

COVID-19 EFFECTS ON TOURISM INDUSTRY, CASE OF HUNGARY

Alreahi Mahmoud – Bujdosó Zoltán

Summary

Covid-19 had its critical effects on each aspect of life, 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) Covid had its bad effect on tourism, but it has changed tourists' preferences; (ii) Domestic tourism had a better performance comparing with the international tourism except the revenue before and after covid era; and (iii) both, domestic and international tourism still need more time to recover and return to the previous situation.

Keywords: Covid, tourism, international, domestic, accommodation

JEL: H12, L83, Z3

Introduction

Crises, pandemics, and disasters of all kinds continually afflict humanity. As soon as a calamity ends, a new calamity of a new kind begins, from health epidemics to natural disasters to economic crises to wars, terrorist acts and political conflicts.

Successful tourism depends mainly on several elements, the most important of which are security, safety, public safety, and protection (Baker, 2014; Péter *et al.*, 2019). Therefore, tourism is considered one of the highly sensitive activities, as it is greatly affected by the surrounding events of all kinds.

Starting from climate change, as it is one of the factors that directly affect tourism, whether it is international or local tourism (Yang and Chen, 2009). Where climate change leads to high temperatures or climate changes to changing tourist preferences and shifting them from one place to another (Hamilton and Tol, 2007). In addition to the occurrence of natural disasters such as earthquakes, volcanoes, tsunamis, and hurricanes, which deeply affect the volume of international and domestic tourism demand in the affected areas (Rosselló, Becken and Santana-Gallego, 2020), as the Indian Ocean tsunami led to a reduction of international arrivals by 67% in Thailand in 2005 (Page, Song and Wu, 2012).

As for wars and terrorist acts, they had a significant negative impact on tourism demand, as their occurrence reflects the red light of danger in the eyes of tourists (Baker, 2014). Where the tourist seeks to avoid destinations that witness tensions or suffer from any factors that may affect their safety and spend their vacation ideally (Frey, Luechinger and Stutzer, 2007; Cornwell and Roberts, no date). The September 11 attacks affected the global tourism movement, especially that includes air travel (Boger, Varghese and Rittapirom, 2005; Araña and León, 2008), in addition to the decline in tourism movement in several international tourist destinations such as the Caribbean region (ECLAC, 2010). In addition to the 2005 London metro bombings (Frey, Luechinger and Stutzer, 2007), which affected domestic and international tourism demand, and the Bali bombings in

2002 and 2005, which reduced tourist demand by 40%(Pambudi, McCaughey and Smyth, 2009). Political unrest also has a negative impact on tourism, both internal and external(Tekin, 2015; Njoya *et al.*, 2022).

Regarding health pandemics and diseases, they were numerous and varied. The first pandemic in the twenty-first century was SARS, which appeared for the first time in China in 2002(Pine and McKercher, 2004; Kuo *et al.*, 2008), as it led to decreasing of international tourism by 1.2%, and in Asia specifically by 9%(Wilder-Smith, 2006) (WTO), while domestic tourism was not significantly affected(Yang and Chen, 2009).

Perhaps the most prominent health pandemic that has received media attention and a strong impact on the global level is bird flu. This virus greatly affected the tourism movement of East Asian countries, especially China(Kuo *et al.*, 2007, 2008). This virus appeared in its version (H5N1) for the first time in 1997 in Hong Kong And by 2003, it was announced that it had spread in East Asian countries and a number of countries in the world such as Romania, Russia, Egypt and Turkey(Kuo *et al.*, no date), to continue its effect until 2007(Kuo *et al.*, 2007, no date), and by 2013 the virus returned to strike again with its copy (H7N9) in China('The fight against bird flu', 2013; Wang *et al.*, 2017), but it was easier to deal with and did not affect as much as the first time(Wang *et al.*, 2017).

As for the swine flu (H1N1), which appeared in Mexico in 2009 and spread to Latin America and from there to the world(MICE REPORT, 2009; Maciel-Lima *et al.*, 2015). This affected the tourism movement, as many precautionary actions were imposed to mitigate the spread(MICE REPORT, 2009; Maciel-Lima *et al.*, 2015). This was reflected in tourism-related businesses, as hotel reservations and air travel declined, and the value of their shares fell significantly, reaching 16% for the American Continental Airlines(MICE REPORT, 2009), but in general, countries were better prepared to deal with the virus(Page, Song and Wu, 2012; Haque and Haque, 2018).

In general, poor, and developing countries where infectious diseases spread attract less tourism interest, such as malaria, dengue fever, yellow fever, and Ebola, decreases (Blake, Sinclair and Sugiyarto, 2003; Wilder-Smith, 2012; Rosselló, Santana-Gallego and Awan, 2017; Tan and Lee, 2022).

The financial crisis is one of the crises whose effects on aspects of life cannot be predicted, as the extent of its spread, the intensity of its impact, and the business sectors that affect it vary. In 1997 (Khalid, Okafor and Shafiullah, 2020) the economic crisis began in the countries of East Asia (ASEAN), which constitute 15% of the volume of international tourist traffic(Sadi and Bartels, 1998), as it declined at rates reaching the highest of 53% in Indonesia(Song and Lin, 2010). The negative impact extended to neighboring Australia, where international tourism decreased by 24%. However, the recovery was quick and uneven, as most of the affected countries recorded positive growth rates in the proportion of tourism (Sadi and Bartels, 1998).

In 2008, the global financial crisis occurred, and its impact was global, and included many aspects of life, and its impact was uneven in terms of intensity and duration between countries (Smeral, 2010; Lejnarová and de Moura, 2021). International tourism was one of the main affected by the crisis (Khalid, Okafor and Shafiullah, 2020), as international tourism decreased by 8% (Song and Lin, 2010) and at an average rate of 3.8% globally (Cafiso, Cellini and Cuccia, 2018), but the impact of the global financial crisis was different on domestic tourism, as the low financial capacity of tourists prompted them to find alternatives represented by local tourism (Sheldon and Dwyer, 2010).

At the end of 2019, the Corona virus appeared, which represented the most dangerous health pandemic the world had witnessed in decades, as countries stood unable to contain the virus and deal with it (Altuntas and Gok, 2021). Failed in many health measures to counter its effects, as it was distinguished by its ability to evolve (MahmutDemir, 2021). That led to a very large number of injuries and deaths compared to recent epidemics and pandemics, and its effects severely hit many aspects of life, the most important of which is tourism, as countries found themselves in a state of necessity to close borders and general closures (Arbulú *et al.*, 2021; Falk, Hagsten and Lin,

2022). Which reduced tourism activity to rates that reached 74% in some countries (MahmutDemir, 2021; Volgger, Taplin and Aebli, 2021) and reached its peak at 93% (Arbulú *et al.*, 2021).

On the other hand. Domestic tourism is one of the main drivers of many economies around the world, as it represents 73% of total global tourism spending (Njoya *et al.*, 2022). In general, the tourist demand for local tourism increases during periods of crises of all kinds, due to the low cost, and the reduction of time and distance (Kruger and Douglas, 2015; MahmutDemir, 2021) and the cost, which is a reduction of the risks associated with international tourism (Sheldon and Dwyer, 2010; Smeral, 2010; Volgger, Taplin and Aebli, 2021).

Thus, the country's dependence in the tourism sector on international tourism and neglecting domestic tourism will lead to negative results and a state of instability for the tourism sector, especially in the event of global crises (Boukas and Ziakas, 2014; Odunga, Manyara and Yobesia, 2020). In addition, domestic tourism is distributed in a wider range to include rural destinations (Falk, Hagsten and Lin, 2022; Marques, Guedes and Bento, 2022).

Domestic tourism flourished during the Corona crisis in many countries of the world, and it had a contribution to compensating for the shortfall that occurred as a result of the great contraction of international tourism (Falk, Hagsten and Lin, 2022), as domestic tourism in Spain, for example, was able to compensate for 33% of the volume of losses in the international arena (Arbulú *et al.*, 2021).

The hospitality industry is one of the most important industries in improving the tourism environment of countries and as a mirror that reflects the extent of the country's tourism strength (Tarigan, Tanuwijaya and Siagian, 2020; Alreahi, Bujdosó, Lakner, *et al.*, 2023), as this sector has witnessed remarkable growth in the last two decades to keep pace with the increasing tourism movement and be able to meet the different demand for accommodation (S.W.Chan and H.C. Hsu, 2016; Prakash *et al.*, 2022; Alreahi, Bujdosó, Dávid, *et al.*, 2023; Alreahi, Bujdosó, Kabil, *et al.*, 2023).

Case study:

Hungary is one of the prominent international tourist destinations (Péter *et al.*, 2019) and its capital, Budapest, faces excessive tourism in certain seasons (Remenyik *et al.*, 2021). Hungary showed an ability to quickly recover from the repercussions of previous crises, such as the 2008 global financial crisis (Karakas and Tatar, 2015; Péter *et al.*, 2019), in addition to the availability of the appropriate infrastructure to create conditions for both international and domestic tourism (Karakas and Tatar, 2015; Péter *et al.*, 2019), and the state's interest in domestic tourism and domestic tourists (Budapest Business School in Budapest *et al.*, 2020). In addition to the diversity of tourism and the activities that can be carried out, such as mass, historical and religious tourism, business tourism, sports tourism, adventure tourism, recreation and health tourism, natural tourism, and rural tourism (Bujdosó and Dr. Dávid, 2013). Moreover, domestic tourism in Hungary has a great status, as the Hungarian people prefers to spend their holidays in the interior in an attractive way (Kalmár-Rimóczi, 2019; Bakucz *et al.*, 2021, Gyurkó *et al.*, 2024).

This research aims to compare the impact of the Corona virus on domestic and international tourism in Hungary, by answering the following questions:

I- Which tourism type performance was better, which was better before, during and after covid-19?

II- How was international tourism in Hungary affected by the Corona virus, and how was the recovery and adaptation to the repercussions of the epidemic?

III- How was domestic tourism in Hungary affected by the Corona virus, and how was the recovery and adaptation to the repercussions of the epidemic?

These questions will be answered by testing the following hypotheses:

A-Comparison between domestic and international tourism:

A1-Arrivals: there is no significant difference between domestic and international arrivals.

A2-Gross revenue: there is no significant difference between domestic and international accommodation facilities' gross revenue.

A3-Tourists nights: there is no significant difference between domestic and international tourists' nights.

B- domestic tourism before and after covid-19:

B1-Arrivals: there is no significant difference between domestic arrivals before and after covid-19.

B2-Gross revenue: there is no significant difference between domestic accommodation facilities' gross revenue before and after covid-19.

B3-Tourists' nights: there is no significant difference between domestic tourists' nights before and after covid-19

C- international tourism before and after covid-19:

C1-Arrivals: there is no significant difference between international arrivals before and after covid-19.

C2-Gross revenue: there is no significant difference between international accommodation facilities' gross revenue before and after covid-19.

C3-Tourists' nights: there is no significant difference between international tourists' nights before and after covid-19

Methodology

To answer the research questions, data provided by the Hungarian Statistical Office will be used, which provides historical data on tourist accommodation establishments on a monthly basis, including the number of tourist nights spent, tourist accommodation establishment revenues, and the number of arrival tourists for both international and domestic tourists. International and domestic tourism will be compared for three periods: before, during, and after the Corona virus period, or the period of decline and adaptation or control of the virus.

Studies have shown that the beginning of the spread of the Corona virus globally was at the beginning of 2020 (Nikadimovs and Rodčenkova, 2021; Elkhwesky *et al.*, 2022; Johann, 2022). The partial and total lockdown continued during 2020 and 2021. During 2021, humanity began to regain control, adapt to the virus, and produce anti-vaccines (Liu and Yang, 2021; Chen and Peng, 2023).

Therefore, the study was divided into three periods from 2018 to 2020, which is the pre-virus period, from 2020 to 2021, the virus period, and from 2022 to the end of 2023, which is the post-virus period. Where the comparison periods were divided into two years or 24 months, which corresponds to 24 readings for each variable.

Data Analysis Methods and Techniques:

To test the research hypotheses and answer the questions, the SPSS program was adopted to conduct the necessary statistical analysis, where the paired Student's t test was applied to evaluate both domestic and international tourism in Hungary by conducting the analysis of three main axes, e.i. arrivals, gross revenue, and tourists' nights, within three periods, e.i. before, during, and after Covid-19, in order to reveal which type of tourism performed better.

In addition, the same statistical method was applied to compare the performance of domestic tourism before and after the Corona virus for the same axes, and the same was applied to international tourism, to explore the extent of development or decline for the two types of tourism before and after Covid-19.

Results

General review

The Tests of Normality is one of the conditions for conducting the paired Student's t test, where the normal distribution condition was tested using the SPSS program. Not all variables followed the normal distribution as the value of the test of both (Kolmogorov-Smirnov) and (Shapiro-Wilk) was statistically significant, i.e. equal or less than 0.05 for a several variables, but the value of the skewness and kurtosis were within the values that enable the variable values to be considered to follow the normal distribution (symmetric distribution), which is +1/-1 (Burdenski, 2002; Ibrahim and mohd shariff, 2014).

Hypotheses Testing

First: The results of paired Student's t test revealed the existence of statistically significant differences between domestic and international tourism, as table.1 shows the p-values of the applied statistical test.

Table 1. P-value of the test

	Pairs	t	df	Sig.
Pair 1	arr_d_b - arr_i_b	4.012	23	0.001
Pair 2	arr_d_d - arr_i_d	4.807	23	0.000
Pair 3	arr_d_a - arr_i_a	6.013	23	0.000
Pair 4	gr_d_b - gr_i_b	-9.733	23	0.000
Pair 5	gr_d_d - gr_i_d	2.503	23	0.020
Pair 6	gr_d_a - gr_i_a	-7.476	23	0.000
Pair 7	tn_d_b - tn_i_b	0.267	23	0.792
Pair 8	tn_d_d - tn_i_d	4.052	23	0.000
Pair 9	tn_d_a - tn_i_a	2.811	23	0.010

Source: analysis results conducted by the authors using SPSS software.

1- Rows from pair 1 to pair 3 show the comparison results of domestic and foreign tourism with regard to arrivals to accommodation facilities. Domestic tourism achieved better results than foreign tourism before, during and after Covid, and the P-values were statistically significant for the three periods, thus rejecting the null hypothesis and accepting the alternative hypothesis A1.

2- Rows from pair 4 to pair 6 show the comparison results of domestic and foreign tourism regarding gross revenue of accommodation facilities. Domestic tourism achieved better results than foreign tourism only during the Covid period, while international tourism results were better before and after Covid, and the P-values were statistically significant for the three periods, thus rejecting the null hypothesis and accepting the alternative hypothesis A2.

3- Rows from pair 7 to pair 9 show the comparison results of domestic and foreign tourism with regard to tourists' nights in accommodation facilities. Domestic tourism achieved better results than foreign tourism before, during and after Covid, but not all P-values were statistically significant, as the pre-Covid period was not statistically significant, while it was statistically significant for the P-values during and after Covid and thus accept the null hypothesis A3 that there are no differences between domestic and foreign tourism before Covid, and reject the null hypothesis A3 for the period during and after Covid.

Second: As for the second part of the hypotheses (B,C), the results of P-values of paired Student's t-test revealed the existence of statistically significant differences between the performance of both domestic and international tourism before and after Covid, as table.2 shows the p-values for the applied statistical test.

Table 2. P-value of the test

	Pairs	t	df	Sig.
Pair 1	arr_d_b - arr_d_a	6.464	23	0.000
Pair 2	arr_i_b - arr_i_a	7.706	23	0.000
Pair 3	gr_d_b - gr_d_a	-8.095	23	0.000
Pair 4	gr_i_b - gr_i_a	-6.119	23	0.000
Pair 5	tn_d_b - tn_d_a	3.549	23	0.002
Pair 6	tn_i_b - tn_i_a	6.686	23	0.000

Source: analysis results conducted by the authors using SPSS software.

1- The row of Pair 1 shows the comparison before and after Covid of domestic tourism regarding arrivals to accommodation facilities. Where the P-value was statistically significant and in favour of the pre-Covid period, thus rejecting the null hypothesis B1.

The row of pair 2 also shows the comparison before and after Covid of international tourism regarding arrivals to accommodation facilities. Where the P-value was statistically significant and in favour of the pre-Covid period, thus rejecting the null hypothesis C1.

2-The row of Pair 3 shows the comparison before and after Covid of domestic tourism regarding gross revenue of accommodation facilities. Where the P-value was statistically significant and in favour of the post-Covid period, thus rejecting the null hypothesis B2.

The row of Pair 4 also shows the comparison before and after Covid of international tourism regarding gross revenue of accommodation facilities. Where the P-value was statistically significant and in favour of the post-Covid period, thus rejecting the null hypothesis C2.

3- The row of Pair 5 shows the comparison before and after Covid of domestic tourism regarding tourists' nights in accommodation facilities. Where the P-value was statistically significant and in favour of the pre-Covid period, thus rejecting the null hypothesis B3.

The row of Pair 6 also shows the comparison before and after Covid of international tourism regarding tourists' nights in accommodation facilities. Where the P-value was statistically significant and in favour of the pre-Covid period, thus rejecting the null hypothesis C3.

Discussion

It was not unlikely that domestic tourism would perform better than international tourism during the Covid period for several main reasons, the most important of which is the closure of borders between countries for a period of time in addition to the suspension of flights and international flights (Koh, 2020; Prommakhot, Arreeras and Arimura, 2023; Mueller and Sobreira, 2024), which was confirmed by the hypotheses, as domestic tourism in Hungary achieved a higher return, a greater number of arrivals, and more tourist nights compared to international tourism.

The arrivals and tourist nights of international tourism after the decline of the Covid wave did not return to the normal situation before Covid, and perhaps this is not due to the virus alone, as the Covid wave and the paralysis that affected the tourism movement were an opportunity to reorganize this movement and reduce the phenomenon of excessive tourism (Koh, 2020; Adamiak and Szyda, 2022). In addition to encouraging and improving domestic tourism as a means of compensating for the shortfall resulting from the decline in international movement (Leonidova, 2021; Richards and Fernandes, 2023), in addition to the change in the behaviour patterns of international tourists after Covid to make more rational and safe decisions (Lin *et al.*, 2022; Mueller and Sobreira, 2024) as tourists became more inclined to book and do activities in a spaced or individual manner to increase the level of precautionary safety (Lin *et al.*, 2022; Nguyen-Da *et al.*, 2023), which partly explains the increase in the return of tourist accommodation facilities for both domestic and international arrivals. Domestic tourists also had the ability to avoid the causes of infection due to their experience in choosing less crowded destination and timing or the ability to use private transportation compared to international tourists (Volgger, Taplin and Aebli, 2021; Shafiee and Meymandi, 2022). International tourism also played a greater role in increasing COVID-19 cases and deaths during the peak of the pandemic, but those numbers declined significantly at the beginning of 2021 and during 2022 and the start of vaccine rollout (Ansarinassab and Saghaian, 2023; Nguyen-Da *et al.*, 2023; Richards and Fernandes, 2023).

However, Budapest recorded one of the highest numbers of international tourist visits after the Covid period, ranking 11th in the world with 11.2 million visitors after the decline of Covid (Adamiak and Szyda, 2022), thus the situation is recovering at a faster pace than other tourist destinations. However, the percentage of domestic tourists remained the most prevalent, as it recovered the fastest after the decline of the Covid wave (Richards and Fernandes, 2023), and the pace of tourist movement to unknown local destinations that were not important before increased (Prommakhot, Arreeras and Arimura, 2023; Yu *et al.*, 2023), in addition to changing the behaviour and preferences of tourists, so that domestic tourism became increasingly important after Covid (Lin *et al.*, 2022), and the role of consumer purchasing power can also play a role in preferring domestic tourism, as it is less expensive and more affordable (Leonidova, 2021; Richards and Fernandes, 2023).

Implications and recommendations

This study showed the significant impact of the Covid-19 on domestic and international tourism, in addition to the impact of the virus on changing consumer preferences, which was reflected on the increase in domestic tourism and the change in consumer behaviour. The study also highlighted the importance that domestic tourism can play, especially during times of crises, which is an important and fundamental motive for decision-makers and even business owners to take domestic tourism more into consideration and not neglect it.

By comparing the performance or movement of domestic and international tourism, it was noted that tourism before the Corona virus in terms of the number of tourists and nights spent in tourist accommodation facilities is still less than the period before Covid, although the comparison period after the Covid period was 2022 and 2023. Therefore, the analysis can be re-conducted to include 2023 and 2024 to ensure that the impact of Corona on tourism movement is excluded in terms of tourists' fear of visiting tourist destinations and adhering to the distancing and total closure procedures that were prevalent, but slightly, during the beginning of 2022.

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Authors

Alreahi Mahmoud

0000-0002-1115-0288

PhD Fellow

Doctoral School of Economic and Regional Sciences, Hungarian University of Agriculture and Life Sciences

Alreahi.Mahmoud.Mohammad@phd.uni-mate.hu

reahimm@hotmail.com

Dr. Bujdosó Zoltán

0000-0002-5023-074X

Professor

Institute of Rural Development and Sustainable Economy, Hungarian University of Agriculture and Life Sciences

bujdosozoltan@uni-mate.hu

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