Exploring the impact of COVID-19 on tourism: transformational potential and implications for a sustainable recovery of the travel and leisure industry

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ABSTRACT

The study stipulates phases to observe the proposed mechanism in formulating the travel and leisure industry's recovery strategies. The present pandemic COVID-19 has resulted in global challenges, economic and healthcare crises, and posed spillover impacts on the global industries, including tourism and travel that the major contributor to the service industry worldwide. The tourism and leisure industry has faced the COVID-19 tourism impacts hardest-hit and lies among the most damaged global industries. The leisure and internal tourism indicated a steep decline amounting to 2.86 trillion US dollars, which quantified more than 50% revenue losses. In the first step, the study explores the consequences and settings of the COVID-19 pandemic and how innovation and change can contribute to the tourism industry's revival to the next normal. Thus, the study determines that tourism enterprises and scholars must consider and change the basic principles, main assumptions, and organizational situations related to research and practice framework through rebuilding and establishing the tourism sector. In the second step, the study discusses direct COVID-19 tourism impacts, attitudes, and practices in gaining the leisure industry's boom and recovery. In the third phase, the study proposes to observe the characteristics and COVID-19 tourism consequences on the travel and tourism research. The findings provide insights in regaining the tourism industry's operational activities and offer helpful suggestions to government officials, scholars, and tourism firms to reinvest in the tourism industry to set it back to a normal position.

1. Introduction

The appearance of the lethal disease COVID-19 has resulted in massive financial losses and caused global health and economic crises worldwide (Anderson et al., 2020; McKenna and Bargh, 1998; Brewer, 2016). The most frightening news of the seasonal influenza outbreaks, epidemics, pandemics, and catastrophes results in a steep decrease in the travel and tourism industry, a dominant contributor to the service industry (Abbas, 2021; Jones et al., 2015; Avery, 2010). The pandemics adversely impact tourists' behaviors and their mental wellbeing (Aman et al., 2019; Bauer et al., 2021; Park et al., 2019). As a result, they drop their planned tour plans in fear of the disease infection, as it looks impossible to avoid transmission of the virus during travel

(Mamirkulova et al., 2020; Avery, 2017; Meadows et al., 2019). Besides, tourists travel increases infection risk to other air passengers in the absence of effective vaccines (Su et al., 2021; Hu and Zhang, 2014; Reynolds and W.S., 2005; Tonsaker et al., 2014). Travelers play a significant role in transferring viruses, epidemics', outbreaks, or pandemics between local communities' destinations (Hollingsworth et al., 2006; Abbott, 2021; Zhong et al., 2021; Li et al., 2018). At present, the entire world is facing crisis communication in the media (Su et al., 2021). The adverse consequences of the COVID-19 on the travel and leisure industry resulted in novel viral disease appurtenance (Su et al., 2020). Infectious viruses are highly contagious, mutate rapidly and increase mortality (Local Burden of Disease, H.I.V.C. 2021). As a result, novel viruses spread and cause unexpected epidemics or pandemics at

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any time (NeJhaddadgar et al., 2020, Abbas, 2020, Maqsood et al., 2021). Contagious agents usually communicate from animals to humans, which has affected nurses' work-related life quality (Halimi et al., 2019; Bergquist et al., 2020; Firouraghi et al., 2020; Lebni et al., 2020). Birds were the cause of the Severe Acute Respiratory Syndrome (SARS) virus transmission to humans in 2002 (Shuja et al., 2020). The pandemic has caused a negative impact on patients with chronic diseases (Kiani et al., 2013). The camel flu virus, the Middle East Respiratory Syndrome (MERS) virus, was identified in 2012, and camels were the MERS disease source and infected humans (Al-Tawfiq et al., 2014). Infected people spread the virus and pass it to others in their close contacts through droplets, cough, and smear contaminations (Cliff and Haggett, 2004; MacIntyre, 2020). The earlier study identified that travel restrictions are the most helpful and effective interventions in the early and late phases of infectious disease to minimize its spread and control transmission rate in communities (Kallbekken and Sælen, 2021; Ioannides and Gyimóthy, 2020; Gössling et al., 2020; Lei et al., 2021).

The COVID-19 viral disease caused the coronavirus 2019 pandemic instigated by a fatal infection (SARS-CoV-2) (Aqeel et al., 2020). The health experts first identified this virus in Wuhan, China, in late December 2019. The WHO declared an outbreak of the COVID-19 a public health emergency of international concern in January and a global pandemic in March 2020. As of March 15, 2021, this pandemic has infected more than 119 million people, of which more than 2.66 million individuals have died from the lethal infectious disease (Lange, 2021). It has made this fatal virus one of the deadliest pandemics in human history. Symptoms of the coronavirus virus infection vary widely, from non to most lethal and life-threatening diseases (Abbas et al., 2021). When people approach each other, the virus is mainly transmitted through the air. It leaves the infected person breathing, coughing, sneezing, or talking and entering another person through their mouth, nose, or eyes. It can also spread through contaminated surfaces. Individuals remain infected from the virus for up to two weeks and may spread the virus even if there are no symptoms among infected people (Anjum et al., 2017; Monmousseau et al., 2020; Rather, 2021).

2. Travel and tourism a significant contributor to the global service industry

Globally, travel and tourism are the significant contributors to a leading sector for job creation, socio-economic and cultural development worldwide (McCabe and Qiao, 2020). In many cities, regions, and countries, tourism plays a critical role as a strategic pillar of the economy's GDP. The tourism and leisure industry plays a vital role in economic activities and customer satisfaction, but it has also become the most vulnerable industry member (Ma et al., 2020). This industry always experiences the hardiest-hits of various diseases, epidemics, seasonal influenza, and global pandemics. The tourism industry encounters the massive adverse consequences of the "black swan" major crisis events, including the global financial crunch in 1997 and 2008, the SARS epidemic in 2003, various social unrests, and earthquakes (Lee and Chen, 2021). The emergence of the deadliest viral disease has affected all economic sectors and overwhelmed tourists and customers' satisfaction. Economic activities and business services are contingent on expert forecasts that are based on traditional methods. It could be outdated and ineffective to handle global crisis events (Yu et al., 2020; Wang, 2009; Page et al., 2011). Accurate forecasting methods for the academic world and business operations need the needful response to the COVID-19 impacts. Since late December 2019, the advent of the present pandemic COVID-19 has developed unprecedented global health crises, social emergencies, and profound adverse consequences on the global economy. The current pandemic COVID-19 has resulted in global challenges, renewable energy, carbon emission, economic and healthcare crises, and posed spillover impacts on the global industries, including tourism and travel that the major contributor to the service industry worldwide (Lepp and Gibson, 2003; Im et al., 2021; Abbasi et al.,

2021; Abbasi et al., 2021a,b). It has massively affected the business firms' sustainable performance, and the CEO role became critical to take innovative decisions to revive economic gains (Mubeen et al., 2020). Social media platforms have provided information to various stakeholders in the crisis of the COVID-19 pandemic (Abbas et al., 2019; Lin and Kishore, 2021; Lebni et al., 2020). The tourism and leisure industry have experienced COVID-19 tourism impacts the most hardest-hits. This industry falls among the most vulnerable industries worldwide. The leisure, travel, and inbound tourism activities designated a steeper drop causing 2.86 trillion US dollars losses that made up 50% plus loss in revenues. In the first stage, this research study discovers the significance and settings of the current pandemic COVID-19 (Wut et al., 2021). The study explores how innovation and change might contribute to the tourism and leisure industry's revitalization to the next normal (Cuomo et al., 2021).

3. International tourism: regions contribution to the service industry

Europe region is the sole major contributor to the global travel and tourism industry. EU tourism presents one trip out of two by making up a 50% share of worldwide tourism (Naslund et al., 2016). Tourism in European countries makes up nearly 48% of the entire outbound travel and tourism activities globally (Boluk et al., 2019). The leisure industry is one of the main components of the global service industry (Iorember et al., 2021). Travel and tourism provide a substantial contribution to business operations and ultimately contribute to the worldwide economy. The travel and tourism sector is an economic driver to the destination country's local GPD (Wondirad et al., 2021). See Fig. 1 about DACH countries.

The estimations based on 2018–2020 data on the travel and tourism industry of the DACH states showed a 5.1 trillion dollar contribution to their GDP. In 2019, the tourism industry contributed to Austria's GDP remained 446.31 billion dollars, Germany 3780.55 billion dollars, and Switzerland 704.83 billion dollars. Similarly, in 202, the tourism industry contributed to the Austrian G.D.P. amounted 432.89 billion dollars, Germany 3780.55 billion dollars, and Switzerland 707.87 billion dollars (UNWTO, W. 2019). The region of DAH in Europe consists of Germany, Austria, and Switzerland. In 2019, Fig. 1 indicates DACH nations GDP amounted to almost 3.86 trillion US dollars. Germany remained the largest and most significant contributor with approximately 5.01 trillion US dollars. The acronym DACH refers to Germany (D), Austria, Switzerland (CH), represents these three neighboring countries. These nations make the most significant community, and German presents as the de-facto national first and official language of most of the population. These three nations collectively represent the highest human development standards indicated in social and economic dimensions. The service industry's contribution to Austria's GDP remained 62.50%, whereas Germany's service industry significantly contributed 61.80% to its GDP. In terms of percentage, the service industry contributed 71.4% to GDP in Austria. There were almost 135 million travelers in 2018 to the DACH Germany remained the third-major spender on a truism, amounting to 94 billion US dollars. European countries region is a global travel and tourism industry with 600 million tourists arriving in Europe each year (Neuburger and Egger, 2020; Daye et al., 2019). See Fig. 2.

The tourism and leisure industry's growth rate accelerated in the 2010s due to many countries' active mobility and participation. Besides, China and the United States are two key market players besides intra-European countries tourism that have primarily contributed to the growth in travel and tourism. The increase in tourist numbers has caused some challenges, and numerous destinations attempted to find sustainable paths in coping with travelers' high intensity. Regardless, the travel and tourism industry has developed positive impacts and a significant contributor to the European economy. It directly contributed approximately 782 billion euros to the EU economy in 2018 and created 14.4 jobs. The statistics indicated the growing number of international tourist
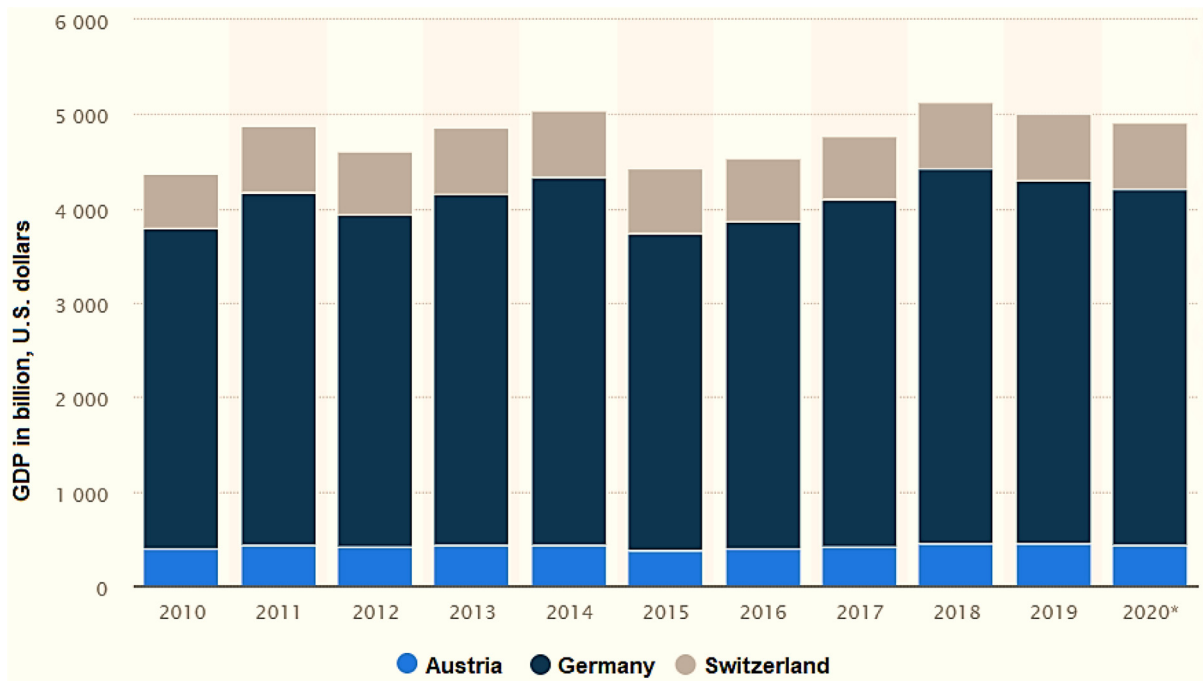
Fig. 1. DACH countries GDP: The gross domestic product (GDP) from 2010 to 2020
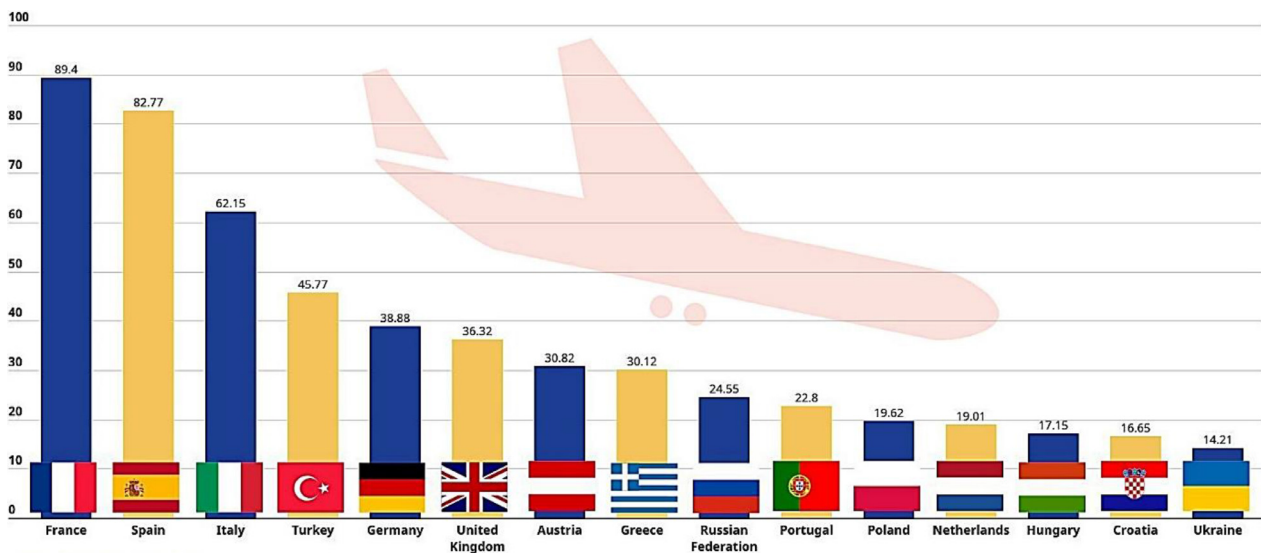Source: World Tourism Organization (UNWTO).

Fig. 2. Europe hosted the largest arrivals of international tourist
Source: World Tourism Organization (UNWTO).

arrivals from 2010 to 2019 worldwide. The statistics of 2019 stipulated that there were 146.4 million arrivals of international tourists in North America and 61.4 million in the Middle Eastern countries. The appearances of international tourists showed a year-on-year increase between 2010 and 2019. Europe was one of the major destinations for international travelers in terms of region of origin. The European region accounts for more than 50% of international tourist arrival worldwide, and it is the most visited region globally, according to UNWTO. The travel and tourism industry has become a key driver of cultural and socio-economic progress, and it creates millions of employment opportunities within the travel industry.

In 2019, estimations documented that travel and tourism remained a significant contributor to the world economy. It contributed growth of 9.3 trillion US dollars to the global economy, with a direct contribution of 2.9 trillion US dollars. On the other hand, the travel and tourism industry has faced the hardest-hit of the COVID-19 outbreak and showed a 98% sharp decline in May 2020, which reflected travel bans and restrictions worldwide, amid preventive measures for containing the quick transmission of the pandemic. According to the data information reported by destinations, there was a drastic decline of 56% in arrivals of global tourists in the first five months of 2020 compared to 2019 data for the same period. There were 300 million decreased arrivals of global tourists From January to May 2020 compared to 2019 for the same time. It reported a 320 billion dollars loss in terms of international tourism receipts based on export revenue, more than 300% less than the economic crisis impacts in 2009. Asia and the Pacific region were the first
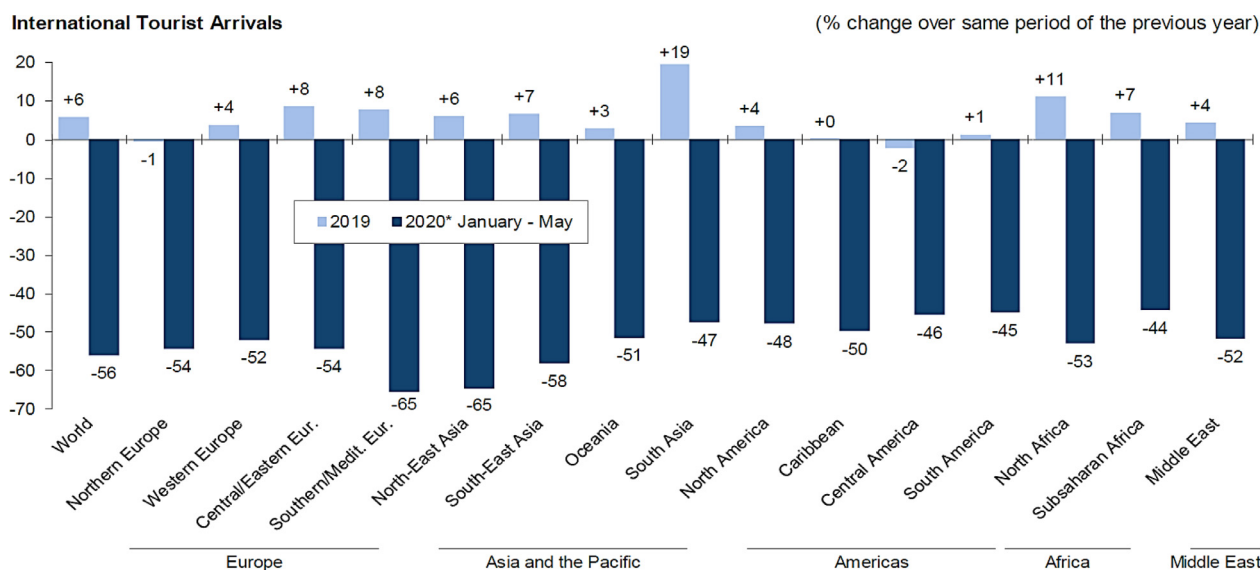
International Tourist Arrivals   (% change over same period of the previous year)

Fig. 3. Global tourists' destinations by regions indicating international arrivals worldwide
Source: World Tourism Organization (UNWTO).

to suffer and recorded a steep 60% drop in arrivals from January to May 2020. The current pandemic's appearance has resulted in a global economic and health crisis and posed unprecedented disruptions to the world economy's leading sectors. See Figure 3 on destinations of international tourists.

Tourism as a critical sector to local and national socio-economic development relies heavily on energy use. Any rise in the number of tourist arrivals requires an increase in energy demand to support the change (Iorember et al., 2020). In turn, coupled with the associated increase in travel due to increased tourism, it has some consequences on environmental sustainability (Usman et al., 2019; Iorember et al., 2019). The recent outbreak of the COVID-19 pandemic, which has disrupted economic activities globally, constitutes a significant shock to tourism development globally and in the sub-region (Jelilov et al., 2020). In the wake of global economic recovery evidenced by the loosening of lockdowns and commencement of complete internal air travels, there is a need for concerted policies that would increase tourist arrivals, broaden clean energy use and ensure economic and environmental sustainability (Usman et al., 2019). The pandemic has affected energy consumption patterns and impacted globalization and tourism to rethink innovation for sustainable recovery strategies (Usman et al., 2020). The pandemic has influenced stock markets and caused inflation (Goshit et al., 2020; Dabwor et al., 2020). The pandemic has also effected governments budgets for agricultural expenditures on household welfare plans (Iorember and Jelilov, 2018). The travel and tourism industry in Europe was the second-highest affected sector and recorded 58% fewer arrivals, followed by the Middle Eastern countries with a 51% decline. In comparison, Africa and the Americas both reported a 47% decline in tourist arrivals at the same time. Travel and tourism research scholars typically concentrate on exploring the impacts of perceived socio-economic and cultural factors fundamental contributions towards destinations residents (Mamirkulova et al., 2020; Lindberg and Johnson, 1997; Joo et al., 2021). Inbound travel and tourism activities profoundly impact communities with their positive effects on the arrivals of international tourists' interfere with residents of destinations societies' social, cultural, and socio-economic growth and prosperity (Jordan et al., 2021). The virus's outbreak has impacted travel and tourism activities and caused a global travel collapse since mid-March 2020. The arrivals of international tourists showed a sharp decline of 56% from January to May, and a 97% drop in April and a 98% arrivals dropped in May 2020. See Fig. 4 for arrivals of global tourists.

4. Global health crisis, social stigma, and mental health

The disease outbreaks and pandemics cause global health and economic crises. Pandemics adversely increase mental heal issues and affect tourists' behavior and their mental wellbeing (Aman et al., 2019). In fear of the risks, tourists cancel their planned travel plans as it looks challenging to avoid virus infection during travel time (Mamirkulova et al., 2020). See Fig. 5 on global tourist visits.

Tourists and air passengers lead to the risks of virus transmission among communities. It is a lethal disease in the absence of effective vaccines (Su et al., 2021). Air passengers and tourists play a leading role in spreading viruses of pandemics between communities' destinations. The WHO declared an outbreak of the COVID-19 a public health emergency of international concern in January and a global pandemic in March 2020. As of March 15, 2021, this pandemic has infected more than 119 million people, of which more than 2.66 million individuals have died from the lethal infectious disease (Lange, 2021). It has made this fatal virus one of the deadliest pandemics in human history. The global seasonal influenza outbreaks and pandemic cause adverse consequences on inbound tourism activities during the epidemics crisis, such as COVID-19, SARS, MERS, and ZIKA that developed fears among tourist destination residents (Tambo et al., 2021; McKercher and Chon, 2004; Sarkar et al., 2021). The world has encountered health and economic crisis with the advent of the pandemic COVID-19 that has adversely affected more than 200 territories and countries worldwide (Lange, 2021; Agarwal et al., 2021; Acter et al., 2020). See Table 1 for detailed information.

Table 1 reflects confirmed cases of the pandemic COVID-19 and mortality by the most affected country, as of March 15, 2021, worldwide. The WHO's statistics show that the USA is still dealing with the highest number of confirmed cases, 29,495,424, and a death toll of 535,628. The rate of case-fatality rate is 1.80%. Brazil remains the second most victim country from the infection of this fatal disease of the COVID-19 virus. They reported 11,519,609, with total deaths 279,286, a case fatality rate of 2.4%. The United Kingdom reported confirmed positive infected cases 4,276,840, with a death toll of 125,817 and a case fatality rate of 2.9%.

Table 2 reports on the countries with the highest number of deaths due to the infection of the COVID-19, totally confirmed cases, and a case and mortality ratio by most affected countries with the COVID-19 patients, as of March 15, 2021. The World Health Organization announced
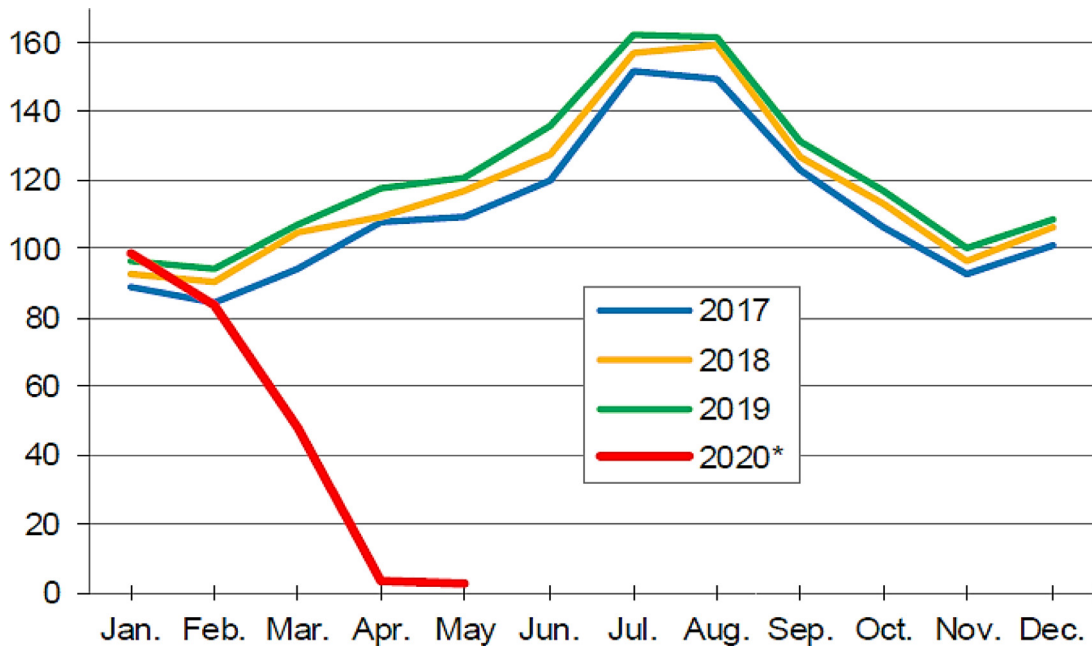
Fig. 4. Global tourists' arrivals by months from January to December during 2017-2020.
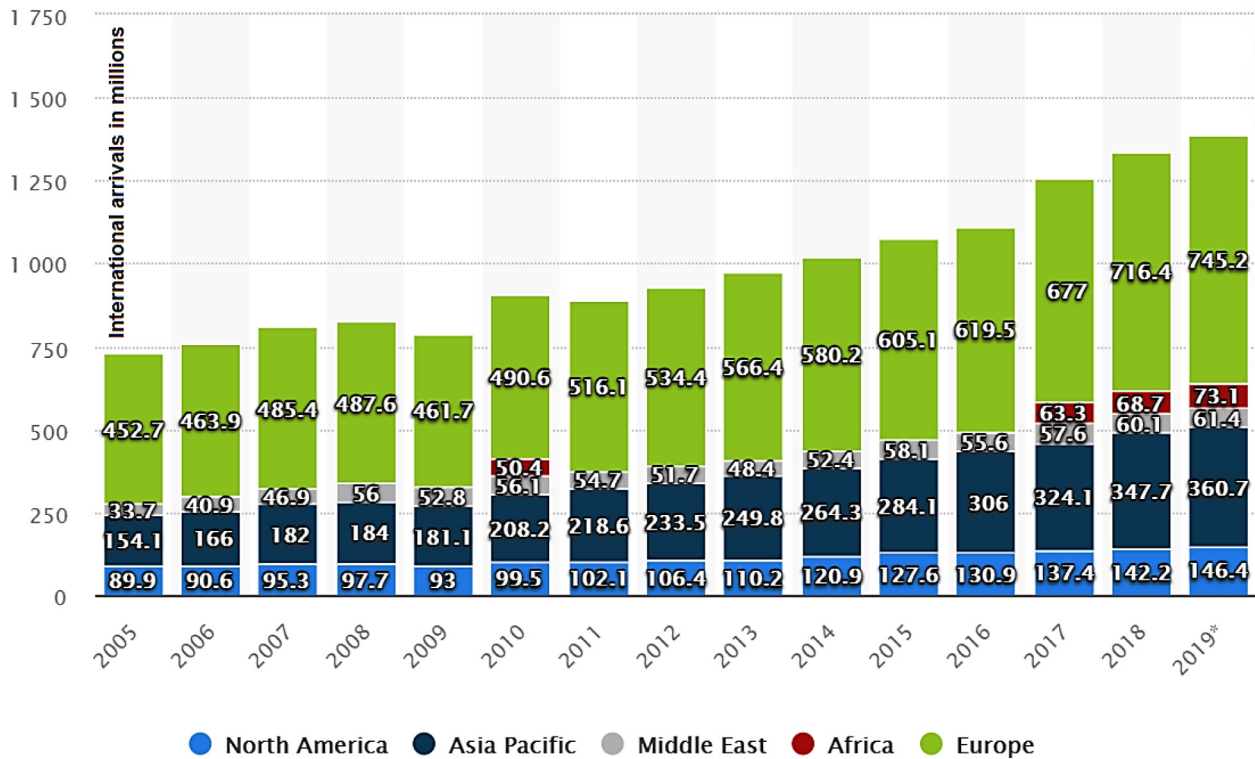Source: World Tourism Organization (UNWTO).

Fig. 5. By regions: International tourist arrivals from 2010-2019 worldwide
Source: World Tourism Organization (UNWTO).

that the United States of America is still the most affected nation with the highest death toll. The US reported confirmed cases, 29,495,424, total deaths 535,628, and a case-fatality rate of 1.80. Brazil remains the second most affected country in terms of a total death toll of 279,286, actual confirmed patients 11,519,609, a case fatality rate of 2.40%. Mexico is the third-highest death toll country and reported 2,167,729 real

cases, with a death toll of 194,944 and a case fatality ratio of 9.00%. See Table 2.

Table 2 shows that India is also one of the most affected states with the highest recorded deaths due to the COVID-19 attack. There were 11,409,831 positive cases, with a death toll of 158,856 and a case-fatality rate of 1.40%. The United Kingdom declared 4,276,840

Table 1

COVID-19: Confirmed cases and mortality by the most affected nations as of March 15, 2021.

Country	Confirm cases	Deaths	Case-fatality	Deaths/100k Pop.
United States	29,495,424	535,628	1.8%	163.72
Brazil	11,519,609	279,286	2.4%	133.33
India	11,409,831	158,856	1.4%	11.74
Russia	4,350,728	90,958	2.1%	62.96
United Kingdom	4,276,840	125,817	2.9%	189.23
France	4,132,104	90,924	2.2%	135.73
Italy	3,238,394	102,499	3.2%	169.61
Spain	3,195,062	72,424	2.3%	155.00
Turkey	2,894,893	29,552	1.0%	35.90
Germany	2,585,385	73,701	2.9%	88.87
Colombia	2,305,884	61,243	2.7%	123.35
Argentina	2,201,886	53,836	2.4%	120.99
Mexico	2,167,729	194,944	9.0%	154.48
Poland	1,917,527	47,206	2.5%	124.30
Iran	1,754,933	61,330	3.5%	74.98
South Africa	1,530,033	51,421	3.4%	89.00
Ukraine	1,516,865	29,969	2.0%	67.16
Indonesia	1,425,044	38,573	2.7%	14.41
Peru	1,412,406	49,003	3.5%	153.19
Czechia	1,402,420	23,379	1.7%	220.02
Netherlands	1,178,501	16,218	1.4%	94.12
Canada	918,406	22,484	2.4%	60.67
Chile	896,231	21,772	2.4%	116.25
Romania	862,681	21,565	2.5%	110.74
Israel	820,913	6030	0.7%	67.88
Portugal	814,513	16,694	2.0%	162.37
Belgium	809,861	22,545	2.8%	197.38
Iraq	763,085	13,788	1.8%	35.87
Sweden	712,527	13,146	1.8%	129.10
Philippines	626,893	12,837	2.0%	12.04
Pakistan	609,964	13,595	2.2%	6.41

Source: John Hopkins University CSSE COVID-19 Data https://coronavirus.jhu.edu/data/mortality

Table 2

COVID-19: Cases and mortality (Deaths) by the most affected states, as of March 15.

Country	Confirmed	Deaths	Case-Fatality	Deaths/100k pop.
United States	29,495,424	535,628	1.80%	163.72
Brazil	11,519,609	279,286	2.40%	133.33
Mexico	2,167,729	194,944	9.00%	154.48
India	11,409,831	158,856	1.40%	11.74
United Kingdom	4,276,840	125,817	2.90%	189.23
Italy	3,238,394	102,499	3.20%	169.61
Russia	4,350,728	90,958	2.10%	62.96
France	4,132,104	90,924	2.20%	135.73
Germany	2,585,385	73,701	2.90%	88.87
Spain	3,195,062	72,424	2.30%	155
Iran	1,754,933	61,330	3.50%	74.98
Colombia	2,305,884	61,243	2.70%	123.35
Argentina	2,201,886	53,836	2.40%	120.99
South Africa	1,530,033	51,421	3.40%	89
Peru	1,412,406	49,003	3.50%	153.19
Poland	1,917,527	47,206	2.50%	124.3
Indonesia	1,425,044	38,573	2.70%	14.41
Ukraine	1,516,865	29,969	2.00%	67.16
Turkey	2,894,893	29,552	1.00%	35.9
Czechia	1,402,420	23,379	1.70%	220.02
Belgium	809,861	22,545	2.80%	197.38
Canada	918,406	22,484	2.40%	60.67
Chile	896,231	21,772	2.40%	116.25
Romania	862,681	21,565	2.50%	110.74
Hungary	524,196	17,083	3.30%	174.87
Portugal	814,513	16,694	2.00%	162.37
Ecuador	302,498	16,240	5.40%	95.06
Netherlands	1,178,501	16,218	1.40%	94.12
Iraq	763,085	13,788	1.80%	35.87
Pakistan	609,964	13,595	2.20%	6.41

Source: John Hopkins University CSSE COVID-19 Data

infected patients of the coronavirus, death toll 125,817, with a case fatality rate of 2.9%. Italy reported total cases 3,238,394, with death numbers 102,499, and a case fatality rate of 3.2%. Russia declared total confirmed cases 4,350,728, deaths 90v,958, with a case fatality rate of 2.10%.

Similarly, France indicated actual confirmed cases of 4,132,104, with a death toll of 90,924 and a case fatality ratio of 2.20%. Germany declared a total number of 2,585,385 COVID-19 positive patients of the COVID-19, with a death toll of 73,701 and a case fatality rate of 2.90%, correspondingly. France declared total confirmed cases 4,132,104, with a death toll of 90,924 and a case fatality rate of 2.90%. Italy reported a total number of infected confirmed patients, 3,238,394, with a death toll of 102,499 and a case fatality rate of 3.20%. See Table 6.

Fig. 6 specified that Brazil has controlled the spread to some extent and indicated a decreasing tendency in daily new cases on a 7-day average, as of March 15, 2021. The US is also successful in lowering the daily new cases since January 2021. Similarly, there was a decline in Russia for daily new cases burden since the first week of March 2021. However, Germany has recorded a trend in daily new patients. Italy has also encountered a rise in new cases since February 2021. Globally, several countries have met a second and third wave of the current COVID-19 outbreak. Europe region is affected and became a new epicenter. There were approximately 38 million COVID-19 cases. The hardest-hit of the COVID-19 impacts posed extensive disruptions to the service sector, including the tourism and leisure industry that make up a significant contributor to the GDP of the global economy. Argentina reported a total number of infected confirmed cases 2,201,886, a death toll of 53,836, and a case fatality rate of 2.40%. Fig. 6 reflects the trend of the COVID-19 positive cases in different countries, including Italy and France, from March 01, 2020, to March 15, 2021. Spain declared total confirmed cases 3,195,062, with a death toll of 72,424 and a case fatality rate of 2.90%. Likewise, Iran reported a total number of infected confirmed cases 1,754,933, a death toll of 61,330, and a case fatality
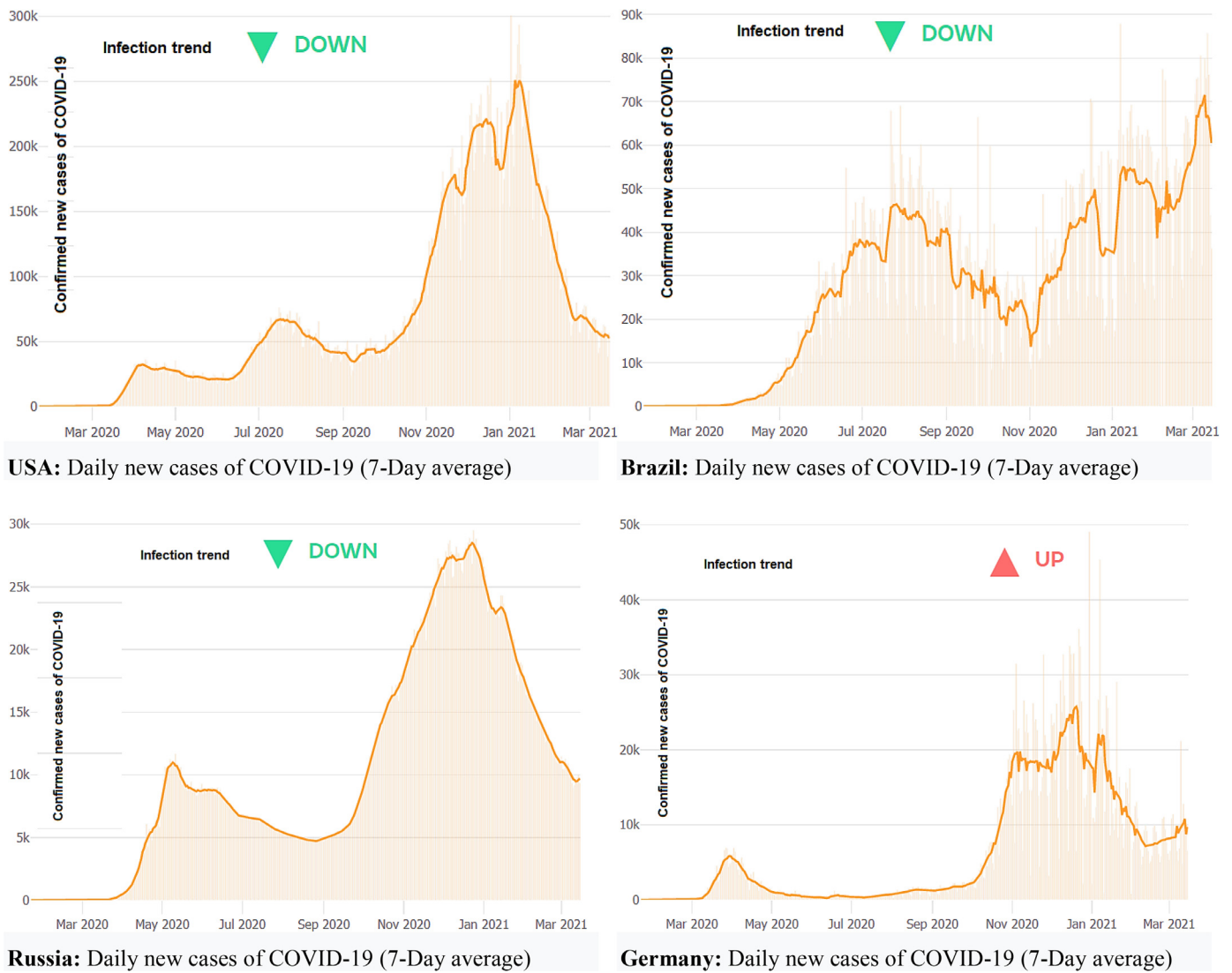
USA: Daily new cases of COVID-19 (7-Day average)

Brazil: Daily new cases of COVID-19 (7-Day average)

Russia: Daily new cases of COVID-19 (7-Day average)

Germany: Daily new cases of COVID-19 (7-Day average)

Fig. 6. COVID-19 positive cases in Brazil, U.S.A., Germany, and Italy as of March 15, 2021.
Source: John Hopkins University CSSE COVID-19 Data

rate of 3.50%. Colombia declared 2,305,884 cases of the COVID-19, total deaths 61,243, and a case fatality rate of 2.70%.

The pandemic's appearance is still sweeping the world, and numerous regions and states have closed borders with all kinds of travel restrictions to combat the virus transmission (Jimenez et al., 2020). When a transmittable virus infection waves appearance, again and again, it causes a significant decline in mobility and global tourism (Richter, 2016). International tourists and air passengers spread the pandemic virus and exacerbate public health and economic crisis worldwide (Hilsenrath, 2020; Hall et al., 2020).

Table 3 indicated that Yemen is highly affected in terms of the case-fatality ratio (CFR=24%) as of March 15, 2021. Yemen reported 2,908 cases, a death toll of 698, and deaths per 100K population is 2.45. Mexico has declared the second-highest case-fatality ratio (CFR= 9%). There were 2,167,729 infected patients with a death toll of 194,944, and per 100K population, deaths are 154.48. Similarly, Syria has shown a case-fatality rate (CFR= 6.70%); total reported cases were 16,556, deaths 1,104, and deaths toll per 100K population was 6.53. Sudan reported case-fatality ratio (CFR = 6.30%), total positive cases 30,973, total deaths 1959, and deaths toll per 100K population was 4.69. See Table 3. Table 3 specifies COVID-19 cases and mortality (Case-Fatality Ratio) declared by the most affected countries as of March 15, 2021. Table 3 indicated that Yemen has shown the highest case-fatality ratio

(CFR=24%) as of March 15, 2021, and reported 2,908 infected cases, a death toll of 698, and deaths per 100K population is 2.45.

5. Social stigma in the COVID-19 pandemic and mental health issues

The World Health Organization described that social stigma determines a negative linkage between persons or groups who share specific features and particular diseases (Tang et al., 2021; Aleta et al., 2020; Škare et al., 2021). It explains that communities are labeled, discriminated and treated in particular ways because people consider them transmitters of infectious disease and pandemic (Hao et al., 2020; Saqib et al., 2020; Sharifpour et al., 2014). This behavior can lead to negative social behaviors and affect people, family members, relatives, friends, and patients' caregivers (D'Amico et al., 2020; Wang et al., 2020; Wong et al., 2021; Sahoo et al., 2020; Őri et al., 2021). Individuals with infections but have other features can also suffer social stigmatization in the community (Zheng et al., 2021; Crespí-Cladera et al., 2021; Piccinelli et al., 2021; Zenker and Kock, 2020). The appearance of the pandemic COVID-19 is leading social stigma in some societies worldwide (Farzanegan et al., 2020; Lynch et al., 2021; Chopra and Arora, 2020). People of various socio-economic backgrounds, religious and racial identification have caused some problems to chinses peo-

Table 3

COVID-19: Cases and mortality (Case-Fatality Ratio) by the most affected countries.

Country	Confirmed	Deaths	Case-Fatality	Deaths/100k pop.
Yemen	2908	698	24.00%	2.45
Mexico	2,167,729	194,944	9.00%	154.48
Syria	16,556	1,104	6.70%	6.53
Sudan	30,873	1959	6.30%	4.69
Egypt	191,555	11,340	5.90%	11.52
Ecuador	302,498	16,240	5.40%	95.06
China	101,421	4839	4.80%	0.35
Bolivia	260,059	11,974	4.60%	105.47
Afghanistan	55,985	2,459	4.40%	6.62
Bolivia	260,059	11,974	4.60%	105.47
Afghanistan	55,985	2459	4.40%	6.62
Liberia	2030	85	4.20%	1.76
Bulgaria	283,194	11,472	4.10%	163.32
Zimbabwe	36,504	1,504	4.10%	10.42
Somalia	9328	379	4.10%	2.53
Mali	8933	363	4.10%	1.9
Tanzania	509	21	4.10%	0.04
Comoros	3646	146	4.00%	17.54
Bosnia and Herz.	144,831	5584	3.90%	167.99
Eswatini	17,239	663	3.80%	58.35
Niger	4865	182	3.70%	0.81
Guatemala	183,014	6578	3.60%	38.14
Chad	4328	155	3.60%	1
Peru	1,412,406	49,003	3.50%	153.19
Iran	1,754,933	61,330	3.50%	74.98
Tunisia	242,124	8404	3.50%	72.67
South Africa	1,530,033	51,421	3.40%	89
Hungary	524,196	17,083	3.30%	174.87
Malawi	32,864	1084	3.30%	5.97
Italy	3,238,394	102,499	3.20%	169.61

Source: John Hopkins University CSSE COVID-19 Data. Note: *Bosnia and Herzegovina.

ple with increasing discrimination (Turner-Musa et al., 2020; Singh and Subedi, 2020; Adja et al., 2020). This behavior has also affected tourists' minds from the Chinese community (Duan et al., 2020; Ferree et al., 2021; Mejia et al., 2021; Ransing et al., 2020). The pandemic has also affected marital life, and numerous studies have reported domestic violence issues globally (Abbas et al., 2020; Piquero et al., 2021; Gulati and Kelly, 2020; Noman et al., 2021). Religiosity levels among people have helped to maintain marital satisfaction (Aman et al., 2019; Khoo et al., 2021). The coronavirus infection disease is dangerous to elderly diabetic patients (Moradi et al., 2020). Women with mental health issues face severe stress due to the emergence of the deadliest disease (Yoosefi Lebni et al., 2020; Azhar et al., 2018; Perzow et al., 2021; Silverio-Murillo et al., 2021; Buckley and Westaway, 2020).

The present pandemic has caused numerous health issues, which resulted in the burden on healthcare systems worldwide (Le and Phi, 2021; Karl et al., 2020; Scott and Laws, 2008). The prevailing global health crisis has affected global communities' livelihood, and destinations are without tourists (Ritchie, 2008; Blake and Sinclair, 2003; Wang, 2009). The lethal virus outbreak has caused numerous problems for international societies. Researchers of the travel and tourism industry have started to rethink and reshape revival strategies to bring back the following normal economic activities (Kuo et al., 2008; Cró and Martins, 2017; Aliperti et al., 2019). Accordingly, the COVID-19 tourism impacts and related research will increase awareness by educating the masses, nurturing, reshaping, and handling such an economic crisis by implanting innovation and change to revive the industry. Quite the reverse, the global economy will suffer, and the travel industry can show losses (Sigala, 2020). Responding to the increasing research enthusiasm related to studies of COVID-19 tourism impacts requires innovative research studies based on e-tourism. Thus, e-tourism can change the travel and tourism industry's future by providing measurable and multifunctional value structures, structural definitions, theoretical trends,

and tangible and flexible technical concepts. Technological innovation requires changes in e-tourism work, including history, reflection, openness, equality, diversity, and innovation (Gretzel et al., 2020).

Travel research scholars propose that e-tourism can transform tourism's future by rendering measurable and versatile value structures, structural definitions, theoretical trends, and tangible and flexible technical conceptions (Ma et al., 2021). Scientific-technological innovation requires changes in e-tourism work, consisting of historical, reflectivity, openness, equality, diversity, and innovation. Investigation to promote the tourism sector, numerous researchers have recommended modifying interdisciplinary (Wen et al., 2020), multi-disciplinary (Hall et al., 2020), and anti-disciplinary study (Sigala, 2018) to create innovatively and flexible planning that questions and moves beyond established pre-assumptions and attitudes. Crisis management determines the primary application process before, during, or after a crisis. Observing the impact and consequences of COVID-19 can include the following significant stakeholders: demand for tourism, tourism resources, tourism organizations, and government leaders (Sigala, 2018). These three parties can demonstrate outbreak response, regeneration, and restart cycles to integrate the COVID-19 post-transition phase. For tourism research to be successful and innovative, COVID-19 tourism research does not have to solve the problem at the last point. If this point repeatedly studies "current" issues and relationships but incorporates many "modern" methods into the research structure through modern conceptual views and analysis, it may be equally innovative. Such measures can significantly reveal unresolved problems and complexity, have more critical descriptive ability and interpretation of ideas and relationships, and identify and evaluate the "preparation" for innovation and change (Kim and Lee, 2020; Su et al., 2021).

6. Conclusions

The COVID-19 pandemic has reflected social, psychological and socio-economic, and cultural influences on various tourism stakeholders, and they will suffer from the adverse effects for a longer time. The pandemic has provided an 'abundant" new framework in which tourism scholars and researchers can conduct studies with applicable research models. Nevertheless, the COVID-19 tourism impacts surveys need to ignore or drop the previous methods to execute the tourism and travel industry (Michael Hall, 2011). Simultaneously, researchers need to implement feasibility studies, tourism demand forecasting, and active and best practices that would be beneficial and appropriate to explore the COVID-19 consequences on various geographic organizations and stakeholders. They theoretically provide minimal space for advancing the understanding of crisis management and potentiating the pandemic's ability to restart investigation areas and enhance the role and boundaries of tourism science and industry. The purpose of the present work is to encourage researchers to interpret and utilize the COVID-19 as a transformative power to reshape and redesign their research methods based on novel thinking for tourism development and research. Hence, it aims to rebuild the strategies and objectives to motivate and assess the intent, function, and effect of tourism organizations' tourism studies. Crises also stimulate the development and shift of new technologies (Colombo et al., 2016; Zeng et al., 2020). Indeed these are not to be treated as unavoidable, un-challengeable and challenging to re-form and re-calibrate to meet specific needs and concrete standards. Scientists have a responsibility to be convinced that COVID-19 tourism studies can guarantee the last consequences.

The current narrative study in the context of the COVID-19 tourism impacts attempts to involve all participants in the same community of travel stakeholders, and it may not be consistent. For instance, the COVID-19 pandemic has a significant impact on tourism organizations (including intermediaries, transportation planners, and accommodation or attraction providers) based on attributes such as the size, venue, management, and governance types of the tourism industry. Similarly, the travel needs that are very different from leisure and business travel, lo-

cal and individual tourists show that the various consequences of the COVID-19 are expected and are critical for discussion in specific market sectors. Tourism research in COVID-19 can reveal different distinguishable forces of the pandemic. They can also include advanced predictive capabilities, because of such differences in the context, to predict or test any specific recommendations on identifying any discrepancies and weaknesses that may arise in different tourism stakeholder groups. Specific major tourism stakeholders, including tourism workers, residents, entrepreneurs in the tourism field, and tourism education such as university staff, students, and scholars, are not included in the analysis. The latest cases and issues related to COVID-19 have further worsened travel stakeholders' travel business and working conditions, making their situation more complicated. Investigations in the field of COVID-19 and tourism stakeholder behavior are critical.

Small commercial hoteliers are at risk of losing their property assets because they cannot receive "accommodation charges" to pay their mortgage as COVID-19 is expected to maintain and strengthen current concepts and models, this "root" of tourism work. All this comes from the ongoing recession and rising costs for travel companies. The COVID-19 tourism research requires a careful study of workers' mental, physical, and psychological conditions with a COVID-19 background, such as health, participation, virtual work environment, and other human resources. For instance, during isolation time of the COVID-19, virtual teams and jobs, regular governance, recruitment, leadership, and promotion opportunities fail to encourage, motivate, and retain employees who have re-changed their values and principles.

The COVID-19 tourism impacts on employment have put more pressure on tourism education. It has seriously affected job creation opportunities worldwide. Due to virtual learning and teaching, students also have to deal with training interruptions, recruitment, and unstable employment opportunities in the tourism business. Tourism programs, initiatives, and academic universities face the challenge of reducing new student enrollment, marketing and government support, and research funding. Tourism scholars should consider innovative approaches and research opportunities to determine organizational distance, taking into account the mental health and privacy issues of stakeholders affected by COVID-19. Similarly, teaching aspects must be explored, such as the planning and implementing more "sustainable," flexible, and flexible methods of tourism teaching and the development of students with transferable and practical skills in other business sectors.

Besides, other specialized subjects in the field of COVID-19 are worth investigating. Social entrepreneurship over the past decade increased due to tourism, such as during the 2008 economic crisis. The COVID-19 facilitates these tourism social projects, aiming to build social impact, address the social problems arising from COVID-19, and help those in need. The rapid expansion of relevant social tourism enterprises in COVID-19 provides several opportunities to practice and accurately understand this concept in new biodiversity, stakeholders, and conditions.

From now on, the bet should not be on the increase in visitor numbers but on "better, more comfortable travel, personalized service, while maintaining affordable prices." The tourism industry should consider starting renovations of hotels, improving staff quality, simplifying the sale of tour groups and customer registration, and moving to digital technology. Particular attention should be paid to family entertainment: special programs for children and adolescents, the development of appropriate menus, entertainment systems, etc. Future pandemics are likely to recover fully, so tourism must first provide high-quality sanitation measures. For example, all hotels may require protective masks and gloves for employees, visitors, and disinfectants. To avoid overcrowding, restaurants should serve their customers in shifts. The beach can be divided into blocks separated from each other to maintain social distance. Besides, scientists, the Government, and the tourism industry should agree and hold the latest tourism sector discussions to better tourism. Travel companies and their partners in each region can recently

start using their time to make their proposals more sustainable, if financially possible. The time has come to reposition the tourism industry and change the tourism products. There is a need to review the measures and prevent abandonment, at least in part after the coronavirus pandemic from mass tourism, which we previously knew. Specifically, among the comprehensive measures for tourism development in the COVID-19 pandemic, the study recommends that the Government develop a significant initiative with specific proposals to improve tourism.

Declaration of Competing Interest

The authors are well informed and declared no competing interests.

Data for reference

Data is available at the request from the corresponding author.

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