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COVID-19 AND THE FUTURE INTENTION TO TRAVEL IN A POST-VIRAL WORLD: A BRAZILIAN CONTEXT

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ABSTRACT

In light of the abrupt and quite devastating early impact of COVID-19 on the global travel and tourism system, this paper introduces the still persistent threats to the global tourism industry from COVID-19 after almost 2 years of its appearance, sets the context for the study within the wider body of literature on disasters and crises and their impacts on tourism, and estimates the impact on tourism demand in the world's top ten most visited destinations before the COVID-19. In particular, the study provides an early analysis of future intention to travel in the specific context of Brazil before offering a series of measures that destinations can adopt in the future to mitigate negative impacts of pandemics. Above all, the paper seeks to add to the emerging body of knowledge on COVID-19 be providing insight on the future of tourism in a post-viral world.

KEYWORDS: Covid-19. Tourism. Crises. Disasters. Travel intention. Brazil.

INTRODUCTION

Tourism continues to account for approximately 10% of GDP and employment world-wide (WTTC, 2020), this despite a myriad of economic shocks, man-made crises and natural disasters over recent decades (see for example Garau-Vadell et al., 2018; Joo et al., 2019; Liu & Pratt, 2017; Maphana & Henama, 2019; McKercher & Chon, 2004; Perles-Ribes et al., 2016a, 2016b). Tourism has thus proved to be a highly resilient phenomenon with its industry, to date, having withstood such shocks albeit with changing travel flows, patterns of consumption, and perceptions of risk. Studies by Hartman (2018) and Lew (2018) on travel flows, Yeoman and McMahon-Beattie (2019) on changing consumption trends, and Deng and Ritchie (2018) on risk perceptions have together helped explain the tourism trajectory and provided the necessary evidence to position tourism as a robust and resilient force. All these studies, however, pre-date COVID-19, the global pandemic that without question represents the single biggest threat to the future of tourism as we know it; in the short- to medium-term at least. Climate change and sustainability are arguably greater threats to the longer-term survival of tourism (see for example Siddiqui & Imran, 2018; Weaver, 2011). However, COVID-19 presents the global tourism industry with a threat that if not fully understood and addressed provides an existential threat to the very existence of tourism in many parts of the world (Gössling et al., 2020).

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COVID-19 is not the first health-related threat to the industry in recent years. In the twentieth century, more precisely in 2002, news of "Severe Acute Respiratory Syndrome" (SARS) appeared in China, a syndrome that spread quickly to the countries of North America, South America, Europe, and Asia, infecting more than 8,000 people and causing about 800 deaths (Henderson, 2004; Zeng et al., 2005). In 2009, the world experienced the Influenza A pandemic - also known as Swine flu and Mexican flu, which also spread rapidly across the globe, starting in North America and reaching Europe and Oceania, causing 18,036 deaths (Monterrubio, 2010; Page et al., 2012). Three years later, another type of coronavirus was identified, this time in Saudi Arabia, which then advanced to other Middle Eastern countries, in Europe, Africa, the United States and Asia. Known as the "Middle East Respiratory Syndrome" (MERS), this particular coronavirus is claimed to have caused just under 1,000 deaths since 2012 (Shi & Li, 2017).

Those epidemics or pandemics referred to above have all caused severe damage to humans, the economy in general and the tourism economy in particular. Among all of them, however, the one that has shown the highest propensity for economic and social destruction, and especially global travel and tourism, appeared in December 2019, in an outbreak in the city of Wuhan, capital and the largest city in Hubei province, China (Gössling et al., 2020). The virus, COVID-19 is a variant of the coronavirus. With a trail of infected and dead people across China, the virus initially spread to South Korea, Japan, Italy, Iran, and Spain by February 2020. At the end of 2021, the COVID-19 had impacted more than 180 countries with infections reaching more than 260 million people, with more than 5 million deaths worldwide (WHO, 2021).

In response to this global pandemic, the various sectors that make up the tourism supply chain have been reeling due to the imposition of travel bans, heightened immigration controls and widespread fear among travelers to venture out beyond their own homes; in part attributed to the imposition of social-distancing policies in many parts of the world. Since it is as yet unclear when exactly will be the end of this outbreak, however, what is being discussed in the tourism industry today is what impact this tragedy will have in the short- and medium-term, as well as the possible changes in a post-virus world. Recent research has shown that the effects on the tourism industry will be in the region of US$50 billion, if not more (USF, 2020).

In addition to the loss of human life, economic issues are important, most notably for regions around the world where tourism plays a vital role in the economic system vis-à-vis income and employment. That being said, forecasting its real impact on tourism is almost impossible with claims to accurately estimate the effects on the economy and tourism "beyond anyone's imagination" according to Jane Sun, CEO of Trip.com (CNN, 2020) - China's largest online travel platform. Although Sun continues to suggest that the population at large will return to travel relatively quickly due to pent-up demand caused by the pandemic, evidence from the WTTC (2016) does unfortunately tend to suggest otherwise with recovery times in months for terrorism, pandemics, environmental disasters and turmoil ranging from 13, 21.3, 23.8 and 26.7 respectively.

This paper, therefore: (a) introduces the initial threats to the global tourism industry from COVID-19; (b) sets the context for the study within the wider body of literature on disasters and crises and their impacts on tourism; (c) estimates the impact on tourism demand in the world's top ten most visited destinations in 2018; (d) provides an analysis of future intention to travel in the specific context of Brazil; (e) concludes by offering a

series of measures that destinations can adopt in the future to mitigate negative impacts of pandemics before contributing to the body of knowledge by providing unique insight on the future of tourism in a post-viral world.

LITERATURE REVIEW

Tourism is a critical economic sector for many countries around the world where, in some cases, it corresponds to over 20% of GDP, total number of employees, and the source of foreign exchange (WTTC, 2020). In recent years, tourism has undergone significant transformation driven mainly by the advancement of technology with low-cost airlines and new means of accommodation just some of the more tangible changes in the sector in recent decades. Artificial Intelligence and the Internet of Things represent the new catalysts for change with new opportunities and experiences evident on both the supply (agents of the tourist trade) and demand side (tourists and potential tourists), generating more well-being, cost reduction, and new experiences for everyone (Wu, 2017). Tourist experiences are particularly omnipresent and socially-desirable in the modern day with travel, in the specific context of Brazil, among the "top five" dreams of Brazilians (14%), this being ahead of attending college (12%) and getting married/starting a family (8%) (PANROTAS, 2019).

Despite this positive consumer sentiment toward travel and tourism, as identified in the Introduction, tourism represents one of the most vulnerable economic sectors in the face of both man-made crises and natural disasters (Ghaderi et al., 2014; Rosselló et al., 2020). According to George (2013, p.33), 'the tourism industry is particularly prone to external shocks such as wars, disease, extreme weather conditions (cyclones, tornadoes, mudslides, hurricanes), elections, adverse publicity, terrorist attacks, transport accidents, pollution, earthquakes, volcanic eruptions, political events, airline strikes, electricity shortages, recessions'. The outbreak of disease has impacted tourism on a number of occasions as evident in a number of studies (Cooper, 2006; George, 2013; Kuo et al., 2008; Maphana & Henama, 2019; McAleer et al., 2010; Steffen et al., 2003; Zhang et al., 2003; Zeng et al., 2005).

Table 1. Synthesis about health-related disasters and crises on tourism studies

Type of disaster/crisis	Author(s)	Tourism impact
SARS	Wishnick (2010)	Loss of USD 10-18 billion on depressed travel, tourism, and retail sales.
EBOLA	Meltzer et al. (2014)	Tourism declined of 20 to 40% in demand.
H1N1	Rassy and Smith (2013)	Loss to the Mexican tourism industry valued at the USD 5 billion after the 2009 outbreak
ZIKA	UNDP (2017)	Loss of USD 644 million on tourism in Brazil in 2017 (total of $6.5 billion overall in the countries more affected)
DENGUE	Shepard et al. (2011)	Lost $2.1 billion per year on average in Americas (2000 to 2017).

Source: authors (2020)

There are many studies about the relationship between disease and tourist decision-making behavior/future intention. Sigala (2020, p.316), in a recent paper analyzing the relationship between a world after COVID-19 and tourist behaviour, did the following question: Or would people go back to their previous travel behaviours and preferences? Wen et al. (2005, p.22) analyzed the impacts of SARS on the consumer behavior of Chinese tourists and they found that the SARS "greatly affected people's life, work and travelling during the SARS period while the impacts on people's inclination to travel, the preference of leisure trips and concern of public hygiene vary". Another study related to MERS outbreak showed that "increasing transmissibility should reduce both the individual incentive to travel and the group optimal rate of travelling, while a decline in the relative risk of travelling should encourage travel, both individually and as a group" (Zhao et al., 2018, p.3). Hong et al., (2020), studying the Chinese tourists, showed that "psychological factors can directly affect the satisfaction of consumers after Covid-19".

Besides it, disease clearly has a significant economic impact on tourism with examples in recent years including the economic costs of SARS, H1N1, Ebola, Foot & Mouth disease (FMD), Zika and Dengue among others. For example, The World Travel and Tourism Council (2003) estimated that approximately 3 million people in the tourism industry lost their jobs following the outbreak of SARS in the most severely affected countries of China, Hong Kong, Vietnam, and Singapore. In addition, the total number of tourists from all countries to Malaysia fell by a fifth (20.5%) in 2003 to 10.57 million compared to 13.31 million in 2012, according to Tourism Malaysia. Meanwhile, Blake et al. (2003) calculated that Foot and Mouth disease was responsible for a £7.7 billion reduction in total tourism revenue in the United Kingdom. According to Maphana and Henama (2019, p.1), 'the outbreak of Ebola in Western Africa has negatively impacted the economies of affected countries and also on tourism which is a key economic driver'. GDP in Sierra Leone, for example, declined from a 10-year average growth rate of 7.8% to 4.6% in 2014.

Rosseló, Santa-Gallego and Waqan (2017, p.545), meanwhile, found that 'countries with Malaria risk receiving 47% fewer tourists than countries where this disease is not endemic. Similarly, countries with Yellow Fever receive 36%, while countries with a risk of Dengue and Ebola receive 12% and 28% fewer tourists, respectively'. In relation to the parameter of the variable of having risk of any travel-related disease (TRD), it also implies that countries with TRD risk receiving 37% fewer inbound tourists. According to Joo (2019), the 2015 MERS outbreak caused losses in the accommodation, food and beverage sectors associated with the decrease in non-citizen visitors equal to US$542 million in the Republic of Korea.

In the specific geographical context of Latin America and Africa, their warm and humid climate, larger areas with forests, and unsuitable hygiene habits (due to the lack of education and income) generate a "perfect storm" for the appearance of climatic diseases transmissible by insects (such as dengue), bacteria or viruses. Silva (2018) performed a study to identify the negative impact of the incidence of dengue cases in Brazil on the number of landings in the country. The research shows that an increase of one percentage point in incidence of Dengue cases, there was a 3.7% decrease in the number of landings. Another important survey conducted by Nishikawa et al. (2016) showed that a decrease of 4% in tourism to Brazil due to Dengue outbreak resulted in a negative economic impact

of US$132.3 million from international tourism and US$1.4 billion from local tourism in 2013.

With specific regard to the impacts of COVID-19, although still in the early stages of academic investigation and scrutiny, Gössling et al. (2020) provide a useful summation of the situation to date, its origins and the anticipated impact on travel and tourism. Along with a rapidly growing and increasingly mobile population globally, the increasing concentration and urbanization of this population, a global network of industrialized food and global travel networks, it does perhaps come as no surprise that "travel and tourism is both a contributor to disease spread and its economic consequences and is dramatically affected by it" (Gössling et al., 2020, p.5). Although previous studies, as mentioned above, help provide context to what may happen over the coming months, and years, the scale and reach of COVID-19 is unprecedented with warnings for the economic future of all tourism sectors very real. Almost 20 years ago, Steffen et al. (2003) mentioned that the infectious diseases are determinants for potential tourists when choosing a destination. It is, thus, expected that this perception of health risk will be taken to the extreme until after COVID-19 is adequately controlled. This is evident below in Table 2 which shows the number of people infected and killed by the virus compared to previous significant outbreaks up until November 26, 2021.

Table 2 Epidemic / Pandemic - Cases vs. Deaths

Epidemic/Pandemic	Cases	Deaths
COVID-19	14,673,689	609,603
EBOLA	28,652	11,325
SARS	8,096	774
MERS	2,494	858
AVIAN FLU	256	152

Source: WHO (2020).

In light of these significant numbers, the COVID-19 crisis may bring a "new order" for the entire tourism system due to its global reach as evident in Figure 1. It is anticipated widely that the sheer number of deaths will change tourist behavior and severely disrupt businesses and travel to affected destinations. For example, according to the WTTC (2020), the COVID-19 pandemic could cut 50 million jobs worldwide in the travel and tourism industry with Asia expected to be the worst affected region with it taking up to 10 months for the industry to recover. Specific to COVID-19 and its impacts on Brazil, a survey conducted by the National Confederation of Trade in Goods, Services and Tourism demonstrated that tourism segment revenues shrank by 16.7% representing a total loss of R$2.2 billion in just the first 15 days of March (CNC, 2020). Currently, Brazil has 12.9 million people unemployed (IBGE, 2020) and 41% of its economically-active population working in the informal sector (without any government protection). The longer-term projection is even bleaker in that the number of unemployed could reach 20 million by August 2020 (BBC News Brazil, 2020). In Rio de Janeiro, hotel chains are currently showing occupancy levels less than 5% with 20% of the sector's employees having already been laid off (REVISTAHOTEIS, 2020).

Insert Figure 1

Interestingly, in a previous study conducted by the WTTC in a previous major viral epidemic, the average recovery time for visitor numbers to a destination was projected at 19 months. This period seems to be closer to what has been disclosed by major hotel chains and the International Air Transport Association (IATA) for example (IATA, 2020). In Brazil, the largest hotel chain reports that the recovery would only come in 2023, at least for its sector. The International Air Transport Association (IATA) estimates that global revenue losses for passenger business could rise up to US$113 billion in the worst-case scenario (IATA, 2020). According to an estimate, this time by the Italian Tourism Federation, there will only be around 172 million visitors in Italy by the end of the year 2020. This number represents a 60% drop compared to 2019 when it received 432 million people (VIAGEM, 2020).

Table 3. COVID-19 in the 10 world's most visited countries in 2018

	Countries	Tourists (millions)	Coronavirus Cases	Deaths
1	France	89	174,674	30,152
2	Spain	83	307,335	28,420
3	USA	80	3,899,358	143,310
4	China	63	83,682	4,634
5	Italy	62	294,434	35,045
6	Turkey	46	219,641	5,491
7	Mexico	41	344,224	39,184
8	Germany	39	202,901	9,163
9	Thailand	38	3,250	58
10	United Kingdom	36	294,792	45,300
	Sum	**577**	**5,824,291**	**340,757**

Source: WHO (2020); WTTC (2018).

Table 3 shows that 40% of COVID-19 cases, by the mid-July 2020, were concentrated in the ten countries that received the most tourists in 2018. This downward trend is likely to continue into 2021 as many countries continue to restrict movement across national borders, aggressively promote domestic tourism alternatives, and express national sentiment that it is good to “staycation” until all risk of the pandemic has vanished. For example, a move for the Chinese to focus their travel on domestic “staycations” in their own country in 2021 would impact other destinations dependent on Chinese outbound markets significantly as the Chinese spent a staggering US$277 billion on outbound trips in 2018 (UNTWO, 2019). Likewise, if Europeans decide to stay in Europe for their vacations, the U.S. which attracts roughly 850,000 inbound visitors from Europe every month, would lose an estimated US$3.4 billion per month (WTTC, 2020).

Another segment important for tourism in many countries is the cruise sector. According to Cruise Lines International Association (2019), China was the second-largest market for cruise ship passengers in 2018, 2.4 million of which were Chinese. The United States remains the largest contributor of cruise tourists with 13 million U.S. passengers traveling on a cruise in 2018. However, this sector may be among those likely to suffer the most due to COVID-19. This possibility gained strength in the face of the dilemma faced by

Princess Cruises' ships who were denied entry by several countries due to ill passengers and crew on board. Most cruise lines suspended voyages in the middle of March due to so many passengers cancelling their trips. The impact is already reflected in the value of these companies on their respective stock exchanges. For example, 'Carnival Corp.'s stock has dropped by nearly 60% while Royal Caribbean and Norwegian have lost more than 70% of their value over the past 30 days', according to CNBC (2020). Sadly, many potential consumers may now have a negative association with cruise travel after the COVID-19. Much of this can be tracked back to the Diamond Princess ship that had more than 700 passengers and the crew tested positive for the COVID-19 with eight who caught the virus eventually dying. According to Munarriz (2020, p.1), upon hearing the opinion of a leading cruise industry analyst, he reported that 'the Royal Caribbean will face funding shortfall if it isn't back on the water in six months'. The short-term solution for these companies has been to increase their liquidity in the credit market until the effects of COVID-19 are reduced, and it is possible to see the resumption of cruises by tourists.

Aware of this bleak scenario for the sector, government aid is likely to be needed to keep these cruising giants financially healthy during the outbreak. Mike Pence, the American Vice President, stated that 'we want to work with the cruise line industry to ensure that when we come through this, that cruise lines and the medical services that are available for passengers and all of the crew, that cruise lines are safer than ever before and can prosper for years to come' (CNBC, 2020). Besides, the cruise line sector has many seniors and retirees with highest income among its passengers – the average age of a cruise passenger was 47 years (CLIA, 2019), the leading cruise ship group wants 'to ban passengers over 70 without doctor's note amid the coronavirus outbreak' (NYPOST, 2020, p.1)). The reason for this measure is that the death rate among people over 80 years old is 14.8% and 8% for people between 70 and 79 years old. Another statistic that justifies such action is that in Italy, the second country with the most deaths in the world caused by COVID-19, the average age of people who died from the virus was 79.5 years (WHO, 2020).

METHODOLOGY

This article is based on a literature review as well as on a survey to describe the occurrence of COVID-19 in the world. The literature review covers the secondary data research, including books, TRINET´s discussion list, journal articles and WHO database to contribute to building of scientific basis of knowledge concerning the economic impacts on tourism. The study period for the COVID-19 case extends from December 31, 2019, to March 31, 2020. The study estimates the impact on tourism in the world's most visited countries in 2018 caused by COVID-19 based on Smith's research (2006, p. 3114) that states that 'the global macroeconomic impact of SARS was estimated at around USD 3–10 million per cases. These costs were distributed across a wide range of sectors, although principally travel and tourism, and countries'. In general, the economic cost is the sum of the 'cost of diagnosing and treating patients, loss of tourism revenue, the value of lost productivity and the long-term direct and indirect costs of disabilities attributable to the disease' (UNDP, 2017, p.8).

For estimating this economic cost, McKibbin and Fernando (2020) applied the G-Cubed Multi-Country Model – developed by McKibbin and Wilcoxen (1999) – to determine the share of industries affected by COVID-19 pandemic within the service sector, such as

tourism, retail trade (including hotels and restaurants), and land/air transport for 20 countries. Lee and McKibbin (2012) also used the G-Cubed (Asia Pacific) Model to quantify the effects of SARS on China. Bloom et al. (2005), meanwhile, used the Oxford Economic Forecasting model to estimate the potential economic impact of an Avian Flu pandemic on Asia. In addition, Shepard et al. (2011) synthesized existing studies to calculate the economic burden of Dengue where they estimated the cost per case in the Americas to be $382 on average per tourist between 2000 and 2007.

This study presents the results of the questionnaire on an online Google platform (in Portuguese), which was distributed to the respondents through social networks. The users had to click on the link of the study in order to access the questionnaire. Therefore, this research is a descriptive study using a quantitative approach and a probability sampling with simple random sampling. The reason for approaching via the Internet is twofold: convenience and inclusion (KAYAM & HIRSCH, 2012). Although it reached 11 States of Brazil, most respondents were residents of the State of Minas Gerais (Brazil), a fact observed after the conclusion of the research via identification of the place of origin (IP of the equipment). After the survey had reached 309 respondents, the questionnaire became unavailable. The questionnaire was applied in the period of August 13 - September 29, 2021. The questionnaire was divided into two sections: the first included social and economic issues for the construction of the interviewee's profile, such as gender, age group, income level, education, and education; the second (five questions) were related to travel intention in the face of the new reality caused by the COVID-19 pandemic, namely:

1. Did you plan to travel in the first half of 2022? The option "I didn't plan to travel" was available among the responses. If this option has been marked, the respondent has been sent to question f.
2. If you said YES in the previous question, the following question appeared “To what date did you postpone the leisure trip?” The option "I gave up traveling" was available among the responses.
3. If you postponed your intention to travel for leisure, do you plan to keep the same destination or change the destination of the trip?
4. If you decided to change your travel destination, would you: a) travel abroad and now travel in Brazil or b) travel to another state in Brazil, and now you will travel in your state of residence."
5. The Coronavirus outbreak (COVID-19) influences the decision to change the travel destination". About this statement, you agree, disagree, or don't know how to give an opinion?

Brazil was chosen for this study for several reasons. First, Brazil occupies the 16th position in the global ranking of countries that spent most on tourism in 2017 (UNWTO, 2019). According to data from the World Tourism Organization (UNWTO, 2019), the country contributed USD 19 billion into the global economy in 2017 through tourism. Second, Brazil has the largest market in Latin America, with 208 million people (40% of the regional labor force), and it is Latin America’s largest economy with a Gross Domestic Product of US$ 1.9 trillion (IBGE, 2010). Third, despite the economic crisis caused by COVID-19 pandemic, it will result in lower or negative economic growth in 2020/2021; currently, the country presents economic and political stability; namely, inflation rates below 3.5% per year and basic interest rates equal to 3.0% a year (IBGE,

2010) - these indicators are the best among the Latin America´s country together with Chile. The final reason is that Brazil, to date, has been heavily impacted with more than 70,000 people infected and more than 6,000 deaths (Figure 1), this despite practicing social distancing in its 5,553 cities. It is most likely that a combination of overcrowding, poor public health, and high demographic density together have contributed to this sad scenario in Brazil.

FINDINGS

Estimative

Table 4 shows the impacts of COVID-19 might bring to the 10 most visited countries in the world in 2018 multiplying the value per case (USD) – both scenarios – by the number of the COVID-19 cases in each country. As mentioned above, this value per case was based on Smith's research (2006, p. 3114) - at around USD 3–10 million per cases.

Table 4. COVID-19 in the 10 world's most visited countries in 2018

Rank	Countries	Tourists (millions)	COVID-19 (number cases)	Negative impacts (Smith´s estimative) – USD million	
				USD 3 million per case (best scenario)	USD 10 million per case (worst scenario)
1	France	89	174,674	524,022	17,467,400
2	Spain	83	307,335	922,005	3,073,350
3	USA	80	3,899,358	11,698,074	38,993,580
4	China	63	83,682	251,046	836,820
5	Italy	62	294,434	883,302	2,944,340
6	Turkey	46	219,641	658,923	2,196,410
7	Mexico	41	344,224	1,032,672	3,442,240
8	Germany	39	202,901	608,703	2,029,010
9	Thailand	38	3,250	9,750	32,500
10	United Kingdom	36	294,792	884,376	2,947,920
	Sum	**577**	**5,824,291**	**17,472,873**	**58,824,291**

Source: WHO (2020); WTTC (2018).

Survey

Among the 309 respondents to the survey, 50.3% were male, and 49.7% were female. The predominant age group among the respondents was 18 to 30 years old (46.1%), followed by the age group 31 to 40 years old (32.8%). In terms of monthly income, 26.5% of respondents earn more than $ 2,000 per month, while 25.2% earn up to $ 600 monthly.

More than half of the respondents (54.7%) intended to travel in the first half of 2020, that is, 169 respondents. In total, 40.2% planned a leisure trip until December (2020), this besides the fact that 13.8% said they had postponed a trip between January and April 2021, and with 3.7% reporting that they had postponed a trip until August 2021. Almost a third of the respondents who had an intention to travel in the 1st semester of 2020 and who postponed a trip had given up traveling (31.2%). Thus, of the 60.8% who decided to

take a trip, 103 participants, 75% chose to keep their previously established travel plans (78 participants). In contrast, 25% decided to change their already defined travel plans (25 respondents). Of the 25 participants who not only decided to travel but also planned more travel, 37% who planned to travel abroad now decided to travel in Brazil while 63% who had planned to travel to another state in Brazil decided to travel internally within their own state. In this regard, the Coronavirus outbreak (COVID-19) clearly influences the decision to change the destination of a trip. This is shown clearly in Figure 2 with most respondents agreeing with COVID-19's ability to change destination options.

Insert Figure 2

In addition to the above, with 77% of respondents less than 40 years old, it is important to note that people over 60 are more susceptible to COVID-19 (main risk group). Hence, the 77% percentage may mean a greater willingness of respondents to maintain their travel plans, despite the existing uncertain environment. For instance, more than half of respondents intended to travel in the first half of 2020. This result does this demonstrate the strength of tourism and the very positive scenario for the sector - if the pandemic had not arisen. Since more than 40% still intend to travel until December 2020. This decision would contribute a lot to the faster recovery of the tourism sector if tourists can see a significant drop in most of the main tourist destinations in the world.

DISCUSSION

The results of this study closely mirror those found by McKercher and Chon (2004). Maybe because the survey was carried out in Brazil in the middle of March, a time when the country had 165 deaths registered by COVID-19 (the country surpassed the mark of 5,500 deaths on the last day of April), it is possible that the respondents underestimated the impacts and extent of the pandemic. However, nowadays, Brazil has more than 2,100 million infected people and over 80,000 deaths (WHO, 2020).
For example, Argentina - the Latin American country most visited by Brazilians in 2019 - prohibited, in mid-April, any flight (national or international) in the country until the end of September 2020. The idea that the pandemic could be extinguished or at least mitigated by the end of 2020 may justify that just over 15% postponed their trip after 2021. However, almost a third of the respondents who had an intention to travel in the 1st semester of 2020 and who postponed a trip had given up traveling. This finding is consistent with similar studies. For example, Maphanga and Henama (2019, p.1) found that the "the outbreak of contagious diseases impacts negatively on a destination (…) and tourists may shun destinations that have contagious disease outbreaks". Joo et al. (2019, p. 107), meanwhile, found that "that the losses were permanent because visitors cancelled rather than postponed travel". This result is an indication that the tourism sector can already be sure of a drop in its revenue and movement with much anticipation.

Perhaps because of the incidence of COVID-19 cases and deaths is quite different between countries, three out of four people decided to keep the previously established travel destination. This may also mean that the choice for the destination was made in a very consistent way in terms of choice parameters. However, this result is different from what is allowed in a survey conducted in the same period and with 4,000 respondents from USA, Italy, Australia and China (Bloom Consulting, 2020). In this research, "46% of all respondents said they choose a different destination from the original choice they made prior to the outbreak". On the other hand, among the 25% that decided to change the already defined destination, more than one third, theirs will no longer travel abroad,

but between Brazilian states. This result is in line with the statement that suggest international arrivals could decline by 20 to 30% relative to 2019. (UNWTO, 2020).

Domestic tourism, or “tourism for us”, may be a hallmark of post-viral tourism mainly because more than 65% of respondents decided to restrict their travel to their own states - perhaps to help the economic recovery of their regions. About the affirmative "the Coronavirus outbreak (COVID-19) influences the decision to change the destination of a trip", three out of four people agreeing with COVID-19's ability to change destination options. This result shows that pandemics do affect tourism, which is in line with previous studies (see for example Monterrubio, 2010; Page & Yeoman, 2007). In this regard, many actions can be taken by countries to reduce the risks associated with diseases, such as those described by McKercher and Chon (2004), Novelli et al. (2018) and Sonmez et al. (2019). Taking measures to reduce or eliminate the risks associated with diseases is fundamental for society broadly, but also for the tourism sector. For example, Rossell et al. (2017, p.538) showed that, “in the case of Malaria, Dengue, Yellow Fever, and Ebola, the eradication of these diseases in the affected countries would result in an increase of around 10 million of tourist worldwide and a rise in the tourism expenditure of 12 billion dollars”. This positive effect is very considerable, especially since these are more common diseases in countries with tropical climates, which often have economic indicators and well-being that are far below ideal.

Although it still may be a little early to predict the exact outcomes of COVID-19, evidence from this and previous studies indicate some measures (as evident in Table 5), that could appear wise in mitigating the risks associated with diseases.

Table 5. Actions to reduce the risks associated with diseases – Tourism

Creating an integrated on-line communications network between the world's largest hotel chains, airport administrators, shipping companies, and ministries of health in countries to give immediate warning signs of the slightest possibility of local outbreaks.
Voluntary temperature checking (arrival and departure).
Points of availability of water, masks, soap, and gel alcohol immediately after disembarking and before accessing the public areas of the terminals as well as in tourist attractions
Expansion of requirements regarding proof of vaccination.
Presentation of the detailed travel plan and active registration for tracking purposes, if necessary.
Intensification of guidelines on personal hygiene and contacts.
Robotization of those processes maintained up until now by people.
IATA could create a commission to assess health conditions in destinations independently.

Source: authors

In addition to the above, a number of future travel trends were advocated by Fodors (2020) which although lacking in empirical evidence do throw up some valid options for the future of the industry. In addition to staying local, as outlined in this study, the need for increasing levels of demonstrable personal responsibility are clear with individuals and groups ultimately responsible for their behavior and how they themselves can limit the spread of disease.

There may also be a surge in the selection of destinations that really are clean, are more "eco" in their offering, and that offer tourists a sense of safety and security from a range of hazards, including health hazards. Along with the need for the capping of visitor numbers at more crowded destinations, attractions and cruise ships, for example, the greater the annual spread of tourist visits (less seasonality), more diversification, and more sustainable options all offer solutions, in part or in full, for our future post-COVID-19 world.

CONCLUSION

This paper set out to introduce and explore the initial threats to the global tourism industry from COVID-19 and estimate the impact on tourism demand in the world's top ten most visited destinations in 2018. In particular, the study sought to provide an analysis of future intention to travel in the specific context of Brazil, to offer a series of measures for destinations to adopt to mitigate future negative impacts of pandemics before contributing to the body of knowledge by providing unique insight on the future of tourism in a post-viral world.

Ultimately, the goal of the paper is to provide guidance to tourism policy makers to help them manage and appreciate the economic benefits of globally-coordinated policy responses to tame the virus and protect the future of the tourism industry. The paper builds upon the experiences gained from evaluating the economics of SARS (Lee & McKibbin, 2003) and Pandemic Influenza (McKibbin & Sidorenko, 2006). Therefore, this study sought to contribute to the body of knowledge by providing unique insight on the future of tourism in a post-viral world.

This paper has presented some preliminary estimates of the cost of the COVID-19 outbreak under seven different scenarios of how the disease might evolve. The goal is not to be definitive about the virus outbreak, but rather to provide information about a range of possible economic costs of the disease. At the time of writing this paper, the probability of any of these scenarios and the range of plausible alternatives are highly uncertain. In the case where COVID-19 develops into a global pandemic, our results suggest that the cost can escalate quickly. It`s certain that tourism will be modified by the damage caused by COVID-19. One of the practical implications of this study is that the perception of traveling safely and securely surely will be impacted. In addition, policies designed to truly promote sustainable tourism, balancing profits by traders with the well-being of the local population, will become imperative and no longer will serve as rhetoric.

Another practical implication of this study is that food and health security issues will be taken even more seriously in the post-COVID-19 world, which will naturally harm individuals. One hand-on strategy to mitigate this situation is the wide dissemination of good hygiene practices as outlined in Levine and McKibbin (2020) can be a low cost and highly effective response that can reduce the extent of contagion and therefore reduce the social and economic cost. Those countries considered as "exotic", particularly in Asia, have in recent years recorded especially high rates of growth in tourism (WTCC, 2018). However, their future ability to attract tourists will be determined by the guarantee that will be applied, for example, to taste typical dishes and entrees or to visit places relatively distant from the urban areas of these cities in a safe and hygienic manner. Fast-food chains will gain more space in these destinations (at least in the short and medium-term) because food and health security will be still giving more priority to the detriment of a little more

unique experiences. This movement will probably start as soon as the tourists arrive at the destination airport and will continue until their return. Then, the main theoretical contribution of this study is to confirm that travel intention is highly correlated to risk perception found in the literature (Roehl & Fesenmaier, 1992; Mitchell & Vassos, 1998) since the "small" number of deaths presented in Brazil during this survey. Another example that could explain our theoretical contribution has been found by Wachyuni and Kusumaningrum (2020, p.67). In a study made for both in Jakarta (Indonesia), "about (65%) will return to travel in the near term, which is 0-6 months after the pandemic is declared over (…) the survey results show that travel intention mean value is higher than travel anxiety". In fact, according to Wu (2015), tourism risk perception could substantially impact tourists' decisions.

This somewhat more restrictive scenario seems to be consistent with that mentioned by Shem (2020), according to which, commented on the African context, "the COVID-19 has taught us a great lesson: the importance of Safety and Hygiene in Tourism. We need now more than ever to have Safe destinations for visitors, Safe airlines as well as Safe hotels (…)" (para. 1). According to Maingi (2020), "the Global Tourism sector should be able to contain such pandemics in the future. The sector should be viewed as part of the solution and not part of the problem in such pandemic situations" (para. 2). However, this is unlikely to be possible without the public sector. Overcoming complicated socio-economic situations, insufficient water, and sewage systems and the lack or ineffectiveness of hotel inspection systems, popular restaurant markets, for example, are all issues that depend, for the most part, on the public sector be it local, regional or state governments.

We have known for years what Abdullah et al. (2000, p.125) said that "poor socio-economic conditions, inadequate sanitation and cultural differences between the countries of origin of travelers and their travel destinations contribute to increasing the risk of travel-related illnesses, particularly communicable diseases". To date, this threat has not been taken seriously with the exponential growth in tourism overtaking other perhaps more rational responses to safe levels of growth. As of now, and certainly with regard to looking forward, one can only assume, hope, that tourism and public authorities around the world will take such threats more seriously and ensure a more holistic, health-driven, approach to the management of tourist destinations. According to WTTC (2020, p.1), "the coronavirus outbreak in China could have a damaging and lasting economic impact on the global travel and tourism sector unless lessons are learned from the previous viral epidemic". Historically, society has demonstrated its capacity for self-adaptation to overcome such situations. It would appear now that society needs to react once again to ensure that the future of one of its greatest industries actually has a future and will serve populations, many of them in the developing world, a sustainable and healthy living.

RESEARCH LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

The main limitations of the study are related to sampling and data analysis used in this research. For example, the representativeness of the data and random sampling are two disadvantages found in online survey research. The recommendations for future research implies to use another sampling – for example, older people – most vulnerable to infectious diseases.

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