



IMPACTS OF COVID-19 ON TRAVEL AND TOURISM INDUSTRY

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ABSTRACT

Our paper is among the first to measure the potential effects of the COVID-19 pandemic on the tourism industry. Using panel structural vector auto-regression (PSVAR) we estimate the impact of the pandemic crisis on the tourism industry worldwide. COVID-19 proves that pandemic outbreaks have a much larger destructive impact on the travel and tourism industry than previous studies indicate. Tourism managers must carefully assess the effects of epidemics on business and develop new risk management methods to deal with the crisis. Today the industry of meetings, incentives, conferences and exhibitions, commonly known under the name of MICE, contributes to economic diversification and actively stimulates the rational use of cultural-historical and natural recreational resources. The research revealed that under the conditions of harsh travel restrictions and closed borders, the UAE MICE industry is faced with a sharp reduction of demand. The multiplicative analysis performed in the course of the study identified the 5P marketing strategy and an outsourcing method as an optimal solution for MICE companies' survival and recovery. By the end of the first quarter of 2020, the COVID-19 pandemic had brought international travel to an abrupt halt and significantly impacted the tourism industry. For many developed and developing countries, the tourism sector is a major source of employment, government revenue and foreign exchange earnings. In some countries, unemployment could rise by more than 20 percentage points and some sectors could nearly be wiped out if the duration of the tourism standstill is up to one year. Further the paper puts forward policy recommendations for governments to avert the worst effects and facilitate recovery.

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INTRODUCTION

Although many of us have been "tourists" at some point in our lives, defining what tourism actually is can be difficult. Tourism is the activities of people traveling to and staying in places outside their usual environment for leisure, business or other purposes for not more than one consecutive year. Tourism is a dynamic and competitive industry that requires the ability to adapt constantly to customers' changing needs and desires, as the customer's satisfaction, safety and enjoyment are particularly the focus of tourism businesses. Tourism is a social, cultural and economic phenomenon which entails the movement of people to countries or places outside

their usual environment for personal or business/professional purposes. These people are called visitors (which may be either tourists or excursionists; residents or non-residents) and tourism has to do with their activities, some of which imply tourism expenditure (United Nations World Tourism Organization, 2008). Using this definition, we can see that tourism is not just the movement of people for a number of purposes (whether business or pleasure), but the overall agglomeration of activities, services, and involved sectors that make up the unique tourist experience. By June 2020, COVID-19 infected over 10 million people and caused the deaths of over 500,000 worldwide (WHO1). Globally, the spread shows no sign of abating. Although daily cases in Europe and Western Pacific are declining, they are increasing in the Americas, South East Asia and Africa. In response, most countries have closed their borders to visitors and tourists. The UN World Tourism Organization² reported during the second

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quarter of 2020 for the first time ever that 100 per cent of global destinations introduced travel restrictions. As a result, international tourism has been almost totally suspended, and domestic tourism curtailed by lockdown conditions imposed in many countries. Although some destinations have started slowly to open up, many are afraid of international travel or cannot afford it due to the economic crisis. Tourism is a critical sector of the international economy. In 2019, the tourism sector accounted for 29 per cent of the world's services exports and about 300 million jobs globally.³ It is an important source of income and employment for developed and developing countries. The global contraction in tourism arrivals could have devastating economic consequences as some developing countries are highly dependent on tourism. In some countries, such as several small island developing states (SIDS), tourism accounts for more than half of the GDP.

This paper focuses on the potential economic effects of the halt of tourism, in the short and medium term, in the major tourist destinations as well as in those countries highly dependent on tourism (as a share of GDP). In this context, special attention is placed on developing countries where the prosperity of some communities can be seriously compromised by the fall of tourism revenues. The paper considers three different scenarios to quantify the impact of the reduction in global tourism on country incomes, trade and employment using a general equilibrium model which captures the backward and forward linkages between sectors. The paper concludes with policy implications. Tourism is distinguished from exploration in that tourists follow a "beaten path," benefit from established systems of provision, and, as befits pleasure-seekers, are generally insulated from difficulty, danger, and embarrassment. Tourism, however, overlaps with other activities, interests, and processes, including, for example, pilgrimage. This gives rise to shared categories, such as "business tourism," "sports tourism," and "medical tourism" (international travel undertaken for the purpose of receiving medical care).

The Origins of Tourism: By the early 21st century, international tourism had become one of the world's most important economic activities, and its impact was becoming increasingly apparent from the Arctic to Antarctica. The history of tourism is therefore of great interest and importance. That history begins long before the coinage of the word tourist at the end of the 18th century. In the Western tradition, organized travel with supporting infrastructure, sightseeing, and an emphasis on essential destinations and experiences can be found in ancient Greece and Rome, which can lay claim to the origins of both "heritage tourism" (aimed at the celebration and appreciation of historic sites of recognized cultural importance) and beach resorts. The Seven Wonders of the World became tourist sites for Greeks and Romans. Pilgrimage offers similar antecedents, bringing Eastern civilizations into play. Its religious goals coexist with defined routes, commercial hospitality, and an admixture of curiosity, adventure, and enjoyment among the motives of the participants. Pilgrimage to the earliest Buddhist sites began more than 2,000 years ago, although it is hard to define a transition from the makeshift privations of small groups of monks to recognizably tourist practices.

Pilgrimage to Mecca is of similar antiquity. The tourist status of the hajj is problematic given the number of casualties that—even in the 21st century—continued to be suffered on the journey through the desert. The thermal spa as a tourist destination—regardless of the pilgrimage associations with the site as a holy well or sacred spring—is not necessarily a European invention, despite deriving its English-language label from Spa, an early resort in what is now Belgium. The oldest Japanese onsen (hot springs) were catering to bathers from at least the 6th century. Tourism has been a global phenomenon from its origins. Modern tourism is an increasingly intensive, commercially organized, business-oriented set of activities whose roots can be found in the industrial and postindustrial West. The aristocratic grand tour of cultural sites in France, Germany, and especially Italy—including those associated with Classical Roman tourism—had its roots in the 16th century. It grew rapidly, however, expanding its geographical range to embrace Alpine scenery during the second half of the 18th century, in the intervals between European wars. (If truth is historically the first casualty of war, tourism is the second, although it may subsequently incorporate pilgrimages to graves and battlefield sites and even, by the late 20th century, to concentration camps.) As part of the grand tour's expansion, its exclusivity was undermined as the expanding commercial, professional, and industrial middle ranks joined the landowning and political classes in aspiring to gain access to this rite of passage for their sons. By the early 19th century, European journeys for health, leisure, and culture became common practice among the middle classes, and paths to the acquisition of cultural capital (that array of knowledge, experience, and polish that was necessary to mix in polite society) were smoothed by guidebooks, primers, the development of art and souvenir markets, and carefully calibrated transport and accommodation systems.

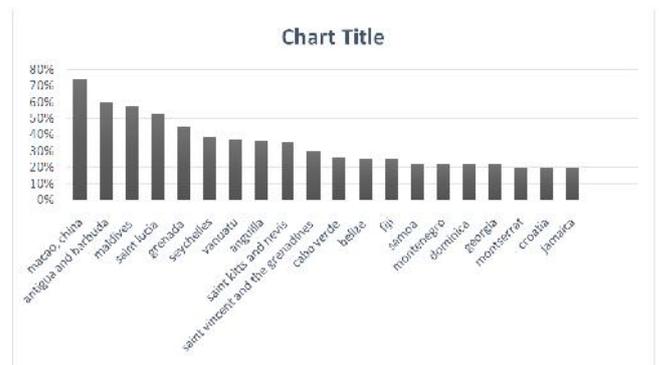
How the COVID-19 crisis hits tourism: Tourism is one of the fastest growing economic sectors and is an important driver of economic growth and development. In 2018 there were 1,407 million international tourist arrivals, a six per cent increase on the previous year.⁴ Tourism receipts amounted to \$1,480 billion, an increase by 4.4 per cent, higher than global GDP growth as in the previous 8 years. Passenger transport is worth another \$250 billion. Tourism exports account for seven per cent of global trade in goods and services, or \$1.7 trillion. In 2019, the most popular destinations were France, Spain, the USA and China. Tourism is a major source of employment globally. The labour market has some distinguishing features. The industry is labour-intensive in nature. A high proportion of the jobs are undertaken by women, 54 per cent, significantly higher than in most other sectors, and young employees, meaning the industry is seen as inclusive. However, women are more likely to be entrepreneurs in tourism than in other sectors and most women hold low skilled jobs in the tourism sector, making them vulnerable to shocks. There is also a significant amount of indirect employment in construction and infrastructure development, plus supplying food and drink and souvenirs to tourists. Furthermore, many employees have direct contact with tourists in travel agencies, airlines, ships, hotels, restaurants, shopping centres and various tourist attractions. COVID-19 is a health and economic crisis on a global scale. While little is known at this time about many aspects of the disease (such as asymptomatic transmission, preventative measures, possible treatments, the likelihood of a vaccine and long term effects), it is generally agreed that the

virus is easily transmissible and that the fatality rate is low when compared to previous pandemics such as SARS, Ebola and the bubonic plague. Fatalities are heavily skewed towards older people and those with existing ailments.

To slow the spread of the virus, many countries have encouraged or mandated the use of sanitary practices such as hand washing, social (spatial) distancing and isolation. Government have introduced a slew of policy measures such as targeted testing and tracing, lockdown measures, upgrading public health facilities and closure of borders. The measures have impacted many industries and the delivery of personal services, resulting in demand and supply side shocks. International tourism is among the economic sectors most impacted by the COVID-19 pandemic. The United Nations World Tourism Organization (UN WTO) estimates a loss of 850 million to 1.1 billion international tourist arrivals, \$910 million to \$1.1 trillion in export revenues and 100-120 million jobs, depending on whether the borders are opened in July, September or December. Most destinations were entirely closed in April and May 2020, opening only in some regions slowly for the northern summer. UN WTO projections reflect considerable uncertainty about the duration of the pandemic, in addition to the government response to support economic activity.

For Least Developed Countries (LDCs), tourism is also an important sector contributing 9.5 per cent to their GDP on average.⁶ For 42 out of 47 Least Developed Countries, tourism is considered a key sector of the economy.⁷ Some larger high or middle income countries, such as Croatia, Greece and Thailand, also depend significantly on tourism with a share of inbound tourism between 8 and 18 per cent. Countries most dependent on tourism include many small economies and notably, SIDS (Coke Hamilton, 2020). This is illustrated in Figure 1 which shows the inbound tourism as a share of GDP in the 20 most dependent countries. Common characteristics among these countries include small domestic markets, a low degree of export diversification and remoteness. As a result, these economies are highly vulnerable to external shocks and thus, are among the most impacted by COVID-19. It is anticipated that the economic blow to SIDS will result in record amounts of revenue losses without the alternative sources of foreign exchange revenues necessary to service external debt and pay for imports. In addition to inbound tourist expenditure, tourism also has indirect effects on the economy. Tourism employs labour, capital (ports and airports), and a host of intermediate inputs such as financial services, education, food and alcohol, and domestic travel. Due to the remoteness of many SIDS, travel to these destinations is expensive for consumers in important export markets such as North America, Europe and Asia. Consumers are limited to air and sea travel to reach these destinations. Given the current public health and safety concerns, these transportation options are not feasible at this time for many international tourists. The dramatic reduction in global demand for international travel has caused significant setbacks in key industries, most evidently the cruise and airline industries. Amid travel restrictions, the cruise industry has suspended sailing until September 2020. The industry has seen record losses in share prices amongst the top three cruise lines - Carnival, Norwegian Cruise Line and Royal Caribbean Cruises.⁹ For example, Carnival's share price dropped 70 per cent in the first quarter of 2020, However, booking for 2021 are 40 per cent up on 2019, according to data from industry sources, but this may

reflect postponed booking from 2020.10As of April 2020, the airline industry (IATA) has recorded an 80 per cent drop in flights when compared to the same period in 2019. In the IATA financial outlook for the global air transport industry, it showed that airlines are expected to lose \$84.3 billion in 2020.11 Frankfurt's passenger numbers, home of Europe's biggest airline Lufthansa, dropped by 97 per cent in April. The situation is even worse in some other airports, such as Lima with a drop of 99 per cent. Chili's LATAM airline, Latin America's biggest carrier, filed for Chapter 11 bankruptcy protection, and Lufthansa survived only with a € billion bailout. IATA reports that passenger numbers may not recover to 2019 levels until 2023-24. Domestic flights will recover much sooner, reflecting the closed international borders and uncertainty about the safety of long-distance air travel. Some 40 per cent of respondents to an IATA survey said they would wait at least six months after restrictions were lifted before resuming travel (IAT2020). Tourist travel is discretionary spending and a global recession will dampen consumers enthusiasm for international travel. In particular because ticket prices may increase if social distance measures have to be observed in planes and airports. The bankruptcy of several airlines may also increase the cost of air travel. Taken altogether, the availability and accessibility of transportation will have a profound impact on the financial recovery for many tourism dependent economies. Many predictions do not anticipate a return to normal levels in the short term for the tourism sector.



The paper aims to critically review past and emerging literature to help professionals and researchers alike to better understand, manage and valorize both the tourism impacts and transformational affordance of COVID-19. To achieve this, first, the paper discusses why and how the COVID-19 can be a transformational opportunity by discussing the circumstances and the questions raised by the pandemic. By doing this, the paper identifies the fundamental values, institutions and pre-assumptions that the tourism industry and academia should challenge and break through to advance and reset the research and practice frontiers. The paper continues by discussing the major impacts, behaviours and experiences that three major tourism stakeholders (namely tourism demand, supply and destination management organisations and policy makers) are experiencing during three COVID-19 stages (response, recovery and reset). This provides an overview of the type and scale of the COVID-19 tourism impacts and implications for tourism research. Using panel structural vector auto-regression (PSVAR) (Pedroni, 2013) on data from 1995 to 2019 in 185 countries and system dynamic modeling (real-time data parameters connected to COVID-19), we estimate the impact of the pandemic crisis on the tourism industry worldwide. Past pandemic crises operated mostly through idiosyncratic shocks'

channels, exposing domestic tourism sectors to large adverse shocks. Once domestic shocks perished (zero infection cases), inbound arrivals revived immediately. The COVID-19 pandemic, however, is different; and recovery of the tourism industry worldwide will take more time than the average expected recovery period of 10 months. Private and public policy support must be coordinated to assure capacity building and operational sustainability of the travel tourism sector during 2020–2021. COVID-19 proves that pandemic outbreaks have a much larger destructive impact on the travel and tourism industry than previous studies indicate. Tourism managers must carefully assess the effects of epidemics on business and develop new risk management methods to deal with the crisis. Furthermore, during 2020–2021, private and public policy support must be coordinated to sustain pre-COVID-19 operational levels of the tourism and travel sector.

Data and facts on pandemics' impact on travel and tourism:

The travel and tourism industry in the time of services-led growth trends has become increasingly important worldwide since 1990. From 1995, the travel and tourism industry's direct contribution to the world GDP increased from 9.9% in 1995 to 10.3% in 2019. A significant impact of the travel and tourism industry is also visible on employment levels. The total contribution to world employment in 2019 was 10.4%. The SARS epidemic in 2003 and the financial crisis of 2008 had a significant negative impact on world and regional travel and tourism industries. We use annual data for 185 countries grouped in 16 world regions: Africa, the Americas, Asia Pacific, Caribbean, Central Asia, Europe, Latin America, Middle East, Northeast Asia, North Africa, Northern America, Oceania, other Europe, South Asia, Southeast Asia, and sub-Saharan Africa. All data are in real prices (CPI US\$ 2000=100 index), adjusted for the impact of inflation. We utilize two main databases: World travel and tourism council (WTTC) data gateway (wttc.org/datagateway) and UNWTO (unwto.org/data). All data are in annual frequencies from 1995 to 2019.

Measuring pandemics' impact on the tourism industry using PSVAR:

Our goal is to analyze the impact of the new coronavirus (COVID-19) outbreak on world tourism dynamics. To our knowledge, this study is the first attempt to measure the impact of the current COVID-19 outbreak on tourism worldwide. To estimate the impact of COVID-19's ongoing outbreak, we model the COVID-19 shocks using time series data for past coronavirus outbreaks; for SARS (2002), H1N1 (2009), and Ebola (2004); and for the past epidemic outbreaks of Hendra (1994), H5N1 bird flu (1997), Nipah (1998), MERS (2012), and H7N9 bird flu (2013). However, COVID-19 is a new type of virus, and it brings much uncertainty connected to the speed of spread, infectious power, mortality rate, and future dynamics of the virus. Therefore, we use the current state of knowledge on the COVID-19 reproduction number (R_0) (Kucharski et al., 2020) to calibrate our models for the SARS (2002) and H1N1(2009) variance. To study the impact of COVID-19 on tourism worldwide, we use the heterogeneous PSVAR model as developed by Pedroni (2013). Using the PSVAR model—Eviews code provided by Luvsannyam (2018) and Góes (2016)—we estimated how the COVID-19 shocks on tourism (arrivals, spending) propagated across world regions. We have a strong heterogeneous sample, so using PSVAR enabled us to estimate the impact of the COVID-19 shock on tourism, depending on the following factors: region-specific socioeconomic conditions, vulnerability to external

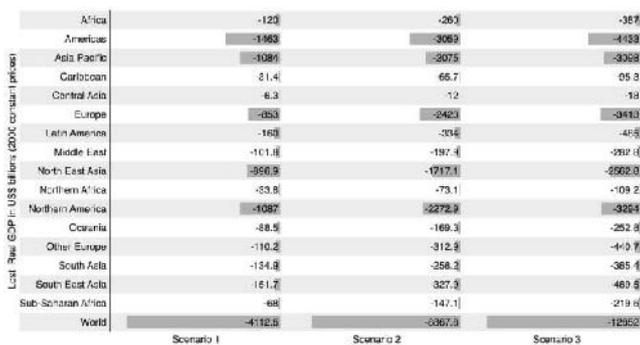
shocks, health system stability, environmental conditions, tourism sector stability, and competitiveness. Following Pedroni (2013), we decomposed the impact of the structural shock (COVID-19) into common shock (effects of COVID-19 outbreak originating in any other region in the sample and propagating to region-specific tourism industry) and idiosyncratic shock. Idiosyncratic shocks show the impact of COVID-19 originating in a member-specific region on the tourism industry in the same region. As in Biljanovska et al. (2017) and Pedroni (2013), we refer to the measured COVID-19 effects on the tourism industry as a common component or spillover (common shock), and to an idiosyncratic component as country-specific (idiosyncratic shock).

Estimating COVID-19 pandemic shock economic impact on the world and the regional travel and tourism industry:

To evaluate the impact of COVID-19 on the travel and tourism industry worldwide, we set up a dynamic model (not presented here due to space constraints). From the estimated PSVAR models, we take parameters on the empirical link between TCGD, TCEMP, SPEND, GOV, INV, and IPANDEMIC shock. Estimated parameters reflect the empirical link from past pandemic episodes from 1980 to 2019 but say little about the empirical link of the above variables (COVID-19). To measure the potential impact of COVID-19, we recalibrate estimated parameters to correct for the knowledge we now have on COVID-19. Our dynamic model includes recalibrated PSVAR parameters, R_0 for COVID-19, a proxy for government responses (Hale et al., 2020), country's/region's economic policy responses (RBA Research International), the share of export in the GDP, the travel and tourism sector share in the GDP, the phase of the financial cycle (credit-to-GDP gaps - BIS data), private debt share in the GDP, and tourist arrivals under three scenarios. We set up the number of international tourist arrivals under three different scenarios.

The first scenario is a lockdown as it occurred during March 2020 and continuing in April (scenario one from January 1, 2020 to April 1, 2020). The second scenario projects the continuation of the lockdown from April 1, 2020 to August 1, 2020. The third and worst scenario of the pandemic outbreak projects it staying in the environment until the end of 2020 (scenario three from August 1, 2020 to December 31, /2020). We use the above-explained building blocks to build a dynamic model for estimating the potential impact of COVID-19 on the travel and tourism industry worldwide. Fig. 2 shows the estimate of the potential COVID-19 impact on the travel and tourism industry at the world and regional levels (regions according to the WTTC) under different scenarios. The first scenario is already in place (actual scenario) since we are well beyond its time duration: January 1, 2020 to April 1, 2020. This is the best-case scenario, assuming the pandemic outbreaks to be under control during April 2020 and a complete worldwide lockdown is revoked

The numbers in Fig. 2 present losses in the real GDP (TCGDP) in the travel and tourism industry (in US\$ bn 2000 constant prices). Numbers in Fig. 2 stand for the GDP the travel and tourism industry could create but lost due to the outbreak of COVID-19. Under scenario 1, the world will suffer economic costs equal to -2.2 trillion US\$ or -4.54% of the world's GDP. The actual scenario (scenario 1) tells us we can expect the world's GDP to fall by -4.54% in 2020. The world will experience a new recession phase amounting to a -4.54% GDP decrease if scenario 1 persists.



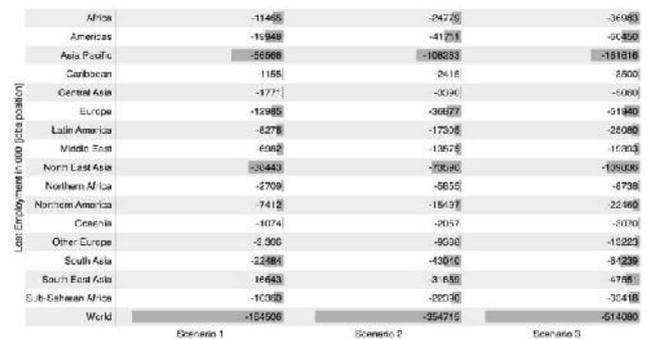
Source: Authors' calculations using their system dynamic model

Fig. 2. Estimated potential (COVID-19) impact on output in the travel and tourism industry by world regions

We can see that pandemic economic shocks are significant and substantial (even under the best actual scenario). The costs are much higher even now under scenario 1 than policymakers and practitioners expected when COVID-19 first appeared in China. Thus, we can call scenario 1 an actual or inevitable economic cost that the world will face because of the COVID-19 outbreak. Fig. 2. shows how the pandemic economic shock spillover effects vary across world regions. Advanced economic regions like the Americas, Europe, NorthEast Asia, Asia Pacific, and Northern America will experience significant declines in the GDP, from -853 bn US\$ in Europe to -895.6 in Northeast Asia. The Americas and the Asia Pacific will face a significant decline in the GDP, with the Americas losing 1.5 trillion US\$ and Asia Pacific 1.1 US\$ trillion.

In absolute numbers, other world regions will face a significantly lower amount in terms of dollar amounts, but in relative terms (their share in the lost GDP), they will face the same recession pressure as advanced regions. The region's potential recession is a consequence of a domestic pandemic shock and limited to a minor spillover effect of the pandemic shock from other regions. The reason lies in the economic lockdown policies that regions adopted to fight COVID-19. However, common shocks or spillover effects for COVID-19 are significantly more substantial when compared to the same effects for SARS (2002), H1N1 (2009), or MERS (2012). According to the actual situation and actual scenario (scenario 1), regions will face recession ranging from a decline in the GDP from -2.09% (Central Asia) to -7.82% (Caribbean). The third scenario, from August 1, 2020 to December 1, 2020, is the more severe scenario in our model (if lockdown continues to end of this year). The average drop in output under scenario 3 equals -12.72% for all regions in the sample. Regions with a significant share of tourism contribution to output, as in the Caribbean (-23.69%) and Oceania (-14.97%), will face significant idiosyncratic shocks impact. The less-developed regions of Africa (-14.95%) and North Africa (-14.97%) will experience a cascade effect resulting from both idiosyncratic and common shocks disrupting the supply-demand mechanism. Such regions will experience a double impact resulting from the domestic effects of the outbreak on the economic activity that amplified the worsening economic conditions abroad. Total world output if the lockdown continues to the end of 2020 will reach levels (-14.20%) far worse than the 2008 economic crisis and constitute the biggest plunge after WWII. The plunge depends mainly on the lockdown conditions that, if relaxed, will move recession scale more toward scenario 2.

Scenario 2 describes an undergoing scenario (April 2020). It shows that the adverse macroeconomic effects of the COVID-19 pandemic crisis are much worse than policymakers and analysts expected when the crisis started. With the COVID-19 outbreak and lockdown continuing to August 1, 2020, the world economy will face a decline in output of -9.80%. Again, advanced regions will be affected the most (due to a drop in a large number of tourist arrivals) with the Americas facing -10.93%, Europe -8.33%, and Southeast Asia -9.88%. However, less developed regions like Africa (-10.08%) and North Africa (-10.03) could also experience significant recession. For less-developed regions, the dynamics of tourist arrivals are somewhat different (due to climate and environment), so their economic losses are more significant under the second scenario than under the first. Other regions, on average (-8.69%), will experience a pandemic shock with an output drop ranging from the lowest, -4% in Central Asia, to the highest, -16.34% in the Caribbean and -9.59% in Oceania.



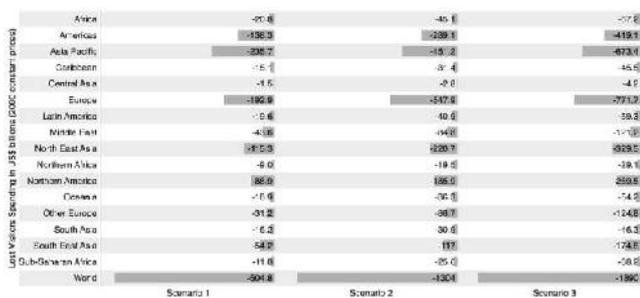
Source: Authors' calculations using their system dynamic model

Fig. 3. Estimated potential (COVID-19) impact on employment in the travel and tourism industry worldwide

Fig. 3 shows estimates the potential impact of COVID-19 on the labor (and associated) markets in the travel and tourism industry. Fig. 3 also shows that the connected industries' labor market will be significant and negative. As expected, the impact will be more substantial in regions more dependent on the travel and tourism industry. The Asia Pacific region under scenario 1 will lose 56.6 million jobs due to COVID-19. A large part of the region's travel and tourism industry, with 186 million jobs, will suffer a significant shock if not counterbalanced by government measures to fight the adverse effects of COVID-19 on the labor markets. Potential negative impacts multiply as lockdowns continue or countries retain strictly controlled border regimes (as announced by France and other EU members, at least to September 2020). Under these conditions, the second scenario applies, with the Asia Pacific regions losing a million jobs in the travel and tourism industry. Under the first scenario, the Americas could loss -19.9 million jobs, an actual scenario if we observe the last data for the United States with more than 15 million unemployment claims by March 21, 2020. In Canada, jobless claims in the same period peaked at 2.13 million with the model predictions fitting the data quite well. Northeast Asia could experience -38.4 million jobs lost in the travel and tourism industry under the first scenario, with South Asia reaching -22.4 million. The impact will be on a "tsunami" level for the Caribbean, losing almost 46% of the total jobs in the industry. Scenario 1 will hit the world by large force with -164.5 million jobs lost in the travel and tourism industry.

Although scenario 1 is the actual scenario now (April 2020), the estimated impact is ample, but recovery is still possible since the average recovery time in the travel industry is estimated between 10 and 12 months. However, if the lockdown continues with travel limitations imposed, the second scenario could bring severe challenges to the travel and tourism sector well beyond the sector's resilience threshold.

Under scenario 2, jobless claims worldwide could hit 354.7 million with direct jobless claims in the travel and tourism labor markets reaching -118 million. Regions experiencing the most significant declines in employment (in absolute numbers) will be Asia Pacific (-108.2 million), Northeast Asia (-73.5 million), South Asia (-43 million), and Southeast Asia (-31.8 million). The total impact of COVID-19 on the travel and tourism labor market under various scenarios will depend, to a large extent, on the government's economic response to fight the virus. Under the first and the second scenarios, governments' economic response is essential but still not a last resort; under scenario 3, governments' support to fight COVID-19 economic damages becomes crucial. Total jobless claims in the world could reach -514.8 million depending on two main factors: (1) if the entire tourist season is lost and (2) governments' strength and speed of response. Tourists' spending in the travel and tourism industry worldwide will experience a drop ranging from -1.5 US\$ bn to -771.7 US\$ bn (see Fig. 4).

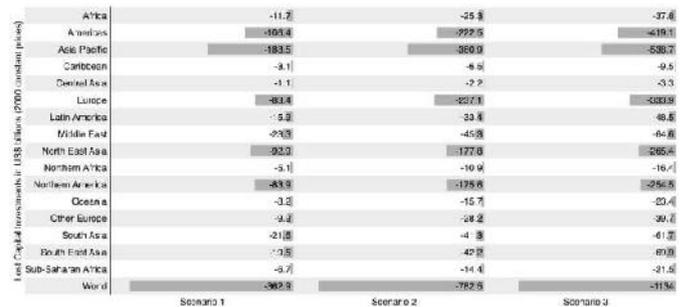


Source: Authors' calculations using their system dynamic model

Fig. 4. Estimated potential (COVID-19) impact on tourists' spending in travel and tourism industry worldwide

On the world level, tourist spending will drop from -604.8 US\$ bn (scenario 1) to -1.9 US\$ trillion (scenario 3). Regions most affected (in absolute numbers) will be the Americas (-138.3 to -419.1 US\$ bn), Asia Pacific (-235.7 to -673.4 US\$ bn), Europe (-192.9 to -771.7 US\$ bn), Northeast Asia (-115.3 to -329.5 US\$ bn), Central Asia (-1.5 to -4.2 US\$ bn), North Africa (-9.0 to - 29.1 US\$ bn), and sub-Saharan Africa (-11.8 to -38.2 US\$ bn)—and these regions have the lowest absolute numbers in tourist spending. All other regions, as we can see from the tables, ranging from Central Asia (-1.5 US\$ bn) to Europe (-771.7 US\$ bn). Scenario 1 (as an actual scenario) shows the full extent of the pandemic crisis for the travel and tourism industry worldwide. Scenarios 2 and 3 show a profound impact on the crisis if pandemic outbreaks continue. On the world level, -1.3 US\$ trillion in tourist spending will be lost under scenario 2 and -1.89 US\$ trillion under scenario 3. The region most affected by the pandemic crisis will be the Asia Pacific due to its dependence on the travel and tourism industry. Policymakers and tourism practitioners can observe that scenario 1 is an affordable scenario for the travel and tourism industry. Under this scenario, the industry could recover from the crisis (regain lost income) in 15 months.

However, scenarios 2 and 3 do not offer such optimistic conditions. Scenario 2 presents the resilience threshold, the point beyond which the travel and tourism industry will need massive government bailouts and incentives to recover from the crisis. Scenario 3 is the worst scenario that could take the travel and tourism industry back to the income levels of 2009 or even 1980. The third scenario would need a massive government support plan for the travel and tourism industry, similar to the one developed for the financial industry during the great recession of 2008. Fig. 5 shows the impact of COVID-19 on investment flow in the tourism industry worldwide. Investment flow in the tourism industry will face large adverse shocks because of the negative expectations of the industry, and tourist practitioners do not have many choices to alter these conditions. Experiences from SARS (2002) and H1N1(2009) show that a recovery period in the number of tourist arrivals beyond the pandemic crisis and travel constraints lift-off last, on average, one year. Under such conditions, planning new investments in the industry is not expected. Another negative aspect is freezing investments and postponing future investments, since the recovery phase will involve price competition, not diversification of tourism supply (re-branding, innovation). Tourism practitioners should rewrite investment plans for the next two years, linking investments (if any) to price competition during the recovery phase and to product competition afterward.



Source: Authors' calculations using their system dynamic mode

Fig. 5. Estimated potential (COVID-19) impact on capital investment in the travel and tourism industry worldwide

As shown in Fig. 5, the world level travel and tourism industry will face a massive decrease in the total capital investments, and total capital investments in the travel and tourism industry on the world level will drop by -362.9 US\$ bn under scenario 1. Regions with the most significant decline as the one with the highest inbound arrivals and share in the GDP. The highest drop of capital investments is for the Americas (-106.4 US\$ bn) and Asia Pacific (-188.5), followed by Northeast Asia (-92.9), Northern America (-83.9), and Europe (-83.4). Such a massive decline, even under the best scenario 1, will send the tourism industry back to the total capital investment levels of 2004. Scenario 2 estimates that travel and tourism industry capital investments could drop to the 1989/1990 levels. Since capital investments are essential for tourism growth, a decrease in capital investment will also result in the decline of future inbound arrivals. According to our model, capital investments on the world level will decline by 781.5 US\$ bn. The decline under scenario 3 is even more significant, reaching -1.1 US\$ trillion of lost capital investments in the travel and tourism industry. The tourism industry will have to abandon innovation and product development, facilitate touring visitors, experience development, and mobilize efforts to deliver consumer experience through increasing traveler confidence and

reducing perceived traveling risks. In the short run, the total capital investment decline across regions will reshape the tourism industry worldwide. The level of strength in the restructuring process will depend on the pandemic dynamics and the scenarios in place. Capital investments in the travel and tourism industry show a high level of volatility. Risk condition realization, in the form of exogenous factors (pandemic outbreaks, terrorism, environmental disasters) or endogenous factors (financial and business cycles), will result, on average, in a -15 to -20 percentage points drop in the level of capital investments in the tourism industry. The recovery period for the investments, unlike the conditions in tourist arrivals or spending, is long, lasting on average two years to return to positive figures and 8–9 years to return to pre-crisis levels. The larger the plunge in capital investments, the longer the recovery period and convergence time to pre-crisis levels. Model results (scenarios 1–3) show that aggregate indicators in the travel and tourism industry will register a significant fall in 2020. Tourism industry competitiveness and resilience will be tested as never before and will require meaningful public and private efforts to recover from the COVID-19 pandemic outbreak.

Strategy for MICE survival and competitiveness: A queuing model was proposed to optimise MICE companies in terms of performance in the post-pandemic market. The Kotler's extended marketing mix model may serve as a framework of choice for hoteliers, providing a competitive advantage over the existing participants in the MICE market. This model allows evaluating

MICE services from various segments of the market by the in-depth profitability and demand analyses.

The five Ps of the marketing mix model are

- J **Product**—a hotel in which a business tourist stays and rests, where a business event is organised, etc.;
- J **Price**—pricing policy, discount, price-quality (varies depending on hotels and airlines, plus insurance, travel and event organisation), etc.;
- J **Place**—distribution channels, internet platforms, etc.;
- J **Promotion**—meetings, incentives, conventions, exhibitions (product launch), state summits, public relations and advertising, etc.;
- J **People**—loyal customers and VIP customers, staff, other customers, etc.

It can be argued that meetings and events in hotels that adhere to this marketing model will bring additional income to stakeholders and corporate business travel agencies and hence improve the image of MICE companies. The consequences of this 5P marketing mix model can also be the improvement of the tourism service quality. Normally, large hotel corporations associate themselves with the image, rather than location. Therefore, when choosing strategies for gaining competitive advantage through outsourcing, the economic and marketing models were used. The underlying sustainable competitive advantages of MICE companies are innovation; service quality control; flexible, adaptive and strong organisational culture; intangible assets (image and business reputation); and consumer behaviour management. Hence, the competitiveness strategy should more focus on these variables. In cross-border tourism, the most promising strategies for competitiveness are

those aimed at ensuring consumer loyalty, innovation and adaptation to the external environment like heightened health and safety measures. The MICE industry leaders are increasingly focused on current trends in outsourcing business processes, namely: expanding the boundaries of outsourcing; use of best practices, tools and technologies to ensure better management; the ability to integrate new features with existing systems; ensuring information confidentiality; the transition from individual services to service packages; and global coverage of existing and new markets. Where there is the opportunity to survive in the pandemic and post-pandemic world and gain competitive advantages by reducing costs while increasing the efficiency of performance, business travel companies turn to outsourcing (It Pulse, 2019). Key Account Managers settle issues with the business travel organisation on the key client's behalf (Suvorova, 2012). The main factors of competitiveness are the image and reliability of MICE companies. Competitiveness is achieved by improving the quality of services (Tymchyshyn-Chemerys and Pasternak, 2017). The previous studies highlighted the following important variables: total cost of business events; expenditures on restaurants and hotels, transportation, etc.; additional costs associated with increased demand; and value-added income. The scientific novelty of this study is that it offers an optimal competitiveness strategy for the MICE industry offering to introduce outsourcing practices and the 5P marketing model.

RESULTS AND DISCUSSION

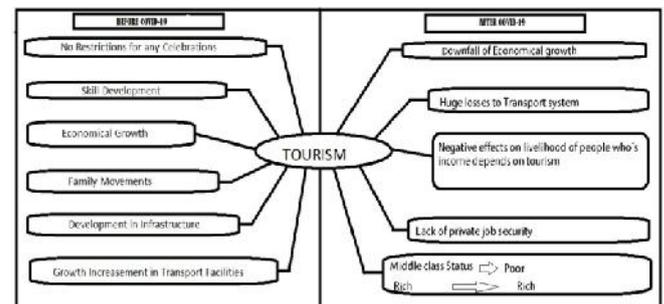
Using PSVAR on data from 1995 to 2019 and system dynamic modeling (real-time data parameters connected to COVID-19), we estimated the potential impact of the current pandemic crisis on the tourism industry worldwide. Empirical studies on pandemic outbreaks and their impact on the tourism industry are not found in the literature. The COVID-19 pandemic outbreak will have an unmatched negative impact (vast decline in inbound tourism arrivals) on the travel tourism industry worldwide, and we empirically investigated those impacts in this study. Negative shocks will be significant, not just in the short run but also in the long run, and it will take several years for the industry to recover. The summary of our empirical results on a world level, demonstrated in the various scenarios, shows that the travel and tourism industry's contribution to the GDP will decline from -4.1 US\$ trillion to -12.8 US\$ trillion. In addition, the total tourism industry contribution to employment will fall from -164.506 million to -514.080 million jobs, and lost inbound tourist spending will plunge from -604.8 US\$ bn to -1.9 US\$ trillion with a fall in capital investments of -362.9 US\$ bn to -1.1 US\$ trillion.

Unlike past pandemic crises with idiosyncratic shocks having dominant effects, COVID-19, because of the travel restrictions and border closures, reveals large common shocks (globalization effect) on the domestic tourism industry. During previous pandemic crises, like SARS (2002) and H1N1 (2009), the domestic tourism industry suffered from idiosyncratic (domestic) shocks. Once pandemic cases were no longer registered, the tourist industry started to return (bouncing effect)—the extent of which depended on the risk perception, risk aversion, income levels, and hysteresis (Mao et al., 2010). Past studies note the high resilience of the tourism industry to shocks (WTTC, 2019), and the number of months needed to

recover in the tourism sector decreased from 26 to 10 months on average from 2001 to 2018. However, this time it could be different. Past pandemic crises operated mostly through idiosyncratic shocks' channels, exposing domestic tourism sectors to large negative shocks. Once domestic shocks disappeared (zero infection cases), inbound arrivals started to revive immediately. With the COVID-19 pandemic crisis, global effects in the form of common shocks multiply the intensity of the crisis. Thus, a country with no COVID-19 alert (idiosyncratic shocks) will not experience an immediate bounce-back effect of inbound arrivals if other countries do not withdraw the COVID-19 alert (common shock). For example, a COVID-19 alert can be lifted for the European region, but arrivals from China will not revive if the alert is not lifted for China as well. Pandemic crises such as COVID-19 show multiplier effects through both idiosyncratic and common shock channels, resulting in a much deeper crisis compared to past pandemic episodes. Past pandemic episodes were limited to idiosyncratic shocks and constrained common shocks. Now, the interaction of both idiosyncratic and common shocks is stretching the tourism industry to the limits. Another important interaction is with the financial cycles. Pandemic cycles appearing at the peak of financial cycles, as in this time, intensify the negative pandemic impacts, limiting the economic response of business and government. Capital investments and employment plunge, real wage and household income abruptly drop, resulting in a decline in aggregate consumption. In the condition of high private and public outstanding debt, both private initiative efforts in the tourism sector and the government's economic policy instruments to revive the industry are limited. COVID-19 impact on global and country tourism market. According to the United Nations World Tourism Organization (World Tourism Organization, 2020b), as of May 2020, 100% of destinations worldwide had travel restrictions associated with COVID-19. The pandemic has significantly impacted every sector of the travel and tourism industry: airlines, transportation, cruise lines, hotels, restaurants, attractions (such as national parks, protected areas and cultural heritage sites), travel agencies, tour operators and online travel organisations. Small and medium-sized enterprises and micro-firms, which include a large informal tourism sector, account for about 80 per cent of the tourism sector, and many of them may not survive the crisis without substantial support. This will lead to a domino effect in the entire tourism supply chain, affecting livelihoods in agriculture, fish-eries, creative industries and other services. The loss of jobs in the MICE industry has a disproportionate effect on women, youth and the indigenous population. Women-owned and operated MICE companies are often smaller in size and have fewer financial resources to counter the crisis. Women hold such frontline positions in the tourism industry as housekeeping and front desk staff, which puts a particular risk to their health (Twining Ward and McComb, 2020). According to the World Bank, the world GDP is expected to decline by 5.21% in 2020 (the decrease in 2019 comprised 2.38%) and grow by 4.16% in 2021. The dynamics of GDP of the United Arab Emirates will comprise -4.5% (compared to 1.7% growth in 2019), followed by the estimated increase by 1.4% in 2021 (World Bank, 2020). In 2019, the direct, indirect and induced impact of travel and tourism industry accounted for 10.3% of the global GDP (USD 8.9 trillion) and 330 million jobs, or 1 in 10 jobs globally. As a result of the COVID-19 pandemic, in 2020, the global travel and tourism market is predicted to see a loss of 121 million

jobs worldwide and USD 3,435 billion in global GDP (World Travel and Tourism Council, 2020).

Conceptual model



Conclusion

The present research examined the impact of COVID-19 on global and UAE MICE market by way of quantitative and qualitative analysis. The study revealed that in the conditions of severe travel restrictions and closed borders, travel-dependant industries like MICE or passenger air services were significantly hit by the pandemic. In 2020, the COVID-19 quarantine measures are predicted to result in a global loss of 121 million jobs and USD 3,435 billion in GDP. Now the UAE is at the forefront in terms of reducing demand for MICE services, as well as for global air travel. Emirati Airlines, hotels, and other travel and tourism-related businesses have experienced significant oversupply. Compared to the same period of 2019, the most considerable fall of scheduled departure flights in the UAE occurred on June 1, 2020, and equalled 82%. Despite the fact that the industry has started to recover after weakening anti-epidemic measures, this process can take some time (provided severe anti-pandemic measures will not be restored along with the new wave of COVID-2019). The choice of survival and competitive strategy for the MICE industry is justified by the study of outsourcing business processes. Outsourcing enables the reduction of operating costs. In these circumstances, a MICE company needs to 'keep the good work' by employing competence, establishing a modern communication system, and promoting digitalisation. The study used multiplicative analysis to evaluate the profitability of the MICE industry and the impact of operating costs on the competitiveness of MICE companies. The 5P marketing model was identified as an optimal choice for surviving and recovering MICE business companies through outsourcing. Since the major resource of organisations under consideration is people and the product, it is advisable to use the competitive marketing strategy when developing a management approach. However, because the product in the MICE industry is a result of multi-stage cooperation, the MICE service provider should simultaneously focus on the external environment. The study findings can be used by travel agencies, MICE related companies, or researchers, applying specific company and market data for developing strategies to overcome COVID-19 related crisis and increase the competitiveness of MICE business. Due to the lack of reliable post-pandemic data, this research was limited to pre-pandemic information. As soon as actual data are available, more accurate calculations can be made, and theoretical research can be verified. Thus, there are enough opportunities for further research aimed at introducing the results obtained to certain post-pandemic MICE market conditions.

Policy makers and practitioners in the tourism industry must develop a new crisis-readiness mechanism to fight the current pandemic crisis as well as future pandemic crises. To do so, they must gain empirical knowledge on the nature and actual extent of the COVID-19 crisis. For now, this has not happened, and scenarios developed by them significantly underestimate the potential effects of the COVID-19 pandemic crisis. Kirby (2020) recalls that central banks expect rapid tightening, representing the sharp fall in sovereign bond yields worldwide. Various countries are offering different economic assistance programs. Policy makers and practitioners in the tourism industry need to gain knowledge of the impact of the pandemic crisis on the tourism industry and economy. In this study, we acquire the same knowledge by examining the historical effects of past pandemic outbreaks corrected the real-time parameters of COVID-19. A four-part economic strategy is required: (1) accept economic losses, (2) protect health, (3) support people experiencing a sudden loss of income by broadening existing security network programs, and (4) protect productive capacity and use economic production capacity to the fullest extent possible as soon as the virus has diminished (Marron, 2020). Our study demonstrates that pandemic crises have long-lasting negative effects on the tourism industry and economy. Estimated negative effects are far beyond those observed during past pandemic crises.

Future pandemic crises should be dealt with promptly, and to do so, policy makers and practitioners need effective contingency plans. Our study shows that the pandemic effects of COVID-19 on the tourism industry share the effect of a common shock. A revival of the tourism industry worldwide will need cooperation rather than competition to minimize the costs of COVID-19. Mandel and Veetil (2020) estimated that global production decreased by 7% when only China locked down, but it decreased by 23% at the peak of the crisis when other countries implemented lockdown. As the shock propagates across the world economy, such immediate consequences are compounded due to buyer–seller ties. In the optimistic and unlikely scenario of an end to all lockdowns, the world economy takes about one quarter period to achieve a new balance. If partial lockdowns persist, recovery time will likely be considerably longer.

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