Original Scientific Article

Cultural UNESCO Heritage in COVID-19 Pandemic Times

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Being on the UNESCO list is a privilege and a sign of exclusivity and uniqueness. Destination Management Organizations (DMOs) extensively use the international popularity of the UNESCO list inscription. Many researchers have confirmed that UNESCO list inscription is an advantage. However, there are also papers with opposite results. Several factors influence the visitor numbers at the UNESCO site – the structure of the visitors (international and domestic), and location, including accessibility, seasonality, and regional importance. COVID-19 dramatically affected world tourism. This research aims to answer whether UNESCO heritage list inscription was an advantage in the COVID-19 pandemic times and what role international tourism plays in UNESCO sites. The authors used a method of comparative analysis based on available statistical data, correlation analysis and *t*-test. The paper compares the change in the number of visits to UNESCO attractions to similar tourist attractions. The Czech Republic has 16 tangible attractions on the UNESCO list. The analysis includes 12 cultural UNESCO attractions. The results show that UNESCO list inscription was rather a disadvantage in the first year of the pandemic (2020) but brought a faster recovery in 2021. The role of changes in international tourist arrivals is important for collective accommodation establishments in both UNESCO and non-UNESCO sites, but more for UNESCO sites. The correlation of changes in international tourism with changes in visitor numbers in the UNESCO attraction is also high; however, it is not statistically significant.

Keywords: tourist attractions, UNESCO sites, Czech Republic, COVID-19 pandemic

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Introduction

Cultural heritage plays a very important role in tourism development in many countries. The Czech Republic is a country of cultural tourism. It is very rich in the number of cultural monuments; almost forty thousand are protected as immovable cultural monuments, and 336 have the status of national cultural heritage (see https://www.npu.cz). The most important cultural attractions for tourism are those which are on the UNESCO list of cultural and natural heritage (UNESCO, 2021c). Their exclusivity and uniqueness are the highlights of the destinations. The inclusion on the UNESCO list impacts domestic and foreign tourism in the destination. The World Heritage-listed sites typically receive more tourist visits than their non-listed counterparts (Yang et al., 2010; Gao & Su, 2019, Han

et al., 2020). In 2020 and later, tourism and World Heritage Sites experienced dramatic changes due to the COVID-19 pandemic (UNESCO, 2021d; UNWTO, 2021). This paper examines if inscription on the UNESCO list was an advantage compared to non-UNESCO attractions. Their competitiveness and resilience are important for the restart of tourism (UNWTO, 2020). The paper brings new findings and contributes to the knowledge about cultural heritage. The situation caused by the COVID-19 pandemic is unprecedented and the effect of restrictions and critical tourism collapse brought new impacts and challenges.

Theoretical Background

The paper is based on the tourism demand theory (Divisekera, 2013). Tourism demand is affected by many factors such as income in the origin country, prices in the tourist destination, the safety of the destination and a set of other demand factors on the tourist site (e.g. motivation). Tourism demand and its influencing factors are topics of many papers, e.g. Dogru et al. (2017) and Agbola et al. (2020).

Significance of UNESCO List Inscription

A World Heritage Site is an area with an outstanding universal value that requires long-term protection and is non-renewable and irreplaceable, as was identified in 2021 by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and World Heritage Committee (WHC). Inscription on the World Heritage list and the resulting prestige helps raise awareness among citizens and governments about heritage preservation. Greater awareness leads to a general rise in the level of protection and conservation given to heritage properties. Countries may also receive financial assistance and expert advice from the World Heritage Committee to support activities for the preservation of their sites (UNESCO, 2022). A localized monument, building, town, landscape, or cultural tradition becomes globalized through its inclusion into the world heritage list and gets a new status as being of 'outstanding universal value' (Scholze, 2008). World heritage areas especially are used as a means of economic regeneration through tourism development (Su et al., 2015; Buckley et al., 2020; Agapiou, 2021). These sites also have a significant economic impact on local communities (Jimura, 2011; Christensen & Jones, 2020; Slabbert et al., 2021; Zhang, 2021). The research reveals that residents and entrepreneurs perceive inscription in the UNESCO heritage list as an advantage (Kvitkova et al., 2022). The World Heritage Sites contribute to national image creation (Silverman, 2011; Kim et al., 2019; Wang & Yuan, 2020) and due to that, they play an important role, especially in international tourism. They also promote destination branding (Poria et al., 2011; Xu & Ye, 2018; Kim et al., 2019). These two aspects are why various national and regional governments actively apply for the inscription of sites on the UNESCO list (Poria et al., 2011). Some authors (Ryan et al., 2011; Li et al., 2020; Panzera et al., 2021) discuss a symbiosis tension between tourism utilization and conservation. Panzera et al. (2021) investigate the impact of tangible cultural heritage on the tourism attractiveness of European regions. They show that the presence of UNESCO sites reduces the distance decay effect. International tourists, when not faced with barriers, are willing to travel longer distances if a destination is endowed with UNESCO cultural World Heritage Site status. According to, e.g., Bloch (2016) and Allen and Lennon (2018), poor legislation, management and some inappropriate tourism operations are leading to conflicts between heritage conservation and tourism development. On the other hand, tourism development can create new values and can be seen as a tool to combat poverty in less developed countries/destinations and promote sustainability (Su et al., 2016; Vargas, 2018; Lin et al., 2020; Maruyama & Woosnam, 2021).

Several authors (Shen et al., 2014; Park et al., 2019; Fu, 2019; Katahenggam, 2020) pay attention to the significance of authenticity, which is important for heritage tourism. Authenticity and its perception increase the heritage destination value (Kolar & Žabkar, 2010). On the other hand, the acceptance of authenticity itself depends on tourists' perceptions. Tourists' satisfaction and their level of education are the main factors influencing their perception of the outstanding universal value of UNESCO sites (Verma & Rajendran, 2017; Alazaizeh et al., 2020). This outstanding universal value is beneficial for enhancing the in-

ternational and national image and tourism attractiveness of destinations where these sites are located (Parga-Dans et al., 2020). It is generally believed that the inscription of a site on the UNESCO list positively impacts local tourism demand (Zhang et al., 2022). The effects of the sites on the World Heritage List on tourism, of course, vary from country to country and region to region. They are monuments of global significance. As mentioned, these monuments have a special protection status and are of great importance, especially in international tourism (Kučová, 2009). All the above confirms that UNESCO list inscription is an advantage. Several factors (Johnová, 2008) influence the visitor numbers at the UNESCO site. There are some factors on the site itself (internal ones), such as the type of attraction, whether indoor or open air, opening hours, regulation of visits, etc. Other factors (external ones) are the social and economic situation in the destination, the structure of the visitors in the destination (domestic/international, one day visitors/tourists), and location, including accessibility, seasonality, and regional importance. Of course, there are also the general factors influencing tourism development (Holloway & Humphreys, 2020), which can impact the number of visitors, e.g. terrorism, natural disasters, diseases/pandemics.

Tourism Impacts on UNESCO Sites and COVID-19 Impact

According to Zhang et al. (2022), great attention is paid to the impacts of tourism on World Heritage Sites, such as environmental, economic, social, and cultural. The highly intensive tourist demand and the number of World Heritage Sites visitors is a great challenge for sustainability (Li et al., 2008; Berg, 2018). Tourism development has both positive and negative impacts on World Heritage Sites, an obviously positive economic impact in smaller sites, and negative impact on, for example, the local population in bigger cities such as Venice and Barcelona (Kumar, 2019). New standards for sustainable tourism in UNESCO sites are being adopted (Kumar, 2019; Pedersen, 2020). On the other hand, World Heritage Sites impact tourism development in destinations and places where they are located (Yang et al., 2019).

According to UNWTO statistics (2021), with few exceptions (e.g. 2003, 2009), international tourism was constantly growing for decades until 2019. At a certain development stage, the situation, especially in cities, became unsustainable. Similarly to the general development, tourism grew in the Czech Republic till 2019. In 2019, 22 million guests stayed in collective accommodation establishments in the Czech Republic (CZSO, 2020). Due to the COVID-19 pandemic, tourism was almost paralysed in 2020. The number of accommodated guests fell to 10.8 million in 2020 (CZSO, 2021), which meant a decrease of 51%. The number of foreign guests fell from 10.9 million in 2019 (CZSO, 2020) to 2.8 million in 2020 (CZSO, 2021), which is an even higher drop of 74%. That means domestic tourism dropped less than international tourism in the Czech Republic. COVID-19 has affected all sectors and regions worldwide and has deeply impacted the entire cultural ecosystem. The world's 1,000-plus UNESCO World Heritage properties were no exception. World Heritage Sites experienced a 66% drop in visitation and a 52% decline in ticket sales in 2020 because of COVID-19 (UNESCO, 2021a). The uncertain surroundings of this crisis changed the policy of re-alignment of properties towards domestic tourism in the short term. According to a study (Falk et al., 2022), in the summer season of 2020 (July and August), official data of 65 regions in four countries in Europe (Austria, the Czech Republic, Germany, and Switzerland) showed that the domestic overnight stays evolved unevenly, with decreases from 10% in sparsely populated areas up to 27% in densely populated regions. The different impacts on the different site types described by Caruana et al. (2021) highlight the lower effect of the pandemic on open-air (archaeological) sites and the important role of such open-air sites within the local community. Also, the official data from CzechTourism (see https://tourdata.cz) confirms that the most visited attractions during the COVID-19 pandemic years are the open-air attractions, in comparison with indoor attractions. As COVID-19 is widely recognized as a challenge or even a game-changer for travel and tourism, Higgins-Desbiolles (2021) explains how advocates of tourism industry rapid recovery stand op-

posed to wider efforts to reform tourism to be more ethical, responsible, and sustainable. In response to the pandemic, UNESCO (2021b) launched global monitoring to assess, among other things, the impact of COVID-19 on the cultural sector as whole. The downturn in tourism has had a deep financial impact on heritage sites, thereby weakening their conservation and preservation. Therefore, the reactivation of more sustainable, resilient, and inclusive tourism in the long term will be a priority. This will include working onsite with local communities and site managers to reflect on and design new ways of preserving sites, promote sustainable tourism models, and emphasize the importance of sustainable development approaches in line with the World Heritage Sustainable Development Policy (UNESCO, 2015).

The synthesis of the current knowledge shows that the effect of the World Heritage Site List enhances the site's attractiveness and positively influences tourism demand. On the other hand, a synthesis confirmed that other factors (like the COVID-19 pandemic) are influencing the tourism demand (number of visitors), both domestic and international.

Methods and Aim

The paper aims to bring new insight into the UNESCO sites situation during the COVID-19 pandemic and answer whether UNESCO heritage list inscription was an advantage during the COVID-19 pandemic and what role the international importance of these sites played in the results.

As the published research acknowledges both positive and negative effects on the destination and the situation with the pandemic was completely unprecedented, the first stage of the research was brainstorming. During the brainstorming, the findings from literature were discussed and two additional ideas emerged: (1) Residents will expect that the usually overcrowded sites will be pleasant for a visit now and will tend to visit the UNESCO sites and their attractions, and (2) the UNESCO sites are more dependent on international tourists than the others, and the domestic tourism will not be sufficient to cover the decrease in international tourism. These ideas raised more questions, such as what was the real development in UNESCO sites and if it was different from the non-UNESCO sites?

The research questions are formulated as follows:

RQ1 *Is inscription into the UNESCO heritage list an advantage during the COVID-19 pandemic?*

RQ2 *What role does international tourism play in the UNESCO sites during the COVID-19 pandemic?*

The following hypotheses are developed in line with the research questions:

H1a *The decrease in visitor and tourist numbers will be on average smaller in UNESCO sites than in non-UNESCO sites.*

Comparative analysis is used with these criteria: (1) change in the number of visitors in UNESCO attractions compared to change in the non-UNESCO attractions. The change between 2019 and 2020 is considered. (2) change of the tourists in collective accommodation establishments (CAE). The decrease is analysed and compared in the two groups. *F*-test is applied to test the variance, and *t*-test is applied to test the significance of the difference. The tests were done on the 95% significance level.

H1b *The average decrease of visitors in UNESCO attractions will be smaller than the average decrease in the region.*

The change in visitor numbers to the UNESCO attractions are taken and compared to the total numbers of visitors to all attractions in the regions. The decrease is compared individually, and average values are calculated. The year-to-year changes are compared.

H1c *The recovery is faster in UNESCO sites than in non-UNESCO sites.*

The statistics from CAE are analysed, explicitly the change in tourist numbers/number of guests and amount of nights/number of overnight stays of tourists in the accommodation establishment. The change in both indicators is compared. The numbers from 2020 and 2021 are compared. *F*-test is applied to test the variance, and *t*-test is applied to test the significance of the difference. The tests are done on the 95% significance level. Unfortunately, the number of visitors to the attractions in 2021 have not been published at the date of elaboration of this paper (June 2022).

H2a *The UNESCO sites are more dependent on international tourists than the non-UNESCO sites.*

For this hypothesis the statistics from CAE are analysed, explicitly the share of international tourists in the number of tourists and nights at the site. *F*-test is applied to test the variance, and *t*-test is applied to test the significance of the difference. The tests are done on the 95% significance level.

H2b *The decrease in visitors to UNESCO sites is mainly influenced by the decrease in international tourists, as they are the most frequent visitors.*

The data on the decrease in visitor numbers in the UNESCO attractions and international tourists in CAE are compared, and the correlation coefficient is calculated.

H2c *For the results of non-UNESCO sites, domestic tourists are more important than international ones.*

The data on the decrease in visitor numbers in the non-UNESCO attractions and domestic tourists in CAE are compared, and the correlation coefficient is calculated. The SPSS program is used to make the calculations and test the significance.

Data sources are different for attractions and CAE. The attractions are monitored, and the number of paying visitors is reported; one tourist can be reported more times on different attractions. There is a platform in the Czech Republic managed by CzechTourism (the Czech NTO – National Tourism Organization), tourdata.cz, where all the information is available. The data are reported directly from the attractions based on their ticket sales or entrance monitoring. Unfortunately, the visitors are not monitored according to the country of origin, so there is no information about the share of international tourists. Tourists in CAE are reported by hotels to the Czech Statistical Office (CSZO) and represent one person arriving at the destination. Nights are reported by CAE and represent how many nights the tourists stayed in the destination. This is taken from the Czech Statistical Office. The statistics do not include tourists staying in private apartments.

The Czech Republic has 16 tangible attractions on the UNESCO list. 14 of them are cultural ones. Analysis and comparison include 12 cultural UNESCO attractions in 9 towns/sites. One of the excluded UNESCO sites is Prague, with the specifics of the capital and big city, where the influence of UNESCO/non-UNESCO could be negligible. The second excluded site is Villa Tugendhat in Brno for a similar reason. One villa in the whole of Brno would probably have a negligible effect on the total numbers, and it would be impossible to detect the impact of UNESCO inscription among many others. Considering the aim of the paper, all relevant attractions are included in the analysis.

The second step was to choose the appropriate sites for comparison. As authors apply the statistical methods, the bigger the sample, the better. Therefore, as many relevant attractions as possible were selected. Nonprobability sampling was performed. Based on the number of visitors, attraction character, and location, 19 similar attractions were chosen for comparison. However, during the analysis it was found that 4 rely mostly on one-day visitors, and there is no data for accommodation available in the towns/villages. These were excluded. Therefore, 15 attractions in different sites were selected as suitable for comparison. The statistical methods allow different size of samples and, considering the low numbers, every additional data point can increase the reliability. The character of the attractions is cultural and sacral, mostly castles and chateaux, as the UNESCO sites are also cultural ones. The level of protection was not one of the selection criteria, as authors approach the attractivity of the attraction from the visitors' perspective. However, most of the non-UNESCO attractions are protected on the national level (national cultural monument).

The paper uses an empirical analysis based on dynamic panel data methodology for 2019–2020.

Research Results

As mentioned, there are 12 UNESCO sites and 15 non-UNESCO sites in the sample. Table 1 presents the name, UNESCO heritage list inscription, the number of visitors in 2019 and 2020, and the percentage change. The order is according to the percentage change in the number of visitors.

Table 1 presents the attractions in the sample and the basic information. The percentage decrease ranks the attractions in visitor numbers, and 7 out of the 10

Table 1 Attractions in the Sample

Name	UNESCO?	2019	2020	Change*
Kostnice/Kutná Hora	Y	482646	123800	−74.35
St. Prokop Basilica	Y	44800	12000	−73.21
St. Barbora Church/ Kutná Hora	Y	347500	114100	−67.17
Telč Castle	Y	72900	25100	−65.57
Italian Court/Kutná Hora	Y	32600	12300	−62.27
Konopiště Castle	N	148000	67500	−54.39
Litomyšl Castle	Y	53310	26600	−50.10
Český Krumlov Castle	Y	386300	196400	−49.16
Vsetín Castle	N	45100	23700	−47.45
Karlštejn Castle	N	212400	120100	−43.46
Vranov nad Dyjí Castle	N	69400	43100	−37.90
Valtice Castle	Y	212500	135900	−36.05
Hluboká Castle	N	292930	191500	−34.63
Svojanov Castle	N	83500	54700	−34.49
Lednice Castle	Y	389400	256000	−34.26
Velehrad Basilica	N	259847	176800	−31.96
Buchlovice Chateau	N	101400	71400	−29.59
Lipnice Castle	N	31100	22300	−28.30
Želiv Monastery	N	10900	7900	−27.52
Jindřichův Hradec Castle	N	71880	52300	−27.24
J. Nepomuk Church Zelena Hora	Y	33600	24900	−25.89
Kroměříž	Y	177500	136100	−23.32
Hrad Lichnice	N	22800	18800	−17.54
Třebíč Castle	Y	39500	34800	−11.90
Cimburk Castle	N	23500	22200	−5.53
Bítov Castle	N	66200	68200	3.02
Svatý kopeček Mikulov	N	261200	278900	6.78

Notes * In percent. Based on data from the Czech Tourism (www.tourdata.cz).

worst are on the UNESCO list. In comparison, only 3 out of the 10 best ones are inscribed on the UNESCO list. Already this indicates that UNESCO inscription is not necessarily an advantage.

The attractions are grouped into UNESCO and non-UNESCO attractions. First, the samples are tested with the *F*-test if the variance is the same. First, the change in the number of visitors is compared. A result of 0.68 (*F*-crit = 0.39) leads to the rejection of the null hypothesis. The *t*-test with the *t*-stat 2.33 (*t*-crit(1) = 1.72) leads to the rejection of the null hypothesis. The tests are done on the 95% significance level. The analysis of CAE numbers reveals the opposite result. The variance in both samples is similar (*F*-test = 0.25, *F*-crit(1) = 0.33), the correct *t*-test is applied, and the result (*t*-stat = 0.55, *t*-crit(2) = 2.07) leads to support of the null hypothesis. The means −41.67% and −38.65% are not significantly different. This different result in visitors to the attractions and the tourists' numbers in CAE can be explained by higher dependence of UNESCO sites on the one-day visitors.

Hypothesis H1a: 'The decrease in visitor numbers will be on average smaller in UNESCO sites than in non-UNESCO sites' is rejected because the results show a significant difference in the means (−27.28 and −46.15). Indeed, the UNESCO inscription seems to be rather a disadvantage for the sites. In terms of accommodation, neither advantage nor disadvantage has been confirmed.

The comparison to the regional numbers (H1b) also leads to the conclusion that being on the UNESCO list is rather a disadvantage in the COVID-19 pandemic. In individual cases, 5 out of 12 UNESCO attractions have a smaller decrease, and 7 have a more significant decrease than the whole region. For statistical comparison, the *F*-test is applied to analyse the variance and then the *t*-test. As the hypothesis supposes the mean in UNESCO sites will be smaller, the one-side criterium is used (*t*-crit(1) = 1.76), and the result, −2.14, leads to rejecting the null hypothesis and acceptance of the significant difference between the means −47.77% in UNESCO attractions and −33.49 in regions as a whole.

The following hypothesis H1c assumes that the UNESCO sites will start growing faster than the non-UNESCO sites. The data from CAE from the years 2020 and 2021 are compared.

The results show an opposite trend than in Table 1. Out of the 10 best-growing sites, 6 are inscribed on the UNESCO heritage list. Out of the 10 worst, 8 are not UNESCO sites. To decide about the hypothesis H1c: The recovery is faster in UNESCO sites than in

Table 2 Number of Tourists in CAE in 2020 and 2021 in the UNESCO and Non-UNESCO Sites

Name	UNESCO?	2020	2021	Change*
Velehrad Basilica	N	4402	7302	65.88
Telč Castle	Y	11841	15061	27.19
St. Prokop Basilica	Y	16039	20034	24.91
Třebíč Castle	Y	16039	20034	24.91
Kroměříž	Y	17587	21773	23.80
Kostnice/Kutná Hora	Y	26168	31566	20.63
St. Barbora Church/ Kutná Hora	Y	26168	31566	20.63
Italian Court/Kutná Hora	Y	26168	31566	20.63
Valtice Castle	Y	20841	24712	18.57
Vsetín Chateau	N	10390	12252	17.92
Svatý kopeček Mikulov	N	65697	77418	17.84
Želiv Monastery	N	6317	7351	16.37
J. Nepomuk Church Zelena Hora	Y	14161	16244	14.71
Vranov nad Dyjí Castle	N	11608	13235	14.02
Litomyšl Castle	Y	12457	13944	11.94
Lichnice Castle	N	7481	8323	11.26
Konopiště Castle	N	11818	12915	9.28
Lednice Castle	Y	34499	37610	9.02
Cimburk Castle	N	1930	2087	8.13
Buchlovice Chateau	N	11901	12662	6.39
Hluboká Castle	N	37666	39667	5.31
Jindřichův Hradec Castle	N	18685	19045	1.93
Bítov Castle	N	20536	20658	0.59
Svojanov Castle	N	2412	2390	−0.91
Karlštejn Castle	N	10526	10098	−4.07
Český Krumlov Castle	Y	109791	100456	−8.50
Lipnice Castle	N	988		

Notes * In percent. Based on data from the Czech Statistical Office (https://vdb.czso.cz/).

non-UNESCO sites, the relevant data are analysed and tested. For the analysis of the data from CAE, the sample slightly changes. There are no data for Lipnice for the year 2021, so only 14 non-UNESCO sites are analysed. Three UNESCO attractions are in Kutná Hora, so only 10 UNESCO sites are in the analysis.

Whereas the mean of the growth in non-UNESCO sites is 12.14%, the mean of the growth in UNESCO sites is 16.71%. First, again the F-test is applied to test the variance. The result, 0.40, exceeds the *F*-crit 0.33, and the variance in the samples is statistically different (288.50 and 115.01). It can be assumed that the UNESCO sites grow as a group, and individual conditions influence the non-UNESCO sites. The hypothesis supposes that the growth in UNESCO sites is higher; we can check the one-side criterium to evaluate the hypothesis (*t*-stat = 0.81, *T*-crit(1) = 1.72). With this result, it is impossible to reject the null hypothesis, and we must admit that the difference in growth is not statistically significant.

However, with deeper insight, there is one exceptional site among the non-UNESCO sites with a growth of 65.88% (the Velehrad Basilica), an outlier. As this is an exception among the sites, the question arises of how the situation changes if the site is excluded. The mean of the growth of non-UNESCO sites decreases to 8.01% (from 12.14%). The variance, in this case, is statistically not significantly different (*F*-stat = 2.16, *F*-crit(1) = 2.80). The correct *t*-test is applied with the following result: *t*-stat = 2.31, *t*-crit(1) = 1.72; it leads to rejection of the null hypothesis, and the idea of the faster recovery of UNESCO sites represented by the year-to-year growth is supported in the adjusted sample.

Approaching the second research question: What role does international tourism play in the UNESCO sites during the COVID-19 pandemic? The first hypothesis H2a: The UNESCO sites are more dependent on international tourists than the non-UNESCO sites, will be tested. Data from the CAE in 2019 are analysed.

The mean shares of international tourists in UNESCO and non-UNESCO sites are 27.24% and 19.42%, respectively. Firstly, the *F*-test supports the null hypothesis, and samples have statistically the same variance. The difference in the share of international tourists and nights in UNESCO and non-UNESCO sites is compared. The *t*-test 1.25 and 1.50 are within the criteria 1.71 and support the null hypothesis that the shares are similar. We can reject hypothesis H2a that the UNESCO sites depend more on international tourism based on this sample. This correlates with the second part of hypothesis H1a, that the decrease in tourist

Table 3 Tourists in CAE in 2019

Name	UNESCO?	Number	(1)	(2)
Český Krumlov Castle	Y	193425	71.20	64.40
Hluboká Castle	N	46533	53.12	43.01
Svatý kopeček Mikulov	N	51901	41.75	33.82
Kostnice/Kutná Hora	Y	16455	32.35	33.68
St. Barbora Church/Kutná Hora	Y	16455	32.35	33.68
Italian Court/Kutná Hora	Y	16455	32.35	33.68
Konpiště Castle	N	7899	31.29	31.26
Telč Castle	Y	4891	28.88	29.45
Vsetín Chateau	N	4465	28.30	34.65
Velehrad Basilica	N	2520	27.41	27.69
Litomyšl Castle	Y	5174	25.50	29.03
Kroměříž	Y	7779	25.06	24.13
Jindřichův Hradec Castle	N	6533	21.30	23.49
St. Prokop Basilica	Y	5670	20.99	19.60
Třebíč Castle	Y	5670	20.99	19.60
Lednice Castle	Y	11154	19.59	17.12
Karlštejn Castle	N	4161	19.18	19.14
Buchlovice Chateau	N	2478	15.26	14.42
Valtice Castle	Y	4791	15.25	13.57
Vranv nad Dyjí Castle	N	2435	14.21	6.96
J. Nepomuk Church Zelena Hora	Y	3083	12.57	14.07
Svojanv Castle	N	348	9.40	8.44
Želiv Monastery	N	793	8.08	6.14
Hrad Lichnice	N	932	7.19	6.97
Bítov Castle	N	1572	7.06	6.58
Cimburk Castle	N	102	4.92	2.80
Lipnice Castle	N	67	2.78	1.88

Notes (1) share of international tourists, (2) share of international tourists in nights, in percent. Based on data from the Czech Statistical Office (https://vdb.czso.cz/).

numbers in CAE is not significantly different in UNESCO and non-UNESCO sites.

To decide about hypotheses H2b and H2c, the correlations are calculated in SPSS for both groups, UNESCO and non-UNESCO. The following variables are included: change in visitor numbers (attraction), change in total tourist numbers (CAE), change in domestic tourist numbers (CAE), change in international tourist numbers (CAE). Results are presented in Tables 4 and 5.

Table 4 Correlation Matrix for UNESCO Sites

		UNVIS	UNTOT	UNDOM	UNINT
UNVIS	(1)	1	0.170	−0.167	0.467
	(2)		0.596	0.603	0.126
UNTOT	(1)	0.17	1	−0.163	0.744**
	(2)	0.596		0.612	0.006
UNDOM	(1)	−0.167	−0.163	1	−0.404
	(2)	0.603	0.612		0.193
UNINT	(1)	0.467	0.744**	−0.404	1
	(2)	0.126	0.006	0.193	

Notes UNVIS – visitors change in the UNESCO attraction, UNTOT – tourists change in CAE in total in UNESCO sites, UNDOM – domestic tourists change in CAE in UNESCO sites, UNINT – international tourists change in CAE in UNESCO sites, (1) correlation, (2) significance (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed). Based on data from the Czech Statistical Office (https://vdb.czso.cz) and from the Czech Tourism (www.tourdata.cz).

The table works with changes in the numbers, not with the absolute numbers. The correlation indicates how much a decrease in one variable correlates with a decrease in another variable. First, the UNESCO sites are analysed.

The tourist change in CAE in total is strongly and significantly correlated with the international tourists' decrease in CAE, demonstrating a significant role of international tourism in these sites for CAE and the effect of losing this segment. The other correlations are not significant. The correlation between change in visitors in attractions and the decrease in international tourists in CAE is, however, high (0.467) and is the second highest out of the analysed variables. The correlation is not statistically significant. Even if this is a correlation, from the logical perspective, we can assume that the loss of international tourism had the most significant impact on the visitor numbers at UNESCO sites. In contrast, the decrease in domestic tourists did not play a role.

Table 5 Correlation Matrix for non-UNESCO Sites

		VIS	TOTAL	DOM	INT
VIS	(1)	1	0.486	0.457	0.393
	(2)		0.066	0.087	0.147
TOTAL	(1)	0.486	1	0.843**	0.653**
	(2)	0.066		<0.001	0.008
DOM	(1)	0.457	0.843**	1	0.440
	(2)	0.087	<0.001		0.101
INT	(1)	0.393	0.653**	0.440	1
	(2)	0.147	0.008	0.101	

Notes VIS – visitors change in the non-UNESCO attraction, TOTAL – tourists change in CAE in total in non-UNESCO sites, DOM – domestic tourists change in CAE in non-UNESCO sites, INT – international tourists change in CAE in non-UNESCO sites, (1) correlation, (2) significance (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed). Based on data from the Czech Statistical Office (https://vdb.czso.cz) and from the Czech Tourism (www.tourdata.cz).

In the non-UNESCO sites, the total decrease in tourist numbers strongly and significantly correlates with the decrease in domestic tourist numbers (0.843). However, in the sample, the decrease in international tourists is also significantly correlated with the total decrease (0.653). This confirms the dominant effect of domestic tourism in non-UNESCO sites from the CAE perspective. Considering the change in visitor numbers in the attractions, both domestic and international tourist numbers are correlated. The correlation of domestic tourism development is stronger; none of them is statistically significant.

Conclusion and Discussion

Based on the analysis, the authors can answer the question: is inscription into the UNESCO heritage list an advantage during the COVID-19 pandemic? The results reveal that for the attractions, UNESCO inscription was rather a disadvantage in the first year of the pandemic. This answer is supported by comparing the UNESCO and non-UNESCO attractions and the comparison of the regions as a whole. The second year brought a faster recovery in UNESCO sites. The second question, dealing with the role of international tourism in the UNESCO sites during COVID-19 pandemic, is also answered, even if the answer is ambiguous.

Hypothesis H2a has been rejected. The *t*-test did not support higher dependence in terms of tourist numbers nor in terms of tourist nights for the UNESCO sites. The difference in share of 27.24% vs. 19.42% was not statistically significant enough. Within the discussion, it must be mentioned that the non-UNESCO sites in the sample were the most important ones. Considering that the others will be rather of regional and local importance and their share of international visitors will be even smaller, the share of international tourists in UNESCO vs. non-UNESCO sites, in general, could be seen from a different perspective. The further hypotheses confirmed the effect of decrease of international tourists in terms of CAE in UNESCO sites and revealed a high correlation with the decrease in visitor numbers (not significant). The CAE in non-UNESCO sites performs higher dependence on domestic tourism changes. Indeed, the analysis also confirmed the significant role of changes in international tourist numbers. The correlations with the change in visitor numbers are stronger for changes in domestic tourism; the change in international tourism is also positively correlated.

Authors can conclude that the UNESCO sites are less influenced by domestic tourism than the non-UNESCO, but international tourism plays a role in both types. It must be mentioned again that important and highly visited attractions were selected for the research.

The main limit of the research is the number of the analysed sites in the sample. The size of the sample is influenced by the objective conditions. The number of UNESCO sites is given in the Czech Republic. To be able to compare data from CAE for UNESCO and non-UNESCO sites, only similar attractions located in towns/villages with own accommodation facilities were needed. And, therefore, the number of non-UNESCO sites is also limited.

Regarding the future research directions, an analysis of larger destinations (Prague, Budapest, etc.) would be worth researching. The cities offer more types of tourism, and cultural tourism is only one.

More factors will influence the changes and results. It is also interesting how the COVID-19 pandemic affected the perception of the UNESCO brand in domestic tourism.

The COVID-19 pandemic had a devastating effect on tourism. The pandemic and the restrictions especially endangered entrepreneurs. However, some attractions suffered in 2019 by overtourism, and this is a good opportunity to restart the strategy and manage the attractions in more sustainable ways. The pandemic showed the vulnerability of tourism and especially of international tourism. From the managerial perspective, it is important for UNESCO sites (Pedersen, 2020) to diversify the target groups and audience, and to focus on quality instead of quantity. The pandemic was a shock and caused a crisis. But after the crisis it is important to take the good from the development. The pandemic showed the potential of virtual reality, ICT, reservation systems, and other technologies. The situation forced both UNESCO and non-UNESCO sites to communicate current issues and restrictions on time, mainly online, and to inform visitors what to expect. This might be taken as an opportunity to continue with communication and to educate future visitors in terms of sustainability and responsibility. The second lesson learned is the diversification of the products offered. Open-air attractions were less affected; this might be an impulse to develop additional products which will offer a different kind of leisure activity and can complement the indoor product. This approach could increase resilience and help with spatial distribution of the tourists and contribute to sustainability.

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