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The Role of Health Resort Enterprises in Health Prevention during the Epidemic Crisis Caused by COVID-19

Adam R. Szromek

Department of Organization and Management, Institute of Economy and Informatics, Silesian University of Technology, 44-100 Gliwice, Poland; szromek@polsl.pl

Abstract: The COVID-19 pandemic has reduced or even temporarily halted tourism worldwide. The lack of tourists has huge consequences not only for the tourism industry, but also for the tourism economy. Health tourism enterprises are also affected by this problem, but their situation is somewhat different from other tourism enterprises, as the relationship of these enterprises with the healthcare system provides an opportunity to continue operations, albeit in a different role than the tourism function. The diagnostic objective of this article is to assess the impact of the pandemic caused by the SARS-CoV-2 virus on the activities of tourism and medical tourism enterprises operating in spa destinations after 12 months of the pandemic situation. The cognitive objective, on the other hand, is to identify the roles that these companies play in reducing the impact of epidemic risks. The article presents the results of the research conducted in 19 tourism and medical companies, covering 115 sanatorium facilities, run in Polish health spas. The results indicate that although their economic situation is difficult, it is at the same time stable. Two reasons in particular stand out: (1) financial support from government anti-crisis programs; and (2) implementation of rapid organizational changes that enable the implementation of epidemiological prevention tasks, relieving the burden on infectious diseases hospitals by operating an isolation center, a vaccination center, or a quarantine facility for asymptomatic patients. This use of tourism infrastructure contributes to promoting it as open innovation in tourism.

Keywords: tourism; management; health resorts tourism; spa; social open innovation; COVID-19

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1. Introduction

The global health crisis caused by the SARS-COV-2 virus and the associated social and economic impacts demonstrate the importance and complexity of the problem facing the world today, especially the tourism industry. Measures to address the crisis have been attempted by individual countries and associations of countries and international organizations, based on the experience of previous health disasters. However, in recent world history, mankind has not faced such a huge global threat [1]. Therefore, both world leaders and scientists in various fields quickly realized that humanity is not prepared for such huge disasters. With scientific advances, we know the probability of their occurrence and can even predict what virus might be the next threat [2], but trying to overcome global disasters is still beyond the modern capabilities of humanity [3].

It is estimated that the largest economic loss caused by the COVID-19 coronavirus pandemic was to the tourism industry, which is considered the world's largest industry globally [4]. The United Nations World Tourism Organization estimates that tourism generates 10% of the world's GDP, providing 1 in 10 jobs, which makes the current situation even more acute. According to the UNWTO, after the first year of the global lockdown, the losses caused by the travel restriction were estimated at USD 1.3 trillion in export revenues, 11 times more than during the 2009 global economic crisis [5].

It should be noted, however, that the consequences resulting from the COVID-19 pandemic are not evenly distributed across the industry, so it is worth assessing what effects

of the health crisis are recorded by individual tourism divisions after the first year of the pandemic. Therefore, the diagnostic objective of this article is to assess the impact of the SARS-CoV-2 virus pandemic on the activities of tourism and medical enterprises after 12 months of the pandemic state, while the cognitive objective is to identify the roles these enterprises play in reducing the impact of the epidemic threat. We also discuss our observations using the example of 19 Polish spa enterprises. The results of the diagnostic research presented in this article are complementary to the research on the activities of spa enterprises, which was performed in 2018 in the same enterprises [6].

2. Health Tourism in Spas

2.1. Overview of Definitions and Forms of Health Tourism

The discussion on the features and functions of health tourism practiced in health spas seems to still be open, even though it has been undertaken by researchers for many decades. This is probably due to the dynamically changing ways in which tourist activity affects human health, and differences in the perception of this form of tourism in different countries, or even due to the different medicinal resources present in different parts of the world. Regardless of the reasons for the differences, in considering this topic it is worth starting from what we have in common, namely the general concept of health tourism.

According to E. Lanz-Kaufmann and H. Muller [7], health tourism is the sum of relations and phenomena resulting from the change of location and stay of people, undertaken to provide support, achieve balance, and restore physical, mental, and social comfort, respectively, through the use of health services. On the other hand, J. Goodrich and G. Goodrich [8] define health tourism as an attempt to attract tourists through tourist facilities or areas in order to provide them with non-standard services (i.e., healthcare and the provision of appropriate equipment). Thus, health tourism includes a composition of three elements: staying outside the place of residence, health as the main motivation for arrival, and staying in leisure conditions [9].

However, S. Parris-Chambers [10] points out that health tourism involves people traveling outside their place of residence for health purposes, and the therapeutic aspect of these trips includes concepts such as health and wellness, spa tourism, convalescence, additional treatments, retirement community, and some alternative health services.

Contemporary attempts to redefine health tourism are aimed at expanding the concept to include other forms of tourism or reevaluating some forms in relation to others. However, these actions often cause discussion in the literature because health tourism does not develop in a similar way everywhere.

According to M. Smith and L. Puczkó [11,12] observing the tourism market in Romania, health tourism includes two main forms of tourism. The first is medical tourism (hard-core), which includes surgical and therapeutic tourism. The second—wellness tourism (soft-core)—includes as its other dimensions spa tourism, holistic, alternative, and 'New Age' tourism, and spiritual tourism. However, this division is not seen in this way in other areas of the world or Europe. That is why the discussion in the literature presents different definitions of health tourism. Some complement it with wellbeing tourism [13,14]. Others specify the scope of health tourism by including therapeutic tourism [15] or balneotherapy tourism (holistic) [16].

This is not a conclusive article, nor does it engage in discussions, so it seems reasonable to remain with the current divisions that do not put precedence on any of the forms. Then, among the forms of health tourism, we can mention medical tourism (including surgical tourism and dental care tourism, but also reproductive or fertility tourism, transplant tourism, and many others) [17–21], spa tourism (in the dimension of traditional spa treatments and modern forms of leisure in spas [22]), wellness [11] and well-being [13] tourism, and rehabilitation tourism.

One of the key forms of health tourism is spa tourism, which seems to be the form that best realizes the health objectives of tourism. However, it has a significant limitation, because while health tourism can be practiced almost everywhere, spa tourism can only

be practiced in strictly defined areas with features that have a positive impact on human health. N. Tomić and K. Košić [15] point to two meanings of the word "spa", seeing in it both a medical and non-medical reference (noun and adjective), also differentiating the understanding of this concept in different areas of the world.

P. Erfurt-Cooper [23], adopting a broad definition of a spa as an area and an object, lists 49 types of spa functions, and, among them, apart from the traditional therapeutic and recreational functions, there appear dental, historical, adventure, cosmetic, cruise, ecological, holistic, family, and musical specializations.

S.E. Spivack [24] proposes a division that includes spas in both a spatial and entity sense. He lists three types of spas:

A. *Amenity spa resorts*, or spas, where guests enjoy fitness programs (aimed at improving the figure through physical exercise), which are also complementary to a form of leisure based on pleasure, resulting from the practice of favorite sports (golf, tennis). It is a form of leisure used also for business meetings.

B. *Destination spa resorts* are spas divided according to separate functions and offer forms. Within this type of spa, the forms are listed as follows:

- classic, adopting a spa regime aimed at improving health;
- luxury, taking place in luxurious conditions and unique surroundings, with particular attention to beauty treatments, treating the client in an individualized manner;
- wellness (new age), based on programs aimed at improving the psychophysical condition of the guest, using such techniques as relaxation or yoga; and
- medical (medically oriented), focused on medical treatments (cosmetic, plastic surgery, dental).

C. *Day spas*, or day treatment centers, located in large cities and offering spa services (medical, cosmetic, therapeutic treatments without accommodation). These centers are perceived primarily as entities providing spa services rather than spa areas.

The European view of spa tourism is mainly limited to the second dimension of spas, i.e., a destination spa resort, which is reflected especially in the names of many historic European cities, e.g., Spa, Baden-Baden, and Bath.

N. Tomić and K. Košić [15] note that the criterion for the division of spas may also be the scope of the spa offer, directed to the dominant segment of spa service recipients. This in turn indicates the need to define the scope of groups of services provided.

Health therapy practiced in spa areas can take a variety of forms. The two main forms of health therapy in spas are balneotherapy and physical medicine and (second) tourism [18]. As already mentioned, while health tourism can be practiced regardless of the place, as its criterion is the realization of a health purpose, balneotherapy and physical medicine therapy can be conducted only in designated places with scientifically confirmed effects on the human body.

The research of N.S. Gustavo [25] conducted in Portugal confirms the opposite structure of recipients than in Central and Eastern Europe. Tourists wishing to benefit from anti-stress and relaxation programs constitute the dominant group of spa clients there (74.3%), while more than half indicated the need for physical therapy (respondents could indicate more than one form of service).

A review of recent studies on health tourism is cited by J. Ridderstaat, D. Singh, and F. DeMicco [26]. At the same time, they emphasize that the scope of research conducted on this topic concerns many scientific areas. Analyzing the literature cited by J. Ridderstaat et al., it is worth listing some of them and supplementing them with yet other research areas undertaken within the framework of health tourism research. The research covers various areas, e.g., economic [27–30], business [31–34], marketing [1,35–37], historical [11,27], health policy [38–40], related to risk [41], intervention [26,42], destinations offering this service [12,42–44], health tourism destinations or countries of origin of the tourists [42–46], and many others (e.g., accessibility to tourism [47–49]).

2.2. Tourism and Therapeutic Activities within the Healthcare System

If there are no threats, health tourism is not limited, because healthcare through tourism is possible at every tourist destination, even those without tourism infrastructure. On the other hand, balneological therapy, which is the essence of European spa areas, depends on the presence of infrastructure enabling this form of rehabilitation and on the inclusion of this type of medical activity in the healthcare system. However, this system differs from country to country.

Some countries (especially those in Western Europe and Asia) treat spa therapy as a purely tourist activity, and thus not related to the healthcare system, while others (such as countries in Central and Eastern Europe) include this kind of activity in the healthcare system, as a spa treatment based on balneology and physical medicine [11]. This is then the reason that the spa therapy prevalent in Central and Eastern Europe can be implemented in the form of tourism and treatment activities and financed by the state.

The literature lists many examples of countries that integrate health tourism activities into the state healthcare system [50,51]. P. Gahlinger [52] calculated that, worldwide in the first decade of the 21st century, there were more than 50 countries that identified medical tourism as a national industry and thoroughly adapted their healthcare systems to be able to receive international consumers.

Additionally, the healthcare system in Poland includes balneological therapy and physical medicine in the group of medical procedures provided as part of tourist medical stays; thus, they are financed by the state health insurer [39]. At the same time, it is possible to use spa facilities as part of tourist stays financed directly by tourists, but only in areas with spa status.

Such an arrangement of mutual relations between medicine and tourism in spa areas raises the necessity of taking into account different dimensions of health tourism. One of the attempts at such dimensioning of health tourism activities was undertaken by M.K. Smith and L. Puczko [11,12], who showed the necessity of repositioning this activity by directly basing it on the needs of the tourist and indirectly taking into account the motives of the place of therapy, i.e., the spa area. The division suggests the adoption of two main dimensions, i.e., Medical Tourism (MT) and Wellness Tourism (WT), and several intermediate dimensions, in which the holistic role is played by Balneotherapy Tourism (BT), which includes both medical services and a tourist product [53]. It should be noted, however, that the term Balneotherapy Tourism is inaccurate as it limits spa therapy only to water treatment in dedicated baths (Lat. *balneo)*.

The concept of wellness tourism, on the other hand, includes stays focused on mental and spiritual wellbeing, and using relaxation and body beautification practices. However, M.K. Smith and A. Diekmann [13] argue that wellbeing is something more. It proves that the relationship between wellbeing and tourism is complex because it involves a spectrum of experiences embodied in episodic, hedonic forms of tourism through to educational cultural tourism with some hedonic elements, to retreat or spiritual pilgrimage trips that enhance a sense of existential authenticity, or those forms of tourism that also include altruistic or ethical dimensions.

It is worth noting that the form of health tourism also has a dimension that takes into account local law and cultural conditions of the local society, so the form of tourism in different countries may show some differences. Health tourism practiced in Poland has a slightly different character from that presented by the previously discussed researchers [11], e.g., in Romania or the Czech Republic and Slovakia [46], because in Poland the popularity of spa tourism significantly dominates over that of wellness tourism. Similar tendencies are noticed in the case of the Croatian market, where a division into (1) sanatorium/hospital 'tourism'; (2) spa/thermal/thalassotherapy tourism; (3) wellness tourism; and (4) medical tourism is introduced [50].

Admittedly, despite everything, some elements of wellness tourism play an important role in conducting spa therapy, e.g., anti-stress therapy, slimming therapy, and beautifying therapy, but they are generally treated as a kind of complementary therapy to traditional spa

treatment. It is also impossible to find examples of spiritual or mental health therapies in Polish spas; thus, wellness tourism is limited to practices, which become one of the elements diversifying the stay rather than a direct way to achieve spiritual or mental harmony. Balneological and physical medicine therapies, as well as anti-stress and care prophylaxis programs, are leading in Polish spas. However, physical medicine and balneology therapies are mainly used by persons referred for spa treatment by a doctor, while programs similar to wellness tourism are used only by tourists who come to health spas on their own initiative and self-finance their stay [39].

In the context of the goal of this article, which is to assess the situation of spa businesses after one year of the pandemic condition, it is also worth citing the results of studies on Polish spa businesses and the spa tourism market that were performed before the COVID-19 pandemic. The literature presents several such reviews.

One of the first international publications on this topic was a paper on product changes and perceptions of spa tourism in Poland. A. Kapczyński and A.R. Szromek [22] presented the development of Polish spas and spa enterprises since World War II. They referred to the concept of tourism area development by R.W. Butler [54] and pointed out the key historical moments influencing the activity of spa enterprises. This work also discussed the key changes that occurred in the spa tourism market after the change of the political system in Poland.

Another scientific work on this topic was the treatment of the activity of spa enterprises in the context of the healthcare system by A. Hadzik, P. Romaniuk, and A.R. Szromek [39]. They presented the context of product changes that were perceived in the market of spa services and indicated the new structure of the spa market: market segments.

In 2017, these observations were verified by D. Dryglas and M. Salamaga [44,55], who presented the changing profile of the recipients of spa services. The research conducted in Polish spas on a sample of 2050 people identified three main market segments:

- Segment 1—Treatment seekers (48.83%) are elderly, sick people who do not pay for their stay in the spa as the costs are covered by the insurer.
- Segment 2—Wellness and treatment seekers (36.15%) are middle-income, relatively young women with higher education.
- Segment 3—Tourism, treatment, and wellness seekers (15.02%) form the youngest group of the three segments, which seems to represent a typical tourist family, but they are also the most active segment as they seek additional activities such as sports, cultural tourism, and entertainment.

However, it seems that Segment 3 is the least numerous and not a very expressive group of people who value both previous ways of realizing the spa function. The observed division of spa service recipients is therefore consistent with the supply side view, resulting from market conditions.

Another study conducted in Polish spa companies concerned the business models of these companies. These were studies by various research teams under the scientific direction of A.R. Szromek [6,31–33,56]. It was then shown that although the knowledge of business models among managers is low, they use the components of business models intuitively. The structure of the recipients of spa services was also determined, the nine components of business models were characterized, and models dedicated to tourism and medical spa enterprises were presented.

Some of the recent works on this topic are those of R.W. Butler and A.R. Szromek [33] and A.R. Szromek and K. Wybrańczyk [32], who addressed the topic of value propositions in resort businesses. While the analysis of A.R. Szromek and K. Wybrańczyk mainly discusses the customer value proposition and the value captured by the spa enterprise, the research of R.W. Butler and A.R. Szromek points to the social dimension of the value proposition and the interdependence between the three values in the business model of spa enterprises.

3. Global Health and Epidemiological Crisis Caused by the Virus Pandemic

The scientific and journalistic literature on the coronavirus pandemic refers to it as a *crisis*. It is a term understood differently in different scientific disciplines, so at the outset it is worth assuming that, here, 'crisis' means specific, unexpected, and non-routine events leading to a state of high uncertainty as well as a threat or perceived as a threat [34]. There are different categories for the division of crises, but the most widely used is the division by its scope (global, national, regional, or local) and by the cause of its occurrence, which allows them to be differentiated into terrorist, political (including military), economic, health and epidemiological, and environmental crises [57].

Yet another classification of crises is cited by W. Pearsons [58]. He lists three types of crises in the context of sustainability of impact, namely:

- An immediate crisis (gives no or very weak warning signals);
- An emerging crisis (progressing slowly, gives warning signals, countermeasures can be introduced); and
- A sustained crisis (lasting several months or years).

It is worth noting that the health and epidemiological crisis caused by the spread of an infectious disease is usually a sustained crisis and, in addition, it usually extends to other areas of social life, as an economic crisis of exogenous origin is also caused by the slowdown or suspension of economic activity in many industries. It also happens that a disruption of the supply chain as a result of a lockdown may also cause a social or even humanitarian crisis. Thus, it is a chain of events having sequelae consequences.

The health and epidemiological crisis that arose in the case of the infectious disease COVID-19 caused by the action of the SARS-CoV-2 virus in 2020 was not different in this respect from the previous ones, because as a result of first local and then global economic slowdown, it led to an economic crisis, especially in the tourism industry.

One year after the virus was identified, UNWTO World Tourism [5] reported that, in 2020, the tourism industry experienced the worst crisis in its history. It is estimated that international tourist arrivals fell by an average of −74% in 2020 compared with the previous year, with the associated loss reaching USD 1.3 trillion in export revenues, 11 times more than the losses caused by the 2009 global economic crisis. However, this is an averaged result, as the distribution of changes varied (the decline in arrivals in Asia and the Pacific was −84%, the Middle East and Africa −75%, Europe −70%, and the Americas −69%). Estimates calculated 12 months after the retention of tourism listed losses that could be made up only 2.5–4 years after the restoration of transport capacity. However, this was a forecast made when the global pandemic was not even over yet.

Global or national crises, regardless of their cause, have a strong impact on domestic tourism, as they usually lead to its disappearance. An overview of disasters affecting the tourism market is provided by Rodríguez-Antón et al. [1].

However, G.C.L. Chien and R. Law [3], after the 2003 SARS virus outbreak, noted that the impact of an infectious disease crisis can have a more lasting effect on a tourist destination and hotels than other disasters. They note that, in the case of natural disasters, such as earthquakes or floods, the impact is generally short-lived and predictable in its effects. In contrast, the negative impact of epidemics can last for many years and extend beyond the tourist destination.

J.C. Henderson and A. Ng [35] confirm that analogies from the past, e.g., the SARS virus epidemic in 2003, become an important experience in this regard. At that time, the tourism industry and the healthcare sector also suffered the most [2].

It should be mentioned, however, that the basic point of reference for almost all epidemics and pandemics of the last 100 years is the Spanish flu pandemic of 1918–1919, called in the literature "The mother of all pandemics", because almost all modern viruses (except bird flu) are composed of genes of the Spanish flu virus [59]. The Spanish flu pandemic caused the illness of 500 million people (i.e., one third of the population at the time) and the death of 50 million to 100 million people (i.e., about 2.5–5% of the world's population at the time). Its course had three waves, as measured by the weekly combined

mortality ratio (with a 4-month interval in the United Kingdom, the second of which was the largest) and spread rapidly by shipping and rail [59].

Although the mortality rate of COVID-19 is much lower than that of Spanish flu, this is paradoxically an important facilitator of its spread, as even people who are asymptomatic can become infected. Causes facilitating the spread of COVID-19 include a rapidly growing and mobile world population, urbanization trends and human concentration, industrialized food production, increased consumption of processed foods, and the development of global transportation networks acting as vectors in the spread of pathogens [60–62]. Mass events, especially sporting events (Olympics, championships), cultural events (concerts), religious events, or other human gatherings on a massive scale would also add to this list.

Interestingly, in general, a crisis is an unpredictable phenomenon, and symptoms of its possible occurrence are often observable only a posteriori. P.J. Tew et al. [1], based on their analysis of the effects of the 2003 SARS epidemic, made a prediction in a 2008 article that it is almost certain that the world will experience another epidemic similar in severity to SARS of 2003 or even a pandemic. They note that epidemics of varying severity occur with a frequency of 1 to 3 years, while pandemics, which are global epidemics, occur at unpredictable intervals and are more devastating than epidemics.

Historians of the previous century record influenza pandemics in 1918–1919, 1957–1958, and 1968–1969 [1]. In contrast, in the 21st century, epidemics occurred in 2002 (SARS-CoV-1), 2009 (bird flu), 2012 (MERS), and 2013–2014 (Ebola) [60]. However, it should be added that two of the viruses mentioned (MERS-CoV and Ebola) were active at the time of the SARS-CoV-2 outbreak, albeit locally.

Knowledge of the determinants of epidemics and pandemics makes it possible to reduce uncertainty, so it is not surprising that P.J. Tew et al. stated as early as 2008 that the next pandemic could be caused by the H5N1 virus, and a decade later Y.Y. Fan et al. predicted an upcoming pandemic [63].

The similarity of viruses causing epidemics and pandemics over the past hundred years provides an opportunity for scientists to develop ever-better means of dealing with epidemiological crises. Nonpharmaceutical interventions (NPIs) used in each subsequent epidemic are similar. S. Gössling, D. Scott, and C.M. Hall [60] cited studies estimating that nonpharmaceutical interventions in the form of quarantine of the sick and those in contact with them and restrictions on travel and even movement (closing schools, churches, cultural sites) reduced mortality by about 50% or even more while maintaining the discipline of nonpharmaceutical interventions [1,64]. The important variable here is the timing, or rather the moment of implementation of the NPI (preferably early in the epidemic), but also the period of acceptance of the restrictions. The social capacity to maintain them is estimated at 4 weeks on average, after which there is a resurgence of disease due to their disregard. Therefore, it is recommended that they be used as an emergency measure in times of vaccine and drug shortages.

Societies facing an epidemiological crisis after a period of compliance with the sanitary regime expect an improvement in the situation and a partial or complete abandonment of social distancing. However, such a scenario of development of the situation is possible if three conditions are met [65]. The first is to have data on the spread and degree of risk of infection and population resilience. The second is to improve the healthcare capacity at local and supra-local levels (diagnostic infrastructure, safety measures, medical resources). The third is to develop treatment and prevention programs for the protection of vulnerable populations.

The literature also includes studies relating to the recovery of economies, each time assuming that restarting the economy requires a phased approach. A study by the American Enterprise Institute [65] lists the following phases of bringing an economy out of a state of epidemiological crisis:

- Phase 1: *Slow the Spread*—this is the phase of efforts to slow the transmission of the virus and shift the healthcare infrastructure to pandemic health mitigation activities.

The key operational action in this phase is to close schools, work remotely, and block off meeting places (shopping malls, cultural and sports infrastructure, restaurants, hotels).

- Phase 2: *State-by-State Reopening*—is the phase when the public has diagnostic tests and virus transmission has been declining for at least 14 days. At that time, schools are opened and businesses are restored (except for mass gatherings), but the condition is that the public has acquired the skills to safely diagnose, treat, and isolate cases of the disease. Restrictions are maintained for the highest risk groups. Hygienic protection is increased (cleaners, masks, isolation of the chronically ill, testing). Uneven lifting of restrictions is possible, e.g., within regional administrative units.
- Phase 3: *Establish Immune Protection and Lift Physical Distancing*—this is the phase when society has a vaccine and can effectively treat the infected and has developed therapies to treat the most infected. This phase enables the lifting of social distance restrictions.
- Phase 4: *Rebuild Our Readiness for the Next Pandemic*—this is the phase launched after a pandemic ends to prepare for the next infectious disease threat. Investments are made in research, infrastructure, public health and healthcare workforce development, and emergency management strategies, particularly the creation of strong preparedness plans. These plans should specifically address the channels that facilitate disease transmission, namely public transportation (especially international and intercontinental), as well as measures to disperse mass gatherings and limit direct contact.

Concern for the tourism industry meant that the first publications on observed changes in this activity caused by the pandemic began to appear in the literature a few months after its occurrence. Some of them acted as forecasts and others as first estimates. A.E.E. Sobaih et al. [66] analyzed the impact of the COVID-19 pandemic on various tourism stakeholders. The results show that restaurant owner-managers expressed more resilience than their hotel counterparts. Similarly, M. Skare et al. [67] made their first summaries.

However, there are also publications that analyze the pandemic situation using well-known concepts and heuristics. One of them is the concept of using the Swiss Cheese Model (SCM) [68–73], which is a heuristic to explain failures and disasters. It is a visualization based on the juxtaposition of several slices of holey cheese, each of which presents a specific issue that protects a threatened object from a hazard. The holes in the cheese slice symbolize flaws and weaknesses in the protective element through which the threat gets closer and closer to the threatened object. However, holes are not just an unfortunate random event, but can result from negligence or even intentional actions [74]. Despite criticisms of this heuristic as being static, linear, and too simplistic, as well as underspecified and overly generic [75–77], it also has many practical advantages in that it allows for the visualization and heuristic analysis of the problem of loss of control and safety (including health) [75,78,79]. The Australian virologist I. Mackay adapted the Swiss Cheese Model for the COVID-19 pandemic defense situation [80–84]. This model groups cheese slices over two groups. The first (personal responsibilities) includes (1) physical distancing and staying home if sick; (2) masks; (3) hand hygiene; (4) cough etiquette; (5) avoiding touching one's face; and (6) limiting time in a crowded space. The second group includes (7) fast and sensitive testing and tracing; (8) air filtration; (9) government messaging and financial support; (10) quarantine and isolation; and (11) vaccines. S.V. Popescu [81] proposes to add to this set the cleaning and disinfection of surfaces, mental health support, and the use of careful language. However, he emphasizes that human actions should not be limited to avoiding hazards, but also to taking socially responsible actions against hazards. A mouse gnawing holes symbolizes intruders creating confusion, spreading fake news, or undermining a threat.

P.J. Tew et al. [1] also make recommendations to the hospitality industry that can protect it from the effects of future disasters. They do so relative to the crisis management phases of Yu et al. [85] or: (1) pre-crisis stage; (2) acute crisis stage; (3) chronicle crisis stage; and (4) review stage.

In the first phase (the pre-crisis stage), it is necessary to prepare for a possible crisis, and this is possible by developing crisis management plans, which should coincide with

the strategic planning system. Then, the organization (hotel) does not waste time in a crisis situation to develop solutions. It is also necessary to train management to catch alarming signs of a possible crisis and then manage according to the adopted crisis plans. The third task is to frequently review strategic plans for relevance and the possible need for threat-related changes.

The second phase (the acute crisis stage) is the phase of reaction to the occurring crisis, i.e., it is the time of implementation of crisis plans. They should include assessing crisis threats, informing management and employees on how to cope with the crisis, securing easy access to information in crisis situations, communicating with customers through the media, redirecting marketing activities to local audiences, and reducing costs.

The third phase (the chronicle crisis stage) is the damage review and recovery stage, which means performing damage audits, cleaning, repairing, rebuilding, and disinfecting. This is also the stage of caring for employees and existing customers.

The fourth phase (the review stage) is the period after recovery and involves reflecting on the crisis in hindsight. The strengths of the implemented crisis plans are analyzed, and the weaknesses of the plan are removed.

The need to develop contingency (crisis) plans is noted by many researchers [67]. Some see the need to completely rethink post-pandemic tourism [86].

At the end of this section, it is worth noting that the category of human health in the context of tourism and medical activities is generally considered in terms of the elements of the tourism product that affect the health and wellbeing of the tourist, who is the beneficiary of the company's activities. Although indeed such an approach dominates in the literature and will be discussed more frankly here, it is also worth noting that this topic is also taken up in the context of tourists' influence on the health of residents of a tourist destination. An interesting study was presented by T. Ying et al. [87]. They noted that tourists have a negative short-term impact on resident health, but the long-term impact is positive. The short-term negative impact of tourists can be explained by the negative effects of tourist arrivals, generally associated with overcrowding, increased crime, traffic congestion, and other effects that negatively impact resident stress. A factor that adds to this list of negative impacts is that tourists can also contribute to the spread of viruses [87]. In this context, the phenomenon of 'overtourism' is broadened to include the spread of diseases that are destructive to the inhabitants of the destination as well as to tourism activities. Complementing the discussed research, it is also worth mentioning that the positive long-term health impact of tourist arrivals is explained by the positive impact of experiences and social interactions that affect the physical health and longevity of residents.

S. Zenker and F. Kock [88] rightly state that descriptive studies are catchy, but often provide neither theoretical advances nor new managerial implications, so they propose not to choose the obvious and purely descriptive. Instead, attention should be paid to the deeper underlying relationships and changes caused by the pandemic. In doing so, they list six thematic areas worth pursuing in further research. These are: The Level of Complexity, Change in Destination Image, Change in Tourist Behavior, Change in Resident Behavior, Change in the Tourism Industry, and Long-term and Indirect Effects. Of particular relevance seems to be which expected changes in the tourism industry relate to health tourism and what role health tourism may play in the context of health risks.

4. Materials and Methods

The presented theoretical issues allow us to pose a question: how can tourist and medical enterprises support the healthcare system and reduce the negative effects of the COVID-19 pandemic? Answering the research questions posed and achieving the stated purpose of the study required the author to use both primary and secondary research. The primary research conducted to achieve the cognitive objective was done using the method of in-depth interviews, which were conducted by telephone due to the pandemic condition. They consisted of asking the managers of the spa companies basic questions ad-

dressing the researched issues and then possibly other questions clarifying and deepening the issues.

There are 45 health spas in Poland, with 241 tourist and treatment establishments where spa treatment is provided and spa tourism is practiced. Spa therapy is generally administered to patients referred by a local doctor for treatment whose aim is generally convalescence after surgical, pharmacological, or mental therapy. Spa therapy is also carried out for the rehabilitation of various organs (e.g., motor, visual, circulatory, nervous, and respiratory).

The research was carried out in Poland in February and March 2021 at 30 spa treatment establishments carrying out treatment and tourism activities in Polish spas. The selection of establishments was based on the list of health spas developed and made available by the Ministry of Health of the Republic of Poland, selecting the 30 largest ones [89]. Due to the refusal of 11 managers of health resort companies to participate in the study, 19 health resort companies finally took part in the study, comprising 115 tourism and treatment facilities (sanatoriums and health resort hospitals), i.e., 48% of all facilities operating in Poland before the outbreak of the COVID-19 pandemic [90].

The research questionnaire developed by the author contained 7 groups of questions divided into three main parts. The first part of the questionnaire was diagnostic in nature, including questions about activities conducted during the first year of the SARS-CoV-2 pandemic. The second part of the questionnaire was comprised of questions defining the pandemic potential as a reserve for national and global emergencies. On the other hand, the third part of the questionnaire included questions estimating the impact of the pandemic on the spa enterprise. This impact was determined mainly in terms of income and employment. Other issues and research topics covered in other publications by the author were also included in the study.

The issues addressed in this paper are a continuation of the author's previous (2018) research on business models in resort enterprises [6,31–33,56]. Unfortunately, global socio-economic events, caused by the outbreak of the coronavirus pandemic, triggered the need to supplement the previous research with other issues. The topic undertaken in this article complements previous research on the potential of spa enterprises.

The discussion of the results of the research based on primary data is preceded by an analysis of the coronavirus situation in Poland, prepared on the basis of secondary data. Two variables were used for this purpose in the form of the smoothed number of new cases and the smoothed number of deaths due to COVID-19. The basic reproduction number [91] is also used in the presentation of the results. This is an indicator of how many new infections are caused by a single case of an infected patient [92,93]. Its interpretation is based on only one point, a value of 1.0. A value of RO > 1.0 indicates further development of the epidemic, whereas RO < 1.0 indicates that the epidemic is ending [94]. Secondary data on the development of the COVID-19 pandemic in Poland and worldwide are from Our Word in Data [95].

5. Results

5.1. COVID-19 in Poland

The first case of coronavirus in Poland was reported on 4 March 2020; however, before that, on 2 March 2020, a law was passed enabling the implementation of preventive solutions [96], i.e., the Act of 2 March 2020 on specific solutions related to prevention, counteraction, and control of COVID-19, other infectious diseases and crisis situations caused by them (Journal of Laws of 2020 item 374). Therefore, with the declaration of a global pandemic, it was possible to introduce a lockdown and launch preventive support.

Figure 1 illustrates the course of morbidity and mortality due to COVID-19. It is worth noting that the preventive measures implemented were effective in the first months of the pandemic. The average daily incidence from 4 March 2020 to 4 July 2020 was 290. The average daily incidence then reached 538 during the vacation period, and in September

2020 there was a sharp increase in incidence, reaching a peak incidence of just under 25,000 on 12 November 2020.

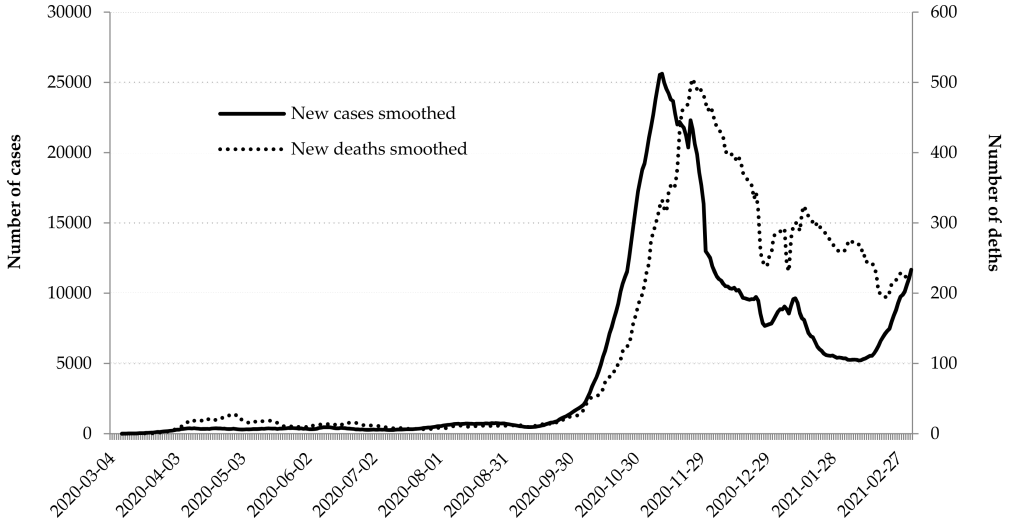

Figure 1. The magnitude of incidence and death due to COVID-19 in Poland between 4 March 2020 and 4 March 2021. Source: Own study based on Our Word in Data [95].

The situation is also illustrated by the value of the SARS-CoV-2 virus reproduction rate (R0) in the Polish population (Figure 2). While in the first period of lockdown in Poland the virus reproduction was limited to about 1.0, this condition was maintained until the vacation period, which in Poland fell on July and August. Then, the R0 value increased to 1.24, and afterwards it dropped below 1.0 again to reach 1.66 during the autumn period of increased flu incidence (September–November) and then again to the lowest level of 0.79 (28 November 2020). In the following months, there were repeated increases and decreases in the index, oscillating around the value of 1.0.

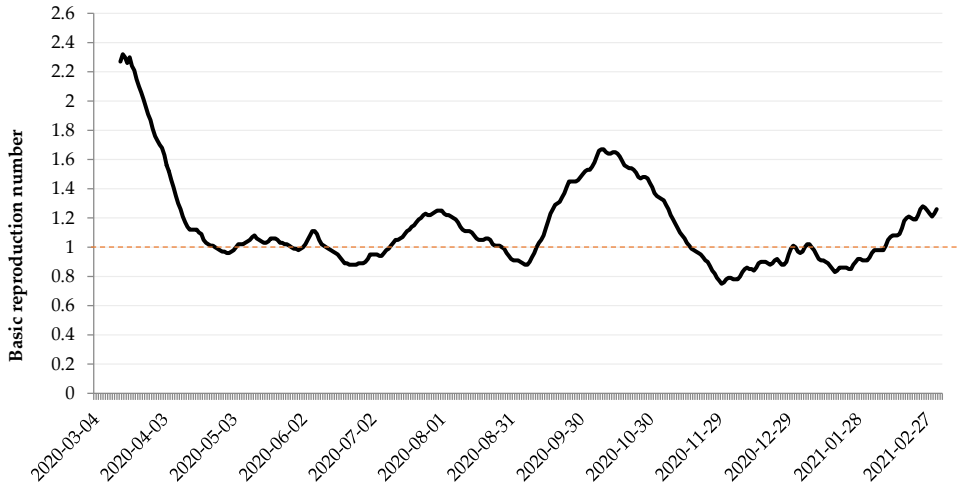

Figure 2. Basic reproduction number of the SARS-CoV-2 virus for Poland during the period from 4 March 2020 to 4 March 2021. Source: Own study based on Our Word in Data [95].

Starting from 11 March 2020, when the World Health Organization (WHO) declared a pandemic, the situation in the travel industry became dramatic overnight. It was no different in Poland. The cessation of tourist traffic led to the halt of operations of almost all tourist and closely related businesses. On 20 March 2020, following the spread of the SARS-CoV-2 coronavirus and the declaration of a pandemic state, spa treatment and spa tourism stays were completely halted.

One of the key solutions is the so-called Anti-Crisis Shield and its subsequent extensions [97] and subsequent versions. It is a package of solutions aimed at protecting the state and its citizens from the crisis caused by the coronavirus pandemic by stabilizing the Polish economy and initiating an investment impulse. The idea of initiating an investment impulse consisted in the government incurring financial expenditures of 10% of GDP, i.e., PLN 212 billion (EUR 46 billion) [98].

The amount of expenditure was distributed among strategic areas of the economy. Five pillars were thus singled out:

- Job protection and worker safety (14.2%);
- Financing of entrepreneurs (35%);
- Healthcare (3.5%);
- Strengthening the financial system (33.1%); and
- Public investment (14.2%).

Details of spending under the Anti-Crisis Shield are given in Table 1.

Table 1. The scope of funding under the Anti-Crisis Shield program.

Five Pillars of the Government's Anti-Crisis Shield		
I	Employee safety (PLN 30 billion ≈ EUR 6.5 billion)	
	- Wage subsidies	- *Wakacje od kredytu* (Loan Payment Holidays) program
	- Aid to the self-employed and those working on contractual agreements	- *Wakacje od obowiązków administracyjnych* (Administrative Obligations Holiday) program
	- Lockdown benefit for companies	- Anti-price increase program
	- Supplementary care allowance	- Deferred payment of utility charges
II	Financing for business (PLN 74.2 billion ≈ EUR 16.1 billion)	
	- Non-repayable loan for companies that maintain stable employment	- Favorable changes in CIT
	- Automatic working capital loan	- Abandonment of the prolongation of fee collection
	- Extension of the de minimis guarantee program for small and medium-sized enterprises (SMEs)	- New deadlines for reporting obligations and VAT matrix
	- *Kapitał dla Bezpieczeństwa i Wzrostu* (Capital for Security and Growth Program) of the Polish Development Fund	- Suspension of retail sales tax
	- Trade Insurance	- Longer time for filing PIT returns
	- Bank Gospodarstwa Krajowego subsidies to loan interest	- Transport companies will receive support from the Industrial Development Agency
	- Possibility of retrospective tax loss settlement in PIT and CIT	- Waiver of penalties for delays in public tenders
		- *Polityka nowej szansy* (New Opportunity Policy) program for SMEs
III	Healthcare (PLN 7.5 billion ≈ EUR 1.6 billion)	
	- Increased funding for activities related to combating the effects of SARS-CoV-2	
	- Expansion of information channels (Patient Helpline and Physician Helpline)	
	- Funding for the expansion of infrastructure and retrofitting of the healthcare system	
	- Additional funding for the digitalization of the healthcare system (informatization of medical entities, piloting of e-services for doctors, expansion of high-speed Internet in 20,000 facilities in rural areas)	
IV	Strengthening the financial system (PLN 70.3 billion ≈ EUR 15.3 billion)	
	- Regulatory package of the Polish Financial Supervision Authority and the Ministry of Finance	
	- Liquidity package of the National Bank of Poland	
V	Public investment program (PLN 30 billion ≈ EUR 6.5 billion)	
	- Infrastructure	- Digitalization
	- Modernization of schools and hospitals	- Biotechnology and pharmacy
	- Energy transformation	- Environmental policy

Source: Own study based on [97].

In view of the further needs of certain sectors and the deteriorating epidemiological situation, an additional element of the Anti-Crisis Shield was created—the Financial Shield, which was financed with PLN 100 billion (EUR 21.7 billion). Total government spending under the Anti-Crisis Shield increased to PLN 312 billion (EUR 67.7 billion), or 14.5% of GDP [97].

Another solution dedicated to the tourism industry was a program to support families, in the form of a single travel voucher worth PLN 500 for each child under 18 years of age. This benefit was twice as high if the child was disabled. The voucher could be used to pay for hotel services or participation in a tourist event held in the country in the years 2020–2022 [99]. Tourist vouchers also made it possible to pay for stays in Polish spas.

Since the very beginning, support in the fight against the coronavirus was provided by state-owned companies. Foundations of the companies supervised by the Ministry of State Assets of the Republic of Poland donated more than PLN 100 million for healthcare facilities. Among the most active companies supporting the state in counteracting the pandemic were the largest state-owned companies (PKN Orlen Azoty, Polfa Tarchomin, Bank Pekao, KGHM, and PGNIG as well as Totalizator Sportowy and Poczta Polska), which, apart from financial or material support, often decided to change the purpose of some production lines. Instead of producing windscreen washer fluids for cars, they started producing disinfectant fluids for hospitals and civilians. Some fuel companies (such as PKN Orlen) started selling their products at fuel stations. Armament companies joined the action as well. Polska Grupa Zbrojeniowa (Polish Armament Group) produced masks, aprons, and protective goggles. In turn, LOT Polish Airlines, jointly with Intercity Polish State Railways and Polonus Polish Car Railways, joined the "LOT do domu" ("Home with LOT") program. Poles returning home could thus take advantage of reduced fares. Smaller factories and associations sewed masks to protect against infection [100–102].

5.2. Health Tourism Facilities during the COVID-19 Time Period

The role of spa companies in the healthcare system is extremely important. By providing spa treatment medical services and health tourism, they directly support the progress of treatment of chronic diseases or injuries and protect against the worsening of the disease by carrying out preventive actions as part of a spa prevention program. Their indirect importance is related to improving the health of the population and thereby reducing medical costs.

However, in national or global emergencies their role is even greater. The solutions implemented by the countries of Central and Eastern Europe of including spa treatments in the healthcare system facilitate their use for more than just the standard purposes.

Tourist and therapeutic activities in health spas were suspended with the declaration of an epidemic emergency in the area of the Republic of Poland on 13 March 2020 [103] (Regulation of the Minister of Health of 13 March 2020 on the declaration of an epidemic emergency in the area of the Republic of Poland (Journal of Laws 2020.433)), and then an epidemic emergency as of 20 March 2020 [104] (Regulation of the Minister of Health of 20 March 2020 on the declaration of an epidemic emergency in the Republic of Poland (Journal of Laws 2020.491)). However, within one year of that date, spa facilities generally continued to operate, but to a different extent than before.

The research allowed us to observe that the activities of tourism and treatment enterprises in Poland included the following activities:

- General spa therapy, i.e., standard tourism and spa treatment activities;
- COVID therapy, involving the treatment of patients who have been diagnosed with SARS-CoV-2 but do not require intensive therapy;
- Post-COVID therapy, i.e., the treatment of patients who had COVID-19 and have a negative COVID test result but require rehabilitation;
- Management of isolation facilities, i.e., places for quarantined persons who have been diagnosed with SARS-CoV-2 or hospitalized with COVID-19 but do not require inpatient treatment;

- Hospitality activities, i.e., the provision of accommodation and food services along with other optional medical services and treatments;
- Hotel services for medical workers, i.e., accommodation for health workers working in hospitals treating COVID-19 patients (workers treating COVID-19 patients did not return to their own homes to avoid exposing loved ones to disease transmission); and
- Implementation of the government's COVID-19 vaccination program for the local population.

The above list of activities implemented in the health spas may suggest that their operations have not so much been reduced as expanded. However, it should be noted that the activities listed are for specific time periods during the year and generally they were not performed simultaneously but interchangeably. An example is the tourist activity and general spa therapy, the performance of which was possible in some months of the year, and the running of isolation rooms and COVID therapy, which excluded the running of tourist activity at the same time.

The research allowed us to determine that 56% of the enterprises, between 20 March 2020 and 20 March 2021, conducted general spa operations involving the provision of spa treatments. However, it should be noted that the range of services provided was very limited due to the sanitation regime. A total of 44% of the surveyed facilities did not offer such activities at all.

Half of the surveyed businesses (50%) provided post-COVID rehabilitation therapy and 44% operated COVID-19 vaccination centers. Almost every third business operated an isolation facility (28%). Only in exceptional situations (incidental) was the treatment of patients with COVID-19 carried out (in only three analyzed centers).

Tourist activities carried out in health resort facilities were very limited, which was also due to periods of a full or partial sanitary regime. Only every tenth facility (11%) offered such an option.

The periods during which the above tasks were performed also varied. Recalculating the average duration of individual activities, it was noted that spa enterprises most often performed their previous general spa function (for 6 months of the year), but to a limited extent and without combining it with the tourist function, because while general spa activities were offered by 56% of enterprises, tourist activities were offered by only 11% of them. Post-COVID therapy was conducted for an average of 5 months, and isolation rooms operated for an average of 3.5 months.

One of the key questions about the operation of tourism and treatment enterprises in spas was their ability to transform themselves. Managers were asked how long it would take for a spa facility to change its function from a spa to an emergency facility (e.g., during a pandemic) as part of a coordinated state response to global threats and disasters. Responses from the interviews indicate that the average time for such a transition is less than 18 days (17.9 $\pm$ 9.5 days). Managers most often cited a period of 2 or 4 weeks.

During the interviews, we also determined how many places (beds) spa businesses could provide during a health security or terrorist threat. The results obtained from only some spa enterprises do not allow us to estimate the potential in the case of disasters, but do allow us to get an idea of what part of the spa's potential can be allocated for this purpose. On average, 282 seats were declared (282.7 $\pm$ 200.8). One establishment was able to declare 619 places. However, it should be recalled that the establishments participating in the survey are the largest spa companies in Poland. The average transformation rate of the analyzed establishments is 21.7 places per day.

Without limiting the respondents' opinions to the thematic scope of questions specified in the questionnaire, the respondents were also asked an open-ended question, to which in their answer they could indicate, e.g., in what other way a health resort facility could support the state's activities during global threats and disasters. The most common answer related to making available the resources available to spa companies. Some managers explicitly pointed to human resources in the form of medical staff.

Despite the difficulty of the situation of the spa enterprises during the pandemic state after one year of the pandemic, the managers were asked how the pandemic affected the income of the spa enterprises. All respondents specified that a loss had been made, but the assessment of the amount of the loss varied somewhat, with 83.3% of the managers surveyed describing it as huge without formulating specific figures, and 16.7% considering their losses as moderate. No one described the losses as low.

It should be added that contracts with state insurers for healthcare-funded spa treatment services are for several years. This means that spa facilities continued to receive partial payments for scheduled services, although due to the declaration of pandemic status, these were generally not implemented. For some facilities, there was support during the lockdown period, although it was generally inadequate.

Managers were asked about the level of revenue earned from the following sources:

- income from contracts with state insurers;
- subsidies from the Anti-Crisis Shield (a government program for enterprises);
- income from production activities;
- revenues on tourist and cultural activity; and
- subsidies obtained from other sources.

In general, the respondents unanimously stated that the income received from the execution of contracts with the state insurer was low (92.9%). Income from tourism activities was generally absent, which is consistent with previous statements (since this activity was carried out at only 11% of establishments). However, even when it was carried out, the income from tourism was described as low. In a few cases, revenue from production activities, e.g., water bottling plants, was a financial rescue for spa enterprises.

A significant source of income indicated by 70.6% of managers was the subsidy for enterprises from the Anti-Crisis Shield program. However, it should be noted that only half of those who received it considered it adequate (50%), and the other half considered it too low (50%).

Respondents were also asked about the effects of the pandemic on employment levels during the period under analysis (20 March 2020 to 20 March 2021). The results indicate that the changes in employment concerned only a reduction in employment, both in the case of full-time and contract employment. More than half of the establishments participating in the study (56.3%) did not change their FTE staffing levels during the first year of the pandemic. However, where there was a decrease in the FTE (43.7%), most of the cases of people who were laid off were those whose employment contract had expired in accordance with its term. The situation was slightly different in contract employment, as only one in four establishments maintained (previous) employment levels (26.7%). However, here it should also be emphasized that half of the commission contracts that were not continued were not terminated but expired along with the term of validity.

6. Discussion and Conclusions

The history of mankind proves that breakthrough global events cause many human behaviors to change after their occurrence and it is impossible to return to the state before the event. Disasters, wars, epidemics, and economic crises, as well as breakthrough inventions and ideas that develop humanity, prove this. Undoubtedly, one of these events is the SARS-CoV-2 pandemic, which claimed many lives and losses with consequences estimated to last for many years.

Specific economic losses have been suffered by the tourism industry, where the cessation of tourism has led to many changes, including in paradigms of tourism practice and research. R. Fletcher et al. [4] note that not long ago there was a debate in the tourism literature about overtourism and conflicts between tourists and residents of tourist destinations. The health crisis caused by COVID-19 led the discussion to shift in the opposite direction almost in an instant. Concern for overtourism turned into concern for undertourism and, in places, even no-tourism.

A specific form of tourism in this genre is health tourism, which in times of grave danger takes on unique characteristics and functions. The history of spa operations knows instances of such functional transformations, as spa infrastructure was already used during the wars waged in the 20th century [22]. Given the conducted research, the time of transformation of tourist and medical facilities into facilities supporting the healthcare system in a situation of an epidemic emergency rises to about 18 days. This means that, in a relatively short time, these facilities can be an important link in the system of response to health and epidemic crises caused by humanitarian and military disasters.

The author's research shows that despite the limitation and sometimes even suspension of tourist activities at health spa destinations, tourism and medical companies operating in Polish health spas have undertaken numerous activities to support medical services. These included COVID and post-COVID therapy, the operation of isolation rooms for patients and hotel services for medical staff, and the implementation of a government program of COVID-19 vaccination of the local population.

During the year of the pandemic, revenues generated from the implementation of stays contracted for with the government insurer were low, and revenues from tourism activities were generally non-existent. An important, but often insufficient, source of financial support for the managers of the enterprises participating in the study was revenue from government programs. The implementation of the Anti-Crisis Shield proved to be particularly important. Another solution to support the tourism industry was tourist vouchers, but their effectiveness is spread out over time, so it was difficult to estimate during the period studied. On the other hand, FTE decreased in half of the surveyed companies, while in the remaining ones it did not change. However, in the case of short-term contracts, the level of employment was maintained only in every fourth plant.

Analyzing the results of the study in the context of the aim of the article, it should be concluded that the economic situation of tourism and treatment enterprises operating in Polish health spas after 12 months of the pandemic is characterized by a general decline in employment and income, but at the same time is stable. The negative impact on the examined enterprises is related to the external factor, i.e., to the reduction or temporary disappearance of tourist traffic due to the COVID-19 pandemic, caused by the spread of SARS-CoV-2. A reduction in tourism entails a significant drop in income, which in turn generally implies a reduction in employment. However, the income shortfalls were often offset by two other sources.

The first source is state financial aid to rescue companies in danger of losing income and to counteract mass layoffs in the economy. A total of 70.6% of the managers of enterprises surveyed declared that they used government support in the form of the Anti-Crisis Shield, and although every second one described it as insufficient, the rest described it as sufficient.

The other stabilizing factor for the companies was their involvement in providing emergency and preventive care within the healthcare system. Although these entities are private entities, they were integrated into medical activities aimed at relieving the burden on the standard healthcare system during periods of overload.

With these activities, the Swiss cheese model for defending against the effects of the COVID-19 health crisis can be supplemented with additional elements (Figure 3). The aforementioned study [80] discusses the individual elements that are part of the first two slices of cheese, such as the individual actions that dictate the need to maintain social distancing and personal hygiene, and also those arising from the responsibility for others, i.e., self-quarantine after contact with an infected person, the use of sick leave when the first symptoms of the disease are observed, and wearing a mask or covering the mouth when sneezing or coughing.

The three other groups of elements that significantly increase protection against the consequences of the health crisis are governmental actions towards the economy and society and their response, i.e., the involvement of society as a whole and enterprises in combating the negative effects of the virus. Therefore, an important complement to the

model is government intervention at the indirect level, through the creation of funds to assist employers maintain jobs, and at the direct level, concerning health security (e.g., the creation of field hospitals, treatment of the sick, immunization, and coordinating the reduction of social distress).

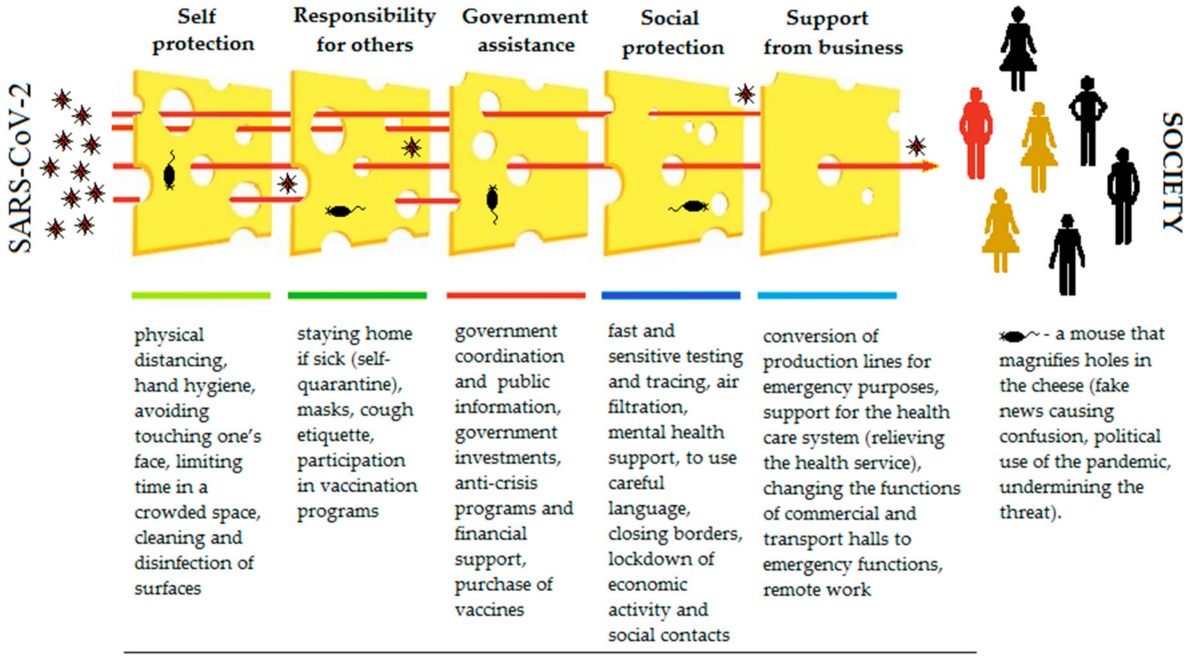

Figure 3. Multi-dimensional social open innovation model to defend against the pandemic—The Swiss Cheese Model of epidemiological protection. Source: Own study.

From the railroads, the societal responses supporting pandemic protection consisted of submitting to border lockdown restrictions, undergoing COVID-19 screening tests and vaccinations, following the rules during lockdowns, and even being careful about the opinions being expressed and using careful language so as not to extend factoids and opinions that disparage the threat.

The response of the corporate sector is an extremely important part of this model. This can take the form of helping to ease the burden on the healthcare system through ad hoc support (an example would be restaurants providing meals to medical staff), but also direct support, as the health tourism operator described here does. Thus, these are all activities that directly contribute to saving the population from the epidemic threat, for example converting some production lines to produce epidemic protection goods (disinfectant liquid) or converting sanatoriums to COVID hospitals or vaccination centers.

Mice biting holes in the cheese, i.e., activities that reduce the tightness of the pandemic prevention system, are an important obstacle to countermeasures. These are all kinds of actions (accidental and intentional) that increase the bandwidth of virus transmission channels. These can be both political and economic goals, e.g., when one country allows the virus to be transmitted to other countries in order to level the regional or global economic playing field, or when factoids, formulated in such a way as to gain a competitive advantage in selling, for example, an anti-inflammatory drug or vaccine from a particular company, are allowed into the media, or when sanatoriums that have provided COVID treatment are stigmatized as a threat even after the pandemic has ended. However, these can also be non-targeted actions, such as misinformation about how the disease is transmitted or how to self-treat.

Conducted research proves that tourism and therapeutic entities operating in health spas are important elements of the tourism market and that these entities are an important link of epidemiological prevention when they are part of the healthcare system. Unfortu-

nately, a significant weakness of the conducted qualitative research among managers of the largest spa companies is the impossibility of indicating universal solutions for health tourism enterprises. The reason for this is the diversity in the structure and scope of the public health system in different countries. A recommendation can be made to raise the importance of spa treatments in the health system, especially in those countries where this symbiosis does not currently exist. The reason for such an opinion is, of course, the exceptionally important role of tourist and therapeutic facilities functioning at health resort destinations, precisely in such dramatic situations for humanity. The transfer of less-specialized medical functions to sanatorium units will relieve the burden on medical services that save the lives of infected patients. The result is an improvement in the efficiency of the medical service strained in these situations.

It seems that the weakness of this research is also the necessity of limiting the results to the spa tourism facilities, as not all the entities forming the health tourism market fit into the recommended solutions, even when they operate at spa destinations. However, entities of medical or rehabilitation tourism that do not provide spa services may also perform preventive functions and relieve the health system at each tourist destination. These can be activities that coincide with existing activities, ranging from the hotel offering accommodation to the medical staff of field hospitals to medical services previously provided but directed to patients with COVID-19 who require immediate assistance. Examples include dental services previously focused on serving tourists and wellness therapies incorporated into post-COVID therapies to improve the mental state of patients.

The directions of research conducted in the third decade of the 21st century in tourism are undoubtedly determined by experience of the COVID-19 pandemic. This is also the case with research on the relevance of health tourism enterprises in health and epidemiological crises. Perhaps the infrastructure of these entities should return to state oversight as the strategic infrastructure for the protection of citizens, which in many cases would mean a partial nationalization of the tourism sector. Certainly, however, plans should be developed to respond to emergencies, as these will inevitably recur, albeit at an unknown frequency [2]. With tourism and medical businesses integrated into the healthcare system, this preparedness can certainly be improved.

However, there is also another solution. Emergency use of tourism infrastructure may be an element of open innovation [105–107], and especially its social dimension, which can be seen in the literature [108–112], thus creating a widely available innovative application of tourism enterprises' resources in society. This innovation can indeed be a valuable solution in the light of future emergency situations. Due to the essence of the problem, the development of this concept of open innovation in tourism should be the subject of further publications by the author.

H. Chesbrough [112] also notes that there are many interesting lessons to be learned from the global COVID-19 pandemic, some of which also apply to open innovation. Open innovation in a social context is an extremely important aspect beyond economic benefits and even contrasts with nationalist trends, leading to the exclusion of some countries from access to medical equipment and vaccines. Social open innovation can reduce this threat.

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