THE IMPACT OF THE COVID-19 PANDEMIC ON SMALL HOTELS ON THE ADRIATIC COAST IN CROATIA

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Abstract The COVID-19 pandemic had a negative effect on all economic sectors, but its impact, with the imposed travel restrictions, was felt most strongly in tourism sector, where significant drops in revenues and serious solvency problems was encountered by all companies. It is well known that Croatia is one of the EU countries whose economy largely depends on tourism, which means that 2020 had the most serious consequences for the Croatian economy. Since the country's large tourist companies were found to be more resilient to the unpredictable effects of external factors, this paper focused on small hotels. The aim of this study was to examine the negative effects the COVID-19 pandemic exerted on small hotel businesses throughout the Adriatic coast of Croatia. The research was conducted on a sample of 42 micro and small companies (hotels) in the Adriatic coastal regions, in the period from 2019 to 2021.

Keywords: COVID 19, small hotels, tourism, Adriatic coast, Altman Z``-score

University of Maribor Press

DOI https://doi.org/10.18690/um.fov.3.2023.79
ISBN 978-961-286-722-5

1 Introduction

Disruptions in general functioning caused by the COVID-19 pandemic, which broke out at the beginning of 2020, affected all economic sectors, causing major problems in supply and demand, and leading to economic decline and recession. As a result, numeorus businesses faced difficulties in maintaining their operations, which jeopardized their solvency, but the most negative effects, owing to the imposed restrictions on public gatherings, movements and travel, were most strongly felt in tourism sector (Vareško and Zubin, 2021).

On the global level, 2020 was the worst year in the history of travelling, according to statistics. In 2020, international travel declined by 74% as compared to the 2019, resulting in 1 billion fewer international tourists worldwide. The loss was estimated at USD 1.3 trillion. By comparison, during the global crisis of 2009, international travel dropped by only 4% (Dobrota, 2021).

Croatia was not spared from the pandemic either. It is known that the Croatian economy relies heavily on the service sector, primarily tourism, which contributes to GDP with a high 24% of added value (Benko, Krstanović and Sovulj, 2022).

Over the past ten years, Croatia has recorded a significant growth in tourist arrivals, turning into a globally popular destination, with tourism becoming an increasingly significant factor in the country's economic development. However, 2020 was the most difficult year for the Croatian economy, and is generally described as the worst year in the history of travel, with a decrease in overnight stays of 55.3% as compared to the previous year (Krešić, Lončar et al., 2021).

This paper presents research on the impact of the COVID-19 pandemic on small and micro businesses and small hotels on the Adriatic coast, and will contribute to more extensive research on tourism sector in the Republic of Croatia. Unlike larger tourism systems, which have been operating successfully for many years and have a high rate of owner's equity, small businesses are more susceptible to negative impacts from the environment, and precisely because of this fact, this research focused on this group of entrepreneurs. The negative effects of the COVID-19 pandemic in 2020 and 2021 were investigated using Altman's Z"- score model and the obtained indicators, while Student's T-test was used for testing the hypothesis.

2 An overview on previous research

Given the importance of tourism in the EU, and especially its importance for the economic development of Croatia, many authors, both in the EU and in Croatia, have been investigating the negative effects of the pandemic on various aspects of tourism. In addition to the negative impact the pandemic exerted on tourism, some researchers have analyzed the opportunities for tourism recovery, as well as the opportunities for sustainable tourism development, but their contribution can only partially point to the emerging difficulties in the hospitality sector. It has been noted, though, that there are not many research papers focusing on the Croatian hospitality sector, especially in the segment of small family hotels, which are extremely vulnerable to external shocks such as pandemics.

The intention of this work is to contribute to the scientific literature that deals with the impact of the pandemic on the Croatian tourism sector, particularly in the segment of small family hotels on the Adriatic coast, an area that was severely affected by the pandemic.

The impact of COVID-19 on global tourism has been analyzed by several authors, with different conclusions. For instance, Niewiadomski (2020) and Gossling et al. (2021) argue that the pandemic provides an opportunity for the tourism industry to re-examine its priorities and direct its efforts onto a more sustainable tourism model, instead of favoring the traditional growth model. Further on, Collins-Kreiner and Ram (2020) and Gallego and Font (2020) say the pandemic may cause significant changes in market behavior, which can completely change global travel trends.

The impact of the pandemic on economic trends, with an emphasis on tourism in the EU, was also investigated by Praščević (2020), who analyzed the contribution of tourism to the EU GDP before and during the pandemic. In addition, she examined how the pandemic affected hotel revenues, tourism sector employments, as well as the activities of tour operators, cruise ship operators and airlines, which were most severely hit by the pandemic.

The impact of COVID-19 on tourism in Croatia has also been the subject of research by numerous Croatian authors.

Kovačević (2020) analyzed the negative effects of the pandemic on the tourism sector in the EU, with a special focus on Croatia. For the purpose of assessing the impact of COVID-19, a regression analysis was conducted to determine how an increase in the number of overnight stays affected the growth of GDP and tax revenues. It was found that the growth rate of the Croatian GDP was moderately strongly related to the number of overnight stays, while a strong correlation was established between tax revenues and the number of overnight stays.

Šerić, Mikulić and Ozretić Došen (2022) explored how the COVID-19 prevention and control measures affected the behavior of foreign tourists in the Republic of Croatia during the pandemic. They carried out interviews with eight tour operators and conducted quantitative research on a sample of 333 foreign tourists. The research was done in Croatia in 2021, establishing positive correlations between the tourists' perceptions of prevention measures and the tourist's level of satisfaction. It also established negative correlations between the perceived risk of COVID-19 and preventive measures, and the perceived risk of COVID-19 and tourist satisfaction.

Mikac and Kravaršćan (2021) examined the strengths and weaknesses of tourism sector in times of crisis. The research was conducted by interviewing employees from different institutions in tourism sector. The authors found that the key protagonists in the Croatian tourism sector responded to the crisis caused by the COVID-19 pandemic in an insufficiently coordinated way, and that there was a need, but also numerous opportunities, for improving the crisis management system. The authors also argued that the results of the tourist season during the pandemic were better than expected, but not as an outcome of planned and coordinated action from the tourism sector protagonists.

Krešić and Mikulić (2020) suggested a step-by-step approach for the recovery of tourism after COVID-19. They presented recovery in three phases, with a conclusion that the first phase of the recovery would coincide with the final phase of the pandemic. The second phase was connected to the re-opening of borders and facilitation of movement within the EU, and the third phase would begin when the

economies of the countries most important for Croatian tourism start recovering, which was expected to happen in 2022.

Čorak, Boranić Živoder and Marušić (2020) analyzed and compared the opinions of tourism experts regarding a short-term recovery of tourism, but also long-term possibilities of transformation towards a greater sustainability. The data were obtained through interviews with tourism professionals from the public and private sectors, and reviews of the existing literature. The results of the research indicated that there were more similarities in the opinions regarding the short-term recovery, while larger differences were established in the opinions regarding the long-term future of tourism in Croatia.

3 Methodology and hypothesis

3.1 Hypothesis

In the research process, the following hypotheses were established:

- The null hypothesis H_0: the COVID-19 pandemic did not negatively affect the business of small hotels on the Adriatic coast
- Alternative hypothesis H_1: the COVID-19 pandemic negatively affected the business of small hotels on the Adriatic coast

3.2 Research methods

Empirical research was conducted to collect data on business results of hotels in three consecutive years, 2019, 2020, and 2021. Descriptive statistics was used to analyze and compare the results. Indicators required for the analysis were calculated using Altman's Z"- score model. A comparison was made for data from the pre-pandemic period, i.e. 2019 and early 2020, and data from the pandemic period of 2020 and 2021. The hypothesis was tested using Student's t-test.

The Altman model was originally used for assessing the possibility of bankruptcy of companies listed on the American stock markets. Altman later changed his model and adapted it for businesses operating in other, non-manufacturing sectors, as well as businesses that were not listed on the stock exchange (Vareško and Zubin, 2021).

For a more reliable examination of the pandemic impact on the businesses in tourism industry, this research used Altman's Z"-score model, which represented the final third Z"-score model and had the following pattern (Altman, 1983):

$Z'' = 6.56X1 + 3.26X2 + 6.72X3 + 1.05X4$
with:

X1 – working capital (short-term assets – short-term liabilities) / total assets
X2 – retained earnings / total assets
X3 – EBIT / total assets
X4 – principal value / total liability

The threshold values (intervals) of the model are shown in Table 1:

Table 1: Threshold values of Altman Z' - score model

Threshold value	Probability of bankruptcy
Z">2.60	Stable business and low probability of bankruptcy
2.60> Z">1.10	There is a possibility of bankruptcy, but it is unlikely
Z"<1.10	Very high possibility of bankruptcy

Source: Pervan, I., Filipović, D. (2010), FP-rating – model for predicting the insolvency of business partners, RriF

According to the values shown in Table 1, when the Z" value is greater than 2.60, the company is classified as stable. When the value of the index ranges from 2.60 to 1.10, the company is classified into a gray zone, with a moderate possibility of bankruptcy, while the index value lower than 1.10 indicates that there is a high probability of bankruptcy in the coming years.

The prediction of Altman's Z-score model in the year before bankruptcy has a high accuracy of 95%, while in the two years before bankruptcy the experiential accuracy is 72%, while in further years the model reliability falls below 50%. Based on Altman's Z-score model, probabilities of bankruptcy are 95% within one year and 72% within two years. The overall accuracy rate declines to 50% for subsequent years (Sajter, 2008).

3.3 Sampling method

For the purpose of this research, an analysis was carried out on a sample of 42 micro and small business entities belonging to 55.10 category of activity according the NKD (National Classification of Business Activities) – "Hotels and similar accommodation" – which were active in the observed period, i.e. from 2019 to 2021. The aim of this research was to determine whether the business of small hotels in the Adriatic declined in 2020 and 2021 due to the impact of the COVID-19 pandemic, as well as to analyze their resilience in times of crisis. A random sampling method was used to select small and micro business entities from the Counties of Istria, Primorje-Gorski Kotar, Zadar and Split-Dalmatia, encompassing more than 80% of small family hotels on the Adriatic coast, which makes this a representative sample.

Data from the financial statements of business entities available in the database of poslovna.hr website (database of Croatian business entities) were used to calculate the Z"-score values.

4 Results and discussion

After defining the research sample, the Z"-score indicator was calculated for each business entity.

Table 2: Companies grouped by Z"-score intervals

COMPANY	Altman Z``- Score		
	Year		
	2019	2020	2021
Adria yachting d.o.o.	-0.470585276	-1.952808322	-1.21654
Domino Opatija d.o.o.	-4.364820223	-0.447412981	-0.44013
Man - Planet d. o. o.	-0.409019799	-0.995288647	-0.30537
Marina Punat hotel & resort d.o.o.	52.74615369	50.19577359	56.90283
Hoteli Rab d.o.o.	254.8756777	306.9621874	259.9243
Mgl international d.o.o.	0.559390104	0.534398023	0.781263
Sika d.o.o.	0.119003273	0.46682825	0.501302
Mistral d.o.o.	1.140809948	0.530112444	0.807201
Fos d.o.o.	-0.100744755	0.437442707	1.056146

COMPANY	Altman Z``- Score		
	Year		
	2019	2020	2021
Pol-mot d. o. o.	-1.264257992	-2.446083322	-1.28249
A.V. Letan d.o.o.	1.206103261	3.747015969	5.59663
Wilim turist d.o.o.	2.99877384	2.393925069	3.15995
Bo Hotel Palazzo d.o.o.	-1.56232712	-7.44529252	-2.95871
Letis met d.o.o.	7.47117623	3.005577515	4.147618
La Grisa d.o.o.	1.978217607	1.547775025	4.393723
Koral d.o.o.	1.726238491	1.801116388	3.314724
Primizia d.o.o.	2.764523555	3.433721602	5.138584
TIŠA d.o.o.	-2.650774438	-1.279026571	-1.49518
Marina ibacom d.o.o.	0.8284915	0.388347966	1.53853
Cittar	2.328786747	0.64963735	1.010757
Visura d.o.o.	1.260951186	0.972809421	1.524858
Hotel luka d.o.o.	4.851014394	4.472494143	10.57693
Mediteran d.o.o.	7.695848065	6.538330089	10.59654
Kruc d.o.o.	0.365293978	0.466411129	1.076001
Vila 4M d.o.o.	0.592598088	-0.003147897	1.736799
Agro kotari d.o.o.	0.223981082	-0.462328554	0.464936
Nomen d.o.o.	3.732654551	3.464017302	4.019099
Božava d.d.	0.485699145	0.245105812	0.393842
Konak d.o.o.	2.179317031	0.410285031	0.6858
Vile Dalmacija d.o.o.	0.43919677	0.202988355.	0.46792.
Koma-maras, d.o.o.	2.502713691	2.215137612	2.00145
Blizina d.o.o.	3.21889945	2.190923402	2.36504
Grip d.o.o.	0.655649243	0.824084786	1.075348
Oaza sunca d.o.o.	0.781224855	-26.12628302	6.928875
Kaurin d.o.o.	-0.267481083	0.916570449	2.661974
Visa-promet, d.o.o.	2.905370637	2.899966872	3.770632
Modra špilja d.d.	16.05403011	15.48014947	12.6194
Viktoria hoteli d.o.o.	-3.423866857	-5.363620837	-3.55147
Hotel Punta Osejave d.o.o.	1.8255928	1.809039515	2.344693
Pjaca rosa d.o.o.	1.824743571	3.471530512	3.116729
Damjan d.o.o.	0.759732311	0.953686434	1.379308
Fontana hotel apartmani d.o.o.	8.646676591	2.92059858	17.682

Source: author's work

After the calculation, the Z"-score indicators were grouped into three intervals to determine the number of companies whose business declined and carried a risk of bankruptcy, and the number of companies whose business was stable, without any indication of decline.

Table 3: Companies grouped by Z"-score intervals

Interval	number of companies 2019	number of companies 2020	number of companies 2021
Z"< 1.1	20	24	18
2.60> Z">1.10	10	7	8
Z"> 2.6	13	12	17

Source: author's work

The comparison of results from 2019 and 2020 showed that there was an increase in the number of companies facing a high risk of bankruptcy (from 20 to 24), while there was a decrease in the number of companies in the gray risk zone (from 10 to 7). The number of stable companies also decreased, from 13 to 12, meaning that the business generally declined.

The comparison of results from 2020 and 2021 indicated that the number of companies with a high risk of bankruptcy decreased from 24 to 18 (33%), while the number of stable companies increased from 12 to 17, which pointed to a trend of recovery and improvement. It seems that most companies began to run their business more cautiously, having adapted their operations to uncertain circumstances in the environment. It should be emphasized, though, that the business support measures introduced by the Government of the Republic of Croatia played a very important role in sustaining the operations of small hotels on the Adriatic coast.

After analyzing the subjects, further analysis was conducted, using the methods of descriptive statistics.

Table 4: Descriptive statistics indicators

Indicator/year	2019	2020	2021
Arithmetic mean	8.981682285	9.048254655	10.10742516
Standard deviation	39.80326297	48.00773472	40.56703284
Standard error	6.141776816	7.407754292	6.259629066
Median	1.173456605	0.870327617	1.637664879

Source: author's work

Since arithmetic mean is affected by extreme values, and its dispersion is confirmed by standard deviation, it was not the most reliable measure for comparing the indicators in the observed period. Therefore, further analysis used the median as a more reliable measure for determining the general tendency.

The median was in the grey risk zone in 2019 (1,173), and in the zone of high bankruptcy risk in 2020 (0.8703). In 2021, the median values rose, improved, and returned to the grey, less risky zone (1,637), even exceeding the levels from 2019. The analysis confirmed that there was a decline in business in 2020, while the 2021 results indicated that the business began to recover and stabilize.

Finally, based on the above presented indicators and the analysis of the median and other descriptive statistics values, it can be concluded that the occurrence of the unforeseen event, i.e. the COVID-19 pandemic, had the strongest impact on the companies that had already had certain difficulties in performing their business in previous years. In addition, in 2020 there was an increase in the number of companies classified into the high-risk zone, accompanied by a decrease in the median value, while the 2021 results indicated a recovery, with a decrease in the number of companies classified in the high-risk zone, and an increase in the median value. This trend points to a great resilience in companies that overcame the first difficult year, 2020. These companies should therefore continue to survive in the market.

Since the research was carried out in such way that the same sample was tested in two periods, i.e. before and during the COVID-19 pandemic, a two-way Student t-test for dependent samples was used to examine whether the mean values from the samples were the same or different, and, if there was a deviation, to determine whether it is statistically significant or not.

The analysis was performed using the MS Excel software package.

Table 5: A paired t-test for 2019 and 2020

	Z` score 2019	**Z` score 2020**
Mean	8.981682285	9.048254655
Variance	1584.299743	2304.742593
Observations	42	42
Pearson Correlation	0.994777101	
Hypothesized Mean Difference	0	
df	41	
t Stat	-0.046182408	
P(T<=t) one-tail	0.48169454	
t Critical one-tail	1.682878002	
P(T<=t) two-tail	0.96338908	
t Critical two-tail	2.01954097	

Source: author's work

Table 6: A paired t-test for 2020 and 2021

	Z` score 2020	**Z` score 2021**
Mean	9.048254655	10.10742516
Variance	2304.742593	1645,684154
Observations	42	42
Pearson Correlation	0.991427815	
Hypothesized Mean Difference	0	
df	41	
t Stat	-0.728615514	
P(T<=t) one-tail	0.235189196	
t Critical one-tail	1.682878002	
P(T<=t) two-tail	0.470378392	
t Critical two-tail	2.01954097	

Source: author's work

The testing was carried out with a confidence level of 95% and a significance level of 5% (α=0.05). The t-test did not determine any statistically significant difference in the operations of the observed companies in 2020 as compared to 2019, i.e., in the period before and after the pandemic, because *p* value of 0.96338908 was higher than the statistical significance level of 0.05.

The same result was obtained for business operations during the pandemic, i.e. in 2021 relative to 2020, where *p* value was 0.470378392, which was again higher than the level of significance of 0.05.

Accordingly, this study supported the null hypothesis, proposing that there was no significant decline in business operations due to the COVID-19 pandemic in 2020, nor in 2021, and rejected the alternative hypothesis.

The t stat was lower than the threshold in both directions, i.e. from the interval of -2.019 to 2.019, which also supported the null hypothesis.

The obtained results suggest that the same conclusion about the acceptance of the null hypothesis can also be applied to the one-way distribution, since *p* value for the one-way distribution in both testings was also higher than 0.05.

5 Conclusion

The COVID-19 pandemic significantly affected sectors that depend on mobility and travel, primarily tourism. This study analyzed and tested the impact of the pandemic on business operations of small hotels on the Adriatic coast, which were heavily struck by the pandemic. The testing was carried out on a sample of 42 micro and small business entities from the Counties of Istria, Primorje-Gorski Kotar, Zadar and Split-Dalmatia. Descriptive statistics and Student's t-test were used in the analysis to test the hypotheses and to calculate Altman Z"-score. After grouping the companies according to business indicators and median values, it was found that there was a decline in business operations in 2020 as compared to the pre-pandemic year of 2019.

Unlike in 2020, during the pandemic in 2021, a trend of business recovery emerged.

The t-test also confirmed a certain decline in business operations during 2020, but it was not statistically significant, hence the null hypothesis was accepted. The same result was obtained in the testing of business operation results in 2021, where a certain recovery was determined, but it was not statistically significant, which confirmed the acceptance of the null hypothesis. It was also evident that the companies adapted rather quickly to the pandemic conditions, and began conducting their business more cautiously in 2021, which resulted in a significant increase in resilience to the negative effects of the pandemic. It should be noted that the number of companies with a high risk of bankruptcy would have certainly been higher if the Government of the Republic of Croatia had not provided support through the introduced measures, thus helping sustain the business operations. However, the obtained results point to a possibility of business failure in companies with a high bankruptcy risk, emphasizing the need for immediate reaction to stabilize the operations and avoid decline in the coming years.

References

Altman, E. I. (1983). Corporate Financial Distress A Complete Guide to Predicting, Avoiding, and Dealing with Bankruptcy. Wiley Interscience. New Jersey: John Wiley and Sons

Benko, L., Krstanović, K., Sovulj, L. (2022). Procjena učinaka pandemije koronavirusa na turističke dolaske i noćenja u Republici Hrvatskoj te na vrijednost CROBEXturist indeksa Zagrebačke burze. EFZG working paper series, (01), 1-33.

Collins-Kreiner N, Ram Y (2020). National tourism strategies during the COVID-19 Pandemic. Annals of Tourism Research forthcoming.

Čorak, S., Boranić Živoder, S. i Marušić, Z. (2020). Opportunities for tourism recovery and development during and after COVID-19: Views of tourism scholars versus tourism practitioners. Tourism: An International Interdisciplinary Journal, 68(4).

Dobrota, A. (2021). Turizam 2021. u brojkama – drukčija očekivanja gostiju i planovi za putovanja u 2022. godini, Cimerfraj.hr, 21/10/2022, https://www.cimerfraj.hr/aktualno/turizam-2021-u-brojkama.

Gallego I, Font X (2020). Changes in air passenger demand as a result of the COVID-19 crisis: using big data to inform tourism policy. Journal of Sustainable Tourism forthcoming.

Gossling S, Scott D, Hall CM (2021). Pandemics, tourism and global change: a rapid assessment of COVID-19. Journal of Sustainable Tourism 29(1), 1–20.

Kovačević, D (2020). Economic Impact of COVID-19 on the European Tourism Sector with Special View on Croatian Tourism, Modern Economy, 11(10).

Krešić, D., Mikulić, J. (2020). Scenarij faznog pristupa oporavku turističkog tržišta nakon COVID-19 pandemije, Institut za turizam, Zagreb, 2-3.

Krešić Lončar, N., Sanpietro, E., Županić, M. i sur. (2021). Turizam 2021. u brojkama, Cimerfraj.hr, 10/10/2022, https://www.cimerfraj.hr/docs/Turizam-2021-u-brojkamaCimerfrajHr.pdf.

Mikac, R., Kravaršćan, K. (2021). Croatian Tourism Sector and Crisis Management - A Case Study Related to the COVID-19 Pandemic. Tourism: An International Interdisciplinary Journal, 69(4).

Niewiadomski P (2020). COVID-19: from temporary de-globalization to a re-discovery of tourism? Tourism Geographies 22(3), 651–656.

Pervan, I., Filipović D. (2010). FP rating – model za predviđanje (in) solventnosti poslovnih partnera. Računovodstvo, revizija i financije, No 7, 92-96.

Praščević, A. (2020). Ekonomski šok pandemije COVID-19 - prekretnica u globalnim ekonomskim kretanjima, Ekonomske ideje i praksa, No 37, 9.

Sajter, D. (2008). Ekonomski aspekti stečaja i restrukturiranja u stečaju. Doctoral dissertation. Osijek: Ekonomski fakultet Osijek.

Šerić, M., Mikulić, J., Ozretić Došen, D. (2022). Understanding prevention measures and tourist behavior in Croatia during the COVID-19 pandemic. A mixed-method approach. Economic Research- -Ekonomska Istraživanja.

Vareško, A. i Zubin, C. (2022). Utjecaj pandemije COVID-19 na poslovanje sektora ugostiteljstva U Istarskoj županiji. Zbornik radova Veleučilišta u Šibeniku, 16(1-2).