefore had to be structured into homogeneous groups. For comparability, we employed cluster analysis, a multivariate dimensionality reduction method endorsed in the literature (Fenyves et al., 2020). Clustering was based on three profitability indicators (ROA, ROE, ROS) that are widely recognised and used in the literature, and recommended in several studies (Dang et al., 2024; Danso et al., 2020; Neacşu–Georgescu, 2024, Rákos et al., 2022)2024. The clusters formed this way allow for a statistically sound comparison between the financial performance of hotels in the two countries. Joint application of the three financial performance indicators ensures a multidimensional evaluation of business operation. ROA informs of how efficient a company's assets are in generating revenue, ROE of the return earned on shareholders' equity, while ROS is a metric expressing net profit as a percentage of sales revenue, characterised by sensitivity to variations in operating costs and capacity utilisation. A combined analysis of these indicators is particularly informative of operational efficiency and capital utilisation, which is in line with our research objectives of analysing the resilience and adaptive potential of business management in response to crises. An analysis of Romanian businesses using the same methodology has been performed and published earlier (Lőrincz, 2025). The present study contributes to the previous findings by analysing Hungarian businesses and comparing the results with the data of Romanian ones.

Prior to the cluster analysis, outliers were identified separately for each selected key indicator (ROA, ROE, ROS) and by country. Box plots were used for this purpose. For Hungary, exclusion thresholds were defined as follows: ROA: ±35% and +45%, ROE: −65% and +75%, and ROS: −75% and +75%. For Romania, we had applied considerably wider ranges due to higher standard deviation (Lőrincz, 2025). After removing outliers, the sample to be analysed contained 717 Romanian and 211 Hungarian businesses.

Table 1 presents descriptive statistics (mean, standard deviation, kurtosis, skewness) for ROA, ROE and ROS by country, following data cleansing. Kurtosis and skewness values as well as the results of the Kolmogorov-Smirnov and Shapiro-Wilk normality tests ($p < 0.05$) confirm that the indicators do not follow a normal distribution. Accordingly, in subsequent analyses, non-parametric tests should be employed.

Table 1
Descriptive statistics of Romanian (N = 717) and Hungarian (N =211) busines-ses, outliers excluded

	ROA		ROE		ROS	
Indicator	RO	HU	RO	HU	RO	HU
Mean	9.41	6.74	16.07	12.99	11.31	8.58
Median	6.76	5.56	12.43	10.77	11.12	7.14
Standard deviation	11.08	7.75	22.7	15.88	20.86	15.51
Skewness	1.14	0.36	0.59	−0.29	−0.71	−0.53
Kurtosis	2.44	5.81	2.9	4.51	3.17	7.2
Minimum	−32.65	−34.42	−70.88	−62.24	−82.13	−74.24
Maximum	62.09	40.47	99.93	74.99	79.08	71.09

Source: author's elaboration and calculations

Cluster numbers were determined and the analysis was performed using the same two-step methodology as for the Romanian dataset. First, the optimal number of clusters was defined by hierarchical clustering using Ward's method. From the resulting cluster number, clusters were segmented by the non-hierarchical k-me-doids method based on the three key financial performance indicators, i.e. ROS, ROA and ROE. This methodological approach is also endorsed in the literature (Fenyves et al., 2020) and is appropriate for grouping companies according to similar profitability profiles.

Figure 5
**Number of clusters using the elbow method**
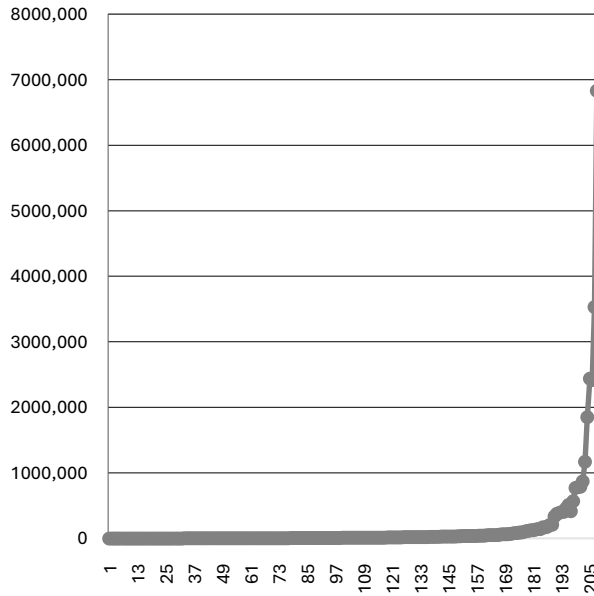
Source: author's elaboration and calculations

We determined the optimal number of clusters using the elbow method (Deb–Lee, 2018) (*Figure 5*). Cluster numbers are shown on the horizontal axis and clustering coefficient values on the vertical axis in the figure. Based on the breakpoint in the chart, the optimal number of clusters is seven in the case of Hungarian businesses. Our previous cluster analysis on Romanian businesses yielded the same outcome (Lőrincz, 2025). The dendrogram in *Figure 6* substantiates that result.

The database was analysed and the figures were compiled using the IBM SPSS Statistics 26.0, MATLAB and Microsoft Excel software.

Figure 6
Dendrogram of the Ward linkage technique
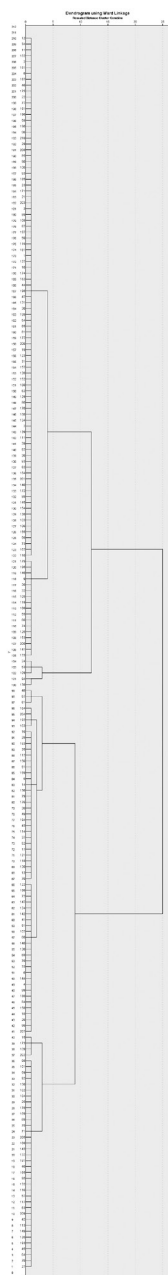
Source: author's elaboration and calculations

4   RESULTS

The objective of this study is to compare the financial performance of hotels in Romania and Hungary and to explore similarities and differences. Performance is measured based on profitability indicators widely recognised in the literature to provide the most comprehensive evaluation of the businesses' financial performance. Consequently, as in our previous analysis limited to Romania (Lőrincz, 2025), three performance indicators were deemed suitable, namely ROS, showing profit relative to sales revenue; ROA, describing the utilization of assets; and ROE, informing of the profit generating potential of equity. These ratio indicators and the additional financial indicators compared were calculated using the same formulae as on the Romanian sample (Lőrincz, 2025) and in Fenyves et al. (2020).

Spearman's rank correlation coefficient was applied to evaluate the relationship between the three key indicators. The results are presented in *Table 2*. The calculated coefficient values are significant for both countries and show a strong positive association. The strongest correlation is observable between ROA and ROE (ρRO = 0.826; ρHU = 0.791), suggesting that among the analysed businesses, profitability in relation to assets is closely linked with profitability in relation to equity. That correlation is more pronounced in the Romanian sample.

Table 2
Correlations between profitability indicators

Spearman's rank correlation coefficient (rho)		
Indicator pair	**RO**	**HU**
ROA – ROE	0.826**	0.791**
ROA – ROS	0.768**	0.665**
ROE – ROS	0.658**	0.506**

**Significant at the 0.01 level

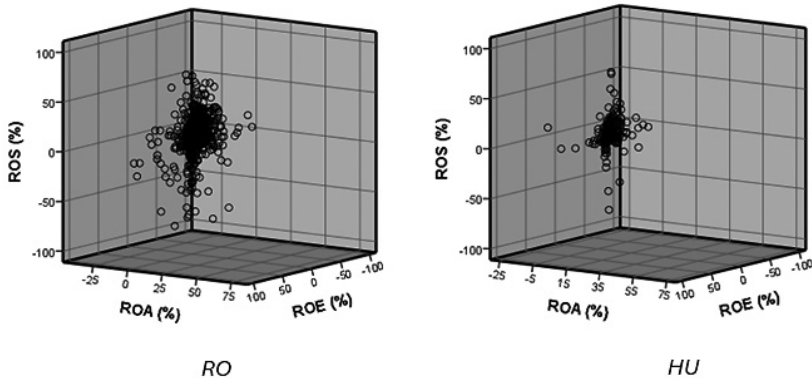*Source:* author's elaboration and calculations

The strong correlation between ROA and ROS suggests that asset utilisation and profitability in relation to sales revenue follow similar performance patterns. ROE and ROS show a correlation of medium strength in the Hungarian sample, which implies that the return on equity is only moderately associated with profitability in relation to sales.

In summary, the calculated correlation coefficient values are higher for all indicator pairs in the Romanian than in the Hungarian sample (*Figure 6*). This dis-

parity may point to underlying structural differences in the businesses' financial performance.

Figure 7
Correlations between financial indicators

RO   HU

Source: author's elaboration and calculations

The following section presents the results of the cluster analysis performed with the methodology outlined in the previous section. The basis of clustering was the mean of the three selected profitability indicators for the five-year reference period. The optimal number of clusters determined with the elbow method and hierarchical clustering was seven in the case of both countries.

We carried out non-parametric tests, more precisely the Kruskal-Wallis test and Dunn's post hoc test, to identify statistically significant differences between the clusters. The results for the Kruskal-Wallis test on the Hungarian sample are summarised in *Table 3*. The test results show clear and significant differences in each analysed profitability indicator between the Hungarian business clusters (*Table 3*). A similar conclusion emerged from the cluster analysis performed on the Romanian sample (Lőrincz, 2025).

An additional finding is that within-cluster standard deviation was lower than in the full sample of either country, which reinforces the validity of the clustering approach and the creation of more homogeneous business groups.

Table 3

Kruskal-Wallis test on Hungarian business clusters formed on the basis of profitability indicators

| Indicator	Kruskal-Wallis test	df	p
ROA (%)	103.02	6	**
ROE (%)	109.61	6	**
ROS (%)	111.34	6	**

**Significant at the 0.01 level

Source: author's elaboration and calculations

Based on the results of the cluster analysis, the majority of Hungarian businesses (94.34%) fits into two clusters. The remaining clusters comprised less than 2% of Hungarian businesses. Accordingly, further analysis concentrates primarily on the two dominant clusters.

In Romania, 96.65% of the businesses are concentrated in four clusters, while each of the remaining three clusters – as in the Hungarian sample – contain less than 2% of the businesses (Lőrincz, 2025). Consequently, comparative analyses were limited to the four Romanian and two Hungarian representative clusters.

Figure 8

**Share of Hungarian businesses (%) in each cluster**
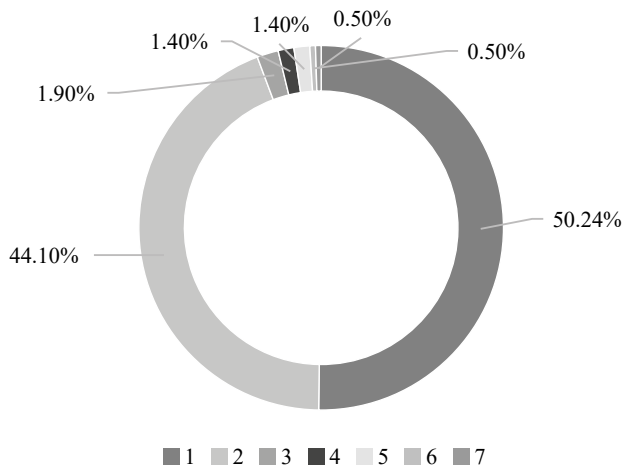
Source: author's elaboration and calculations

Figure 9 presents the clustering of businesses according to the mean values of the ROA, ROE and ROS profitability indicators for the five-year reference period. Although there is no consensus in the literature regarding ideal values, it is widely accepted that a steadily increasing ROA and ROS of at least 5% and a ROE above 10% can be considered a sign of stable and strong business performance (Herciu, Ogrean–Belascu, 2011; Herman–Zsidó–Fenyves, 2022). Clusters were formed according to three performance levels as follows: clusters of high performers (Clusters 2 and 3) have ROA, ROE and ROS values above 6%, 9% and 16%, respectively. In the cluster of medium performers (Cluster 1), mean ROA, ROE and ROS is 3.45%, 5.76% and 2.4%, respectively. Low performers (Clusters 4, 6 and 7) typically record negative ROA, ROE and ROS values. Cluster 5 should be mentioned separately, where ROE is very high, which however, is a distorted value stemming from extremely low equity. Based on actual performance, businesses in this cluster belong rather to medium or low performers. It should also be noted that Clusters 1 and 2 have the greatest significance in the full Hungarian sample, as they comprise the majority of businesses, while the other clusters have a marginal share. Accordingly, these two Hungarian business clusters and the four dominant Romanian clusters are the focus of the comparative analysis. At this level, Romanian clusters already exhibit significant relative differences, as the ROA, ROE and ROS values in high-performing groups are above 14%, 25% and 19%, respectively. Romanian business clusters of medium performance are also characterised by higher values than their Hungarian counterparts, with ROA, ROE and ROS values of around 5%, 8% and 9%, respectively (Lőrincz, 2025). Based on the above data, the Hungarian cluster of high performers is closer to medium performers than to high performers in Romania in respect of ROA and ROE. This finding suggests a structural difference observable in the performance indicators of hotels in the two countries.

Figure 9
Mean financial indicator (ROA, ROE, ROS) values by Hungarian business cluster
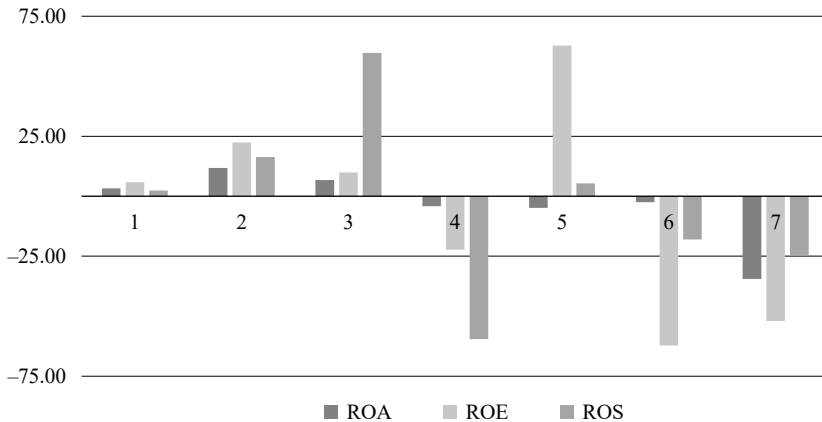
Based on percentage share, 45.97% of Hungarian hotels belong in high-performing clusters, 50.23% to medium performers and 3.8% to low performers. The Romanian sample shows a business distribution of 35.43% in the high-performing, 50.21% in the medium-performing and 14.36% in the low-performing clusters (Lőrincz, 2025). It should be stressed that the three-tier classification was performed for each country separately, based on internal distribution and cluster structure. This also means that performance level thresholds are not directly comparable, but reflect internal relations within the respective samples. Hungarian businesses are in general characterised by a more balanced but lower performance, while the Romanian sample shows greater variance in performance and more pronounced differences between the clusters.

In the following sections, further financial and asset metrics are added to the profitability indicators for an even more comprehensive assessment of businesses' performance. We have taken the means of these additional indicators in each Hungarian cluster, and compared them with the corresponding Romanian values. The results are presented in *Table 4*. We compiled tonal scale charts for better visualization, where more favourable values for a given indicator are marked by darker tones and less favourable ones by lighter tones. The tone-based assessment validates the performance levels established earlier, as well-defined clusters emerge not only from profitability metrics but also from the other indicators analysed. It should be noted, however, that certain indicators, such as the ratio of tangible assets or the proportion of current liabilities, have not been included in

this visualisation due to lack of consensus in the literature as to which direction of deviation should be interpreted as distinctly favourable or unfavourable.

Table 4
Mean values of the analysed indicators by Romanian and Hungarian business clusters

	RO				HU		RO	HU
Cluster no.	1	2	3	4	1	2		
Number of businesses	360	85	184	64	106	93	717	211
Share of businesses (%)	50.21	11.85	25.66	8.93	50.24	44.08	**RO**	**HU**
Indicator	Five-year mean indicator value (2018-2022)						Mean	
ROA (%)	RO				HU		RO	HU
ROE (%)	5.25	−2.72	20.59	14.49	3.45	11.75	9.41	6.74
ROS (%)	8.32	−5.19	40.55	24.65	5.76	22.41	16.07	12.99
Ratio of tangible assets (%)	9.63	−21.6	20.93	44.91	2.41	16.37	11.31	8.58
Equity ratio (equity to total assets ratio) (%)	70.85	75.93	55.27	64.27	58.03	52.18	66.38	55.08
Ratio of current liabilities (%)	59.7	48.3	56.58	63.81	54.28	59.26	56.83	55.36
Current ratio	63.31	63.92	69.13	63.42	68.93	74.98	64.79	71.17
Quick ratio	3.58	5.58	4.21	10.64	1.83	2.67	4.6	2.27
Personnel expenses / Net sales revenue (%)	3.16	4.99	3.79	9.47	1.52	2.42	4.1	1.97
Operating profit / Net sales revenue (%)	27.61	40.38	20.91	22.62	28.31	26.35	27.23	27.46
Accounts receivable turnover ratio (x)	11.51	−18.1	21.93	43.59	4.81	14.66	13.05	9.27
Vevőkövetelések forgási sebessége (x)	68.35	26.35	92.44	18.27	34.27	36.99	63.56	34.79

Source: author's elaboration and calculations

As for the equity ratio, we found a mean value close to 50% even in clusters of the poorest performance, meaning that businesses in both countries can be regarded as having a strong capital position. No significant issues can be observed from the perspective of liquidity, although Romanian businesses exhibit greater overall financial stability based on a joint examination of equity ratio and liquidity. That difference is the most conspicuous when comparing clusters of the same

performance level, where Romanian Clusters 3 and 4 correspond to Hungarian Cluster 2, while Romanian Cluster 1 can be interpreted as equivalent to Hungarian Cluster 1.

The operating profit to net sales revenue ratio is higher in the Romanian sample. It is 22% or higher in high-performing Romanian business clusters, which exceeds the indicator value recorded for their Hungarian counterpart by 7 percentage points. That difference is measured at 3 percentage points between the clusters of medium performers, while it is around 4 percentage points for the full sample (without clustering).

In respect of the accounts receivable turnover ratio, the best performance is observable in Cluster 3 of the Romanian sample, followed by Romanian Cluster 1 and then Hungarian Clusters 2 and 3. Indicator values, however, are substantially more volatile in the Romanian clusters. This trend applies not only to this metric, but to all analysed financial performance and asset-based indicators in general. In Hungarian clusters, by contrast, standard deviation is typically lower but so are performance values, reflecting greater balance but lower development potential. The extended analysis confirms that clusters cannot be evaluated objectively based on profitability metrics alone; a combined assessment of financial standing and asset position is essential. Coherence among the indicators is clearly observable in this study as well, which further substantiates the relevance of the three-tier classification of business performance.

Based on the results of the Kruskal-Wallis test, differences between the Romanian business clusters were, for the most part, significant, except for the ratio of current liabilities, where no significant difference was observed (Lőrincz, 2025). By contrast, inter-cluster differences in the Hungarian sample were significant only in the case of three indicators, specifically the equity ratio (H=16.709; df=6; p=0.010), the quick ratio (H=17.809; df=6; p=0.007) and operating profit / net sales revenue (H=70.397; df=6; p<0.01). For the other five indicators, no statistically relevant difference was found. These findings indicate more marked differences between the Romanian business clusters, and a more homogeneous cluster structure but less diversified performance in the Hungarian sample.

For a more profound understanding of cross-cluster differences, the accounting structure of the businesses was also put under scrutiny (*Table 5*). The analysis revealed a higher mean asset base in Cluster 1 of medium performers within the Hungarian sample. In particular, fixed and tangible asset values were significantly higher in this cluster than in Cluster 2 characterised by relatively stronger business performance. As a consequence, businesses in Cluster 1 incur 2 percentage points higher depreciation expenses on average, alongside greater interest and personnel expenses relative to net sales revenue. Similar findings were applicable to the Romanian business clusters (Lőrincz, 2025).

Regarding that the reference period encompasses the economic recession triggered by COVID-19, it is an important finding of the study that businesses with larger asset holdings experienced a less favourable financial situation during this period. Even more so if their high interest expenses substantially eroded profitability. By contrast, businesses with a lower asset base performed better on average.

Table 5
Mean accounting figures by Hungarian business cluster

Indicator	Cluster		Kruskal-Wallis test	df	p
	1	2			
Total assets	13 167 407.05	5 681 769.22	11.17	6	0.08
Fixed assets	9 050 646.46	3 193 140.09	14.21	6	*
Tangible assets	8 616 576.25	3 181 484.12	14.05	6	*
Current assets	1 982 136.20	1 195 132.96	1.71	6	0.94
Current liabilities	1 953 571.36	919 782.93	1.65	6	0.95
Non-current liabilities	2 188 707.07	716 882.15	10.20	6	0.12
Equity	6 599 813.50	3 104 344.27	11.02	6	0.09
Net sales revenue	5 953 964.15	4 351 978.88	4.71	6	0.58
Profit after taxes	275 839.35	508 681.87	51.16	6	**
Operating profit	439 750.15	530 610.67	32.00	6	**

Significant at the **0.01 or * 0.05 level

Source: author's elaboration and calculations

The results of the Kruskal-Wallis test show significant differences between the altogether 14 clusters in the two countries for all three profitability indicators (ROA, ROE, ROS) (*Table 6*). Dunn's post hoc test was employed for a more precise examination of pairwise differences between the clusters (*Table 7*), with particular attention to the top-performing Romanian business Cluster 4 and Hungarian business Cluster 2.

Table 6

Kruskal-Wallis test on Hungarian and Romanian business clusters formed on the basis of profitability indicators

	Kruskal-Wallis test	df	(Bonferroni-) corrected significance level
ROA (%)	547.351	13	**
ROE (%)	643.005	13	**
ROS (%)	554.057	13	**

**Significant at the 0.01 level

Source: author's elaboration and calculations

In respect of ROA, Romanian Cluster 1 (medium performers) (p = 0.006; pBonferroni = 0.56) and Romanian Cluster 2 (low performers) (p = 0.003; pBonferroni = 0.234) are not significantly different from Hungarian Cluster 1 (medium performers) after applying the Bonferroni correction. Similarly, no significant difference is found between (comparatively high performing) Romanian Cluster 4 and (comparatively high performing) Hungarian Cluster 2 (p=0.06).

Table 7

Dunn's post hoc test on profitability metrics across Romanian and Hungarian cluster pairs

Indicators	Cluster pair		Dunn's test statistic	Standard error	z-statistic	Significance (p)	(Bonferroni-) corrected significance level
	RO	HU					
	1	1	81.137	29.62	2.739	0.006	**0.56**
	2	1	−220.45	39.025	−5.136	0.003	**0.234**
	3	1	448.765	32.683	13.731	**	**
	4	1	379.758	42.43	8.95	**	**
ROA (%)	1	2	−216.717	31.178	−6.951	**	**
	2	2	−498.304	40.221	−12.389	**	**
	3	2	150.911	34.102	4.425	**	**
	4	2	81.904	43.532	1.881	0.06	**1.00**
	1	1	54.728	29.62	1.848	0.065	**1.00**
	2	1	−179.032	39.025	−4.588	**	**
	3	1	485.552	32.683	14.856	**	**
	4	1	352.962	42.43	8.319	**	**
ROE (%)	1	2	−261.712	31.178	−0.35	0.726	**1.00**
	2	2	−280.924	40.221	−12.319	**	**
	3	2	169.112	34.102	4.959	**	**
	4	2	36.522	43.532	0.839	0.401	**1.00**

Indicators	Cluster pair		Dunn's test statistic	Standard error	z-statistic	Significance (p)	(Bonferroni-) corrected significance level
	RO	HU					
ROS (%)	1	1	146.159	29.62	4.935	**	**
	2	1	–220.469	39.025	–5.649	**	**
	3	1	369.204	32.683	11.296	**	**
	4	1	595.646	42.43	14.038	**	**
	1	2	–145.461	310.178	–4.66	**	**
	2	2	–512.088	40.221	–12.732	**	**
	3	2	77.584	34.102	2.275	0.023	**1.00**
	4	2	304.023	43.532	6.984	**	**

**Significant at the 0.01 level

Source: author's elaboration and calculations

In terms of the ROE indicator, Romanian Cluster 1 is not significantly different either from Hungarian Cluster 1 (p = 0.065) or Hungarian Cluster 2 (p = 0.726). The Romanian Cluster 4 and Hungarian Cluster 2 pair does not show any statistically significant difference either (p = 0.401).

For the ROS indicator, inter-cluster difference is not significant only in the case of (comparatively high performing) Romanian Cluster 3 and (comparatively high performing) Hungarian Cluster 2 when the Bonferroni correction is applied (p = 0.006; pBonferroni = 0.56).

On the basis of the above findings, the Hungarian and Roman business clusters are not fully equivalent to each other. Although Romanian Cluster 1 and Hungarian Cluster 1 as well as Romanian Cluster 4 and Hungarian Cluster 2 are similar in terms of ROA and ROE, these correspondences can no longer be substantiated for ROS.

5   FINDINGS AND RECOMMENDATIONS

Based on the comparative analysis of the financial performance of hotels in Romania and Hungary, cluster analysis was reasonable, particularly due to the heterogeneity characterising the sector. As with Romanian businesses, seven statistically distinct clusters were identified within the Hungarian sample, which answers the second research question (Q2).

The performance ranking of the Hungarian clusters, formed on the basis of profitability indicators (ROA, ROE, ROS) calculated for the five-year reference period (2018-2022), is as follows: Cluster 2, 3, 1, 5, 6, 4 and 7. As in the Romanian sample, these may be grouped into three categories: comparatively high performers,

medium performers and low performers. A key difference, however, is that the threshold values between performance groups are lower in Hungary. Of Hungarian businesses, 45.97% belong to high performers, 50.23% to medium performers, and 3.8% to low performers. Nevertheless, the ROA and ROE values of the Hungarian high-performing clusters are closer to those of the Romanian medium-performing group. In Romania, the cluster of low performers is more clearly delineated, comprising 14.36% of businesses. The findings confirmed the validity of the previously identified three performance groups based on indicators of capital structure, asset composition, liquidity and cost efficiency.

94.34% of businesses in the Hungarian sample were concentrated in two principal clusters. Therefore, these two clusters formed the basis for comparison to the four largest clusters in the Romanian analysis. According to the Kruskal-Wallis test, the clusters of the two countries differ significantly. Dunn's post hoc test indicates that Romanian Cluster 1 (medium performers) and Hungarian Cluster 1, as well as Romanian Cluster 4 (high performers) and Hungarian Cluster 2, are partially comparable in terms of ROA and ROE; however, this correspondence does not hold for ROS. The answer to the third research question (Q3) is thereby that full cluster equivalence cannot be established, only partial correspondences can be identified.

The examination of sector-specific indicators reveals a more developed tourism infrastructure and higher tourism density in Hungary, whereas Romanian businesses performed more successfully in crisis management and financial recovery. Real turnover and recovering profitability indicator values also corroborate these observations, thereby answering the first research question (Q1).

Throughout the reference period, businesses with a smaller asset base and higher equity tended to achieve better financial performance on average in both countries. In the Romanian sample, more businesses belonged to the high-performing cluster, whereas the Hungarian sample was skewed towards medium performers. At the same time, the lower standard deviation values of Hungarian clusters indicate more moderate volatility, suggesting that Hungarian businesses delivered a more balanced, albeit restrained, performance.

Common features of high-performing businesses include a low asset base, higher equity ratio, lower interest and depreciation expenses, and moderate personnel expenses. These businesses proved more resilient to economic downturns.

Different performance levels call for distinct strategic priorities: exploiting growth opportunities for high performers, improving efficiency for medium performers, and strengthening financial stability and liquidity for low performers.

Recommendations for Romanian businesses – such as targeted marketing activities, pricing strategies and optimisation of capacity utilisation to improve ROA

(Lőrincz, 2025) – may also be applicable to Hungarian businesses. Proactive corporate governance, the development of controlling systems and the adoption of international best practices would be equally important.

The study also identified several potential directions for future research, including time-series analysis of cluster structures before and after the COVID crisis, examination of financial recovery trajectories, and cluster-based comparison of businesses in Central and Eastern European member states of the EU. Regional-level (NUTS-2 or county) analyses and extension of the research to other segments of the tourism sector, such as hospitality, would also be useful. A limitation of the present study is that it focused primarily on larger businesses. Future research should therefore include smaller businesses for a more complete picture of the state of the sector.

REFERENCES

Alreahi, M. – Bujdoso, Z. (2024): Covid–19 effects on tourism industry, case of Hungary. *Acta Carolus Robertus*, 14(Special Issue), 15–27. https://doi.org/10.33032/acr.6009.

Arie F. – Nagy A. (2023): Impact of six sixma on tourism industries performance in Indonesia: evidence from structural equation model. Annals of the University of Oradea, *Economic Science Series*| EBSCOhost. https://doi.org/10.47535/1991auoes32(1)002.

Baker, D. (2014): The Effects of Terrorism on the Travel and Tourism Industry. International *Journal of Religious Tourism and Pilgrimage* 2(1). https://doi.org/https://doi.org/10.21427/D7VX3D.

Dang, T. T. – Linh, N. T. X. – Nguyen, H. T. – Hoang, D. C. (2024): Impacts of Capital Structure on Microfinance Institutions' Risk: Evidence from Low- and Middle-Income Countries. In N. Ngoc Thach, V. Kreinovich, D. T. Ha, – N. D. Trung (ed.) *Optimal Transport Statistics for Economics and Related Topics* (654–666). Cham: *Springer Nature Switzerland*. https://doi.org/10.1007/978-3-031-35763-3_46.

Danso, A. – Lartey, T. A. – Gyimah, D. – Adu-Ameyaw, E. (2020): Leverage and performance: Do size and crisis matter? *Managerial Finance*, 47(5), 635–655. https://doi.org/10.1108/MF-10-2019-0522.

Deb, C. – Lee, S. E. (2018): Determining key variables influencing energy consumption in office buildings through cluster analysis of pre- and post-retrofit building data. *Energy and Buildings* 159, 228–245. https://doi.org/10.1016/j.enbuild.2017.11.007.

Darabos, É. (2024): The Hungarian Tourism and Hospitality Sector in the Mirror of the Crises.

Annals of the University of Oradea, Economic Science Series, 33(1), 46-52. https://doi.org/10.47535/1991AUOES33(1)005.

Dedkova, E. – Gudkov, A. (2020): Tourism Export Potential: Problems of Competitiveness and Financial Support. In T. Antipova (ed.), *Integrated Science in Digital Age* (187–202). Cham: *Springer International Publishing*. https://doi.org/10.1007/978-3-030-22493-6_17.

Donthu, N. – Gustafsson, A. (2020): Effects of COVID–19 on business and research. *Journal of Business Research*, 117, 284–289. https://doi.org/10.1016/j.jbusres.2020.06.008.

Droj, L. – Ban, O. I. – Droj, G. (2021): Comparative Analysis of the Financial Performance of Tourism Companies Located in Central and Eastern Europe. In G. Karanovic, P. Polychronidou, – A. Karasavvoglou (ed.), The Changing Financial Landscape: Financial Performance Analysis of

Real and Banking Sectors in Europe (o. 81–95). Cham: *Springer International Publishing*. https://doi.org/10.1007/978-3-030-82778-6_5.

Droj, L. – Droj, G. (2021): Considerations regarding the impact of the covid-19 pandemics over the financial performance at the level of the tourism companies operating in Central and Eastern Europe. *The Annals of The University of Oradea. Economic Sciences,* 30(2), 291–298. https://doi.org/10.47535/1991AUOES30(2)030.

Farkas, F. – Póta, C. P., – Becsky-Nagy, P. (2022): Changes in Payment Patterns in Hungary During the Pandemic. *WSEAS Transactions on Business and Economics*, 19, 1061–1074. https://doi.org/10.37394/23207.2022.19.93.

Fenyves, V. – Zsido, K. E. – Bircea, I. – Tarnoczi, T. (2020): Financial performance of Hungarian and Romanian retail food small businesses. *British Food Journal*, 122(11), 3451–3471. https://doi.org/10.1108/BFJ-05-2019-0330.

Gomoi, B. C. (2021): Analiza financiară a unei entități din domeniul turismului–între

normalitate și pandemia de COVID-19. *CECCAR Business Review*, 2(9)12–21, https://doi.org/10.37945/cbr.2021.09.02.

Kővári-Tóth, T. – Müller, D. – Kővári, I. (2024): Analysis of the Turnover of Hungarian Spas. GeoJournal of Tourism and Geosites, 55(3), 1454-1460. https://doi.org/10.30892/gtg.56402-1316.

Kumar, P. B. (2021): Regional and local tourism in covid-19 times: a study of alappuzha in Kerala. *Revista de Turism - Studii Si Cercetari in Turism*, (31) https://doi.org/10.4316/rdt.31.178.

Lőrincz, A. (2025): Financial performance of tourism companies in Romania. *Acta Carolus Robertus*, 15(1), 171–189. https://doi.org/10.33032/acr.5938.

Mihalciuc, C. C. (2022): Analysis of the main financial indicators for the entities in the tourist sector of the North - East Region from Romania in a pandemic context. *Revista de Turism - Studii Si Cercetari in Turism*, (34). https://doi.org/10.4316/rdt.34.145.

Neacșu, M. – Georgescu, I. E. (2024): Analysing the Impact of Crises on Financial Performance: Empirical Insights from Tourism and Transport Companies Listed on the Bucharest Stock Exchange (during 2005–2022). *Journal of Risk and Financial Management*, 17(2)80. https://doi.org/10.3390/jrfm17020080.

Nguyễn Thị Xuân, H. (2022). The Effect of COVID–19 Pandemic on Financial Performance of Firms: Empirical Evidence from Vietnamese Logistics Enterprises. *The Journal of Asian Finance, Economics and Business* 9(2)177–183. https://doi.org/10.13106/jafeb.2022.vol9.no2.0177.

Nugroho, L. – Orban, I. – Utami, W. – Hidayah, N. – Nugraha, E. (2023): Liquidity Surplus and Profitability: How Does Liquidity Affect Profitability prior to and during COVID–19? (Empirical Indonesian Banking Sector). *WSEAS Transactions on Business and Economics*, (21)59–70. https://doi.org/10.37394/23207.2024.21.6.

Orîndaru, A. – Popescu, M.-F. – Alexoaei, A. P. – Căescu, Ș.C. – Florescu, M. S. – Orzan, A. O. (2021): Tourism in a post-COVID–19 era: Sustainable strategies for industry's recovery. *Sustainability* 13(12), 6781.

Panno, A. (2019): Performance measurement and management in small companies of the service sector; evidence from a sample of Italian hotels. *Measuring Business Excellence*, 24(2) 133–160. https://doi.org/10.1108/MBE-01-2018-0004.

Rosselló, J. – Becken, S. – Santana-Gallego, M. (2020): The effects of natural disasters on international tourism: A global analysis. *Tourism Management*, 79, 104080. https://doi.org/10.1016/j.tourman.2020.104080.

Sheldon, P. – Dwyer, L. (2010): The Global Financial Crisis and Tourism: Perspectives of the Academy. *Journal of Travel Research*, 49(1) 3–4. https://doi.org/10.1177/0047287509353191.

Smeral, E. (2010): Impacts of the World Recession and Economic Crisis on Tourism: Forecasts and Potential Risks. *Journal of Travel Research*, 49(1), 31–38. https://doi.org/10.1177/0047287509353192.

Song, H. – Lin, S. (2010): Impacts of the financial and economic crisis on tourism in Asia. *Journal of Travel Research*, 49(1) 16–30. https://doi.org/10.1177/0047287509353190.

Szenderák, J. – Rákos, M. – Kőmíves, P. M. – Bácsné Bába, É. – Bacho, R. – Pataki, G. – Gyurián, N. – Lázár, E. – Suhányi, L. – Fenyves, V. (2024): Who could work remotely during the COVID–19 pandemic? Perspectives from Hungary and Slovakia. *Forum for Social Economics*. https://doi.org/10.1080/07360932.2025.2458604.

Tomej, K. – Bilynets, I. (2024): Large-scale tourism transformations through regeneration: A living systems perspective on tourism developments in Ukraine during the war. *Annals of Toursim Research* 109, 103856. https://doi.org/10.1016/j.annals.2024.103856.

WTTC (2022): Romania 2022 Annual Research: Key Highlights. (Retrieved: 10/11/2022) https://researchhub.wttc.org.

WTTC (2024): Travel & tourism economic impact 2023. (Retrieved: 01/05/2024) https://assets-global.website-files.com/6329bc97af73223b575983ac/647f1abe6695efae23eff97d_EIR2023-Romania.pdf.