Review of the influences of COVID-19 pandemic on tourism

Yunzhi Lin^{1,*}

¹Mathematical finance and Actuarial Science, School of Mathematical Sciences, NanKai University No.94 Weijin Road, Nankai District, Tianjin, China

Abstract. COVID-19 has become a major global pandemic since Jan 2020, which has made a deep impact on tourism industry. There is ongoing research about how the tourism industry is impacted by this global crisis. Researchers have explored the ways to transform e-tourism during pandemic, a special opportunity for e-tourism. In addition, researchers had investigated how the disruption of tourism affects other industry, such as retail payments and wildlife conservation. They found that these two industries incurred loss due to the disruption of tourism to some extent and also gave some suggestions on recovery strategies. What's more, researchers have investigated the condition of firms related to tourism and inferred that firms are hard to survive if crises lasted for more than four months without external support. At last, researchers have tried to find solutions for tourism industry to recover from the disruption. In comparison with the promotion of domestic travel, bridging travel and travel tech is more effective and highly recommended by researchers. It is meaningful and significant because tourism industry is one of the fastest growing industries which is expected to be the key contributor of regaining socio-economic stability after the pandemic.

1 Introduction

The pneumonia of unknown etiology was first discovered in Wuhan, China in December 2019. On 11th February, 2020, the virus was named as 2019 novel coronavirus(2019-nCoV) and the disease caused by 2019-nCoV was named as Coronavirus disease 2019 (COVID-19). The global figure about this pandemic until May 5, 2021 is in the Table 1. The pandemic of COVID-19 is an extraordinary public health crisis, involving unprecedented mitigation measures such as social distancing and school/business closures, which are disrupting the social and economic fabric of normal life across the world. According to the policy, several countries, such as Singapore, Italy and Iceland, suspended overseas group tours, curbed population flow, canceled mass gatherings, halted long-distance buses and closed scenic spots, which are the crashing blow to the tourism industry. The contribution of tourism to GDP as a share in Sri Lanka was 12.5% in 2019 and the figure was 11.4% in 2020. Hence tourism industry is significant in countries development and is expected to be the key contributor of regaining socio-economic stability after the pandemic[1]. This review is to summarize the impact that COVID-19 brought to tourism industry and how the disruption of tourism affects other industries.

2 The way to transform e-tourism during pandemic

Crises are not new towards tourism, but the impact of

COVID-19 has been stronger than any other crises so far, far, therefore, how travel industry can recover from the crises is an important challenge for stakeholders of tourism. Besides, use of information and communication technology is ubiquitous and increasingly important for solving today's problems in many areas. Because of all these impacts, transformative e-tourism is arising. E-tourism is defined by Neidhardt and Werthner as encompassing the "analysis, design, implementation and application of IT/e-commerce solutions in the travel and tourism industry, as well as the analysis of the respective technical/economic processes and market structures". Compared with offline tourism, e-tourism avoids the geographic restrictions and has broader range of targeted people with substantially lower cost (without the expenses of travelling and accommodation). At present time, there are two options treating e-tourism. One is to treat it as before the crisis, while the other is to transform it. Gretzel's group challenged the existing paradigms by making underlying value systems, institutional logics, scientific paradigms and particular notions of technology visible and therefore transformable. As a conclusion, they believe that IT holds the key to understand the relationship between how we manage travel along with our everyday life and how we formulate a better future for e-Tourism as a phenomenon and a field of inquiry under the pandemic-related condition. Furthermore, in the existing ontology, the uniqueness and diversity of social acts of exchange is transformed into "identical" monetary values, which means economic actors are considered as decision making machines, leading to paradox that economics cannot be considered an empirically exact science. They question and criticise the

* Corresponding author: 1375786868@qq.com

ontology and epistemology of the e-tourism research existing now[2].

Table 1 Total COVID-19 infections by 05/05/2021

Total cases reported	World
Total infections	154,600,621
Total deaths	3,235,153
Total recovers	119,501,778
Active cases	22,785,764

3 Regional shifts: Swiss retail payments

The COVID-19 crisis also impacts the retail payment in some countries, especially where the tourism constitutes an important source of revenue, such as Switzerland. Kraezlin's group documented the effects on card payment to the retail sectors in Switzerland, caused by COVID-19 and related lockdown, and also provided evidence on aggregated effects and regional shifts [3]. It has been reported that there is a substantial drop in retail payments. Also, there is direct evidence that the shifts of card payments to the retail sectors from urban to suburban and rural areas and among cantons in Switzerland during the COVID-19 crisis is associated with the dependence of a canton on "tourism and business travel" and its economy's "e-commerce" intensity. They found that the reduction of card payments from foreign tourists and business travelers can promote these shifts.

According to the research, they analyzed more than 1.3 billion credit and debit card transactions from Worldline\Six Payment Services from January 2019 to May 31, 2020, divided into three periods, including the pre-lockdown period (January 7, 2019 to February 17, 2020), the lockdown period (March 17, 2020 to April 26, 2020), and the post-lockdown period (April 27, 2020 to May 31, 2020). The first period was regarded as the benchmark period, prior to the outbreak of COVID-19.

As a result, urban and rural areas suffer much from the absence of foreign tourists and business travelers, with urban areas suffering the most. The absence of tourists and business travelers contributes to the heterogeneity among areas with different degrees of urbanization. Apart from that, excess retail payments were slightly above zero in January and February, reflecting growth in card usage and consumption. This trend reversed several weeks before the lockdown became effective, when the first COVID-19 infection was confirmed in Switzerland. They found that excess retail and non-retail card payments experienced a sharp decline during the lockdown period, bottoming out at around - 20% and - 80% respectively before recovering to varying degrees by the end of post-lockdown period.

Moreover, Eleonora Pantano's group gives some suggestions about strategies that retailers can handle this unprecedented situation. Firstly, in order to deal with consumers' new demands and governments' pressures on how businesses are to be run, retailers should develop dynamic capabilities, which needs retailers to understand how their stakeholders interact and be ready to deal with the rapid rebound in consumption. Secondly, they have

to be aware of consumers' vulnerability, special needs, acceptable times for responses and other information. In other words, they have to put consumers in the first place. To this end, more personal and sensitive information about consumers might be needed. At last, following information should be included in the messages that retailers spread online: (1) restrictions on the amount allowed to be bought (2) their measures to protect consumers and employees (3) their contribution to public health (4) surveillance measures to limit the spread of virus. These three suggestions would help generate in consumers a new sense of trust toward retailers [4].

4 The loss of tourism's impact on wildlife conservation

Tourism experienced a drastic decrease during the pandemic, and its loss can also be critical for some national and local economies. COVID-19 pandemic creates one of the greatest shocks to the global economy in modern history. James McNamara's team concerned on its impacts on wild meat trade in Sub-Saharan Africa [5].

Wild animals are significant in economies and ecologies in many countries, including those of west and central Africa. At the level of economy, the presence of jobs in cities and industries can lead to economic boom that produces a market of wild meat. The transmission of a zoonotic disease pathogen between wildlife and humans in Huanan Market in Wuhan is linked to the earliest known cluster of COVID-19 cases. Despite the role of Huanan Market in COVID-19 pandemic is yet to be confirmed, governments have increased scrutiny on wild meat trade and some countries such as China have banned the consumption of wild animals for food. Such policy could introduce intolerable short-term hardships.

In the paper, COVID-19 crisis has already led to severe disruption of national/international tourism. However, the disruption of tourism somehow supports the conservation of wildlife and local ecosystem, by funding anti-approaching and enforcement activities and providing economic opportunities for citizens living near the national park. It offers the potential to link wild life protection with economic opportunities. Furthermore, increased opportunities provided by international tourism on wildlife protection is also an encouragement on reduction of wild meat trade.

5 Firms in tourism

Tourism industry is one of the hardest-hit by the pandemic since it is a labor-intensive industry with many workers at risk. There are several researches on firms in tourism. Abu Elnasr E. Sobaih's team examined the impact of the pandemic on small tourism-related enterprises, including hospitality enterprises, restaurants, hotels and other enterprises. They also examined the mediating effect of performance related to those enterprises' resilience and sustainable development.

Table 2 The status of sampled enterprises

		restaurants	hotels
Years in operation	Less than 10 years	68(21%)	43(14%)
	10 to 20 years	98(30%)	110(36%)
	Over 20 years	159(49%)	152(50%)
Current level of operation(compared to same time last year)	<20%	29(9%)	180(59%)
	20 to 40%	150(46%)	125(41%)
	41 to 60%	146(45%)	0
	>60%	0	0
Expected pandemic date	1 st August 2020	0	0
	1 st November 2020	32(10%)	0
	1 st February 2021	130(46%)	122(40%)
	1 st May 2021	163(50%)	183(60%)
Satisfaction with governmental support	Strongly dissatisfied	65(20%)	76(25%)
	Dissatisfied	130(40%)	138(45%)
	Neutral	81(25%)	76(25%)
	Satisfied	49(15%)	15(5%)
	Strongly satisfied	0	0

Respondents were asked about their current level of operation. As a result, hotels were highly affected by the pandemic as 59% of hotels were below 20% of operation with maximum operation of 40% for 41% of hotels (Table 2). Restaurants were able to adapt to the pandemic than hotels because they could switch from serving foods at restaurants to home delivery. Apart from that, most of the respondents were pessimistic about the effect of the pandemic and expected end date (Table 2). In addition, most of the respondents were dissatisfied with governmental support (Table 2). In a word, research has shown that these enterprises have been heavily affected by the pandemic and face a difficulty to adjust to COVID-19 without external support [6].

In another group, Alexander and his team had a research on America's small businesses' adjustment on CARES Act and economic disruption caused by COVID-19 in the early stage of pandemic [7]. The team gathered information from the survey of more than 5800 small businesses that were members of the Alignable Business Network. The survey mainly focused on four questions, including the current level of financial fragility among small businesses, the extent to which small businesses have already temporarily closed and laid off employees, expectations about how long the crisis will last -and how this is affecting business decisions and decisions about whether to seek funding through the CARES Act. As a conclusion, they found that there has been massive disorder among small businesses. For instance, if the crisis lasts for six months, the chances of survival for firms in tourism and lodging drops to 27-percent. Furthermore, if the crisis lasts for more than four months, the firms in particularly exposed industries, which need close contact between people such as restaurants, tourism, and personal services, project that they will find it extremely difficult to stay in business.

6 Domestic tourism as recovery strategy

Tourism is significant in gross domestic product for

countries such as Spain and Zimbabwe. The growth of tourism revised downwards because of the pandemic. There was an estimation that 75 million jobs have been lost following the suspension of international travel and about 2.1 trillion US dollars are likely to lose in revenue due to the closure of border. There was a group having a research on the capacity of using domestic tourism to relieve tourism industry crisis in Spain. Tourism sector contributes 12.2% to Spanish GDP and employs 12.8% of the total workforce, and Buhalis warned that no considerable international tourism activity could be expected in the summer of 2020, which means that domestic tourism will play an important role during recovery phase. The figure about tourism in Spain is shown in Table 3. The conclusion is that, the reduction in overnight stays is expected to be approximately 42.64% at the 99% confidence level. Moreover, the negative impact of the pandemic is not homogeneous among Spanish regions, producing decrease from 35 to 60%, due to the historical volatility of a region's tourism demand. In a word, the negative impact of the pandemic on Spanish domestic tourism is really high [8].

However, Zimbabwe tried to leverage domestic tourism as a strategy of building up economic resilience. Though this strategy was not new in literature, promoting domestic tourism as a destination recovery and resilience building strategy during pandemics in destinations with prolonged political and economic crises like Zimbabwe was limited. Erisher Woyo from University of Namibia led a qualitative study in order to examine the sustainability of this strategy in a destination with ongoing political and economic challenges [10]. The study examined the perceptions of demand and supply participants regarding the promotion of domestic tourism as a post-pandemic recovery and resilience building strategy in Zimbabwe. The data were collected from online interviews between May and June in 2020. Interviews were analyzed by thematic analysis. As a conclusion, firstly, using demand analysis, many

Table 3 Inbound, domestic and outbound tourism in Spain

	2016	2017	2018	2019
Inbound tourism(I)	75,315,008	81,868,522	82,808,413	83,509,153
Domestic tourism(D)	166,218,791	176,399,801	176,772,352	173,754,971
Outbound tourism(O)	15,732,052	17,289,487	19,307,118	20,119,745
Internal tourism(D+I)	241,533,799	258,268,323	259,580,765	257,264,124
Share of domestic tourism in internal tourism	68.82%	68.30%	68.10%	67.54%

Source: Elaborated by the authors from data from the Spanish Statistical Office [9]

domestic tourists in Zimbabwe cannot afford to travel for leisure; secondly, many supply participants thought that it cannot be sustainable due to the unwillingness to pay premium prices; thirdly, the performance of economy was described as the primary deterrent of promotion of domestic tourism.

7 Bridging travel and travel tech

Travel industry and travel tech has worked separately for many years due to knowledge, resource and financial limitations. However, the pandemic posed a unique opportunity to seek collaboration. Mizrachi's team discussed the business potential behind this collaboration in short and long runs [11].

In short run, as the number of new COVID-19 cases began to fall due to the roll-out of vaccine, many countries started to ease lockdown restrictions to revive economies. However, because of perceived health risk from COVID-19, many tourists are reluctant to book a trip to countries where COVID-19 cases are still high. Therefore, it is necessary to make tourists know that it is safe to travel and travel technology can help to mediate that. For example, audio guide devices in museums can be replaced by apps so that visitors can could enjoy the same content on their smartphones without health concerns due to possible contamination from these devices. In addition, booking tools such as Uber and Booking could allow greater control on facilities usage, and information about venue regulation and measures to ensure guests' safety could be updated regularly.

In long run, the spread of COVID-19 offers a unique opportunity to build the technological foundations for travel industry, which can address main challenges such as traffic control in overcrowded destinations and profiling of prospective visitors to a destination.

8 Conclusion

Tourism has inevitably been affected by the pandemic, and its disruption also had an influence on related industries such as retail payments, wildlife conservation and firms in tourism and lodging. However, some new opportunities occurred due to the pandemic. For instance, the pandemic creates opportunities to transform existing e-tourism and collaborate travel and travel tech.

References

1. Ranasinghe, R., et al. (2020). "Tourism after Corona: Impacts of Covid 19 Pandemic and Way Forward for Tourism, Hotel and Mice Industry in Sri Lanka." Social Science Electronic Publishing.
2. Gretzel, U., et al. (2020). "e-Tourism beyond COVID-19: a call for transformative research." *Information Technology & Tourism* 22(2): 187-203.
3. Kraenzlin, S., et al. (2020). "COVID-19 and regional shifts in Swiss retail payments." *Swiss Journal of Economics and Statistics* 156(1): 14.
4. Pantano, E., et al. (2020). "Competing during a pandemic? Retailers' ups and downs during the COVID-19 outbreak." *Journal of Business Research* 116: 209-213.
5. McNamara, J., et al. (2020). "COVID-19, Systemic Crisis, and Possible Implications for the Wild Meat Trade in Sub-Saharan Africa." *Environmental and Resource Economics* 76(4): 1045-1066.
6. Sobaih, A. E. E., et al. (2021). "Responses to COVID-19: The role of performance in the relationship between small hospitality enterprises' resilience and sustainable tourism development." *International Journal of Hospitality Management* 94: 102824.
7. Bartik, A., et al. (2020). "How are Small Businesses Adjusting to COVID-19? Early Evidence from a Survey." *SSRN Electronic Journal*.
8. Arbulú, I., et al. (2021). "Can domestic tourism relieve the COVID-19 tourist industry crisis? The case of Spain." *Journal of Destination Marketing & Management* 20: 100568.
9. INE. (2020). Instituto nacional de Estadística. (Spanish National Statistical Office). <https://www.ine.es/>.
10. Woyo, E. (2021). *The Sustainability of Using Domestic Tourism as a Post-COVID-19 Recovery Strategy in a Distressed Destination*, Cham, Springer International Publishing.
11. Mizrachi, I. and U. Gretzel (2020). "Collaborating against COVID-19: bridging travel and travel tech." *Information Technology & Tourism* 22(4): 489-496.