

# Tourism Industry amid Pandemics: Comparative Assessment of Past Outbreaks and Covid-19

Rajeev Ranjan Mishra<sup>1</sup>, Pallavi Tandon<sup>2</sup>

<sup>1</sup>Head of the Department, Hotel Management, IES University, Bhopal, Madhya Pradesh, India

<sup>2</sup>Assistant Professor, Rawal Institute of Management, Faridabad, Haryana, India

## ABSTRACT

Covid-19 has reportedly shattered all previous records of outbreaks. Never a one expected the outbreak, which began in late December 2019, to spread quickly all across the globe, be devastating, and turn the global business upside-down. SARS, Ebola Virus Disease (EVD), MERS-CoV, and other diseases brought about modest casualties in a smaller geographic area, therefore, Covid-19 was predicted to behave similarly at first. But this was not the case. Humans continuously lost their lives and faced financial hardships. Undoubtedly, tourism is amongst the most troubled industries. This research is a review of the literature. On the basis of facts and figures and prior studies, a comparison of the effects of prior outbreaks vis-a-vis Covid-19 on the tourism business has been attempted in this paper. Covid-19 and previous epidemics are so dissimilar, based on the facts and statistics gathered, that they can't be compared. Covid-19 has been the most hazardous viruses to live with owing to its instant spread, geographic distribution, several individuals who have died as a result of it, and the negative implications it has had across the region.

**KEYWORDS:** Covid-19, Pandemic, Outbreaks, Tourism

## INTRODUCTION

Epidemic diseases, which have occurred at various times and with varying degrees of violence, most notably in the twentieth century in 1918, 1957 and 1968 and the twenty-first century in 2003, 2009, 2012, 2015, have caused substantial transformations in individual and societal phenomenon (Mills et al., 2004; WHO, 2020a). In accordance with the report published by Osterholm in 2005, there have been ten "influenza A" epidemics in the last 300 years. According to Wang et al., 2020a, Covid-19 is the third major coronavirus outbreak in the United States. Flu outbreak is consistently recognised as a serious infectious hazard globally (Osterholm, 2005), propagating quickly and killing millions of lives around the world (Mills et al., 2004). Aside from the immediate cost of death, fatal epidemics result in a deluge of socio-economic concerns, like severe financial slowdown, social unrest and political turbulence, recession, lay-offs, insolvency, and scarcity of food (Yeganeh, 2019). In order to decrease the insecurity of a new pandemic, the priority of any government is to develop remedies like, home

isolation, closure of educational institutions, and restricting the movement of people (Ferguson et al., 2006; Yeganeh, 2019). According to Mills et al. (2004), in case a situation such as 1918 occurs, lot of illnesses would quickly rise as a result of greater movement of people, and mortality would be doubled after every 3 days. According to Jayawardena et al. (2008), the most significant part is strategizing, and early cases are critical for that matter.

Epidemics are enormously costly, both financially and in terms of lives lost. There are even some who argue that the number of possible casualties is greater than that of a nuclear weapon (Nigmatulina and Larson, 2009). Even in a moderate pandemic, according to Osterholm (2005), the loss of life will be severe, and the global economy will have to shoulder the consequences for several years of turbulence. The economy of countries not touched by the pandemic suffers as a result of the epidemic's dread (Yeganeh, 2019). Disease has a macro and microeconomic impact on production parameters in numerous

**How to cite this paper:** Rajeev Ranjan Mishra | Pallavi Tandon "Tourism Industry amid Pandemics: Comparative Assessment of Past Outbreaks and Covid-19" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-5 | Issue-6, October 2021, pp.372-381, URL: www.ijtsrd.com/papers/ijtsrd46434.pdf



Copyright © 2021 by author(s) and International Journal of Trend in Scientific Research and Development Journal. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0) (<http://creativecommons.org/licenses/by/4.0>)



industries (Keogh-Brown, 2014). Indirect costs of an epidemic originate from the likelihood of the people being ill as well as the hazards perplexed by the outbreak (Smith, 2006). Epidemics do not have the same impact on everyone. People in low-income groups, in particular, suffer more. The worldwide populace was lowered by 33 percent in the fourteenth century's "Black Death," wherein poor people suffering the maximum deaths (Ahmed et al., 2020). This is also true in terms of countries. In low- and middle-income countries, epidemics have a greater impact on the gross national product, safety, mediclaim policy, judicial system, and cash flows than in high-returns ones (de Francisco et al., 2015).

Government-imposed travel restrictions reduce both local and international travel, making the tourism industry more susceptible to disease. As a result, the travel and accommodation businesses are often the first to be hit by an epidemic (Menon and Goh, 2005; Bharwani and Mathews, 2012). Tourism earnings and its percentage of the gross national product (GNP) are declining as a result of epidemics. (Bhati et al., 2016; Pine and McKercher, 2004; Jayawardena, 2008; Keogh-Brown and Smith, 2008; Pine and McKercher, 2004). Businesses in the tourism industry and places at risk of pandemics must establish and execute detailed tactical strategy (Jayawardena, 2008; Bhati et al., 2016; Cahyanto et al., 2016).

Epidemic diseases, which have occurred regularly throughout human history, have resulted in enormous loss of life as well as a variety of psychic, fiscal, and psychosocial consequences. This is widely assumed that every new epidemic would act as a benchmark for the next pandemic. The scenarios that occurred in earlier outbreaks should be investigated with an intention of making judgments regarding the socio-economic impacts of Covid-19 on the hospitality and tourism sector. The primary purpose of this research is to figure out how much Covid-19 and previous outbreaks have cost the tourism industry. That can be accomplished by comparing the effects impact and death toll of diseases, as well as its consequences on financial system and joblessness. In the study's first component, previous epidemics were analysed, along with their economic consequences. The importance of COVID-19 and its economic ramifications are underlined in the following section, followed by a comparison of the societal and economic costs of epidemic diseases.

### **OBJECTIVES OF THE STUDY**

This study's main purpose is to compare the effects of previous outbreaks and Covid-19 on the tourism industry.

### **RESEARCH METHODOLOGY**

This research is a review of the literature. Based on statistics and prior research studies, a comparison of the impact of previous outbreaks and COVID-19 on the tourism business has been made in this paper.

### **EFFECTS OF PANDEMICS ON THE TOURISM INDUSTRY**

Through the historical process, microorganisms with a million-year history have created many harmful and beneficial events. While bacteria help to set the ground for beneficial activities including turning flora and fauna wastes into oligoelements, transforming eaten foodstuffs into palatable diets, and fermentation of liquor and cheese (Gilliland, 1990), moreover they cause a myriad of ailments that are difficult to treat. As agriculture has substituted hunting and collecting in the established lifestyle, people have become increasingly linked with the land, animals, and plants. The transmission of germs from existing soil, fauna, and flora to human beings has prepared the way for the creation of numerous diseases as a result of this condition. Only a few of the consequences of this link are barberry disease, which evolved with the taming of the animal, and TB and diphtheria, which emerged with the soil domestication of anthrax. Besides, as woodlands and natural habitats are damaged and converted into settlement areas in line with population increase, creatures that reside in these areas, like mouse, ants, bedbugs, and mites, have come into human touch. As a result, the plague, the world's worst pandemic, has originated (Nikiforuk, 2018).

### **Influenza pandemics**

One of the pandemic virus that has killed the most people in recent years is Spanish flu, which has a high diffusion speed (it received its nomenclature because it originated from Spain (Porrás-Gallo and Davis, 2014). Although research findings vary, it is estimated that the disease has spread to approximately 500 million individuals and approximately 50 million people lost their lives (Rosenwald, 2020). Because tourism activities increased dramatically after WWII, the influence of this outbreak on industries apart from the tourism industry has been one of the areas for further research. In many nations, the Spanish flu has brought everyday life and the economy to a halt. According to Ammon (2002), several schools in Geneva were closed as a result of this disease, as were meetings and all events (sports, theatres, and so on). According to Karlsson et al. (2014), the Spanish flu has brought Sweden's economy to a halt. According to this report, incomes have decreased as a result of the sickness, and poverty rates have risen. According to a research conducted by Garrett (2007)

in the United States, this sickness has led many businesses to close in the United States, and those that are still open have had their work cut by 40–70%. It should be noted that the daily loss of businesses is in the range of \$10,000 to \$15,000 dollars.

Swine flu was the flu outbreak that occurred on the closest date to our time. Over 2.5 lac people have lost their lives due to the virus, which first appeared in the country of Mexico in 2009. The pandemic, that had a negative influence on the tourism sector, has triggered massive travel bans and cancellation of tickets (McKibbin, 2009). The swine flu outbreak has had a significant consequence on the hospitality and tourism in a number of countries. According to Page et al. (2011), 1.6 million tourists died as a result of swine flu in England in 2009. According to the report, the swine flu outbreak eventuated in a loss of income of 830 million pounds. As per Haque and Haque (2018), a study conducted in Brunei, the swine flu outbreak has caused in the loss of approx 31,500 visitors and a monetary deficit of \$16 million. Given Brunei's small size, the aforementioned casualties suggest that the outbreak had a significant impact. Mexico, which has been hit the hardest by the virus, is at the top of the list of countries experiencing a sharp decline in tourists. According to Garg (2013), many tourist groups have been cancelled as a because of the swine flu pandemic, and tourism businesses have been closed. Furthermore, during the outbreak, all major international travel companies cancelled all reservations in Mexico, and numerous countries, most notably Argentina and Cuba, discontinued flight operation to and from Mexico.

### **HIV/AIDS (Human Immunodeficiency Virus /Acquired Immuno Deficiency Syndrome**

It is a viral infection resulting from the HIV which results into the malfunctioning of the immune system. Human Immunodeficiency Virus attacks the immunity of human being and weakens it by infecting leucocytes or WBC. The disease has lead to the death of more than 3 crore people. AIDS had affected the tourism industry adversely, which is vital for the economy of every country. According to Ketshabile (2013), the disease reduced economic development in the Southern African region by 30% during 1980 to 2000. The tourism industry was the hardest hit by AIDS which led to the unemployment of many people. Strydom and Carolus' (2010) also claimed that AIDS eventuated in a substantial rise in unemployment in the Southern African region.

**Severe Acute Respiratory Syndrome (SARS-CoV)**  
SARS-CoV is a coronavirus-based illness that first appeared in China in late 2002. It is an epidemic with a rapid spread and higher mortality level. This rapidly

spreading disease has infected over 8,000 people and has spread to 26 countries (Wilder-Smith et al., 2020). Despite the fact that SARS has a shorter survival rate than other diseases due to the lower number of cases and events, it is widely acknowledged that it has had significant economic consequences. As a result of the outbreak, tourism has been one of China's most devastated industries. The cities of Beijing, Guangzhou, and Shanghai, have been tagged as the most affected region in China. SARS outbreak resulted in significant travel restrictions and below average occupancy levels (1.6%) in these regions, it had an adverse impact on the national economy and tourism industry of many countries all across the globe. According to Pine and McKercher (2004), during the pandemic, the percentage of tourism industry in Singapore and Hong Kong's gross national product fell by 44 percent over a four-month period. Bhati in a study conducted in 2016 revealed that the loss in gross national product in Southeast Asia was estimated to be 18 billion USD in 2003. In his 2005 paper titled "Getting ready for the next pandemic," Osterholm pointed out the fact that although the epidemic was limited, the loss of lives would be enormous, the cost to the world economy would be significant, and the economic confusion period would last for more than two years. Jayawardena et al. (2008) determined the impact of the SARS outbreak on tourism in their study, which was made to offer strategical strategies for the hotel management by ascertaining the impact of the SARS-CoV on the tourism industry. Breda in a study conducted in 2004 highlighted that the SARS pandemic resulted in a loss of 2.8 billion dollars to the Chinese tourism industry.

Aside from China, the SARS outbreak harmed the economies of many countries and regions all across the globe. The outbreak, according to Dwyer et al. (2006), had eventuated in room cancellations and travel restrictions throughout Australia, alongwith its adverse impact on the tourism industry. According to reports, the total loss in tourism earnings sustained in Toronto as a result of SARS was 345 million USD, with lodging industry accounting for the major percentage of the damage. With reference to employment, it is acknowledged that more than twelve thousand employees were laid off in the hospitality and tourism industry in Toronto, primarily in the hotel industry, and that many employees were supposed to work for less number of hours (Jayawardena et al., 2008).

According to Chuo (2007), tourism industry managers were expected to extract lessons on how to safeguard their customers if such disaster occurred in

future, and they were supposed to devise survival plans after contemplating the likelihood of a pandemic reoccurring followed-by the SARS-CoV. Following the SARS outbreak, Singapore's ministries, according to Menon and Goh (2005), conducted extensive research and made significant efforts to revitalise the country.

### **Ebola Virus Disease/ Ebola Hemorrhagic Fever**

EVD is a fatal infection that originated in the West African sub-continent in the year 1976. The pandemic got this nomenclature from the Congo's Ebola River. In addition to Africa, Ebola had been witnessed in the continents of Asia, Europe, and America. The disease's spread has been slowed as a result of the development of a vaccine (Anis, 2019; CDC, 2020a). The outbreak of Ebola had an adverse impact on the national economy and tourism sector. The economic impact of the outbreak was greatest in Liberia, Sierra Leone, and Guinea. As a result of the pandemic, the economies of these countries have shrunk. Furthermore, due to the outbreak, the flight services to African countries were cancelled. This resulted in loss of revenue for tourism industry. According to Anis (2019), Nigeria was hardest hit by the pandemic with regard to tourism activity. According to a survey, hotels in Nigeria experienced a 75% drop in reservations in April 2004, and Ebola cost the Nigerian economy 8 billion Naira (nearly US\$21 million).

### **Middle East Respiratory Syndrome (MERS-CoV)/ Camel Flu**

Middle East Respiratory Syndrome (MERS) is a respiratory track disease that originated in Saudi Arabia in 2012. MERS, which has spread more slowly than past pandemic infections, has resulted in 858 fatality events as of 2019, with 780 of them occurring in Saudi Arabia (WHO, 2020b). The administration had worked hard to make sure that the Hajj and Umrah organisations are not hampered by the outbreak (BBC, 2014). Pilgrims returning from Hajj and Umrah and transmitting the sickness are the main cause of pandemic spreading outside of Arabia (Pavli et al., 2014). The Korean Republic is also one of the countries afflicted by the pandemic. MERS-CoV had a negative impact on the Korean Republic's hotel, food and beverage, and transportation sectors. According to Joo et al. (2019), the pandemic had cost the Korean Republic 2.1 million tourists and 2.6 billion dollars in revenue.

### **IMPACT OF COVID-19 ON TOURISM**

The Covid-19 epidemic has tested mental fortitude, and it is the most severe outbreak since the outbreak of SARS in 2003 (Wang et al. 2020). The unexpected and rapid spread of Covid-19, caused by a virus

strain, highlighted world's failure in preparedness, as many countries worldwide were caught off guard (Djalante et al., 2020). The city of Wuhan in China is said to be the epicentre of the disease. Because of its genetic resemblance to SARS, it was dubbed "severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)" on 11<sup>th</sup> Feb, 2020. Many clusters of people with symptoms of pneumonia were discovered in December 2019 in Wuhan, China. The Covid-19 has been proclaimed as a pandemic by the World Health Organization (Ali, 2020).

Unfortunately, the pandemic's relentless spread continues to harm several aspects of economic and social life, particularly national health systems. In order to prevent its transmission, initial public health guidelines for workers focused on ensuring workers stayed at home when they were sick, avoided unnecessary travel, and practised good hygiene (CDC, 2020b). With a sharp increase in the number of cases and evidence of community transmission became clear, subsequent guidelines emphasised urging employees to work-from-home, with many employers implementing a WFH policy (Frenkel, 2020; Weise, 2020). In many parts of the world, educational establishments were shut down (Samuel and Walsh, 2020; Education Week Map, 2020). Retail stores were closed or worked with severely reduced hours, and food and beverage outlets were either closed or operated as take-aways model (Hussain et al., 2020; Testa et al., 2020).

A sharp decline in the supply of goods and services was witnessed because its production in factories seized due to Covid-19 which resulted in higher prices, or stagflation. It's worthy to note that the impact of second wave of a global outbreak will have significant changes – closure of factories and places of employment, demand curves shift inward, lowering GDP, increasing unemployment, and price rises.

Hospitality and Tourism industry is highly vulnerable to the aftermaths of pandemics owing to its labour-intensive nature (UNWTO 2020a). According to the UNWTO (2020a), the Covid-19 pandemic is a prime deterrant for the tourism sector, necessitating dependable and flawless leadership that prioritises tourism during the recovery phase. Covid-19 is still devastating the world in 2021. The world has and continues to suffer sizeable losses and setbacks due to COVID-19. As of April 2020, over 9 in 10 persons in this world, or 7.2 billion people lived in countries with travel restrictions in place; with 40% of the world population living in nations which shut down their territories entirely for non-citizens and non-residents, including China and India, among others. In effect, as of May 2020, 3 in 4 countries and territories

globally suspended travel from at least one other destination. Present projections highlight that foreign tourist footfalls could decline by 60-80% in the year 2020. As per WTTC's projected figures, over 121 million jobs will be influenced in the T&T industry globally, with a loss of \$3.4 trillion in world GDP. Confronted with marked decrease in revenues surrounded by steady costs, lot of organizations within the T&T industry have been compelled to furlough or lay off a major chunk of their manpower. WTTC approximated that when the crisis was at its peak, 10 lakhs people lost their jobs daily in Travel & Tourism sector. SMEs, which attribute for 80% of the T&T industry, had to freeze or cease their operations. In the US, for example, it is approximated that 75% of standalone F&B outlets that have temporarily closed during the crisis will not continue to survive.

### CONCLUSION

The general public, who had previously discussed pandemics, was almost certainly excited about Covid-19's implications. However, the entire world has suffered greatly in every sector and appears to be suffering for the time being. Historical data is unquestionably a reference point in pandemics, just as it is in all other fields. Covid-19, on the other hand, was a harsh and brutal training. The world has begun to believe that everything should be rebuilt after witnessing such a high level of human death and economic damage in a long time. Covid-19, unlike previous pandemics, evolves into a new type of virus as it spreads rapidly around the world, killing nearly 1.92 million people and causing economic disruption (January 2021). Naturally, the pandemic will end at some point. The losses it causes, on the other hand, will have a long-term impact on the entire world.

Uncertainties about a pandemic, on the other hand, continue to worry people and economies. As a result of this fear, both the health and the economy will continue to struggle to return to the past. Despite the fact that Covid-19 is under strict control, the measures are expected to be implemented globally. This implies that problems will continue to exist in all sectors. The pandemic's effects were lessening but still present at the time this report was written. Covid-19 is well-known for its ability to distinguish itself from other strains, and subsequent outbreaks should be addressed using this reference.

### REFERENCES

[1] Acar, Y. (2020), "YeniKoronavirus (COVID-19) salgını ve turizm faaliyetlerine etkisi", *Güncel Turizm ve Araştırma Dergisi*, Vol. 4 No. 1, pp. 7-21, doi: 10.32572/guntad.703410.

[2] Ahmed, F., Ahmed, N., Pissarides, C. and Stiglitz, J. (2020), "Why inequality could

spread COVID-19", *Lancet Public Health*, Vol. 5 No. 5, doi: 10.1016/S2468-2667(20)30085-2.

- [3] Ali, I. (2020), "The COVID-19 pandemic: making sense of rumor and fear", *Medical Anthropology Cross-Cultural Studies in Health and Illness*, Vol. 26 Mar 2020, pp. 1-4, doi: 10.1080/01459740.2020.1745481.
- [4] Ammon, C.E. (2002), "Spanish flu epidemic in 1918 in Geneva, Switzerland", *European Communicable Disease Bulletin*, Vol. 7 No. 12, pp. 190-192, doi: 10.2807/esm.07.12.00391-en.
- [5] Anis, O. (2019), "Western african Ebola virus epidemic", *WikiJournal of Medicine*, Vol. 6 No. 1, pp. 1-34, doi: 10.15347/wjm/001.
- [6] Avcikurt, C., Koroglu, O., Koroglu, A. and SolmazAvcikurt, A. (2011), "HIV/AIDS awareness and attitudes of tour guides in Turkey", *Culture, Health and Sexuality*, Vol. 13 No. 2, pp. 233-243, doi: 10.1080/13691058.2010.522733.
- [7] BBC (2014), "MERS: Saudis in push to keep Hajj free from deadly virus", available at: <https://www.bbc.com/news/world-middle-east-29147727>
- [8] Bharwani, S. and Mathews, D. (2012), "Risk identification and analysis in the hospitality industry: practitioners' perspectives from India", *Worldwide Hospitality and Tourism Themes*, Vol. 4 No. 5, pp. 410-427, doi: 10.1108/17554211211277851.
- [9] Bhati, A., Upadhyaya, A. and Sharma, A. (2016), "National disaster management in the ASEAN-5: an analysis of tourism resilience", *Tourism Review*, Vol. 71 No. 2, pp. 148-164, doi: 10.1108/TR-12-2015-0062.
- [10] Blake, A., Sinclair, M.T. and Sugiyarto, G. (2003), "Quantifying the impact of foot and mouth disease on tourism and the UK economy", *Tourism Economics*, Vol. 9, pp. 449-465, doi: 10.5367/000000003322663221.
- [11] Blake, K.D., Blendon, R.J. and Viswanath, K. (2010), "Employment and compliance with pandemic influenza mitigation recommendations", *Emerging Infectious Diseases*, Vol. 16 No. 2, pp. 212-218, doi: 10.3201/eid1602.090638.
- [12] Breda, Z. (2004), "The impact of severe acute respiratory syndrome (SARS) on China's tourism sector", *Tourism Research Journal*, Vol. 1 No. 2, pp. 5-14.

- [13] Cahyanto, I., Wiblishauser, M., Pennington-Gray, L. and Schroeder, A. (2016), "The dynamics of travel avoidance: the case of Ebola in the US", *Tourism Management Perspectives*, Vol. 20, pp. 195-203, doi: 10.1016/j.tmp.2016.09.004.
- [14] CDC (2020a), "Ebola (Ebola virus disease)", available at: <https://www.cdc.gov/vhf/ebola/index.html>
- [15] CDC (2020b), "Guidance for businesses and employers to plan and respond to coronavirus disease 2019 (COVID-19)", available at: <https://www.cdc.gov/coronavirus/2019-ncov/specific-groups/guidance-business-response.html>
- [16] Chuo, H.Y. (2007), "Theme park visitors' responses to the SARS outbreak in Taiwan", *Advances in Hospitality and Leisure*, Vol. 3, pp. 87-104, doi: 10.1016/S1745-3542(06)03006-2.
- [17] Coomes, S., Huston, K. and Mangeot, M. (2020), "The future of bourbon tourism", *The Rebirth of Bourbon: Building a Tourism Economy in Small-Town, USA (Economics of Vice)*, Emerald Publishing Limited, pp. 113-137.
- [18] Cooper, M. (2006), "Japanese tourism and the SARS epidemic of 2003", *Journal of Travel and Tourism Marketing*, Vol. 19, pp. 117-131, doi: 10.1300/J073v19n02\_10.
- [19] de Francisco, N., Donadel, M., Jit, M. and Hutubessy, R. (2015), "A systematic review of the social and economic burden of influenza in low-and middle-income countries", *Vaccine*, Vol. 33 No. 48, pp. 6537-6544, doi: 10.1016/j.vaccine.2015.10.066.
- [20] Dinarto, D., Wanto, A. and Sebastian, L.C. (2020), "Global health security–COVID-19: impact on Bintan's tourism sector", *RSIS Commentaries*, pp. 1-3.
- [21] Djalante, R., LassaSetiamarga, J.D., Mahfud, C., Sudjatma, A., Indrawan, M., Haryanto, B., Sinapoy, M.S., Rafliana, \_ I., Djalante, S., Gunawan, L.A., Anindito, R., Warsilah, H. and Surtiari, I.G.A. (2020), "Review and analysis of current responses to COVID-19 in Indonesia: period of January to March 2020", *Progress in Disaster Science*, April 2020, pp. 1-9, doi: 10.1016/j.pdisas.2020.100091.
- [22] Dwyer, L., Forsyth, P. and Spurr, R. (2006), "Effects of the SARS crisis on the economic contribution of tourism to Australia", *Tourism Review International*, Vol. 10 Nos 1-2, pp. 47-55, doi: 10.3727/154427206779307231.
- [23] Education Week Map (2020), "Coronavirus and school closures", available at: <https://www.edweek.org/ew/section/multimedia/map-coronavirus-and-school-closures.html#>
- [24] El-Sayyed, N., Kabbash, I.A. and El-Gueniedy, M. (2008), "Knowledge, attitude and practices of Egyptian industrial and tourist workers towards HIV/AIDS", *La Revue de Sante de la Mediterranee Orientale*, Vol. 14 No. 5, pp. 1126-1135.
- [25] Ferguson, N.M., Cummings, D.A., Fraser, C., Cajka, J.C., Cooley, P.C. and Burke, D.S. (2006), "Strategies for mitigating an influenza pandemic", *Nature*, Vol. 442 No. 7101, pp. 448-452, doi: 10.1038/nature04795.
- [26] Frenkel, S. (2020), "The week in tech: welcome to the age of mandatory videoconferencing", *New York Times*, available at: <https://www.nytimes.com/2020/03/06/technology/coronavirus-techbusinesses.html>
- [27] Garg, A. (2013), "A study of tourist perception towards travel risk factors in tourist decision making", *Asian Journal of Tourism and Hospitality Research*, Vol. 7 No. 1, pp. 47-57.
- [28] Garrett, T.A. (2007), "Economic effects of the 1918 influenza pandemic", available at: [https://www.stlouisfed.org/~media/files/pdfs/community-development/research-reports/pandemic\\_flu\\_report.pdf](https://www.stlouisfed.org/~media/files/pdfs/community-development/research-reports/pandemic_flu_report.pdf)
- [29] Giampiccoli, A. and Saayman, M. (2016), "Community-based tourism: from a local to a global push", *ActaCommercii*, Vol. 16, pp. 1-10, doi: 10.4102/ac.v16i1.372.
- [30] Gilliland, S.E. (1990), "Health and nutritional benefits from lactic acid bacteria", *FEMS Microbiology Letters*, Vol. 87 Nos 1-2, pp. 175-188, doi: 10.1111/j.1574-6968.1990.tb04887.x.
- [31] Haque, T.H. and Haque, M.O. (2018), "The swine flu and its impacts on tourism in Brunei", *Tourism Management*, Vol. 36, pp. 92-101, doi: 10.1016/j.jhtm.2016.12.003.
- [32] Head, J. (2020), "Coronavirus: tourism in Thailand hit by covid-19", *BBC News*, available at: <https://www.bbc.com/news/business-51796812>
- [33] Henderson, J.C. and Linh, T.H. (2007), "Tourist destinations and disease: vietnam's tourism industry and the SARS crisis", *ASEAN Journal on Hospitality and Tourism*, Vol. 6 No. 1, pp. 1-11.

- [30] Hoque, A., Shikha, F.A., Hasanat, M.W., Arif, I. and Abdul Hamid, A.B. (2020), "The effect of Coronavirus (COVID-19) in the tourism industry in China", *Asian Journal of Multidisciplinary Studies*, Vol. 3 No. 1, pp. 52-58.
- [31] Hussain, S., Chang, A. and Harris, J.L.A. (2020), "Bars forced to close, restaurants go takeout-only: "Some of these closures might be permanent", *Los Angeles Time*, available at: <https://www.latimes.com/business/story/2020-03-15/coronavirus-close>
- [32] IMF (2020), "World economic outlook", available at: <https://www.imf.org/en/Publications/WEO/Issues/2020/04/14/weo-april-2020>
- [33] Jamal, T. and Budke, C. (2020), "Tourism in a world with pandemics: local-global responsibility and action", *Journal of Tourism Futures*, pp. 181-188, doi: 10.1108/JTF-02-2020-0014.
- [34] Jayawardena, C., Johnson Tew, P., Lu, Z., Tolomiczenko, G. and Gellatly, J. (2008), "SARS: lessons in strategic planning for hoteliers and destination marketers", *International Journal of Contemporary Hospitality Management*, Vol. 20 No. 3, pp. 332-346, doi: 10.1108/09596110810866145.
- [35] Joo, H., Maskery, B.A., Berro, A.D., Rotz, L.D., Lee, Y.K. and Brown, C.M. (2019), "Economic impact of the 2015 MERS outbreak on the Republic of Korea's tourism-related industries", *Health Security*, Vol. 17 No. 2, pp. 100-108, doi: 10.1089/hs.2018.0115.
- [36] Karlsson, M., Nilsson, T. and Picher, S. (2014), "The impact of the 1918 Spanish Flu epidemic on economic performance in Sweden an investigation into the consequences of an extraordinary mortality shock", *Journal of Health Economics*, Vol. 36, pp. 1-19, doi: 10.1016/j.jhealeco.2014.03.005.
- [37] Keogh-Brown, M.R. (2014), "Macroeconomic effect of infectious disease outbreaks", *Encyclopedia of Health Economics*, Vol. 2, pp. 177-180, doi: 10.1016/B978-0-12-375678-7.00608-8.
- [38] Keogh-Brown, M.R. and Smith, R.D. (2008), "The economic impact of SARS: how does the reality match the predictions?", *Health Policy*, Vol. 88 No. 1, pp. 110-120, doi: 10.1016/j.healthpol.2008.03.003.
- [39] Ketshabile, L.S. (2013), "The implications of HIV/AIDS on tourism enterprises in the Sub-Saharan Africa", *Asian Journal of Empirical Research*, Vol. 3 No. 7, pp. 836-850. Kim, S.S., Chun, H. and Lee, H. (2005), "The effects of SARS on the Korean hotel industry and measures to overcome the crisis: a case study of six Korean Five-Star hotels", *Asia Pacific Journal of Tourism Research*, Vol. 10 No. 4, pp. 369-377, doi: 10.1080/10941660500363694.
- [40] Kim, J., Kim, J., Leec, S.K. and Tang, L. (2020), "Effects of epidemic disease outbreaks on financial performance of restaurants: event study method approach", *Journal of Hospitality and Tourism Management*, Vol. 43, pp. 32-41, doi: 10.1016/j.jhtm.2020.01.015.
- [41] Koirala, J. and Acharya, S. (2020), "Impact of novel corona virus (COVID-19 or 2019-nCoV) on Nepalese economy (March 24, 2020)", available at: <https://ssrn.com/abstract53560638>
- [42] Kozak, M., Crotts, J.C. and Law, R. (2007), "The impact of the perception of risk on international travellers", *International Journal of Tourism Research*, Vol. 9 No. 4, pp. 233-242, doi: 10.1002/jtr.607.
- [43] Kuo, H.I., Chen, C.C., Tseng, W.C., Ju, L.F. and Huang, B.W. (2008), "Assessing impacts of SARS and Avian Flu on international tourism demand to Asia", *Tourism Management*, Vol. 29 No. 5, pp. 917-928, doi: 10.1016/j.tourman.2007.10.006.
- [44] Lee, C.C. and Chen, C.J. (2011), "The reaction of elderly Asian tourists to avian influenza and SARS", *Tourism Management*, Vol. 32 No. 6, pp. 1421-1422, doi: 10.1016/j.tourman.2010.12.009.
- [45] Lee, G.O. and Warner, M. (2006), "Human resources, labour markets and unemployment: the impact of the SARS epidemic on the service sector in Singapore", *Asia Pacific Business Review*, Vol. 12 No. 4, pp. 507-527, doi: 10.1080/13602380600571443. Lock, S. (2020), "COVID-19: forecast job loss in travel and tourism sector worldwide 2020", available at: <https://www.statista.com/statistics/1104835/coronavirus-travel-tourism-employment-loss>
- [46] Luo, L. and Tan, X.D. (2005), "A survey on the knowledge, attitude, belief and practice related to AIDS among hotel attendants in Yichang city", *Zhejiang Journal of Preventive Medicine*, Vol. 17, pp. 11-13.

- [47] Maital, S. and Barzani, E. (2020), "The global economic impact of COVID-19: a summary of research", Samuel Neaman Institute for National Policy Research, pp. 1-10.
- [48] Maphanga, P.M. and Henama, U.S. (2019), "The tourism impact of Ebola in Africa: lessons on crisis management", African Journal of Hospitality, Tourism and Leisure, Vol. 8 No. 3, pp. 1-13.
- [49] McAleer, M., Huang, B.W., Kuo, H.I., Chen, C.C. and Chang, C.L. (2010), "An econometric analysis of SARS and Avian Flu on international tourist arrivals to Asia", Environmental Modelling and Software, Vol. 25 No. 1, pp. 100-106, doi: 10.1016/j.envsoft.2009.07.015.
- [50] McKercher, B. (2003), "SIP (SARS induced panic) a greater threat to tourism than SARS (severe acute respiratory syndrome)", E-revision of Tourism Research (ERTR), Vol. 1 No. 1, pp. 17-18.
- [51] McKibbin, W.J. (2009), "The swine flu outbreak and its global economic impact", available at: <https://www.brookings.edu/on-the-record/the-swine-flu-outbreak-and-its-global-economic-impact>
- [52] Menon, K.U. and Goh, K.T. (2005), "Transparency and trust: risk communications and the Singapore experience in managing SARS", Journal of Communication Management, Vol. 9 No. 4, pp. 375-383.
- [53] Mills, C.E., Robins, J.M. and Lipsitch, M. (2004), "Transmissibility of 1918 pandemic influenza", Nature, Vol. 432 No. 7019, pp. 904-906.
- [54] Min, J.C., Lim, C. and Kung, H.H. (2011), "Intervention analysis of SARS on Japanese tourism demand for Taiwan", Quality and Quantity, Vol. 45 No. 1, pp. 91-102, doi: 10.1007/s11135-010-9338-4.
- [55] Moran, K.R. and Del Valle, S.Y. (2016), "A meta-analysis of the association between gender and protective behaviors in response to respiratory epidemics and pandemics", PloS One, Vol. 11 No. 10, doi: 10.1371/journal.pone.0164541.
- [56] Mtapuri, O. and Giampiccoli, A. (2020), "Toward a model of just tourism: a proposal", Social Sciences, Vol. 9 No. 4, pp. 1-19, doi: 10.3390/socsci9040034.
- [57] Nigmatulina, K.R. and Larson, R.C. (2009), "Living with influenza: impacts of government imposed and voluntarily selected interventions", European Journal of Operational Research, Vol. 195 No. 2, pp. 613-627, doi: 10.1016/j.ejor.2008.02.016.
- [58] Nikiforuk, A. (2018), Mahs,erinD€ordunc € u Atl € 1sıSalgınVeBulas,ıciHastalıklarTarihi, \_ İletisimYayınları, \_ İstanbul, TR. OECD (2020), "Unemployment rate", available at: <https://data.oecd.org/unemp/unemployment-rateforecast.htm#indicator-chart>
- [59] Osterholm, M.T. (2005), "Preparing for the next pandemic", New England Journal of Medicine, Vol. 352 No. 18, pp. 1839-1842.
- [60] Ozatay, F. and Sak, G. (2020), € "COVID-19'un ekonomiksonuçlarınıı€netebilmekiçin ne yapılabilir?", Tepav, PolitikaNotu, pp. 1-8.
- [61] Page, S., Yeoman, I., Connell, J. and Walker, L. (2006), "A case study of best practice–visit Scotland's prepared response to an influenza pandemic", Tourism Management, Vol. 27, pp. 361-393, doi: 10.1016/j.tourman.2006.01.001.
- [62] Page, S., Songi, H. and Wu, D.C. (2011), "Assessing the impacts of the global economic crisis and Swine Flu on inbound tourism demand in the United Kingdom", Journal of Travel Research, Vol. 51 No. 2, pp. 142-153, doi: 10.1177/0047287511400754.
- [63] Pavli, A., Tsiodras, S. and Maltezou, H.C. (2014), "Middle East respiratory syndrome coronavirus (MERS-CoV): prevention in travellers", Travel Medicine and Infectious Disease, Vol. 12, pp. 602-608, doi: 10.1016/j.tmaid.2014.10.006.
- [64] Pine, R. and McKercher, B. (2004), "The impact of SARS on Hong Kong's tourism industry", International Journal of Contemporary Hospitality Management, Vol. 16 No. 2, pp. 139-143, doi: 10.1108/09596110410520034.
- [65] Ponnambalam, L., Xiuju, F., Goh, R.S.M. and Sarawgi, D. (2016), "A multi-agent model for adaptive vaccination during infectious disease outbreaks", 2016 International Conference on Computing Technologies and Intelligent Data Engineering, ICCTIDE, Vol. 16, pp. 1-5.
- [66] Porrás-Gallo, M. and Davis, R.A. (2014), The Spanish Influenza Pandemic of 1918–1919: Perspectives from the Iberian Peninsula and the Americas, University of Rochester Press, New York, NY.
- [67] Rosenwald, M.S. (2020), "History's deadliest pandemics, from ancient Rome to modern



- America”, available at: <https://www.washingtonpost.com/graphics/2020/local/retropolis/coronavirusdeadliest-pandemics>
- [68] Rossello, J., Santana-Gallego, M. and Awan, W. (2017), “Infectious disease risk and international tourism demand”, *Health Policy and Planning*, Vol. 32 No. 4, pp. 538-548, doi: 10.1093/heapol/czw177.
- [69] Samuel, H. and Walsh, J. (2020), “Growing number of European countries shut schools to curb spread of coronavirus”, *The Telegraph*, available at: <https://www.telegraph.co.uk/news/2020/03/12/ireland-closes-schools-colleges-uk-heads-delay-phase-coronavirus/>
- [70] Savas, E. and Tanriverdi, D. (2010), “Knowledge, attitudes and anxiety towards influenza A/H1N1 vaccination of healthcare workers in Turkey”, *BMC Infectious Diseases*, Vol. 10 No. 1, p. 281.
- [71] Short, K.R., Kedzierska, K. and van de Sandt, C.E. (2018), “Back to the future: lessons learned from the 1918 influenza pandemic”, *Frontiers in Cellular and Infection Microbiology*, Vol. 8, p. 343, doi: 10.3389/fcimb.2018.00343.
- [72] Sifolo, N. and Sifolo, P.P.S. (2015), “The tourism inconvenience of the Ebola epidemic: lessons for the South African tourism sector”, *African Journal of Hospitality, Tourism and Leisure*, Vol. 4 No. 1, pp. 1-11. *Sino Biological* (2020), available at: <https://www.sinobiological.com/research/virus>
- [73] Siu, A. and Wong, Y.C.R. (2004), “Economic impact of SARS: the case of Hong Kong”, *Asian Economic Papers*, Vol. 3 No. 1, pp. 62-83, doi: 10.1162/1535351041747996.
- [74] Smith, R.D. (2006), “Responding to global infectious disease outbreaks: lessons from SARS on the role of risk perception, communication and management”, *Social Science and Medicine*, Vol. 63 No. 12, pp. 3113-3123, doi: 10.1016/j.socscimed.2006.08.004.
- [75] Strydom, C. and Carolus, B.C. (2010), “Unemployment and HIV/AIDS in a rural community”, *Tiltai*, Vol. 1, pp. 73-88.
- [76] T.C.Ministry of Health (2009), “H1N1 kuresel grip salg € 1m (pandemi)”, available at: <https://www.ttb.org.tr/h1n1/images/stories/sb/halk.pdf>
- [77] T.C. Ministry of Health (2019), “Turkiye HIV/AIDS kontrol program € 1 2019-2024”, available at: [https://hsgm.saglik.gov.tr/depo/birimler/Bulasici-hastaliklar-db/hastaliklar/HIV-ADS/Tani-Tedavi\\_Rehberi/HIV\\_AIDS\\_Kontrol\\_Programi.pdf](https://hsgm.saglik.gov.tr/depo/birimler/Bulasici-hastaliklar-db/hastaliklar/HIV-ADS/Tani-Tedavi_Rehberi/HIV_AIDS_Kontrol_Programi.pdf) (accessed 3 May 2020).
- [78] Testa, J., Maheshwari, S. and Friedman, V. (2020), “Which clothing and beauty stores have closed?”, *New York Times*, available at: <https://www.nytimes.com/2020/03/18/style/coronavirusclothing-beauty-storesclosed.html> (accessed 20 March 2020).
- [79] Tufts, S. (2009), “Hospitality unionism and labour market adjustment: toward Schumpeterian unionism?”, *Geoforum*, Vol. 40 No. 6, pp. 980-990, doi: 10.1016/j.geoforum.2009.08.008. Turkish Thoracic Society (2011), “SARS”, available at: <https://www.toraks.org.tr/news.aspx?detail5902>
- [80] UNWTO (2020a), “Tourism and coronavirus disease (COVID-19)”, available at: <https://unwto.org/tourism-covid-19-coronavirus> (accessed 16 March 2020).
- [81] UNWTO (2020b), “COVID-19: UNWTO Calls on tourism to be part of recovery plans”, available at: <https://www.unwto.org/news/international-tourism-arrivals-could-fall-in-2020>
- [82] Valette, M., Mosnier, A., Cohen, J.M. and Lina, B. (2004), “Impact of tourism on the epidemiology of influenza in the ski resorts of the French Alps”, *International Congress Series*, Vol. 1263, pp. 376-380, doi: 10.1016/j.ics.2004.04.019.
- [83] Wall, G. (2006), “Recovering from SARS: the case of Toronto tourism”, in Mansfeld, Y. and Pizam, A. (Eds), *Tourism, Security and Safety: From Theory to Practice*, Elsevier, pp. 143-152.
- [84] Wang, D., Zhou, M., Nie, X., Oiu, W., Yang, M., Wang, X., Xu, T., Ye, Z., Feng, X., Xiao, Y. and Chen, W. (2020a), “Epidemiological characteristics and transmission model of corona virus disease 2019 in China”, *Journal of Infection*, pp. e25-e27, doi: 10.1016/j.jinf.2020.03.008.
- [85] Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C.S. and Ho, R.C. (2020b), “Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus

- disease (COVID-19) epidemic among the general population in China”, *International Journal of Environmental Research and Public Health*, Vol. 17 No. 5, pp. 1-25, doi: 10.3390/ijerph17051729.
- [86] Weise, K. (2020), “Ahead of the pack, how microsoft told workers to stay home”, *New York Times*, available at: <https://www.nytimes.com/2020/03/15/technology/microsoft-coronavirus-response.html>
- [87] WHO (2018), “HIV”, available at: [https://www.who.int/hiv/data/2018\\_summary-global-hiv-epi.png?ua51](https://www.who.int/hiv/data/2018_summary-global-hiv-epi.png?ua51) (accessed 3 May 2020). WHO (2019), “MERS”, available at: <http://applications.emro.who.int/docs/EMRPU-B-CSR-241-2019-EN.pdf?ua51&ua51&ua51>
- [88] WHO (2020a), “Food safety”, available at: [https://www.who.int/foodsafety/areas\\_work/zoonose/avian/en/index1.html](https://www.who.int/foodsafety/areas_work/zoonose/avian/en/index1.html)
- [89] WHO (2020b), “MERS”, available at: <https://www.who.int/emergencies/mers-cov/en/>
- [90] WHO (2020c), “WHO emergencies press conference on novel coronavirus”, available at: [https://www.who.int/docs/default-source/coronaviruse/transcripts/who-audio-emergencies-coronaviruspress-conference-10feb2020-final.pdf?sfvrsn=5680faf31\\_2](https://www.who.int/docs/default-source/coronaviruse/transcripts/who-audio-emergencies-coronaviruspress-conference-10feb2020-final.pdf?sfvrsn=5680faf31_2)
- [91] WHO (2020d), “EBOLA”, available at: <https://www.who.int/emergencies/diseases/ebola/drc-2019> (accessed 3 May 2020).
- [92] WHO (2020e), “WHO coronavirus disease (COVID-19) dashboard”, available at: <https://covid19.who.int/>
- [93] Wilder-Smith, A., Chiwe, C.J. and Lee, V.J. (2020), “Can we contain the COVID-19 outbreak with the same measures as for SARS?”, *The Lancet Infectious Diseases*, pp. e102-e107, doi: 10.1016/S1473-3099(20)30129-8.
- [94] Wu, E.H., Law, R. and Jiang, B. (2010), “The impact of infectious diseases on hotel occupancy rate based on independent component analysis”, *International Journal of Hospitality Management*, Vol. 29 No. 4, pp. 751-753, doi: 10.1016/j.ijhm.2009.07.001.
- [95] Yang, Y., Zhang, H. and Chen, X. (2020), “Coronavirus pandemic and tourism: dynamic stochastic general equilibrium modeling of infectious disease outbreak”, *Annals of Tourism Research*, pp. 1-6, doi: 10.1016/j.annals.2020.102913.
- [96] Yanni, E.A., Marano, N., Han, P., Edelson, P.J., Blumensaadt, S., Necker, M., Dwyer, S., Crocker, K., Daley, T., Davis, X., Gallagher, N., Balaban, V., Brown, C. and Kozarsky, P. (2010), “Knowledge, attitudes, and practices of US travellers to Asia regarding seasonal influenza and H5N1 avian influenza prevention measures”, *Journal of Travel Medicine*, Vol. 17 No. 6, pp. 374-381, doi: 10.1111/j.1708-8305.2010.00458.x.
- [97] Yeganeh, H. (2019), “An analysis of emerging trends and transformations in global healthcare”, *International Journal of Health Governance*, Vol. 24 No. 2, pp. 169-180, doi: 10.1108/IJHG-02-2019-0012.
- [98] Yeoman, I., Page, S., Connell, J., Walker, L. and Munro, C. (2006), “An influenza pandemic: what it could mean for Scottish tourism”, *Quarterly Economic Commentary*, Vol. 30 No. 4, pp. 47-54.
- [99] Zemke, D.M.V., Neal, J., Shoemaker, S. and Kirsch, K. (2015), “Hotel cleanliness: will guests pay for enhanced disinfection?”, *International Journal of Contemporary Hospitality Management*, Vol. 27 No. 4, pp. 690-710, doi: 10.1108/IJCHM-01-2014-0020.
- [100] Zeng, B., Carter, R.W. and De Lacy, T. (2005), “Short-term perturbations and tourism effects: the case of SARS in China”, *Current Issues in Tourism*, Vol. 8 No. 4, pp. 306-322, doi: 10.1080/13683500508668220.
- [101] Zengeni, D.M. and Zengeni, N. (2012), “Impact of HIV/AIDS to the tourism sector human resources: case of selected hotels in Harare”, *International Journal of Development and Sustainability*, Vol. 1 No. 3, pp. 1088-1102.
- [102] Zhu, N., Zhang, D., Wang, W., Li, X., Yang, B., Song, J., Zhao, X., Huang, B., Shi, W., Lu, R., Niu, P., Zhan, F., Ma, X., Wang, D., Xu, W., Wu, G., Gao, G.F. and Tan, W. (2020), “A novel coronavirus from patients with pneumonia in China, 2019”, *New England Journal of Medicine*, Vol. 382, pp. 727-733, doi: 10.1056/NEJMoa2001017.