



Article

Assessment of the Activities of European Cultural Heritage Tourism Sites during the COVID-19 Pandemic

Mateusz Naramski ^{1,*} , Adam R. Szromek ¹ , Krzysztof Herman ¹ and Grzegorz Polok ²

¹ Department of Organization and Management, Institute of Economy and Informatics, Silesian University of Technology, 44-100 Gliwice, Poland; szromek@polsl.pl (A.R.S.); krzysztof.herman@polsl.pl (K.H.)

² Department of Informatics and Communication, University of Economics in Katowice, 40-287 Katowice, Poland; grzegorz.polok@ue.katowice.pl

* Correspondence: mateusz.naramski@polsl.pl; Tel.: +48-32-277-7336

Abstract: The COVID-19 pandemic has had a significant impact on the way tourism activities are conducted. Restrictions on moving from place to place have likely limited the spread of the SARS-CoV-2 virus but have also led to economic crisis in many countries around the world. In this article, we assessed the impact of the COVID-19 crisis on the activities of cultural heritage tourism sites in Europe. Scientific research was carried out in industrial heritage tourism sites associated with the European Route of Industrial Heritage (ERIH). Analysis of the literature and the results of our own research indicated a strong impact of the pandemic on the examined sites, expressed in the limitation of the operating time of the sites, a decrease in the number of tourists attended to, and a decrease in revenues. No significant reduction in employment was noticed. These sites were not generally used in preventive actions during the health crisis. Only some managers took an active part in supporting emergency services in a difficult situation. We concluded that taking up innovative functions by tourism enterprises should be open innovation.

Keywords: tourism; management; cultural heritage tourism; open innovation; ERIH; COVID-19 pandemic; heritage tourism site; open innovation with digital transformation



Citation: Naramski, M.; Szromek, A.R.; Herman, K.; Polok, G. Assessment of the Activities of European Cultural Heritage Tourism Sites during the COVID-19 Pandemic. *J. Open Innov. Technol. Mark. Complex.* **2022**, *8*, 55. <https://doi.org/10.3390/joitmc8010055>

Received: 25 February 2022

Accepted: 15 March 2022

Published: 16 March 2022

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

The SARS-CoV-2 virus, which caused the COVID-19 pandemic in 2020 and, consequently, the global health crisis, is also the cause of the economic crisis in the global economy. The negative impact of the pandemic is perceived in many sectors, but the industry that suffers the longest loss from a pandemic is tourism. After the first year of the pandemic, UNWTO [1] estimated losses due to the restriction of tourist travel in the amount of USD 1.3 trillion in export revenues, while another year of struggling with this disease has passed and it is still difficult to define the end of its impact, let alone the horizon in which global economies will start making up for their losses. As proven by subsequent UNWTO publications [2], in the first three quarters of 2021, the number of arrivals of international tourists around the world was 20% lower than in the first three quarters of 2020 and 76% lower than the number in 2019. At the same time, the direct economic contribution of tourism in tourism direct gross domestic product was estimated at USD 1.9 trillion in 2021, while in 2019 it was USD 3.5 trillion.

However, in addition to the financial dimension, the impact of the pandemic on tourist sites also has other consequences. These include limitations in the continuity of supplies and business service activities caused by lockdowns and, consequently, the reduction of employment in these sites [3]. However, it is unique that in a crisis of a global nature, the tourism industry may also engage in preventive measures related to reducing the incidence of disease or supporting the counteracting of the effects of a pandemic.

The aim of this article was to assess the impact of the COVID-19 crisis on the activities of cultural heritage tourism sites in Europe. The assessment was based on scientific research by the authors at the turn of 2021 and 2022 among the management of cultural heritage tourism sites associated with the European Route of Industrial Heritage (ERIH). The research issues undertaken are also a voice in the discussion on open access to innovative functions of tourism enterprises in times of global crises.

2. Cultural Heritage Tourism during the COVID-19 Pandemic

2.1. Cultural Heritage Tourism

J.M. Luo and L. Ren [4] emphasised that cultural heritage tourism is one of the oldest forms of tourism, as its subjects often date back to ancient times. Therefore, it is no surprise that it is also one of the most popular forms of tourism. The 2018 UNWTO report on Tourism and Culture Synergies [5], i.e., before the COVID-19 pandemic, notes that even in the 1990s, 37% of all trips contained a cultural element, and the growth rate of tourist trips was forecast at 15% per year [6]. Meanwhile, in the 21st century, the percentage of cultural elements in tourist trips is estimated at about 40%, and according to the OECD report, it is as much as 50% in European and American tourism [7]. In turn, the study by Price Waterhouse Coopers [8] in the 2009 report [5] indicated that cultural tourism in Europe is responsible for between 28% and 39% of tourism expenses. However, it should be noted that the given estimates depend on the scope of the adopted definition from 1985 [9]. Higher scores are obtained if a broad (conceptual) definition of cultural tourism is adopted, including all movements of persons that satisfies the human need for diversity, tending to raise the cultural level of the individual and giving rise to new knowledge, experience, and encounters. However, its technical version (narrow definition) is limited to “movements of persons for essentially cultural motivations such as study tours, performing arts and cultural tours, travel to festivals and other cultural events, visits to sites and monuments [5].” Similar estimates are quoted by G. Richards [10], who also showed the growing interest in the subject of cultural heritage tourism throughout the last three decades among scientists.

At the same time, along with the popularity of tourism related to the exploration of cultural heritage, the discussion on its determinants, especially the concept of authenticity, is intensively developing. R.W.K. Lau [11] recalled that this discussion gained importance more than half a century ago by developing the concept of the authenticity of MacCannell [12]. This concept included relationship and object authenticities. It was criticised and rejected by some, and intensively developed by others [11,13–16]. Criticism most often concerns pseudoevents [17] resulting from mass tourism or staged authenticity [12], loosely related to reality, which the literature also presents in the form of examples, e.g., related to the reconstruction of medieval castles in the 20th century [18].

M. Źemła and M. Siwek [18] presented an overview of the development of the concept of authenticity in tourism activity. Such as other researchers, they noted that as a result of numerous applications and concepts, and the multitude of included elements, the concept of authenticity had become an ambiguous term. Therefore, these researchers proposed three different approaches to authenticity, used according to different types of heritage: pieces of art, buildings, and monumental zones. The consensus seemed to be obtained by referring to the conception of objectivism of authenticity [19] which refers to the measurement of authenticity according to individually formulated absolute and objective criteria.

As already mentioned, the reports of UNWTO [5] proved that tourism, in which the cognitive element is connected with getting to know the cultural heritage of a given place, is an extremely dynamically expanding form of tourism activity. This also applies to postindustrial areas with a long history of socioeconomic development. Then, heritage tourism becomes a function that allows the past to be transferred into the present in active processes of remembering and forgetting [20]. Cultural heritage tourism is often based on a dichotomous definition of heritage [21], which may have a material dimension, generally

related to buildings, settlements, or locations, or an intangible dimension, related to local cultural elements, including local traditions, dialect, and intangible works by local artists.

Attempts to define the issue of heritage by defining its significance for tourists were undertaken by L. Smith [21]. With a sample of 273 travellers, she noticed that among the most frequent answers, almost every third concerned the intangible past (30.0%), and every fifth concerned patrimony or preservation (22.0%) or history in general (15.4%). The material attributes of the past were only in fourth place in terms of preferences of choice by tourists. They were chosen by every tenth respondent (10.6%). This meant that tourists participating in L. Smith's research [21] were far more likely to understand heritage in the intangible sense.

Just as cultural heritage is commonly divided into tangible and intangible [22], so can the sites that represent heritage be divided. However, H. Park [23] indicated that some sites make use of both tangible and intangible heritage [24]. Ch.-K. Lee et al. [25] (following T. Lam and C.H. Hsu [26]) noted that cultural heritage tourism sites are one type of destination, where culture has been found to be an important determinant of visit intention.

However, defining heritage related to a specific destination is not limited to determining its tangible or intangible dimension. Often it is also about the time dimension, as it can take the form of a process. Therefore, the literature also includes attempts to reject the dichotomous approach to heritage. R. Zhang and L. Smith [27] indicated that it is possible to adopt the functional meaning of heritage by defining it as something that is produced, and that at the same time it is in a continuous process of taking place through the practice of management and tourism. This means that the heritage may not only be what was created in the distant past, e.g., in previous centuries, but even what was created during the life of a tourist or their immediate ancestors. Of course, it is not about newly built castles reminiscent of those from previous eras, but about authentic exhibits that were created in the relatively recent past. A striking example is postindustrial heritage tourism, which limits the scope of heritage tourism to industrial sites and equipment associated with industrial activities that have ceased operation or are still running [28].

E. Parka et al. [29], based on the literature [11,30,31], reminded us that the volume of demand in heritage tourism activities results from (i) the level of awareness of heritage in society; (ii) the ability to express uniqueness through the awareness of historical environments or staged history; (iii) increasing the wealth of the society resulting in more leisure time resources, mobility, and access to works of art; (iv) the need to surpass contemporary experiences; and/or (v) satisfying the need for historical continuity with previous generations.

There are also many attempts to estimate the value of these objects in the literature. However, it is not only limited to financial value, but also to its intangible dimension in the form of cultural capital. D. Throsby [32] defined it as an asset that embodies or gives rise to cultural value in addition to whatever economic value it might possess. Assuming that the object functions in a closed economy system, the stock of cultural capital K is a combination of two values for society $V = V(K_e, K_c)$, where K_e is the financial valuation of capital at a given moment, and K_c is a cultural valuation resource measured in a notional metric that reflects the importance or value of the cultural object for society. This interesting concept is implemented by estimating the cultural value of its tourist utility, i.e., by the number of tourists visiting a specific site [33]. Considering, however, that the COVID-19 pandemic has restricted tourist traffic and income from tourism, it should be stated that the cultural value of heritage tourism sites has also been limited.

The ERIH newsletters [34,35], published as part of their own analyses of heritage tourism sites, showed that European heritage tourism entities target a wide range of people, but also have an important educational mission, including that of educating tourists. It is also known that the range of these sites is supraregional, as in general 60% of the structure of visitors are people from the region, 30% from outside the region, but from the given country, and 10% are foreign guests.

2.2. Tourism during the COVID-19 Pandemic

A review of research and scientific opinions published after 2019 showed that few scientific papers do not take into account the impact of the COVID-19 pandemic. The very fact of such a widespread discussion of this issue makes one realise how an important factor influencing the contemporary shape of the tourist market is the health crisis caused by the spread of the SARS-CoV-2 virus. After two years of operation of the related restrictions, the above remarks do not come as a surprise. However, it was interesting that scientists' warnings about a possible pandemic caused by a virus threatening humanity occurred long before the SARS-CoV-2 virus appeared. An example is the publication of P.J. Tew et al. [36], who, in 2008, made a forecast predicting an almost certain outbreak of an epidemic similar to the one that took place in the world in 2003 (SARS epidemic). The forecast predicted that the H5N1 virus would be the source of the epidemic. Y.Y. Fan et al. [37] reached similar conclusions in 2018.

More than two years of experience in the mutation and spread of the virus increased the ability of scientists and state leaders to actually assess the situation and implement solutions to reduce the negative impact of the disease [38]. Figure 1 shows the evolution of the COVID-19 pandemic in Europe, as measured by the number of new COVID-19 cases and deaths from the virus (Figure 1).

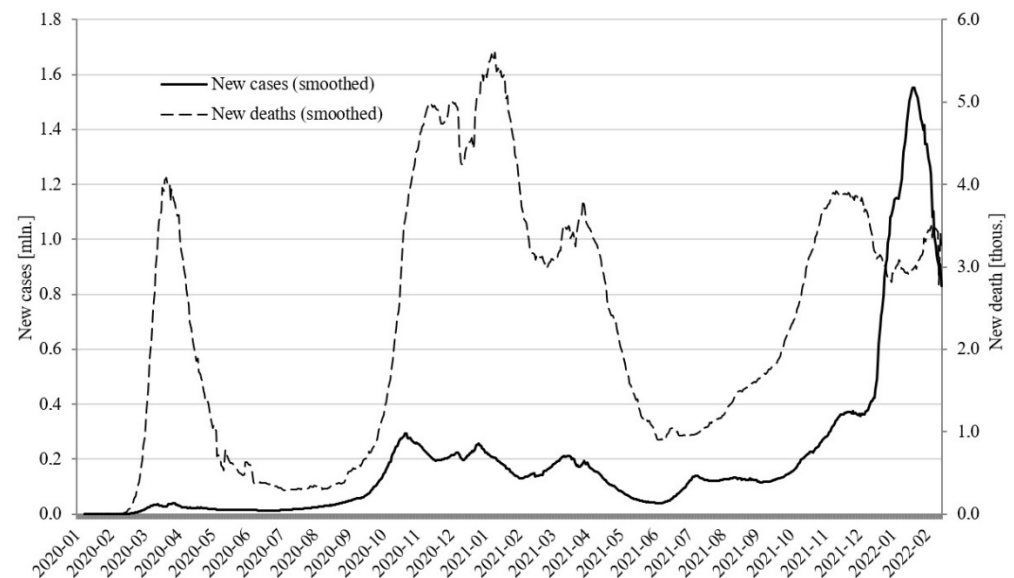


Figure 1. COVID-19 pandemic statistics in Europe. Source: Own study based on [39].

Many scientific publications focused on the behaviour of tourists in the context of pandemic threats. Researchers analysed the relationship between psychological distance and the risk associated with falling ill [40], diagnosed the reasons for fear of travelling [41,42], analysed travel restrictions [43], or examined the residents' perception of the situation (risk, emotional solidarity, and support) [44]. However, there were also analyses of the tourism sector and its main stakeholders (representatives of demand, supply, and the authorities) [45]. The literature also included recommendations to develop new methods of crisis management [46] and to consider the issue of COVID as an environment for verifying theories related to threats [47]. However, with time, more and more researchers pointed to the troubles of enterprises related to tourism, especially the hotel and aviation industries [48].

More and more often, especially since the COVID-19 pandemic, it was also noticed that the popularity of elements of cultural heritage was also present in the digital space [49]. A. Lungu et al. [50] noticed that modern digital technologies make it possible to preserve the motives and symbols of our ancestors and pass them on to the next generations.

The experience gained in the past, especially during previous epidemics, turned out to be extremely important in predicting the future about the postpandemic situation. An interesting query in this respect was presented in the work of V. Kaushal and S. Srivastava [51], who pointed to the important role of events that make people aware of the need to prepare for the effects of the threats. Similar conclusions were formulated by F. Altuntas and M.S. Gok [52], who noticed a research gap in the absence of scenarios for the hotel industry in emergencies in the initial period of the pandemic. Likewise A.E.E. Sobaih et al. [53] appealed to entrepreneurs from the tourism industry to develop resistance plans to epidemic crises. Contrary to appearances, this was not an individual problem, because, as aptly noted by T. Gonzalez-Torres et al. [54], maintenance of the tourism supply chain (TSC) means a network of mutual dependencies between participants of the tourism market, and thus the risk taken by one of the entities may also have an effect on other stakeholders.

Interesting issues were discussed in the article by G.I. Bhaskara and V. Filimonau [55], who considered the activities of tourism enterprises in the context of organisational learning for disaster planning and management. They noticed that the perspective of estimating losses was usually very short (current), the attempt to compensate was limited to observing the competition and implementing similar actions limiting losses. This meant that tourism enterprises were not prepared for crisis situations. The case of the lack of reaction of entities that received information about the appearance of the SARS-CoV-2 virus much earlier than others but did not take preventive measures, not believing that the virus would spread quickly, was especially appealing to the imagination.

The literature cited solutions that should be adopted to immunise the tourism industry against the effects of threats such as COVID-19. According to G.D. Sharma et al. [56], this resilience depended on a government response, technology innovation, local belongingness, and consumer and employee confidence.

However, it is rare to include the role of tourism operators in limiting the effects of the virus in research. Based on the research on spa enterprises by A.R. Szromek [3], he noted that the tourist and spa infrastructure of modern tourism enterprises may play an important role in the pandemic. Due to the lack of tourism in spas, these enterprises got involved in activities supporting the health system through:

- treatment of patients who were diagnosed with SARS-CoV-2 but who did not require intensive care,
- treatment of patients who had COVID-19 but needed help with their recovery,
- running isolation units, i.e., places where people in self-isolation were quarantined,
- vaccinating the local population.

Although the issue of the involvement of tourism enterprises in rescue efforts may be incomprehensible to most stakeholders of the tourism sector, they can play an important role in an emergency. During the global health crisis caused by SARS-CoV-2, the tourism industry was one of the first to experience its effects. The lockdown announced in many European countries at the beginning of 2020 brought tourism to a standstill. The hitherto crowded tourist sites suddenly became useless for society. In many cases, state subsidies provided for maintaining jobs became the salvation for business services. However, some studies [3] proved that tourist sites abandoned by tourists may play an important social role in a crisis period, consisting of supporting these entities by entrusting them with specific tasks. They may concern activities that unburden the health service industry or directly limit the transmission of the disease. However, it seems that knowledge on this subject should be open innovation.

An interesting framework for the concept of open innovation was formulated by E.K. Huizingh [57], which organised the existing knowledge and various approaches. They only complemented the achievements of H.W. Chesbrough two decades ago [58–60]. E.K. Huizingh [57] made the differences between innovation in terms of the openness of both the process and the result of innovation extremely clear. It should be noted, however, that the impact of the concept of open innovation on business performance

was not unequivocal [61], and the creator of this concept even proved that there was no universal set of practices to successfully practice open innovation [62].

After two decades of developing the concept, you can encounter its different views in the literature. The approach that captures sustainable open innovations seems interesting [63]. One of the dynamically developed approaches is open innovation dynamics, which took various forms in the literature, e.g., culture for open innovation dynamics [64], and even entrepreneurial cyclical dynamics of open innovation [65]. J.J. Yun [64,65] pointed out that open innovation dynamics has two layers:

- open innovation microdynamics and
- open innovation macrodynamics.

The first included the process: open innovation—complex adaption—evolutionary change dynamics, while the second included the dynamics: market open innovation—closed open innovation—social open innovation.

The idea of using open innovation in counteracting the effects of COVID-19 was present in the literature since the beginning of the pandemic, as it seemed to be an extremely valuable solution in a situation of crisis requiring unity in actions taken. H. Chesbrough [58–60,66], as the creator of the concept of open innovation, extended it by this aspect [67], and the idea was followed by other researchers [68].

3. Materials and Methods

Assessing the impact of the COVID-19 pandemic on cultural heritage tourism sites needed research among managers and administrators of sites associated with the European Route of Industrial Heritage (ERIH). The research consisted of indepth interviews conducted in December 2021 and January 2022, about two years after the first COVID-19 case in Europe. For this purpose, a research tool in the form of a research questionnaire was used and made available via an online survey platform. The research questionnaire contained a set of 54 questions that were divided into a data table with 8 groups of themed questions. Due to the diverse specificity of cultural heritage sites, some groups of questions were assigned to specific types of sites, while others covered issues of homogeneous themes. An example of issues assigned to specific sites would be a group of questions only asked to administrators of historical estates. Other themed groups concerned the activities of sustainable development, applied business models, the use of open innovation, and activities conducted during the COVID-19 pandemic. Due to the complexity of the issues raised, we only discussed the results of research concerning the running of sites during the pandemic.

The request for participation in the research was sent to all tourist sites included in the ERIH, which is the largest association of such sites in Europe. During the research period, the ERIH owned 316 cultural heritage tourism sites, of which 110 (34.8%) were flagship sites (ERIH Anchor Points), while the rest (65.2%) were ordinary members of the association (ERIH Members). Ultimately, 73 cultural heritage tourism sites from all over Europe took part in the study, i.e., every fourth ERIH site (23.1%). The list of site locations that participated in the research is presented in Table 1. It shows that almost every third site was located in Germany (30.1%), and a little more than every fifth site was in Spain (21.9%). A total of 9.6% of the sites, i.e., every tenth examined, came from the British Isles. On the other hand, 5.5% of the examined sites were located in Poland. The percentage structure of sites participating in the research indicated that in the case of other European countries, the share of sites representing these countries did not exceed 5%.

At the same time, the obtained structure of the studied objects was representative for Europe, as it was structurally consistent with the structure of objects associated with the ERIH. This association brought together almost all the active cultural heritage sites in Europe.

Table 1. Location of the sites taking part in the research, along with their actual participation.

Location of the Sites	Percentage Structure [%]	Location of the Sites	Percentage Structure [%]
Germany	30.10%	Bulgaria	1.40%
Spain	21.90%	Finland	1.40%
UK	9.60%	Slovenia	1.40%
Poland	5.50%	Croatia	1.40%
Sweden	4.10%	Czech Republic	1.40%
Portugal	4.10%	Ireland	1.40%
France	4.10%	Ukraine	1.40%
Norway	2.70%	Austria	1.40%
Italy	2.70%	Belgium	1.40%
Luxembourg	2.70%	Total	100.00%

Source: Own study.

The answers to the questions included in the research questionnaire were generally provided by site directors and managers. In a few cases, the answers were provided by persons appointed by the owner or administrator of the site.

Various statistical methods were used in the research. First, the collected data was subjected to a formal analysis in terms of the correctness of filling in the questionnaires. Second, a substantive analysis in terms of outliers and extreme responses (values), as well as the transformation of responses to questions about the possibility of multiple choices. The transformations of qualitative features and quantitative variables helped develop a database which was subjected to statistical analysis.

The statistical analysis consisted of both univariate and multivariate analysis. In the analysis of qualitative characteristics, structure indicators were used, as well as a five-point Likert scale for assessing the authenticity of the represented cultural heritage site. However, in the quantitative analysis, both a descriptive analysis in terms of classical and positional measures as well as a correlation analysis were used. The descriptive analysis included the use of certain activities: arithmetic mean, standard deviation, median, coefficient of variation, and mode. The Yule correlation coefficient for the 2×2 convergence table (φ^2) was used in the correlation analysis.

In the comparison of some activities in the subgroups, tests of significance of differences between mean values were also used. In the case of variables showing a distribution close to normal, the Student's *t*-test was used, otherwise the Mann–Whitney U test was used. The occurrence of normal distribution was tested by the Kolmogorov–Smirnov test. When comparing more than two study groups, ANOVA was used. The chi-square test was used to compare the two structure indicators. The study used a significance level of $p = 0.05$.

4. Results

The surveyed group of cultural heritage tourism sites mostly belonged to the category of ERIH members (60.3%), i.e., more often than every other surveyed site. A total of 39.7% of the examined sites belonged to the ERIH Anchor Point category (Figure 2a). This meant that the obtained structure of the examined sites corresponded to the structure of the sites affiliated with the ERIH association (the test of significance of differences in structure indicators showed no significant difference between the fractions ($p = 0.6244$)).

At the same time, the surveyed group included sites that are public and private organisations, but also with mixed ownership, as well as nongovernmental organisations (Figure 2b). The majority in this group were public organisations, as every second site was state-owned (50.7%). Every sixth site had a private owner (15.1%), while every fourth site (23.3%) had a mixed ownership structure. The smallest number was in the form of nongovernmental organisations (11.0%).

The vast majority of the examined tourist sites offered tourism activities focused on cultural heritage related to production and manufacturing (Table 2). Every fifth site precisely represented such themed issues of cultural heritage (19.3%). Slightly fewer sites offered tourist routes related to mining (15.6%), and more often than every tenth site presented activities related to the production of iron and steel (11.9%) and transport (11.0%).

This meant that the theme of the heritage of heavy industry was presented more often than every second examined business.

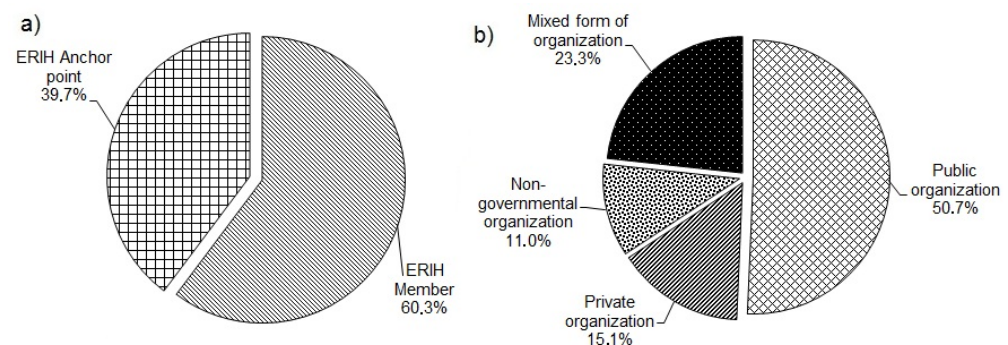


Figure 2. Type of membership of the examined sites (a) and their form of ownership (b).

Table 2. Themed issues presented by the examined tourist sites.

Tourism Offer Subject	[%]	Tourism Offer Subject	[%]
Production and Manufacturing	19.3%	Industry and War	3.7%
Mining	15.6%	Communication	2.8%
Iron and Steel	11.9%	Salt	2.8%
Transport	11.0%	Application of Power	1.8%
Landscapes	8.3%	Water	1.8%
Textiles	8.3%	Paper	0.9%
Housing and Architecture	7.3%	Service and Leisure Industry	0.0%
Extra: Company Museums and Factory Tours	4.6%	Total	100.0%

Source: Own study.

Sites offering tourists cognitive values related to the textile industry (8.3%), landscape (8.3%), or housing and architecture (7.3%) were less frequent. The remaining themed categories, including company museums and factory tours, industry and war, communication, salt, application of power, water, paper, and the service and leisure industry, were represented by less than 5% of sites.

A detailed comparative analysis of average site authenticity assessments divided into ERIH membership type (Member/Anchor point) showed no statistically significant differences between the average scores in these groups ($p = 0.6126$). There were also no significant differences between private and public sites ($p = 0.1317$). A comparison of the differences between the average scores obtained in groups differentiated in terms of the form of site ownership, performed with the ANOVA test, allowed us to establish that in this case as well no significant difference was observed between the scores ($p = 0.2453$). The statistical difference was also not observed in the case of the division into groups diversified in terms of the target recipient of the tourist offer ($p = 0.1625$).

The respondents were also asked about the impact of the pandemic on the activities of tourist sites (Figure 3). The obtained structure of responses allowed us to establish that every third tourist destination (34.2%) operated for more than half of the first year of the pandemic or for half of the season in which it usually operated. Almost the same number of tourist sites (32.9%) was in operation for less than half of 2020, or for less than half of their regular operating times in previous years. Only every fifth site (20.5%) operated without major obstacles for all or almost all of the year. Every tenth cultural heritage tourism site (9.6%) did not run its normal tourist activity.

Representatives of the surveyed tourist sites were also asked about the approximate number of visitors to the site in 2019 and 2020, which made it possible to compare the reduction in tourism caused by COVID-19. The results of the comparisons showed that the average decrease in the volume of tourism caused by the pandemic in the studied sites amounted to $-60.4 \pm 27.3\%$ ($Me = -62.5\%$), which meant that some sites recorded almost

total loss in tourism. Only two sites recorded an increase in the volume of tourism, in one case it was an increase of 2.8%, and in the other, of 42.9%.

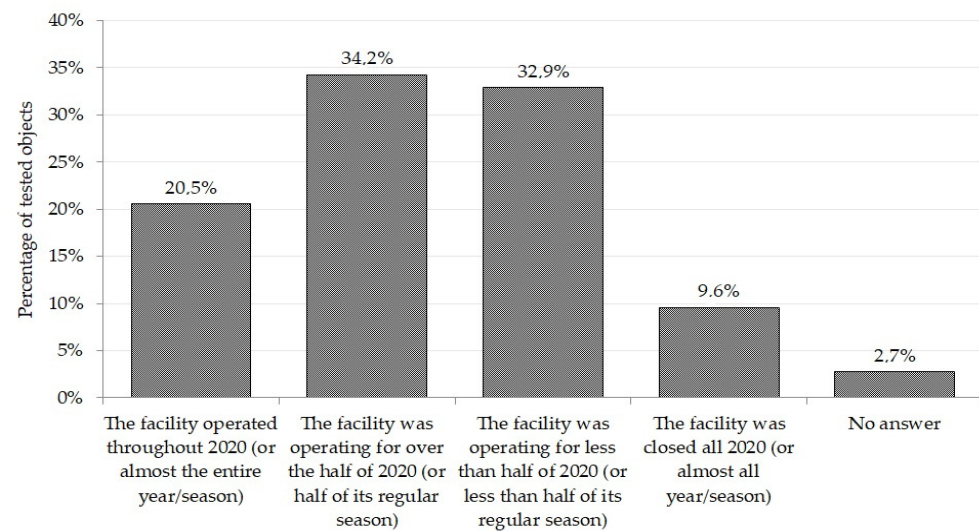


Figure 3. Structure of answers to the question about the functioning of the site during the pandemic.

The respondents were also asked about the average share of foreign visitors in the total number of tourists visiting the examined sites during the year. On average, it was $14.9 \pm 15.2\%$ of visitors ($Me = 10\%$). On average, $87,486 \pm 237,914$ tourists stayed in the examined tourist sites in 2019, while a year later it was $42,111 \pm 140,893$ people. The site that recorded the highest turnout in 2019 among all the examined sites welcomed a total of 1.5 million tourists, while in 2020 it was only 918,721 people.

The economic difficulties caused by COVID-19 also contributed to the reduction of employment in the examined sites through employment dismissals or nonrenewal of employment contracts. The average number of employees (excluding volunteers) in the examined sites was 26.1 ± 64.4 people ($Me = 7$). On average, employment was reduced by 0.68 ± 2.35 employees, and according to the median value, there were generally no employment dismissals ($Me = 0$). However, there were also sites where the recorded reduction in employment amounted to 15 employees. Nobody was hired in this period.

The respondents were also asked how the sites managed by them got involved in rescue efforts related to the COVID-19 pandemic. It should be noted that this was one of the most difficult questions for the respondents, as in many cases the respondents stated that they did not understand how their site could contribute to the reduction of disease (26.0%) or did not give any answer at all (30.1%). Almost every fourth site (23.3%) got involved in rescue efforts related to COVID-19, and every fifth (20.5%) did not do so.

Managers were also asked about the form of involvement of sites in preventive activities. Two approaches to this issue could be identified among the responses of the managers of the examined sites. The first was a perspective directed towards the inside of the institution—managers answered how they secured the facility and their employees. Second, on the other hand, were activities directed outside—helping intervention services, making their spaces available to medical service employees, conducting educational activities among the community, etc. The full list of activities is presented in Table 3. Therefore, in general, it was both the development of internal emergency plans for the duration of the pandemic and the provision of building space for rescue purposes or delegating workers to community work related to the pandemic or organising vaccinations. Therefore, it should be noted that although these sites rarely engaged in activities related to the mitigation of the effects of COVID-19, when they did, they generally performed very important functions. It is also important to note that the awareness of those in charge of these sites as to what they can do to help during a health crisis is very limited.

Table 3. Selected ways of involving sites in preventive activities.

Ways of the Facility's Involvement in Rescue Operations Related to the COVID-19 Pandemic
1. Offered public open space for cultural and community activities. 2. Implemented government recommendations and adapted to the changing epidemic situation. 3. Informed of government rescue funds and ideas and invention ideas. 4. A contingency plan for employees and visitors was put in place. 5. Adapted the facilities, adopting the necessary measures to guarantee the safety of visitors. 6. Visiting conditions, an emergency plan, and virtual visits were created. 7. The plant was not directly involved in preventive activities. Local residents were supported by social associations. 8. Started two campaigns to raise money and keep people engaged. Obtained secured grants, launched an online shop, and a mobile tour to facilitate self-guided visits. 9. While closed, staff members were working as volunteers of Red Cross or medical facilities, to help organise testing point inside the main institution of the museum. 10. Organisation of testing for all employees, providing vaccination centre. 11. Staff deployed to call centre roles; venue converted into a call centre for COVID-19 support. 12. Information on the risks was made available on social media and on the website. 13. Implemented parking for employees, remote work, antivirus shield, crowdfunding platform (patronite, screenshot), sale of assets. 14. Provided disinfectants and disinfected the facility. 15. One employee was at the pandemic staff of the district. 16. Assistance to the population as part of the efforts: carrying meals, reception in a vaccination centre, call centre for vaccines, reinforcements in school canteens.

Source: Own study.

Correlation analysis did not show a statistically significant relationship between the studied variables. The type of membership in the ERIH was not related to the fact that the sites were involved in combating COVID-19 ($\varphi^2 = 0.065$).

The site representatives were also asked for their opinion on how COVID-19 affected the future of the site. The majority of respondents (56.2%) stated that the pandemic did not significantly change the conducted activity; therefore, the site would continue to function as it previously did even after the pandemic period. However, more than one in ten (12.3%) admitted that the pandemic had brought about negative changes that would affect the functioning of the site for a long time. A total of 4.1% of the respondents even stated that the continuation of restrictions or their reintroduction risked the functioning of the site, and 1.4% of the respondents believed that the consequences of the pandemic meant that the site would have to undergo permanent changes or be at risk of being closed down. Only 1 in 10 (11.0%) stated that COVID-19 contributed to the improvement of the functioning of the site.

In the case of 6.8% of sites, their situation was different than above. For example, it was found that the financial situation of the institution deteriorated, and it was difficult to say how this would affect the future of the institution.

5. Discussion and Concluding Remarks

General analysis of the course of the COVID-19 pandemic, measured by the number of cases and deaths (Figure 1) proved that the variability of this phenomenon revealed periodic fluctuations. The observed course of the phenomenon over time was consistent with the changing seasons of the year. It was observed that in both the first and the second year of the pandemic, the lowest levels of deaths and cases were recorded in summer, the warmest period of the year in Europe, and the highest levels were recorded in the winter. Considering the fact that tourism related to cultural heritage tourism generally follows the opposite course of the year to that observed in Figure 1, it could be concluded that the losses caused by the pandemic were lower than those of the forms of tourism that record the greatest tourist movement in winter.

When confronting the obtained results with the previously cited studies, it was worth noting that although, based on the ERIH [34] research, tourist sites functioned for half of the year, our research showed that every fifth site operated throughout the year, and every third for more than half of the year. Thus, the research showed that most of the sites

(54.7%) operated for more than half a year. However, it should be noted that this result was overestimated due to the sites that only function in the summer, and it was these sites that showed no restrictions in operation.

It was also confirmed that most of the time of operation of the sites took place within pandemic restrictions, the organisation of special events was also suspended, and the number of visitors decreased by $60.4 \pm 27.3\%$ compared to 2019. The decline in visitors also entailed a decline in revenues. The ERIH reported that the reduction in revenues in cultural heritage tourism sites reached 28% compared to 2019, with more than half of the sites (51%) receiving funding from public authorities and 24% from other sources. In addition, 34% of businesses had to reduce employment (especially among seasonal workers). The results of our research showed that the reduction in employment was much lower, and taking into account the median value, it could be concluded that no reduction in employment was recorded.

ERIH research [34] also showed that 79% of sites adapted their offer by proposing alternative solutions. This research was studied further as part of additional ERIH research [34], conducted ad hoc through an online survey among 50 representatives of cultural heritage tourism sites in April 2020 [35]. It was noticed that virtual tours were the most popular during the pandemic, with the addition of contests and online exhibitions, which at the same time confirmed the results of research by the research teams of A. Bec et al. [49] and A. Lungu et al. [50]. Podcasts and employee videos were of slightly less interest. In turn, webinars, online meetings, video conferences, and sharing documents, were used to contact business recipients. In the context of further development of cultural heritage tourism sites, it was noted that they primarily tested new formats for online sightseeing (50%). Unfortunately, many sites reported that they have tried everything they are capable of. A total of 20% of sites did not increase their online activity, explaining this by a lack of staff or technical resources.

The optimistic conclusion was that half of the managers (56.2%) said that the pandemic did not significantly change the business, so the site would continue to function as before. Only 12.3% of the managers believed that the pandemic brought about negative changes that would affect the functioning of the site for a long duration of time. This was confirmed by the results of ERIH research [34], which showed that 14% of site managers believe that their site's operation was at risk.

The social role of cultural heritage tourism sites during the pandemic was not only dependent on the mindfulness and creativity of managers, but also on the conditions of the site. While in the case of the above-mentioned studies carried out among spa tourism sites [3], the scope of rescue efforts and preventive activities was large due to the favourable infrastructural conditions of health resorts; in the case of heritage tourism sites, these possibilities were much smaller.

As the research showed, an overwhelming majority of managers did not take part in counteracting the pandemic, but the rest showed great ingenuity in this regard. This is extremely important information pointing to the very limited ability of managers and administrators of European cultural heritage tourism sites to overcome limitations and be mindful of being innovative. This knowledge also directly relates to the usefulness of open innovations in such situations. M. Pichlak [69] emphasised that the use of open innovations allows us to supplement the possessed resources of technical knowledge, and thus, achieve additional opportunities to increase the efficiency of the innovative process.

While focusing on administrators showing innovative activity, it is worth noting that while antipandemic activity in many sites was limited to actions taken only against employees and customers, some managers took more advantage of the social opportunities of their sites. For example, the area of the site was used, making it available for rescue or vaccination purposes. An important action was undoubtedly the assigning of employees to preventive activities as part of volunteering. These conclusions are supplemented by the research of A.R. Szromek [3] about further critical actions made during the COVID-19 pandemic by tourism businesses.

The obtained results of research on the need to create a crisis management strategy confirmed a compliance with the needs that were also indicated in other research by authors such as V. Kaushal and S. Srivastava [51], F. Altuntas and M.S. Gok [52], and A.E.E. Sobaih et al. [53]. In the future, it seems necessary to increase the awareness of managers of tourist sites in terms of the possibility of active participation in preventive activities and the creation of programmes for functioning in times of global crises. This need is motivated by the fact that a little more than every other manager of the examined sites did not answer or understand the questions about how to include a tourist business in preventive measures. Unfortunately, the negative surprise was the fact that three out of four managers did not go ahead with any activity in this area, probably waiting for a reaction from other institutions and services.

It is also worth noting that programmes or action strategies may be based on solutions already used and made available by other entrepreneurs, or perhaps even state administration organisations in the form of open innovations. They make it possible to obtain innovative solutions from outside the enterprise [70], but also to share our own solutions with other market participants [71]. Global crises should be a reason to limit market competition in favour of coordinated, critical actions. It may be an innovation based on a quick change of the business model, in the form of a change in the profile of activity, which cannot be carried out due to the introduced restrictions, into one that will be socially beneficial at the same time. It seems reasonable to develop scientific foundations and business practices in the form of open innovations, enabling a smooth change of the business profile, especially in industries that are extremely sensitive to limiting the possibility of moving from place to place.

It may be useful to start work on the development of relevant recommendations for stakeholders in the scope of activities that can be undertaken by them. For example, facilities with a large exhibition area could protect their exhibits and make the remaining space available to the city authorities. On the other hand, a tourist service, during a period of stoppage in tourism, may undertake voluntary work or engage in rescue work. These are just examples of possible activities.

It should also be pointed out that the weakness of the conducted research was the difficulty in reaching the administrators of listed (historical) estates and in adjusting the questions contained in the questionnaires to this group of respondents. Difficulty was also noticed in terms of understanding the questions relating to the ways of responding to a pandemic. This was because some respondents did not know how the facilities they manage could contribute to supporting relief efforts in humanitarian emergencies. At the same time, it is worth noting that such research and recommendations can raise awareness of the ability of each tourist facility to help in emergency situations.

Author Contributions: Conceptualization, A.R.S., M.N. and K.H.; methodology, A.R.S.; formal analysis, A.R.S.; investigation, M.N. and K.H.; resources, M.N.; data curation, A.R.S.; writing—original draft preparation, A.R.S.; writing—review and editing, A.R.S.; visualization, G.P.; supervision, K.H.; funding acquisition, A.R.S. All authors have read and agreed to the published version of the manuscript.

Funding: The publication of the article has been supported by statutory research ROZ 1: 13/010/BK_22/0065 at the Silesian University of Technology, Faculty of Organization and Management, and as part of grant 13/010/RGJ21/0054 from the Rector of the Silesian University of Technology.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to matters of privacy.

Acknowledgments: The authors would like to thank the ERIH board members for their support and help in the development of our survey, as well as for their endorsement of our study.

Conflicts of Interest: The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analysis, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

References

1. UNWTO World Tourism Barometer and Statistical Annex, January 2021. 2021. Available online: <https://www.e-unwto.org/doi/abs/10.18111/wtobarometereng.2021.19.1.1> (accessed on 24 February 2022).
2. UNWTO World Tourism Barometer and Statistical Annex, November 2021. 2021. Available online: <https://www.e-unwto.org/doi/abs/10.18111/wtobarometereng.2021.19.1.6> (accessed on 24 February 2022).
3. Szromek, A.R. The Role of Health Resort Enterprises in Health Prevention during the Epidemic Crisis Caused by COVID-19. *J. Open Innov. Technol. Mark. Complex.* **2021**, *7*, 133. [CrossRef]
4. Luo, J.M.; Ren, L. Qualitative analysis of residents' generativity motivation and behaviour in heritage tourism. *J. Hosp. Tour. Manag.* **2020**, *45*, 124–130. [CrossRef]
5. World Tourism Organization. *Tourism and Culture Synergies*; UNWTO: Madrid, Spain, 2018. [CrossRef]
6. UK, Economist Intelligence Unit. The market for cultural tourism in Europe. *Travel Tour. Anal.* **1993**, *6*, 30–46.
7. Organisation for Economic Co-Operation and Development. *Impact of Culture on Tourism*; OECD: Paris, France, 2009.
8. Price Waterhouse Coopers, Arte, Turismo Culturale e Indotto Economico, PWC, Rome. 2009. Available online: <https://www.yumpu.com/it/document/view/47958637/arte-turismo-culturale-e-indotto-economico-confcultura> (accessed on 5 February 2022).
9. World Tourism Organization. *The State's Role in Protecting and Promoting Culture as a Factor of Tourism Development*; UNWTO: Madrid, Spain, 1985.
10. Richards, G. Cultural tourism: A review of recent research and trends. *J. Hosp. Tour. Manag.* **2018**, *36*, 12–21. [CrossRef]
11. Lau, R.W.K. Revisiting Authenticity A Social Realist Approach. *Ann. Tour. Res.* **2010**, *37*, 478–498. [CrossRef]
12. MacCannell, D. Staged Authenticity: Arrangements of Social Space in Tourist Settings. *Am. J. Sociol.* **1973**, *79*, 589–603. [CrossRef]
13. Cohen, E. Authenticity and commoditization in tourism. In *Contemporary Tourism*; Cohen, E., Ed.; Elsevier: Amsterdam, The Netherlands, 2004; pp. 101–114.
14. Cohen, E. Authenticity and commoditization in tourism. *Ann. Tour. Res.* **1988**, *15*, 371–386. [CrossRef]
15. Reisinger, Y.; Steiner, C.J. Reconceptualizing object authenticity. *Ann. Tour. Res.* **2006**, *33*, 65–86. [CrossRef]
16. Zhu, Y. Performing heritage: Rethinking authenticity in tourism. *Ann. Tour. Res.* **2012**, *39*, 1495–1513. [CrossRef]
17. Boorstin, D.J. *The Image: A Guide to Pseudo-Events in America*; Atheneum: New York, NY, USA, 1982.
18. Zemła, M.; Siwek, M. Between authenticity of walls and authenticity of tourists' experiences: The tale of three Polish castles. *Cogent Arts Humanit.* **2020**, *7*, 1763893. [CrossRef]
19. Wang, N. Rethinking authenticity in tourism experience. *Ann. Tour. Res.* **1999**, *26*, 349–370. [CrossRef]
20. Macdonald, S. *Memorylands: Heritage and Identity in Europe Today*; Routledge: Abingdon, UK, 2013; p. 79.
21. Smith, L. *Uses of Heritage*; Routledge: Abingdon, UK, 2006; p. 36.
22. Vecco, M. A definition of cultural heritage: From the tangible to the intangible. *J. Cult. Herit.* **2010**, *11*, 321–324. [CrossRef]
23. Park, H. *Heritage Tourism*; Routledge: New York, NY, USA, 2014.
24. Yu, X.; Xu, H. Cultural heritage elements in tourism: A tier structure from a tripartite analytical framework. *J. Destin. Mark. Manag.* **2019**, *13*, 39–50. [CrossRef]
25. Lee, C.-K.; Ahmad, M.S.; Petrick, J.F.; Park, Y.-N.; Park, E.; Kang, C.-W. The roles of cultural worldview and authenticity in tourists' decision-making process in a heritage tourism destination using a model of goal-directed behavior. *J. Destin. Mark. Manag.* **2020**, *18*, 100500. [CrossRef]
26. Lam, T.; Hsu, C.H.C. Predicting behavioral intention of choosing a travel destination. *Tour. Manag.* **2006**, *27*, 589–599. [CrossRef]
27. Zhang, R.; Smith, L. Bonding and dissonance: Rethinking the Interrelations Among Stakeholders in Heritage Tourism. *Tour. Manag.* **2019**, *74*, 212–223. [CrossRef]
28. Szromek, A.R.; Herman, K.; Naramski, M. Sustainable development of industrial heritage tourism—A case study of the Industrial Monuments Route in Poland. *Tour. Manag.* **2021**, *83*, 104252. [CrossRef]
29. Parka, E.; Choib, B.-K.; Lee, T.J. The role and dimensions of authenticity in heritage tourism. *Tour. Manag.* **2019**, *74*, 99–109. [CrossRef]
30. Adongo, R.; Choe, J.Y.; Han, H. Tourism in Hoi An, Vietnam: Impacts, perceived benefits, community attachment and support for tourism development. *Int. J. Tour. Sci.* **2017**, *17*, 86–106. [CrossRef]
31. Asplet, M.; Cooper, M. Cultural designs in New Zealand souvenir clothing: The question of authenticity. *Tour. Manag.* **2000**, *21*, 307–312. [CrossRef]
32. Throsby, D. On the Sustainability of Cultural Capital. Available online: http://www.econ.mq.edu.au/_data/assets/pdf_file/0006/220569/cult_cap_throsby.pdf (accessed on 25 January 2022).
33. Niemczewska, Z.E. How to assess the impact of commercially reused immovable cultural heritage on local, sustainable development in a holistic way? *J. Cult. Herit. Manag. Sustain. Dev.* **2021**, *11*, 553–579. [CrossRef]
34. ERIH Industrial Heritage Barometer 2020/21. Survey of European Industrial Heritage Sites. Available online: <https://www.erih.net/projects/erih-industrial-heritage-barometer> (accessed on 5 February 2022).

35. ERIH COVID-19 #stayathome Measures ERIH Sites. Results of an Ad-Hoc Online Survey. Available online: https://www.erih.net/fileadmin/Mediendatenbank/Downloads/7_SERVICE/SERVICE_DOWNLOADS/Survey/Corona/Covid-19_Social_Media_Measures_ERIH_Online_Survey_english.pdf (accessed on 5 February 2022).
36. Tew, P.J.; Lu, Z.; Tolomiczenko, G.; Gellatly, J. SARS: Lessons in strategic planning for hoteliers and destination marketers. *Int. J. Contemp. Hosp. Manag.* **2008**, *20*, 332–346.
37. Fan, Y.Y.; Jamison, D.T.; Summers, L.H. Pandemic risk: How large are the expected losses? *Bull. World Health Organ.* **2018**, *96*, 129–134. [[CrossRef](#)] [[PubMed](#)]
38. Gottlieb, S.; Rivers, C.; McClellan, M.B.; Silvis, L.; Watson, C. *National Coronavirus Response—A Road Map to Reopening*; American Enterprise Institute: Washington, DC, USA, 2020; pp. 1–20.
39. Ritchie, H.; Ortiz-Ospina, E.; Beltekian, D.; Mathieu, E.; Hasell, J.; Macdonald, B.; Giattino, C.; Roser, M. Coronavirus Pandemic (COVID-19). 2021. Available online: <https://ourworldindata.org/coronavirus> (accessed on 14 December 2021).
40. Li, Z.; Zhang, S.; Liu, X.; Kozak, M.; Wen, J. Seeing the invisible hand: Underlying effects of COVID-19 on tourists' behavioral patterns. *J. Destin. Mark. Manag.* **2020**, *18*, 100502. [[CrossRef](#)]
41. Zheng, D.; Luo, Q.; Ritchie, B.W. Afraid to travel after COVID-19? Self-protection, coping and resilience against pandemic 'travel fear'. *Tour. Manag.* **2021**, *83*, 104261. [[CrossRef](#)]
42. Zenker, S.; Braun, E.; Gyimóthy, S. Too afraid to Travel? Development of a Pandemic (COVID-19) Anxiety Travel Scale (PATS). *Tour. Manag.* **2021**, *84*, 104286. [[CrossRef](#)]
43. Pan, T.; Shu, F.; Kitterlin-Lynch, M.; Beckman, E. Perceptions of cruise travel during the COVID-19 pandemic: Market recovery strategies for cruise businesses in North America. *Tour. Manag.* **2021**, *85*, 104275. [[CrossRef](#)]
44. Joo, D.; Xu, W.; Lee, J.; Lee, C.-K.; Woosnam, K.M. Residents' perceived risk, emotional solidarity, and support for tourism amidst the COVID-19 pandemic. *J. Destin. Mark. Manag.* **2021**, *19*, 100553. [[CrossRef](#)]
45. Sigala, M. Tourism and COVID-19: Impacts and implications for advancing and resetting industry and research. *J. Bus. Res.* **2020**, *117*, 312–321. [[CrossRef](#)]
46. Skare, M.; Soriano, D.R.; Porada-Rochón, M. Impact of COVID-19 on the travel and tourism industry. *Technol. Forecast. Soc. Change* **2021**, *163*, 120469. [[CrossRef](#)]
47. Miao, L.; Im, J.; Fu, X.; Kim, H.; Zhang, Y.E. Proximal and distal post-COVID travel behavior. *Ann. Tour. Res.* **2021**, *88*, 103159. [[CrossRef](#)]
48. Yang, Y.; Altschuler, B.; Liang, Z.; Li, X.R. Monitoring the global COVID-19 impact on tourism: The COVID19 tourism index. *Ann. Tour. Res.* **2021**; in press.
49. Bec, A.; Moyle, B.; Timms, K.; Schaffer, V.; Skavronskaya, L.; Little, C. Management of immersive heritage tourism experiences: A conceptual model. *Tour. Manag.* **2019**, *72*, 117–120. [[CrossRef](#)]
50. Lungu, A.; Androne, A.; Gurau, L.; Racasan, S.; Cosoreanu, C. Textile heritage motifs to decorative furniture surfaces. Transpose process and analysis. *J. Cult. Herit.* **2021**, *52*, 192–201. [[CrossRef](#)]
51. Kaushal, V.; Srivastava, S. Hospitality and tourism industry amid COVID-19 pandemic: Perspectives on challenges and learnings from India. *Int. J. Hosp. Manag.* **2021**, *92*, 102707. [[CrossRef](#)]
52. Altuntas, F.; Gok, M.S. The effect of COVID-19 pandemic on domestic tourism: A DEMATEL method analysis on quarantine decisions. *Int. J. Hosp. Manag.* **2021**, *92*, 102719. [[CrossRef](#)]
53. Sobaih, A.E.E.; Elshaer, I.; Hasanein, A.M.; Abdelaziz, A.S. Responses to COVID-19: The role of performance in the relationship between small hospitality enterprises' resilience and sustainable tourism development. *Int. J. Hosp. Manag.* **2021**, *94*, 102824. [[CrossRef](#)]
54. Gonzalez-Torres, T.; Rodríguez-Sánchez, J.-L.; Pelechano-Barahona, E. Managing relationships in the Tourism Supply Chain to overcome epidemic outbreaks: The case of COVID-19 and the hospitality industry in Spain. *Int. J. Hosp. Manag.* **2021**, *92*, 102733. [[CrossRef](#)]
55. Bhaskara, G.I.; Filimonau, V. The COVID-19 pandemic and organisational learning for disaster planning and management: A perspective of tourism businesses from a destination prone to consecutive disasters. *J. Hosp. Tour. Manag.* **2021**, *46*, 364–375. [[CrossRef](#)]
56. Sharma, G.D.; Thomas, A.; Paul, J. Reviving tourism industry post-COVID-19: A resilience-based framework. *Tour. Manag. Perspect.* **2021**, *37*, 100786. [[CrossRef](#)]
57. Huizingh, E.K. Open innovation: State of the art and future perspectives. *Technovation* **2011**, *31*, 2–9. [[CrossRef](#)]
58. Chesbrough, H.W. *Open Innovation: The New Imperative for Creating and Profiting from Technology*; Harvard Business School Press: Boston, MA, USA, 2003.
59. Chesbrough, H. The Logic of Open Innovation: Managing Intellectual Property. *Calif. Manag. Rev.* **2003**, *45*, 33–58. [[CrossRef](#)]
60. Chesbrough, H.W. The era of open innovation. *MIT Sloan Manag. Rev.* **2003**, *44*, 35–41.
61. Sarkara, S.; Costa, A.I.A. Dynamics of open innovation in the food industry. *Trends Food Sci. Technol.* **2008**, *19*, 574–580. [[CrossRef](#)]
62. Lu, Q.; Chesbrough, H. Measuring open innovation practices through topic modelling: Revisiting their impact on firm financial performance. *Technovation*, 2022; in press. [[CrossRef](#)]
63. Yun, J.J.; Lee, M.; Park, K.; Zhao, X. Open Innovation and Serial Entrepreneurs. *Sustainability* **2019**, *11*, 5055. [[CrossRef](#)]
64. Yun, J.J.; Zhao, X.; Jung, K.; Yigitcanlar, T. The Culture for Open Innovation Dynamics. *Sustainability* **2020**, *12*, 5076. [[CrossRef](#)]

-
65. Yun, J.J.; Liu, Z. Micro- and Macro-Dynamics of Open Innovation with a Quadruple-Helix Model. *Sustainability* **2019**, *11*, 3301. [[CrossRef](#)]
 66. Chesbrough, H.W. Business model innovation: It's not just about technology anymore. *Strategy Lead.* **2007**, *35*, 12–17. [[CrossRef](#)]
 67. Chesbrough, H. To recover faster from COVID-19, open up: Managerial implications from an open innovation perspective. *Ind. Mark. Manag.* **2020**, *88*, 410–413. [[CrossRef](#)]
 68. Żemła, M.; Szromek, A.R. Influence of the Residents' Perception of Overtourism on the Selection of Innovative Anti-Overtourism Solutions. *J. Open Innov. Technol. Mark. Complex.* **2021**, *7*, 202. [[CrossRef](#)]
 69. Pichlak, M. Otwarte innowacje jako nowy paradygmat w zarządzaniu innowacjami. *Zesz. Nauk. Politech. Śląskiej Organ. I Zarządzanie* **2012**, *60*, 281–294.
 70. Burg, E.; Raaij, E.; Berends, H. Dynamics of Open Innovation: A Process Study of the Development of Fiber Metal Laminates. In Proceedings of the American Academy of Management Conference, San Antonio, TX, USA, 12–16 August 2011.
 71. Lichtenthaler, U. Open Innovation: Past Research, Current Debates, and Future Directions. *Acad. Manag. Perspect.* **2011**, *25*, 75–93.