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**COVID-19 POVEIKIO KINIJOS TURIZMO SEKTORIAUS PLĖTRAI**

**ANALIZĖ: VARTOTOJŲ POŽIŪRIS**

**THE ANALYSIS OF IMPACT OF COVID-19 ON TOURISM SECTOR**

**DEVELOPMENT IN CHINA: CONSUMERS' APPROACH**

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## INTRODUCTION

**Relevance of the topic** Tourism is one of the most remarkable and growing sector, and this sector plays a vital role in economy of many countries and also globally drives the development of sustainable socioeconomic (Wakimin et al., 2018), since it can stimulate income, employment and promote growth of other sectors. Tourism sector is also the cluster of various production units in different industries which offers goods and services to visitors according to their demands, and these industries all depend on visitors since visitor acquisition take up an important share of the supply. Therefore, there will be a significant reduction in the production of those industries with the absence of visitors. It happened in 2020 which is the worst record of tourism, and the international arrivals reduced by 74% because of the pandemic (World Tourism Organization, 2021). COVID-19 is an infectious disease which is also known as corona virus disease, since it was identified in 2019 and has resulted in an epidemic owing to SARS-CoV-2 (Johns Hopkins Medicine, 2022). The pandemic constantly threaten people's life and health, and in early 2020, Emergency Committee of World Health Organization (WHO) agreed that the outbreak of COVID-19 turned into a Public Health Emergency of International Concern during their second meeting (World Health Organization, 2020). It made global governments start to realize the seriousness of such a situation, besides the spread of COVID-19 has had some devastating influences on various sectors, such as political, social, economic and cultural sectors. Therefore, governments across the world have taken unprecedented measures which mainly focus on limiting contact between people (Hirsch, 2020). The prominent emergency protocol is lockdown which directly forces self-isolation and restricts social distancing among people, and it has helped reduce the rate of disease transmission. However, tourism sector is hit seriously by partial and full lockdown policy around the world because it directly prevents people from visiting domestic and international resorts. Since May 2022, many countries across the world have totally lifted the restriction of on tourism but there are still some travel restrictions in order to control the spread of COVID-19 applied by most countries, for example China insisted the Zero COVID-19 policy till January 8, 2023 (Zhou, 2022). Besides, other service sectors can be operated continuously by online platforms, while it is a challenge for tourism sector because of the limitation of electronic tourism and the lack of technological advancement (Xiang et al., 2021). To some extent, COVID-19 has a serious impact on tourism sector and its development.

Owing to the importance of tourism sector and the topicality of COVID-19, the study is totally related to the current social problems.

**The level of exploration of the topic** As for studying the influences of COVID-19 on tourism sector development, the impacts can be mainly classified into challenges and chances based on previous researches. From the perspective of adverse impacts, there are challenges in the economy, policy and society of tourism and these challenges are embodied in every subjects of tourism supply chain. In particular, it is still a challenging situation for China to recover the tourism industry under the zero COVID-19 policy. In the process of normal epidemic prevention and control, tourism companies and other suppliers find it hard to adapt to the rapid changes in market consumption patterns during the short-term (Li and Sheng, 2020). And also since the increase of the operating costs and management costs, as well as the uncertainty of the epidemic on the economic operation, most investors are fearful about investing in relevant industry (Geng and Yang, 2021). Therefore, the vulnerability of the tourism supply system has been exacerbated under strict policy and such fragility of industry further increases the pressure, work anxiety, etc. for tourism practitioners. From the perspective of favorable impacts, firstly the innovation of technology and digitalization are regarded as the future of tourism (Huang et al., 2016; Rao and Krantz, 2020). Owing to the danger of COVID-19, it accelerates the development of technology and digitalization in the tourism industry and leads to the further development of the tourism sector. For instance, to reduce the human-to-human interaction, many hotels have already implemented robots to provide relevant hotel services (Afsarmanesh and Camarinha-Matos, 2000; Palmer and McCole, 2000). Besides, the crisis also brings the opportunities to transform the relationship of tourism with nature and culture. According to the UNWTO (2022 a), it is time to reconsider how the tourism sector influences natural resources and ecosystems, and how tourism is developed and transformed to ecotourism and advocate sustainable tourism. At the same time, to improve the visitors' experience, the new trend is developing cultural tourism including visiting cultural heritage and buying cultural products. However, based on the framework of tourism supply chain, if consumers don't have willingness to pay, awareness of sustainable development and even their behaviors are affected by subjective factors (psychology) and objective factors (income, education, etc.), the loss of purchase power might be increasing and meanwhile it impacts on the investment and operation of suppliers and tourism operators and finally influence the development of tourism sector. Therefore, there is a need to research

how consumers' attitude and behaviors towards challenges and chances of tourism sector development and whether they will be in favor of the new trend. There are many studies focusing on one specific impacts (economy) of COVID-19 on tourism sector or the positive and negative impacts of COVID-19 on tourism sector and predict the future development, or the relationship between tourism sector and tourism supply chain under COVID -19 and how COVID-19 affects the tourists behaviors (also attitude and choices), however, just several studies mainly concentrate on the relationship between the impacts of COVID-19 and tourism sector development, and it also shows tourism sector development still needs to be extensively analyzed. Thus, this study uses the structure of tourism supply chain and considers consumers as one of the affected subjects of COVID-19, and researches how the consumers' attitudes and choices will impact on tourism sector development. In addition, the study focuses on China since China has stuck with the zero COVID-19 policy and a sequence of strict prevention and controls for a long time, even though most countries have relieved their relevant policies and prevention measures since May 2022.

**The novelty of the Master thesis** Research applies tourism supply chain as a framework to analyze the impacts of COVID-19 on tourism sector development. Besides, collecting data through questionnaire method and analyzing the influences through primary data. In addition, based on the level of exploration of the topic, the article focuses more on the connection between COVID19 and the development of tourism sector on the basis of the key subject (consumers) of tourism supply chain, in particular, consumers' attitudes.

**The aim of the Master thesis** The study aims to reveal the impacts of COVID-19 on the tourism sector in China and evaluate how consumers' attitudes and behaviors toward the tourism sector development.

**The objectives of the Master thesis** For achieving the aims and better analyzing the impacts, we mainly focus on 4 objectives:

- 1) To present the concept of the tourism sector, tourism development, tourism supply chain as well tourism form.
- 2) According to previous research, to summarize and critically present the direct and indirect impacts of COVID-19 on tourism sector development.
- 3) To analyze the current situation of China's tourism sector based on existed literature and reports, like what the change of tourism in China and how it has developed so far.

4) To analyze how the COVID-19 epidemic affect the consumers' tourism attitudes and behaviors by using the questionnaire and TPB framework.

5) To evaluate and conclude to what the attitudes, future behaviors and suggestions of consumers towards current tourism trend and and the tourism sector development.

**The methods deployed by the Master thesis** To obtain a comprehensive analysis, this paper adopts the questionnaire methodology to further research the attitude and choices of respondents to the new trend of tourism sector in China, and whether they support the tourism sector development. Meanwhile, we uses Cronbach's Alpha to test the reliability of the questionnaire, and applies KMO test and Bartlett test to ensure the validity of the questionnaire. Besides, Linear regression is our main method to reveal the relationship between the impact of COVID-19 and respondents' actual travel times, and then analyze the impacts of COVID-19 on consumers' tourism behaviors and tourism development.

**The problem of the Master thesis** In our study, we intend to answer these questions:

1) What are the direct and indirect influencing factors of COVID-19 on tourism sector development?

2) What are the attitudes and behaviors of consumers towards tourism sector development under COVID-19 in China?

**The description of the structure of the Master thesis** The structure of the study is: in the first section, the study focuses on the theories which includes the definition of tourism sector, supply chain and basic concepts of ecotourism, culture tourism and sustainable tourism. Besides, critically summarizing the direct and indirect influencing factors of COVID-19 on tourism sector development based on previous research and then stating the research gap. In addition, TPB framework is applied to further analyze the consumers' attitudes to the tourism sector development. The definition of tourism sector is for illustrating the scope of our study and mentioning the influencing factors is for explaining what causes the impacts. In the second section, the study mainly use questionnaire methodology to do the further analysis, and it also necessary to present the limitation of the study. And then we conclude how the attitudes and choices of consumers under the impacts of COVID-19 towards tourism sector development are and to what extent consumers support the development.

# **1 THORETICAL ASPECTS OF IMPACTS OF COVID-19 ON TOURISM SECTOR**

In this section, the basic concepts of tourism sector, tourism sector development and tourism form as well as tourism supply chain are defined according to extant literature, and in the part of tourism supply chain, the paper presents how COVID-19 influence on the four main subjects of tourism supply chain based on existing data and researches. Besides, to better understand what the attitudes and behaviors of consumers towards future development of tourism sector, we adopted the theory of planned behavior (TPB) which has been broadly applied in researching a variety of behaviors (Ajzen, 1991). In addition, the direct and indirect influencing factors of COVID-19 on tourism sector development are also clarified, as well as summarized how tourism sector and its development affected by COVID-19. Finally, the research gap will be discussed based on the current study.

## **1.1 The concepts of tourism sector, tourism development and tourism form**

### **1.1.1 Definition of tourism sector and tourism development**

Tourism sector is an economic sector related to tourism, and it is also known as tourism industry and travel industry (*Tourism industry*, 2022). Tourism sector is defined as a range of business as well as commercial and non-commercial organizations, which is entailed in delivering the tourism product. Besides, it focuses on linking the suppliers and customers who serve and demand tourism products and services through common targets (*TechnoFunc - Components of Tourism Industry*, 2022). However, owing to the diversity and width of tourism, tourism is not completely regarded as an industry and a sector by all scholars and specialists. Mill (1990) has stated that ‘tourism is not an industry, although it gives rise to a variety of industries’. In his perspective, tourism is considered as an activity which involves tourists in engaging. Although it is still complicated to clarify the comprehensive definition of tourism, in this paper, tourism belongs to an industry and it can be divided into 5 main sectors, they are accommodation sector, transport sector, attractions sector, tourism services sector and tourist boards’ sector. The specific components are conclude as figure 1.

### **Table 1**



*The summary of main tourism sectors*

<b>Accommodation sector</b>	<b>Transport sector</b>	<b>Attractions sector</b>	<b>Tourism services sector</b>	<b>Tourist boards' sector</b>
<ul style="list-style-type: none"> <li>◆ Hotel/motel chains</li> <li>◆ Farmhouses</li> <li>◆ Homestays</li> <li>◆ Hostels</li> <li>◆ Holiday centres</li> </ul>	<ul style="list-style-type: none"> <li>◆ Aviation</li> <li>◆ Railways</li> <li>◆ Bus/Tram /Subway</li> <li>◆ Ferries</li> <li>◆ Cars rental</li> </ul>	<ul style="list-style-type: none"> <li>◆ Heritage sites</li> <li>◆ Museums and galleries</li> <li>◆ Natural attractions</li> </ul>	<ul style="list-style-type: none"> <li>◆ Tour operators</li> <li>◆ Travel agents</li> <li>◆ Ancillary services(insurance/tour guide)</li> </ul>	<ul style="list-style-type: none"> <li>◆ Tourist information centres</li> <li>◆ International organisations(EU/ASEAN network)</li> <li>◆ National /Regional tourist boards</li> </ul>

Source: compiled by the author

Tourism sectors has plenty of multifaceted characteristics. In essence, it is a service industry offering diverse products and services which are consumed at the point of production (Chadwick, 2012). Organizationally, transnational corporations dominate the general process, however, it is operationally based on the mutual efforts of large numbers of small and medium-sized enterprises. It proves that why there are many sub-sectors in one large tourism sector, since the quantities of enterprises and even national governments make effort to develop tourism, such as retail travel agents, national tourists offices.

Tourism sectors play a significant role in economic growth and development in most countries (Khalid, Okafor, & Aziz, 2019; Khalid, Okafor, & Shafiullah, 2019; Okafor & Teo, 2019; Shafiullah, Okafor, & Khalid, 2018). Since it helps to create more employment, increase income and promote the development of countries' infrastructures, as well as stimulate demand and growth in other industries. According to the report of World Travel and Tourism Council (Jus, 2019), tourism sector contributed 10.3% of global GDP in 2019 and 10.3% of all employment, which are based on the data from 185 economies and 25 geographic or economic regions. These authentic data can prove the certain importance and benefits of tourism sectors and the necessity of developing tourism sectors.

Tourism development is the process of establishing and sustaining the tourism sectors. On an elementary level, the process requires to create strategies and plans to increase and encourage tourism for a certain destination (Abir & Khan, 2022). Besides, development is based

on undesirable conditions, and it can be a change in the existing conditions and also a build a new path (Esteve, 2018). There are many aspects can be involved in tourism development, such as changing in the way of reserving hotel and tickets, changing in the choice of mode of transportation, and changing in tourism form or developing a sustainable form (like ecotourism). These components are related to detailed sectors and are the main elements we discuss in the paper, and to some extent, the tourism development involves in the development of certain tourism sectors which are based on the aim of tourism planning in different periods.

### 1.1.2 Definition of Ecotourism

According to the International ecotourism society(TIES), ecotourism is officially defined as having a responsibility for natural areas when traveling, including protecting the environment, interpreting and educating local residence to sustain the living standard of them (TIES, 2009). From the side of hosts, the ecotourism can also be explained as a mindset of generating value for local people and the industry, and it not only make visitors enjoy remarkable experiences but also foster them have the sensitivity to local environmental, political or social issues (*What is Ecotourism? Definition, Meaning and Examples of Ecotourism*, 2020). The characteristics of ecotourism can be described as respecting and supporting local efforts of conservation, providing education for tourists and local communities, etc. (Manatee Sightseeing & Wildlife Adventures, 2022).

There are many types of ecotourism and tourists can experience different forms based on their preferences. We conclude and list few forms shown as Table 2.

**Table 2**

*The forms of ecotourism*

<b>Form</b>	<b>Definition</b>	<b>Examples</b>
Eco-lodging	Choosing an accommodation following the environmental awareness	Eco-friendly hotel; bird watching; kayaking
Agro-tourism	Visiting farm communities or volunteering	Learning sustainable farming methods in the farm
Community Development	Relieving negative impacts of modernization and mass tourism by volunteering	Becoming volunteers in museums or galleries

Eco Tours	Visiting to exotic or endangered areas in order to increase awareness of the region and support conservation	Hiking, rock climbing, rafting, caving
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Source: What is Ecotourism? (and why you should do it). Burland, H. (2022).

It can be seen that the forms of ecotourism are quite diverse which can give everyone a chance to participate in. Since ecotourism focuses more on long-term sustainability, and its core purpose is to create the chance which everyone can get benefits equally. It also means that ecotourism is not only for sustaining the local ecosystem and protecting the resource but also cherish local communities and culture. In order to achieve this aim, it needs local residences to positively participate to stimulate the development of local economy and improve the living standard, besides it should be emphasized that tourists need to directly and indirectly accept relevant environment-protecting education, and ectourism managers also should make efforts to conserve the nature in the local area.

### **1.1.3 Definition of cultural tourism**

The World Tourism Organisation (1985) widely define cultural tourism as the movements of people who meet the human diverse needs, which is tending to improve the cultural level of the individual and acquire new knowledge, experience and encounter.<sup>1</sup> From a narrow perspective, cultural tourism is mainly associated with education, and sometimes it can be called as educational cultural tourism (Swarbrooke and Harner, 2007). According to the definition adopted by the UNWTO General Assembly, cultural tourism is a sort of tourism activity in which the tourists aim to learn, explore, experience and consume the tangible as well as intangible cultural attractions or products in a tourism destination. These tourism attractions or products relate to the society emotionally, intellectually and materially, and it covers arts and architecture, historical and cultural heritage, culinary heritage, music and dance, literature, value systems, religion and traditions (Richards, 2018). It can be generalized that cultural tourism means individual or group of people move from their residence to another places. And they experience new lifestyle and culture differences, as well as learn and appreciate every aspects of

<sup>1</sup> WTO (World Tourism Organization): 1985

local culture, such as, art, architecture, historical values, language, traditional clothing, religious beliefs and customs, etc.

#### 1.1.4 Definition of sustainable tourism

Sustainable tourism involves the aspects of economy, society and environment as well as covers the concern to improve tourists’ experience and meet the needs of host communities, which all belong to the part of complete tourism experience. Coming up with such a concept is aimed at managing all resources by a way, which can meet the needs of economy, society and aesthetic, meanwhile sustain cultural integrity, essential ecological processes, and biological diversity (UNWTO, 2022b). Zeng et al. Stress that sustainable tourism should pay attention to environmental protection, social equity, cultural diversity and the living standard, besides a dynamic economy which is creating jobs and prosperity also need to be concerned (2022).

According to previous studies, they are many forms of tourism can be regarded as the part of ecotourism, and we mainly conclude 3 of them (Table 3).

**Table 3**

*The forms of sustainable tourism*

<b>Form</b>	<b>Definition</b>
Ecotourism (green tourism)	It can be described as respecting and supporting local efforts of conservation, providing education for tourists and local communities, etc. (Manatee Sightseeing & Wildlife Adventures, 2022).
Solidarity tourism	It aims at supporting people who are suffering from the crisis because of the empathy, responsibility, a sense of unity, etc. (Dolnicar & McCabe, 2022, p. 1)
Fair tourism	It can be described that it focuses more on maximizing the positive impacts of tourism (The Finnish Association for Fair Tourism, 2022).

Source: complied by the author

In fact, if all forms of tourism can be planned, developed and managed appropriately, and then there is the potential that those forms of tourism can turn to be sustainable (Fennell & Cooper, 2020). However, it is a continuous process to realize sustainable tourism which requires

constant monitoring and proper intervening, and even taking certain measures to do the prevention or correction when it is necessary (UNWTO, 2022a). There is a need to follow the sustainable tourism development which requires improving and creating variety of situation based on limited resources. During the process of development, all relevant stakeholders need to be informed to participate, and the local community should take part in leading and managing the tourism resources to attract more participation and build consensus among stakeholders. When everyone enjoys the benefit from the tourism resources, and the concept of cultural heritage preservation and environmental protection can further pass to next generation, thus a virtuous circle is formed.

## 1.2 Tourism supply chain

### 1.2.1 Definition of tourism supply chain

As for supply chain, there are many relevant researches concentrating on manufacturing industry, while tourism supply chain is still being explored. In 1975, the United Nations World Tourism Organization (UNWTO) came up with the distribution channels of the tourism industry on the report (UNWTO, 1975). The term distribution channel concentrates on distribution and marketing activities and it can be narrowly defined as a supply chain which is mainly targeted at the two activities. This is the relevant concept of tourism supply chain at early time.

With the development of tourism, there are more literature about tourism supply chain than those during previous time. We also summarize and list them (Table 4).

**Table 4**

*The summary of the definition of tourism supply chain*

<b>Authors</b>	<b>The definition of tourism supply chain</b>
Tapper and Font (2004)	TSC is a chain that tourism suppliers provide all tourism products and services to consumers
Zhang et al. (2009)	Tourism Supply Chain (TSC) as a network of tourism organizations engaged in a series of diverse tourism products and services, such as flights and accommodation.
SH. Ma et al. (2000)	Wider viewpoint: the supply chain as a corporate structure, and

	the all enterprise are the core of the chain, besides it is not only a supply chain but also a value-added chain, bringing benefits to relevant enterprises
Chen and Yi (2010)	There is the link among all tourist activities in TSC, which involves products for tourists and their experiences, and it is for achieving the goal of sharing resources as well as reducing relevant costs.

Source: complied by the author

From the perspective of distributions to consumer, Tapper and Font (2004) have stated that TSC is a chain that tourism suppliers provide all tourism products and services to consumers. Zhang et al. (2009) further have defined the Tourism Supply Chain (TSC) as a network of tourism organizations engaged in a series of diverse tourism products and services, such as flights and accommodation. It comprises a wide range of subjects in both private and public sector, including from suppliers, producers, purchasers and consumers to ensure the products and services meet demands by greatly coordination. From a wider viewpoint, SH. Ma et al. (2000) have described the supply chain as a corporate structure, and the all enterprise are the core of the chain, besides it is not only a supply chain but also a value-added chain, bringing benefits to relevant enterprises. (Chen & Yi, 2010) have defined that there is the link among all tourist activities in TSC, which involves products for tourists and their experiences, and it is for achieving the goal of sharing resources as well as reducing relevant costs. They stress the existence of all enterprises and the connection among them.

### **1.2.2 Structure of tourism supply chain**

The structure of the tourism supply chain has also been researched broadly by many scholars and specialists under the development of tourism. Kaukal and Werthner (2000) summarize a tourism value chain which involves the main four components, and they are customers, travel agencies, tour operators and suppliers. The suppliers at the first stage provide tourism services, such as catering and accommodation, as well as the operators are in charge of collecting and summarizing those components information and to provide packed services. As

for travel agencies, it plays a vital role between operators and potential customers and consumers. Eduardo et al. (2004) point out that there is a value-added chain among enterprises as an extension of tourism products, including tourism retailers such as tour operators, tour wholesalers or local operators. The services, which are from the retailers of tourist attractions, hotels, car rental companies, airlines and so on, together form a tourism supply chain. Zhang et al. (2009) believe that the tourism supply chain includes not only private enterprises, but also other participants, like the public sector. During the supply process, it covers the multi-level supply of tourism products, services as well as marketing activities. Ling et al. (2014) pay more attention to elaborate on the tour operators, and in their perspectives, tour operators are responsible for selling tourism products in the market while local operators focus on providing tourism services at the destination. To sum up, tourism suppliers, tourism integrators (operators and travel agents) and consumers are the basic components of a complete tourism supply chain (Figure 1).

### **Figure 1**

The simplified structure of tourism supply chain



Source: The tourism supply chain(Kaukal and Werthner, 2000)

### **1.2.3 Tourism supply chain and COVID-19**

During the COVID-19 epidemic, the whole economy can be separated into two main sectors, one is the non-contact intensive sector, such as e-booking and online tours, and the other one is the contact-intensive sector which has a high risk of contagion (Blanchard & Illing, 2021) The contact-intensive sector mainly refers to retail trade, transport, accommodation and food services, which are closely linked to tourism sectors and especially to relevant suppliers and also heavily impacted by the COVID-19 epidemic (Andersson et al., 2021). Therefore, every time any disaster occurs in a certain area or the whole world, the supply chains are disrupted. Such disruptions have an influence on the flow of goods and services for any supply chain (Craighead

et al., 2007). The outbreak of COVID-19 gradually disrupted supply chains worldwide. Tourism supply chain as one of the most significant sections of service supply chains has been hit heavily in comparison to manufacturing supply chains (Mittal & Sinha, 2021). The impact of COVID-19 not only focuses on the whole chain but every main component of the chain, including tourism suppliers, tourism operators, and travel agencies as well as consumers.

Tourism suppliers are one of the main components of tourism supply chain, and they can be specified as accommodation companies, transport companies, food and beverage companies as well as entertainment companies, etc. (Zhang et al., 2009; Tigu and Calaretu, 2013). These suppliers are traditional suppliers who mainly focus on their own business operations and distribution through tourism operators in the past years while now gradually own their direct sales channels for reducing the cost. Under direct sales, suppliers tend to reach out to customers actively, strengthen the insights to consumers and gain satisfaction and loyalty by personalized service. However, owing to COVID-19, the structure of traditional suppliers has been influenced severely by finance and business. Therefore, they have to adjust the current structure and find new financing or capital increases in order to overcome the crisis (Gilabert, 2021). Since the outbreak of COVID-19 happened, transport companies have been impacted firstly and seriously. There is a rapid declining trend in the transportation industry which is also regarded as the upstream tourism industry. Therefore, the transportation department has adopted various measures to cope with the impacts of COVID-19. Folinis and Metaxas (2020) mentioned that after the outbreak of COVID-19, a number of airlines have been canceling flights whatever China is as the starting point or destination, and all relevant tourism activities have been disrupted. Meanwhile, the Civil Aviation Administration of China (CAAC) reduced the number of flights, especially in the area of serious pandemic situation, and the Railway Administration of the People's Republic of China also extended the time for online free refund procedures (Mengying, 2020). Generally speaking, there is always a travel rush during the holidays of the Spring Festival in China, which is regarded as a big migration and usually adds pressure on certain routes of railway and highway traffic (Sun & Bao, 2022). Although the transport industry gradually recovered from COVID-19 and passenger traffic was increasing during Spring Festival in 2022, it can still see there was a sharp reduction in passenger traffic in 2020 and 2021 owing to the impacts of COVID-19 (Figure 2). During the period, tourism traffic was mostly suspended. From the domestic aspect, it was basically stopped because of the lockdown and other



preventive measures. From the aspect of inbound and outbound tourism, there were plenty of flights grounded due to immigration control (Fengjun, 2020).

**Table 5**

*Passenger Traffic (million) of Highway in China during Spring Festival from 2010 to 2022*

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Passenger Traffic of Highway	10.5	13.8	9.9	7	5	0	7	0.8	1.27	-0.8	-73	-43.2	-34.52

Source: CEICDATA database, 2022 and concluded by the author

With the improvement of technology and changes in consumers preference, traditional tourism operators and travel agencies gradually don't dominate the tourism market and its business volume has started to fall off before the outbreak of COVID-19. Nevertheless, tourism operators and travel agencies have been influenced further owing to the pandemic. On the one hand, it encourages traditional integrators to transform the current operation modes and promotes the development of online travel agencies (OTAs) for adapting the new trend of flexible and personalized consumption (Gilabert, 2021). On the other hand, tour operators and travel agents are also affected severely whatever they are individual tour guides or large multinational operators. Since 2019, tourism operators and travel agents have faced many challenges due to COVID-19 and relevant preventive measures. One of the most obvious challenges is that the majority of tour operators and travel agents have to bear the unexpected and extra costs which are generated when travel routes have been suspended and tourists have been left stranded after a coronavirus outbreak sparked a lockdown. According to the report of World Tourism Organization and Asian Development Bank (2022), all tour operators and travel agents still need to cope with multiple obstacles when reinstating tours, even in some places with the approval of releasing those restrictions from government public health regulations. When organizing and coordinating a tourism activity, it involves more inevitable human and financial

resources based on the COVID-19 public health guidelines.

Previous researches states that consumers not only emotively and physically choose, buy and use the product or service in a supply chain (Abbasi & Torkamani, 2010), but they also decide whether obtain ideas and undertake the decision actions (Mowen, 1993; Engel, Blackwell & Miniard, 1986). These can all be defined as a part of consumer behavior. There are many researches in regard to consumer behavior in tourism and marketing, and consumer behavior is also typically named 'travel behavior' or 'tourist behavior' as the terms (Cohen et al., 2013). In tourism fields, consumer behavior involves the whole process of tourism, including pre-visit, on-site and post-visit to a particular destination (Dixit et al., 2019). As for the constraints in tourism behavior, it not only covers stress, depression and religion as well as structural constraints (Gilbert and Hudson, 2000), but also the impacts from external environments (Mansoor and Jalal, 2010) and perceived risk (Perpina et al., 2020). Therefore, it can be known that the decision-making process of tourists is affected by the special features of destination and structural situation of markets (Choi et al., 2011). Covid-19 has already had a huge level of influence on society, economy, tourism, and long-term health of those who come down with it (Gossling et al., 2020). Since there is an enduring consequences on travel and relevant distribution and packaging because of environmental pressure, policies and global panic related to COVID-19. According to previous studies, Wen et al., (2020) found that Covid-19 had an impact on Chinese citizens' lifestyles and travel. For instance, when they find they are out of conditions due to COVID-19 and also know there are many people infected, they will choose not to travel during Chinese public vacations or visit rural places. Besides, people also will opt to experience online tourism or take trips. Wen et al., (2020) also discussed that Chinese travelers will be more prudent in the choices of travel destination because under the prejudicial reports from media, the discrimination is more prevalent with the outburst of COVID-19 worldwide.

In our study, we mainly focus on consumers as one of the most vital components in TSC and more precisely, pay attention to consumers' behaviors which cover consumer preference and choices. Although there are a number of previous papers researching the impacts of COVID-19 on tourism suppliers, tourism operators and tourist behaviors as well as the impacts of consumer behavior on tourism industry, only several studies focus on the impacts of COVID-19 on tourism sector development which is based on consumers' preference and their choices. Therefore, this article uses the framework of tourism supply chain to do the further research and discuss

whether consumers' choices will influence the transformation of tourism and promotion of new trend-tourism technology and tourism digitalization.

### **1.3 Theory of planned behavior (TPB) and tourist behaviors**

Theory of planned behavior (TPB) is usually adopted to study people social behaviors in diverse fields and it can assist us predict the behaviors of individuals (Ajzen, 1991), and it is mainly influenced by three aspects, respectively from attitude towards the behavior, subjective norm, and perceived behavior control (Ajzen, 1985). Firstly, Attitude Towards Behavior. It refers to positive or negative assessment which is based on the result of the certain behavior (Ajzen, 2020). The attitude is subjectively decided by individuals and it may have a positive effect on human's intention of behavior (McIntyre and Roggenbuck, 1998). Besides, relatives, friends, family members and other people which individuals pay attention to are can be a factor to affect individuals' behaviors, and it is named as subjective norms (Ajzen, 1991). Lastly, perceived behavioral control involves the ability of humans' time, chances, money, skills, etc. (Ajzen, 2020). The perception of behavioral control will be increased when individual has more available resources and opportunities (Ajzen, 2025). With the change of the three factors, behavioral intention will also positively or negatively change. Meanwhile, the strong will finally impact on the behaviors of individuals.

However, Sutton (1994) and Bagozzi and Natarajan (2000) proved that humans' actual behavior is impacted by past behavior habits, motivation, anticipated emotions, etc. Ajzen and Kruglanski (2019) came up with the theory of reasoned goal pursuit (TRGP) and considered that the prerequisite of intention is motivation, besides, the motivation is determined by attitudes and subjective norms, and perceived behavioral control can adjust how motivation influences on intention. Thus, we additionally consider the motivation when we adopt TPB framework in our methodology section.

Understanding tourist behavior is important to predict the sustainability and development of tourism sector. Therefore, it is worthy to be considered when we study the development of tourism sector. Tourist behavior refers to the process of consumer behavior in the purchase, acceptance and abandonment of tourist services (Juvan et al., 1970). When researching the tourist behavior, there are 3 aspects should be considered. Firstly, socio-demographic factors. It

includes tourists' age, gender, income, education, lifestyle, etc. Besides, the resources of the destination, such as tourist attractions, facilities, services, etc. In addition, the third is inevitably situational factors, such as weather conditions, social, cultural and financial conditions of tourist destinations (Wu et al., 2011) .

TPB framework is broadly applied in many previous studies to understand the thoughts of tourists about travel and predict future behaviors. In particular, during the COVID-19 epidemic, TPB has been widely applied to research tourists' behaviors, such as the effect of COVID-19 on tourists' future behaviors (Wachyuni and Kusumaningrum, 2020) and Changes in travel behaviors and intentions during the COVID-19 pandemic and recovery period (Fan et al., 2023). However, under the impact of COVID-19, the relationship between tourists' behaviors and tourism sector development, and the tourists' attitude and behavior to cultural tourism and ecotourism are seldom described in previous articles, therefore, it is the one of main research points in this paper.

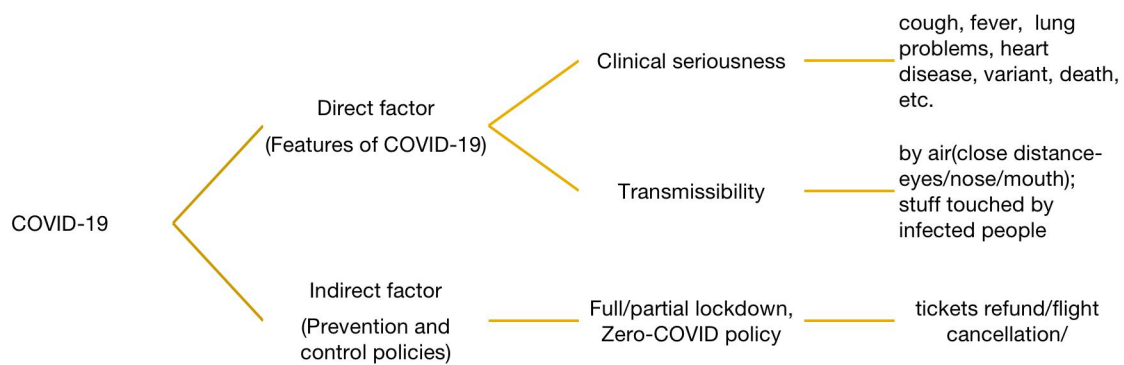
## **1.4 Impact of COVID-19 on tourism sector development**

### **1.4.1 Influencing factors on tourism sector development**

As for the influencing factors, there are two main classifications: one is the direct influencing factor, and another one is the indirect factor. For the direct influencing factor, this paper focuses on the threat and features of COVID-19 itself. For the indirect one, the prevention and control policy which aims to cope with the threat and features of COVID-19 is mainly discussed. These factors are presented based on the framework of tourism supply chain and crucially embodied in consumers (as Figure 3 shows).

#### **Figure 2**

Influencing factors on tourism sector development



Source: compiled by the author

### 1) Direct influencing factor

Compared to previous virus, the severity of the Covid-19 pandemic is much higher because of several factors, such as infectious period, transmissibility and clinical seriousness as well as their combination (Wilder-Smith et al., 2020). According to the report of WHO(2022), by 5 September 2022, from global perspective, there have been over 6 hundred million confirmed cases of COVID-19, including 6,460,493 deaths. And the confirmed cases in China takes up around 1.09% of global amount, as well as the pandemic has also caused 25,019 deaths. COVID-19 itself is a kind of virus in essence and the serious virus has already resulted in higher mortality rate during recent years. Owing to the danger of COVID-19, it becomes the threat of all aspects of people and countries. Tourism sector and relevant development as one of the part of countries' economy are also directly impacted by the essence and features of COVID-19 as well as embodied in tourism suppliers, tourism operators, travel agents and consumers(tourists or customers). In particular, the influence of the epidemic on consumers is not only about psychology and physiology but tourism preference, choices and final tourism behaviors. According to previous literature, it shows that there is a connection between the pandemic and tourists' behavior (Cahyanto et al., 2016).

The high hazard and easy spread of COVID-19 has increased the perception of people to potential physical health risks and psychological risks, and even caused 'social anxiety' or 'travel fear'. The development of the epidemic and the effectiveness of prevention and control not only directly affect the physical and mental health of individuals, but also affect social and psychological behaviors such as interpersonal trust, consumption motivation, and behavior (Chen et al., 2020). Under the influence of the epidemic, Chinese residents avoid traveling to

reduce the probability of coming down with the virus due to perceived risks (Neuburger and Egger, 2021), and meanwhile the consumption confidence, travel willingness and abilities have dropped significantly. Based on previous research, such behavior is because there is a value between the tourists' capabilities to avoid diseases and perceived health vulnerability after travel (Jonas et al., 2005).

Although the threat of COVID-19 and the relevant prevention policy (China's zero-COVID policy) still exists in our daily life, there is still a potential demand for tourism to residents because of tourism spiritual and other functions. Under the circumstance of regional control, intra-provincial, rural and eco-tours have become vital travel products during the pandemic. Wang Qingsheng and Liu Shihan did a questionnaire survey and found that the demand for intra-provincial tourism, natural scenery and ecotourism, and self-driving tourism will be more popular (2020). Other studies have also proved that under the influence of COVID-19, rural tourism (Feng et al., 2020), history and culture tourism (Wang et al., 2020), and self-driving tourism have ushered in new chance of development and become a new trend.

## 2) Indirect influencing factors

Wuhan, one of cities in China, is the first city of experiencing lockdown since many cases of COVID-19 happened in Wuhan. Starting from January 23 of 2020, industries, business and residents' travel (even going out their communities) were all completely restricted and even stopped. According to the level of severe situation of COVID-19, many cities and provinces of China all have taken measures of lockdowns and also other countries follow this policy based on their own situations.

Damage to tourism is resulted by COVID-19, and quarantine measures and relevant policies have intensified the loss of tourism suppliers and national budget. Richards and Morrill (2020) stated that the uncertainty of economy and travel restrictions are the main reason why the business presents a gloomy status. In the process of prevention and control of the epidemic, tourism economic activities have been seriously impeded, resulting in the disruption of tourist travel, refunds of relevant tourism sectors, cancellation of travel business, and suspension of tourism traffic. In 2022, there are many countries trying to get back to the normal life as pre-COVID-19 after lifting the restrictions and canceling the relevant requirements. However, China has stuck with 'zero COVID-19' policy all the time and still has taken the strict measures,

like quarantine policy, regional lockdowns and COVID-19 testing. Therefore, when traveling in the mainland China, tourists in China not only need to consider the prevention and control policy of the tourist source and tourist destination (whether there are medium and high-risk areas, and whether there is a need to do collective quarantine or home isolation, etc.), but also take the sanitation environment of the tourist destination and the situation of travel convenience (whether nucleic acid testing is forcefully required and how many times people should do in a week) as well as other relevant situation into consideration. At the same time, the epidemic prevention measures and cultural connotation (Wang et al., 2020) of the tourist destination during the epidemic period will affect its tourism image and reputation in the mindsets of tourists, and then it will affect the travel choices of tourists and further influence the development of tourism sector in the long term. As for international travel, for the fact that some media have reported the relationship between COVID-19 Chinese in a spiteful and false way. And then the outburst of Covid-19 has also led to virus-related racism and xenophobia towards Chinese and Asian communities (Wong, 2020). Therefore, when only considering this situation, consumers will be more willing to travel to rural area in their own big cities, or to travel in the provinces or across the provinces of China.

Although lockdown has caused economy recession, industries disruption and relevant consequences, it still temporarily helps reduce the rate of infection and mortality and after that other countries also followed the relevant policy (Liu, 2020). Besides, quarantine and lockdown policy has had a huge impact on environmentally sensitive products, thus promoting and strengthening online tourism economic development under the stay-at-home consumption (Zhinmeng and Fangfu, 2020). For instance, technology-based tourism products and services, such as online exhibition and online sightseeing, have faced new opportunities of development.

#### **1.4.2 Impact of COVID-19 on tourism sector in China**

The COVID-19 epidemic has impacted tourism sector in China from diverse aspects. We mainly involves huge impacts on markets and industries, limitation of diverse types of tourism, chance of developing technology and digitalization and promoting new tourism trend.

With the global spread of COVID-19, its effects are not only about health issues but also affecting markets and industries, such as the travel and tourism industry, which has the

responsibility for the transmissibility of the epidemic and also cause a damage to other industries, as well as at the same time is most affected by the pandemic (Gössling et al., 2020; Spalding et al., 2020). Since the spread of the COVID-19 pandemic is faster than expected, which has seriously influenced the prospects and future of global economic growth and the confidence of all parties (Maital et al., 2020). In 2020, the number of domestic tourists in China was 2.879 billion, which was decreased by 52.1% compared to the same period of last year, and also there was a decline in domestic tourism revenue accounting for 61.1% in comparison of last year. By 2021, the domestic tourism situation has gradually improved compared to the situation in 2020. Chinese travelers have traditional preferences for all-inclusive package tours or group travel when visiting destinations (Chen et al., 2020; Huang et al., 2010; Meng, 2010), but gradually the preference turns to rural tourism and self-driving tourism due to the threat and hazard of COVID-19. However, most tourism companies still can't promote the growth of relevant tourism markets since they are restricted by their market scales. Meanwhile, in the process of normal epidemic prevention and control, it is difficult for tourism companies to adapt to the rapid changes in market consumption patterns during the short-term (Li and Sheng, 2021). And also as the increase of the operating costs and management costs, as well as the uncertain impact of the epidemic on the economic operation, most investors are fearful about investing in relevant industry (Geng and Yang, 2021). Therefore, the vulnerability of the tourism supply system has been exacerbated under strict policy. In addition, such fragility of industry further increase the pressure, work anxiety, etc. for tourism practitioners.

There are also impacts on different types of tourism. In terms of expenditure, China is regarded as the largest outbound travel market around the whole world (Wang & Sheldon, 1996; Xiang et al, 2010). Therefore, once China takes measures to restrict the outbound tourism, it affect the world's economy and world's tourism industries. In accordance with the aim of 'dynamic clearing' and the requirements of COVID-19 prevention and control which stresses 'defensing input from outside and preventing internal rebound'. Many China ministries and commissions have issued a number of policies and measures to regulate the operation and management of tourism business (Tang et al., 2022). Firstly, many departments have carried on policies to restrict inbound and outbound tourism. Although the domestic epidemic is initially under control, the rapid spread and uncertainty of the epidemic has brought about a rapid increase in imported virus risks, and the mutation of the virus further threatens the domestic



situation. Therefore, the government strictly controls outbound and inbound tourism business by measures such as controlling the passenger load factor and canceling relevant business and qualifications. Secondly, multiple departments have issued control policies of cross-provincial tourism. At present, for areas with exist the medium and high level of COVID-19 risks will be suspended relevant tourism activities, and the inter-provincial tourism business will also be resumed according to the risk level of the tourism destination. For instance, In 2022, Hainan and many other places showed up a rebound of COVID-19 due to cross-provincial long-distance travel and group travel, then people were required stayed at the destination and relevant tourism activities were all halted.

Owing to the hazard and features of COVID-19, people need to keep distance from others and try to reduce the chance of going outside. Therefore, it also accelerates the development of technology and digitalization, and will influences on the tourism sector development. From the economic perspectives, COVID-19 has a more adverse influence than previous virus in recent history (Gossling, Scott, and Michael). According to the discussion of researchers, the application of e-tourism haven't showed resilience and level of fighting against such epidemics to a extent. There is still a challenging relationship between information technology and tourism (Werthner and Klein, 1999). However, to recover and sustain the economy of every tourism sector, there is a need to adopt innovative IT infrastructure. The innovation of technology and digitalization are regarded as the future of tourism (Huang et al., 2016; Rao and Krantz, 2020a). Chat-bots, online bookings, and journey planners are already existed and applied in tourism industry. For instance, to reduce the human-to-human interaction, many hotels have already implemented robots to provide relevant hotel services (Afsarmanesh and Camarinha-Matos, 2000; Palmer and McCole, 2000). Besides, in China, there are more than 4000 scenic spots showed on online travel agents, and it implement the VR garden tour, live broadcast to prevent the gathering of tourists to promote the tourism. In addition, contactless payments is also a new trend driven by COVID-19. Creative payment applications have been developing quickly, more suppliers, operators and consumers choose to use Quickpass and QR code, in particular, the Wechat and Alipay has been used more extensively, as well as the system of these applications are renewed constantly based on the demand of people.

Under the influence of COVID-19 and its relevant prevention and control policies, people in China are more willing to choose to short-distance tourism such as, traveling in the

provinces or suburban area near their residences. To better enjoy the tourism, there are two main meaningful approaches: one is culture tourism which can know more about Chinese culture and strengthen national confidence, and benefit consumption of culture products as well as promote the development local culture and tourism industry. In 2021, cultural tourism became the second most popular form of tourism in China (Zhang, 2022). In particular, the young have a higher enthusiasm in Chinese culture, for example, during the trial operation period of China Grand Canal Museum in Yangzhou (Jiangsu province), there were more than 250,000 visitors attracted by the culture relics found at Sanxingdui. The other one is ecotourism. It has been a priority for Chinese tourists that focusing on Sustainability, and it reached a huge market of 2.92 trillion RMB of travel expenses in 2021 (Cheng, 2022). Chinese tourists try to get closer to nature and avoid crowded urban tourism under COVID-19, and they learn more natural knowledge when they participating in relevant activities and then understand how to protect eco-environment and biodiversity (Interesse, 2022).

**Table 6**

*The summary of the impact of COVID-19 on tourism sector in China*

<b>Impacted aspects</b>	<b>Description in previous studies</b>	<b>Authors</b>
Huge impacts on markets and industries	Travel and tourism industry is most affected by the pandemic	(Gössling et al., 2020; Spalding et al., 2020)
	The spread of the COVID-19 pandemic is faster than expected, which has seriously influenced the prospects and future of global economic growth and the confidence of all parties.	(Maital et al., 2020)
	In the process of normal epidemic prevention and control, it is difficult for tourism companies to adapt to the rapid changes in market consumption patterns during the short-term.	(Li and Sheng., 2020)
	As the increase of the operating costs and management costs, and the uncertain impact of the epidemic on the economic operation, most investors are fearful about investing in relevant industry.	(Geng and Yang, 2021)
Limitation of diverse types of tourism	China is the single largest outbound travel market around the whole world. However, many China ministries and commissions	(Wang & Sheldon, 1996; Xiang et

	have issued a number of policies and measures to regulate the operation and management of tourism business.	al, 2010) & (Tang et al., 2022)
Chance of developing technology and digitalization	There is still a challenging relationship between information technology and tourism	(Werthner and Klein, 1999)
	However, to recover and sustain the economy of every tourism sector, there is a need to adopt innovative IT infrastructure. E.g. to reduce the human-to-human interaction, many hotels have already implemented robots to provide relevant hotel services	(Afsarmanesh and Camarinha-Matos, 2000; Palmer and McCole, 2000)
Promoting new tourism trends	In 2021, cultural tourism became the second most popular form of tourism in China.	(Zhang, 2022)
	It has been a priority for Chinese tourists that focusing on Sustainability, and it reached a huge market of 2.92 trillion RMB of travel expenses in 2021.	(Cheng, 2022)

Source: compiled by the author

The study uses the framework of tourism supply chain to do the further research. There are many previous research about tourism suppliers, operators and consumers, especially consumers' behavior under COVID-19 . However, there are only several studies research the impact of COVID-19 on tourism sector development based on consumers' behavior in China and also the relationship between consumers' behavior and tourism development. Therefore, it's a research gap of this study. In addition, China has stuck the strict prevention and control policy, residents' life has been affected heavily, while as potential consumers, they have a huge impact on the economy there is a need to discover whether and how their choices and willingness will influence on the new trend of tourism, such as culture tourism, ecotourism and so on. To obtain the relevant information, this paper should analyze existing information and also take the questionnaire method to acquire the primary data on the methodology section.

## **2 METHODOLOGY FOR RESEARCHING THE IMPACTS OF COVID-19 ON RESIDENTS' TOURISM ATTITUDES AND BEHAVIORS IN CHINA**

The outline of this section follows the research design, data collection and data analysis, including elaborating on hypotheses of the research, instruments and procedures of data collection, and analysis of quantitative data and qualitative data (open ended questions). The study is based on primary quantitative research, which primarily aims to address how the COVID-19 epidemic impacts the tourism attitude and behavior of residents in China, and under the influence of COVID-19 epidemic, how the changes in the attitude and behaviors of residents are reflected in new tourism trends and the future development of tourism sector in China.

### **2.1 Aim, model and hypotheses of the research**

The theme of this study aims to evaluate how consumers' attitudes towards tourism sector development and how they will behave in the future travel under the influence of the pandemic. Since the study requires a further demonstration of the impacts of consumers' behaviors under COVID-19, it will employ quantitative research with a mono method. Quantitative research is the strategy of concerning with collecting and analyzing data (Bryman, 2012). Compared to qualitative research, quantitative research requires typical research designs where the key point is to describe, explain and predict phenomena, besides it relies on larger number of samples and mostly uses probability sampling (Cooper & Schindler, 2006), which is also employed in this study.

As a primarily data-oriented research, there are two ways to apply quantitative research. The most widely used method is primary quantitative research and it's also conducted in this study, for the fact that the researcher can concentrate on collecting data directly rather than only relying on data collected from previous researches. There are 5 main types of research consisting of primary quantitative research, they are: survey research, cross-sectional research, correlation research, casual-comparative research and experimental research (Priya Pedamkar, 2021). This paper adopts the self-administered questionnaire which is one of types of survey research. The questionnaire was adopted since we aims to research the attitudes and behaviors of amount of consumers and try to get more reply from respondents as much as we can in a short period, and it

is more suitable for the goal, proper and objective than the interview. Besides, self-administered questionnaire can require respondents to finish questionnaire by themselves, and this study adopts the anonymity of the respondent, which makes that there is possibility to collect more objective, truthful or valid responses (University of Guelph, n.d.). In addition, the questionnaire includes the combination of open-ended and closed-ended questions, except the separation of the two types of questions (Bhandari, 2022). Although self-administered questionnaire is a quantitative research method, it can still collect quantitative and qualitative data by this two types of questions. Closed-ended questions provides a set of choices for different variables, meanwhile, we mainly applied a 5-point Likert scale ranging from strongly disagree (4) and strongly agree (8) to understand respondents' knowledge about cultural tourism and ecotourism and also their attitudes towards tourism sector development and predict their relevant future behaviors. While, open-ended questions can make respondents express their own words.

The questionnaire (Annexe 1) was mainly designed by the author, and Q20 (the attitudes of residents towards the impact of COVID-19 on tourism sector development) were based on the TPB framework which involved attitudes towards behaviors, social norms and perceived behavior control (Ajzen, 1985). The first group of Likert-scale questions (Table 7) was designed to research why respondents chose to travel after January 8, 2023 and how many factors influenced on them in different extents. Therefore, respondents who didn't travel after the turn point was excluded, and that's why the sample size only involves 165 respondents in this group of Likert-scale questions. Besides, there were 4 Likert-scale questions respectively based on the level of attitudes to current tourism trend, attitudes towards the impact of COVID-19 on tourism sector development, behaviors in future travel and suggestions of tourism sector development.

**Table 7**

*Dimension of Likert-scale questions*

<b>Level</b>	<b>Number of questions</b>	<b>Sample size</b>
Q14: Reasons of travel after January 8, 2023	5	165
Q18: Attitudes to current tourism trend	5	220
Q20: Attitudes towards the impact of COVID-19 on tourism sector development	8	220
Q21: Behaviors in future travel	6	220

Q22: Suggestions of tourism sector development	5	220
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Source: compiled by the author

In order to further detailed analysis, this questionnaire was designed by four parts, they are: actual travel behaviors before and after January 8, 2023, and it's mainly for knowing whether there is a change in the residents' attitude and behavior during the pandemic and after the pandemic. The second part is for studying the knowledge of cultural tourism, ecotourism and sustainable tourism, and attitude to the tourism trend in China. The third part relates to the attitude and future behaviors of residents to tourism sector development in China as well as their suggestions. The last part is about the basic information of respondents, including age, gender, place of residence, occupation, education background and personal monthly income (including living expenses which non-working students get from parents), since they are potential factors of impacting the travel ideas and choices of respondents. Besides, the target group of the survey is residents of all ages in China, therefore, the survey was written in both English and Chinese for being read conveniently by Chinese citizens and also expats in China.

Moreover, during the epidemic, the population number is unstable and the residents number (including expats who live in China) in this study is unknown. The author set the sample is expected with a minimum of 100 respondents. According to Roscoe (1975), the sample size of over 30 and less than 500 is appropriate for most studies.

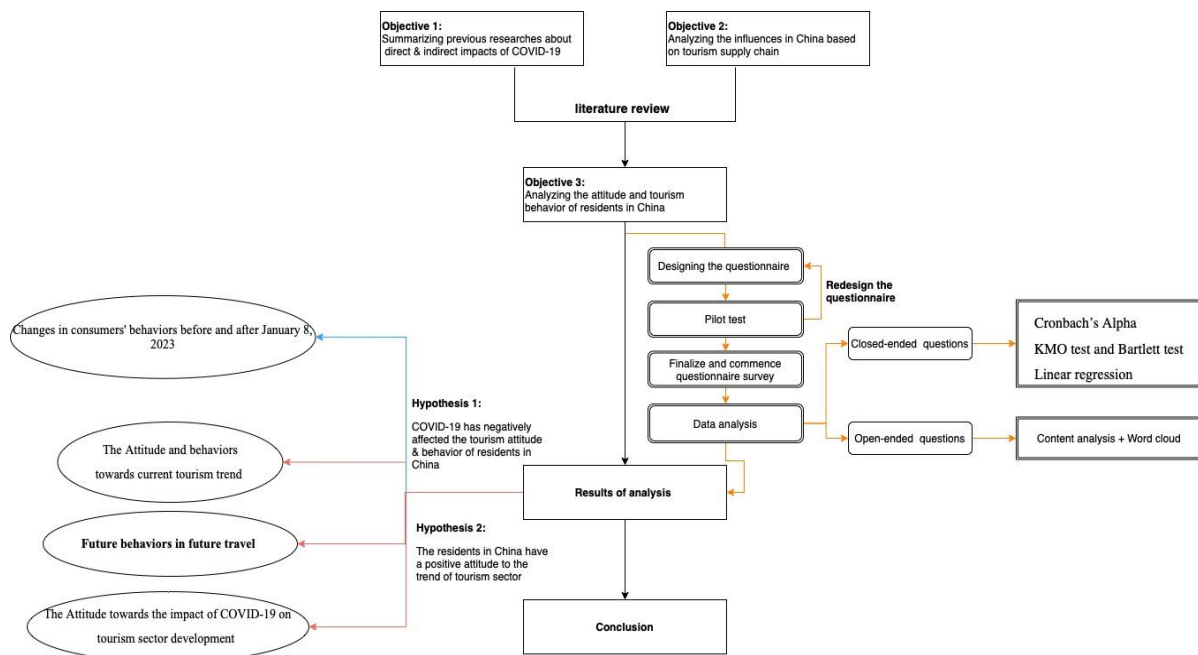
This questionnaire focuses on the residents in China (including expats who live in China), and according to the research questions, there are two main hypotheses:

- 1) COVID-19 has affected the tourism behavior of residents (consumers and potential consumers) in China;
- 2) The residents in China have a positive attitude to the trend of tourism sector, and are willing to support the tourism development.

To clear explain the process of the methodology part, we showed research model (as Figure 3).

### **Figure 3**

The summary of research methodology



Source: complied by the author

The research model is based on previous literature, and to analyze the attitudes and behaviors of consumers in China, we use the questionnaire which is designed by the author and mainly focus on the residents in China. To ensure the reliability of the questionnaire, we adopt pilot test, and when the test result of reliability and validity doesn't meet the standard, then we redesign the questionnaire. Once it meets the requirement of Cronbach's Alpha and KMO test and Bartlett test, then we distribute the questionnaire to people by TikToK and WeChat. After collecting the data, we analyze the result according to the two hypothesis we set. Finally, we make a conclusion based on previous studies and the result of questionnaire.

## 2.2 Instruments and procedure of data collection

Firstly, according to Sukamolson (2007), the questionnaire can be delivered online or in paper-and-pen formats, in person, by mail or other approaches. This paper focused on using online survey which is more fit for the regulation of the COVID-19 quarantine in China and also benefit to efficiently acquire a broader population of respondents (Han et al., 2009). Besides, since Chinese people are not accustomed to using emails and seldom use them (Horwitz, 2017), the author started the initial sampling process by collecting a list of residents (which are not only Chinese) in China that met the requirements as potential consumers of the study from social platforms, such as WeChat and Douyin (Charmaz, 2014). We used Qualtrics which is a online survey software since it can monitor the quality of the questionnaire and can provide suggestions

to adjust the questionnaire, besides, it can be used in China properly. We adopt it to design questionnaire and distribute the questionnaire link and QR code to friends, relatives, families and strangers who added or followed our accounts on Wechat and Douyin, meanwhile, to make the sample more random we posted a short video on Douyin which is about inviting the Douyin users to become the respondents, and we send the questionnaire link or QR code by messages on Douyin to people who are willing to fill in the questionnaire (if they comment the video).

During the collection period, every respondents will receive the same standardized questions with identical wording in general, but they will also receive personalized questions according to their choices, and it aims at avoiding irrelevant questions based on their previous choices. Under so-called zero COVID 19 policy and also relevant regulations, the economy of China has been battered and the citizens are also tired of restrictions and repeated test, and it even led in a protest happened based on accumulative resentment in November, 2022. Therefore, the government decided to cancel quarantine for travelers from 8 January, 2023 (Wang, 2022). Considering the change of the policy and the time of conducting the new policy, this study collected data during April and the start of May in 2023. There were 236 respondents participating in this survey in total, but 16 respondents didn't finish the whole questionnaire. Therefore we only analyze the 220 Chinese respondents whose data are valid and complete in this study. To ensure the reliability of the questionnaire before being distributed. We applied pilot test on 59 respondents according to the calculation with 95% confidence and 5% probability (Viechtbauer et al., 2015). The questionnaire includes 5 levels of Likert scale question and has 29 questions in total, and we tested the scale questions to check the reliability, which showed the Cronbach alpha value > 0.60 (Ghozali, 2007). Therefore, the question instrument adopted is reliable based on the result of reliability test.

### **2.3. Data analysis of close ended questions and open ended questions**

The research philosophy is to apply a deductive approach and adhering to an positivism philosophy. Positivism emphasizes people's beliefs, knowledge and perceptions is either true by definition or positive statements, which suggests the facts are derived from logic and reason by sensory experience (Larrain, 1979). To explore respondents' travel behaviors is not the only aim but also their willingness to travel in the future and their attitudes towards the new trend and



development of tourism in China. This paper is mainly defined as a quantitative research, however, we set the open-end questions in the survey to better know respondents' attitudes and suggestions. Therefore, there are quantitative data analysis and content analysis.

Firstly, it's about the quantitative data analysis. This study mainly adopted IBM SPSS Statistics version 26 to analyse the survey data. Since the questionnaire was mainly designed by the author, there is a need to prove the reliability and validity of the questionnaire firstly. We tested the reliability of the 5 levels of Likert-scale questions in the questionnaire by Cronbach's Alpha and the validity was checked by KMO test and Bartlett test.

Besides, we included social-demographic variables as covariates: gender, age, place of residence, education background, occupation and personal monthly income. We hypothesized that the COVID-19 might have an sever influence on occupation and personal monthly income, and then leading in the influence on travel behaviors. Thus the type of occupation and a change in income due to COVID-19 are included as an independent variable. Besides, every province in China experienced partial or full lockdown or other level of restrictions based on their the number of infected people, and then the travel behavior and attitude of local people will also be affected (e.g. attitude towards among travel within the residence, domestic tourism and outbound tourism, and choices among them). In addition, the education background can also be a factor which impacts the knowledge and attitudes towards tourism trends (e.g. cultural tourism and ecotourism).

To comprehensively analyze whether COVID-19 influences the attitude and behavior of residents, the study focuses on two periods: before (from 2020 to 2022) and after January 8, 2023. We applied a Linear regression to examine what factors impact the actual travel times of respondents in China during the period of the COVID-19 pandemic from 2020 to 2022. The dependent variable is the travel counts so Linear regression is applied in this study, i.e., how many times the respondents have traveled since 2020. In addition, under the influence of the COVID-19 epidemic, there will be a change in consumers' behavior. In this study, we research the changes in travel plans by describing the data based on the choices of respondents, and with the major change in restrictions and relevant policies, we also analyze the tourism destination preference of residents. Cultural tourism and ecotourism are the trend of tourism in China, and also belong to a part of tourism sector development. Therefore, we examine whether residents know and participate in relevant tourism activities, and further analyze the attitude towards the

trend and future behavior. Moreover, based on TPB framework, we will analyze respondents' travel intention, predict their future behaviors and also predict how the behaviors which are impacted by COVID-19 epidemic will be embodied in the tourism sector development in China.

For open-end questions, we will use content analysis to collect and decode the content, and calculate the frequency of the contents, and then know what the main attitude and suggestion of residents in China to future tourism sector development. Besides, to have a better visualization of the content, we apply the word cloud to present residents suggestions mentioned in a high frequency.

#### **2.4. Limitations of the research methodology**

There are some limitations about the research data we collected. The main problem is the social-demographic profiles of respondents. Among users of douyin (TiKToK), around 80% are between 19 and 40 years old, and especially Chinese young people who are between 18 and 24 years old account for 34.9% of Douyin users in 2021 (Iqbal, 2023). Since we mainly used douyin platform to distribute questionnaire (posting the photo which includes the aim and requirements of the questionnaire and the finding volunteers) , therefore, the results may mainly represents the attitudes and behaviors of young residents. Besides, there is a bias about collecting the residence place of respondents, since 35% of Douyin users are located in China's first-tier cities, such as Beijing, Shanghai, Guangzhou and Shenzhen (Shreya, 2022), and 40% of the WeChat contacts of the author are from Hunan province.

### **3. RESULTS OF IMPACT OF COVID-19 ON TOURISM SECTOR DEVELOPMENT IN CHINA BASED ON CONSUMERS' BEHAVIOR**

#### **3.1. The analysis of the reliability and validity of the questionnaire**

There are 5 types of Likert-scale questions and 29 questions in total in the questionnaire. However, as explained above (2.1), the sample size of the first group of Likert-scale questions (Q14) only includes 165 respondents who traveled after January 8, 2023. Therefore, to more precisely acquire the result of the reliability and validity of the questionnaire, we separately

tested the group of Likert-scale questions (Q14) and others, and also provided the whole Cronbach's alpha value (0.878) based on 165 sample size. We adopted Statistical Package for Social Sciences (SPSS) to research the reliability and validity of the questionnaire. Reliability is to test whether the data we used is reliable and whether ensure the consistency of a measure. To some extent, every instrument should have the same responses each time when the test is finished. Although it is impossible to calculate the result exactly, an estimate of reliability can be used through all kinds of measures. The concept of validity is to be measured accurately in a quantitative study (Heale & Twycross, 2015).

**Table 8**

The result of reliability test

Dimension	Cronbach's $\alpha$	N	Sample size
Q14	0.604	5	165
Q18		5	
Q20	0.867	8	220
Q21		6	
Q22		5	

Source: Compiled by the author

The reliability test of the questionnaire was based on Cronbach's Alpha. Cronbach's alpha is broadly adopted as an index of reliability and reported many times in social and behavioural studies (Cronbach, 2004; Zumbo and Rupp, 2004). Alpha Cronbach values between 0.60 and 0.80 can be regarded that it's acceptable, and the value in the ranges of 0.8 and 1.00 is great (Daud et al., 2018 ). According to the analysis, the 5 levels of Likert-scale questions all reached the acceptable value (above 0.6), and in particular the total result of the last 4 levels above 0.8 and it's considered great.

**Table 9**

The result of validity

KMO and Bartlett test		
KMO measure of sampling adequacy		0.835
Bartlett's test of sphericity	Approx Chi-square	1985.782

df	435
P	0.000***

Notes: \*\*\*, \*\*, \* respectively stands for the significance level of 1%, 5%, 10%

Source: Compiled by the author

As for the validity test of the questionnaire, We involved Kaiser Meyer Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity. According to the previous study (Kaiser, 1974), it has suggested that KMO over 0.5 can be adopted for factor analysis, while KMO over 0.8 is quite fit for factor analysis. It can be seen that the validity result of 5 levels of Likert-scale questions (0.835) are not only acceptable but suitable. According to the overall results, the questionnaire has the certain reliability and validity, and it can be further researched.

### 3.2. Profile of respondents

The socio-demographic profile of respondents is presented as Table 3. The questionnaire was distributed by Qualtrics link and QR code, and post on WeChat moments which is a shared platform (it can be seen by all the contacts of the author) on WeChat and also on Douyin. In total, 220 respondents effectively and completely filled the form. To collect the gender of respondents more effectively and efficiently, we only differentiate male and female according to ID cards of respondents. Women was the main respondents of the questionnaire which took up 57.27%, but there's bigger difference with the percentage of male respondents (42.73%). In this survey, we focused on adults since juveniles' travel was mainly impacted by limited financial resources, lack of holidays and disapproval of family members (Mohamed & Omar, 2010). Besides, in China, people who are under 18 years old are defined as minors. Therefore, to ensure the research of impact of COVID-19, we excluded juveniles who are under 18 years old during the collection period. The age range between 18 years old and 25 years old was the most one, followed by age between 46 years old and 55 years old. Respondents were dominated by millennial generations. The millennial generation who was born from 1981 to 2000 surfs the internet actively in daily life (Wiweka et al., 2019). Besides, respondents who live in Hunan province become the main research group which accounted for 17.73%. We classified occupation according to the types of employer, and 45.91% respondents are students. In addition, as for the education background, the majority acquired higher education degree, such as

Bachelor degree (60%) and Master degree (25%).

**Table 10**

*Socio-demographic profiles of respondents*

<b>Demography</b>	<b>Option</b>	<b>Frequency</b>	<b>Percentage(%)</b>
Age (years old)	18-25	109	49.55
	26-35	19	8.64
	36-45	33	15
	46-55	38	17.27
	56-65	18	8.18
	Over 65	3	1.36
Gender	Female	126	57.27
	Male	94	42.73
Place of Residence	Hunan	39	17.73
	Guangdong	30	13.64
	Jiangsu	17	7.73
	Zhejiang	13	5.91
	Shandong	12	5.46
	Beijing	12	5.46
	Henan	9	4.09
	Anhui	8	3.64
	Guangxi	8	3.64
	Sichuan	8	3.64
	Fujian	7	3.18
	Jiangxi	6	2.73
	Hebei	6	2.73
	Shanghai	6	2.73
	Liaoning	6	2.73
	Hubei	5	2.27
	Jilin	4	1.82
	Shanxi	4	1.82
	Others	3	1.36
	Heilongjiang	3	1.36
	Shaanxi	3	1.36
	Inner Mongolia	3	1.36
	Chongqing	2	0.91
Hainan	2	0.91	
Tianjin	1	0.46	
Gansu	1	0.46	
Yunnan	1	0.46	
Hong Kong	1	0.46	
Occupation	Student	101	45.91
	Self-employed workers (including freelancer)	48	21.82

	Government Employee	42	19.09
	Private Employee	18	8.18
	Employer	7	3.18
	Others	4	1.82
Education Background	Bachelor's degree and equivalent	132	60
	Master's degree and above	55	25
	Vocational degree	18	8.18
	High school and equivalent	10	4.56
	Middle school	5	2.27
Personal Monthly Income (Chinese Yuan)	5000 & Under 5000	105	47.73
	5001-8000	37	16.82
	8001-11000	29	13.18
	11001-14000	20	9.09
	>17000	15	6.82
	14001-17000	14	6.36
Total		220	100.000

Source: Compiled by the author

These basic information can be the variables which influence the attitudes and behaviors of respondents to the future development of tourism sector, especially including education background, personal monthly income and occupation.

### 3.3. Changes in consumers' behaviors before and after January 8, 2023

The COVID-19 epidemic made respondents change their travel plans. There were around 188 respondents out of 220 respondents choosing that they had a travel plan during the COVID-19 epidemic (from 2020 to 2022), but around 94.1% of respondents expressed that they have canceled their travel plans, and as for the reason why they canceled the plan, the main reasons are because of the Clinical seriousness and transmissibility of COVID-19, and the influence of prevention and control policies, e.g. lockdown, flight cancellation, which respectively accounted for 45.2% and 48.9%. Meanwhile, about 4.25% people regarded that it was related to whether their income was reduced and whether they had the job during the COVID-19 period, and we adopted cross tabulation analysis to further check which salary range group was influenced most in income reduction, and the respondents with the amount of 5000 or under 5000 Chinese Yuan as the main group who was impacted by the income. Besides, there was two respondents pointed that the COVID-19 didn't impact their decisions but one of expressed that it mainly depended on his personal habit (procrastination).

As for the times of actual travel from 2020 to 2022, 59 respondents out of 220 respondents haven't traveled once during the COVID-19 epidemic, but 165 respondents out of the same respondents have traveled at least once or more from January 8 to May10, 2023 (during the shorter period). To further research the main factor of the actual travel times during the epidemic, and the relationship between the actual travel times and the impact of COVID-19, we adopted linear regression and the independent variables involved socio-demographic (considered the difference of individuals), besides, we also predicted that the reasons of canceling and participating travel, which was mainly impacted by the COVID-19 epidemic, had a relationship with the actual travel times, therefore, the reason of cancellation of the travel, the reason of doing domestic tourism and outbound tourism during the epidemic, and the reason of travel after the turn point (January 8) were all included.

In linear regression, F-statistics is applied to test the significance of the model in the linear regression and if P-value is less than 0.05, then it can be used to research how independent variables affect dependent variables (Draper and Smith, 1998). According to the result of the coefficients from 2020 to 2022, there was a significance between the actual travel times and influencing factors of the COVID-19 epidemic on tourism, since it could be calculated (Table 7) and P-value was 0.000\*\*\*. Besides, if Variance Inflation Factor (VIF) is equal between 1 and 5, then the variables are more correlated, and if it's higher than 5, then it means there is a highly correlation (The Investopedia Team, 2023). And we can see that prevention and control policies (1.944) are the main factor which influence the actual travel times. In addition, the epidemic has been comparatively slowed down in China (4.167) is the most vital factor which has a higher correlation with the actual travel times. As mentioned in 1.4.1 of this paper, there are two influencing factors of the COVID-19 epidemic, one is direct factor which is mainly about the feature of the COVID-19 epidemic (clinical seriousness and transmissibility), and the epidemic has been comparatively slowed down in China means that the level of clinical seriousness and transmissibility of the COVID-19 epidemic has been under control to some extent. The other one is indirect factor which involves prevention and control policies. Therefore, both direct factors and indirect factors all impact the actual travel times of respondents.

## **Table 11**

*The result of linear regression between actual travel times (between 2020 and 2022) and*

*potential influencing factors*

		Unstandardized		std							
		coefficients		coefficients							
		B	Std. Error	Beta	t	P	VIF	R <sup>2</sup>	Adjusted R <sup>2</sup>	F	
Constant		5	0	-	2228303671 22341.12	0.000** *	-				
Cancellation	Income reduction and even unemployment	-3	0	-0.603	-1890778363 75794.28	0.000** *	1.33 3				
	Prevention and control policies, e.g. lockdown, flight cancellation	-3.5	0	-1.112	-2888211658 10184.06	0.000** *	1.94 4				
Outbound tourism	Others	-1.5	0	-0.302	-8455817903 4971.66	0.000** *	1.66 7				
	The prevention and control policies of other countries was not strict	0.5	0	0.159	4126016654 4312.125	0.000** *	1.94 4	1	1	F=1.872 641477 5908038 e+28 P=0.000** *	
	Work and study	1.75	0	0.352	1593360764 21981.5	0.000** *					
Domestic tourism	Lower travel expense	0	0	0	0.182	0.885	3.11 1				
	The epidemic has been comparatively slowed down in China	-0.5	0	-0.159	-2818605967 8323.926	0.000** *	4.16 7				
	Visited families and friends	1.75	0	0.352	1593360764 21980.84	0.000** *					

Notes: \*\*\*, \*\*, respectively stands for the significance level of 1%, 5%, 10%

Source: Compiled by the author

The respondents' choices of actual travel destination also changed under the situation of COVID-19 epidemic. From 2020 to 2022, 91.9% of respondents chose to enjoy domestic tourism, and there were 36.65% of them traveling only within the place (province) where they



lived. Respondents who chose domestic tourism said that the epidemic has been comparatively slow down (38.06%) and it was the most vital reason why they chose to travel only in China during the two years, followed by 15.48% of respondents who expressed that they didn't visit other foreign countries because of the strict prevention and quarantine policies of both countries, and also there were 15.48% of respondents considering the travel expense in China was cheaper and more affordable for them. While for those who chose to do outbound tourism and enjoyed both domestic and outbound tourism (8.08%), the most important reason was because they needed to study and work abroad which took up 31.25%, besides, the control policies of other countries was more relaxed for respondents (31.25%) and also because some of respondents (18.75%) had the required documents to visit or stay abroad therefore, that's why they mainly made the decision to do outbound travel. As for the choice of the specific travel destination in China, South China was the most popular destination where it was be chosen by 25.71% of respondents who chose domestic tourism and to travel out the place of residence. We applied the cross analysis to analyze whether there was a significance differences between Q8 (domestic travel destination from 2020 to 2022) and Q11 (domestic travel destination after January 8, 2023).

**Table 12**

*The result of cross tabulation analysis of domestic travel destination*

options	Q11-1	Q11-2	Q11-3	Q11-4	Q11-5	Q11-6	Q11-7	X <sup>2</sup>	P
Q8-1	11 (30.556%)	11 (30.556%)	4 (11.111%)	3 (8.333%)	3 (8.333%)	2 (5.556%)	2 (5.556%)		
Q8-2	9 (15.254%)	19 (32.203%)	8 (13.559%)	14 (23.729%)	3 (5.085%)	3 (5.085%)	3 (5.085%)		
Q8-3	10 (14.286%)	16 (22.857%)	17 (24.286%)	14 (20.000%)	3 (4.286%)	6 (8.571%)	4 (5.714%)	55.66	0.019*
Q8-4	9 (12.500%)	16 (22.222%)	12 (16.667%)	22 (30.556%)	8 (11.111%)	3 (4.167%)	2 (2.778%)	2	*
Q8-5	1 (7.143%)	2 (14.286%)	0 (0.000%)	5 (35.714%)	4 (28.571%)	1 (7.143%)	1 (7.143%)		
Q8-6	2	5	3	1 (6.250%)	0 (0.000%)	3	2		

	(12.500%)	(31.250%)	(18.750%)		(18.750%)	(12.500%)
Q8-7	2	2	2	2	2	3
	(11.765%)	(11.765%)	(11.765%)	(11.765%)	(11.765%)	(17.647%)
						4
						(23.529%)

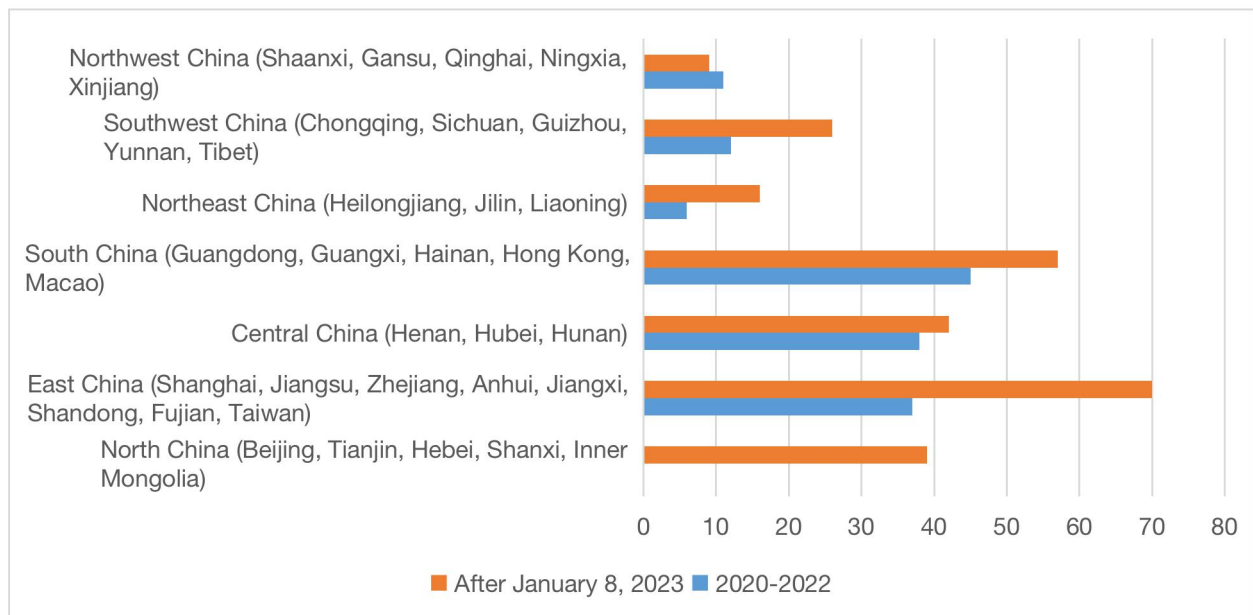
Notes: \*\*\*, \*\*, \* respectively stands for the significance level of 1%, 5%, 10%

Source: complied by the author

Based on the result of Chi-square test, we can see from Table 12 the significance P value is 0.019\*\*, which means there are significant differences between the two questions. Meanwhile, according to the comparison between the choices of domestic travel destination, respondents had a preference for travel in the area of east China and south China whether it's during the epidemic or after the turn point (Figure 4). Outbound tourism was still not the main choice of travel destination no matter whether it was during the epidemic or during post-epidemic. However, Asia and Europe were the main outbound tourism destination.

**Figure 4**

The comparison of choices of travel destination in China



Source: complied by the author

To better research the consumers' attitude and behaviors towards future development of tourism sector, we focused more on the reason why consumers chose to travel after the turn point (January 8, 2023). Therefore, we used Likert-scale question to study the travel intention of respondents based on TPB framework.

**Table 13***The reasons of travel after January 8, 2023 (N=165)*

Factor	Statement	S disagree	Disagree	Neutral	Agree	S agree
1	Since the COVID-19 epidemic is under control now, and I won't be infected and I really want to relax and enjoy my life by travel.	7.88 %	11.52 %	22.42 %	41.21 %	16.97%
1	Since the prevention and control policies of my country has been relaxed, and I can finally travel without limitation of the COVID-19 epidemic.	4.24 %	7.88 %	11.52 %	49.7 %	26.67%
2	Because I desire to help the recovery of national or/and world economy and tourism sector via travel.	7.88 %	19.39 %	47.88 %	20.00 %	4.85%
2	Because lots of my relatives, friends and colleagues have been traveling.	4.85 %	4.85 %	24.24 %	51.52 %	14.55%
3	Because I have time, money and interest to travel.	2.42 %	12.73 %	16.97 %	49.09 %	18.79%

Notes: 1 means Attitude towards the behaviors; 2 means social norm; 3 means perceived behavior control; S means strongly

Source: compiled by the author

Most respondents had a positive attitude towards travel after the turn point, 58.1% of the respondents strongly agree or agree that because the epidemic was under control and they wouldn't be infected again and then they wanted to travel to enjoy their life. Meanwhile, 76.4% of the respondents expressed strongly agree or agree that the reason which mainly encouraged

them to travel was the prevention and control policies has been not strict any more. Besides, social norm also significantly impacts respondents' travel behaviors. The majority of the respondents (66%) strongly agreed or agreed that they desired to travel since they were influenced by their friends, relatives and colleagues who have already traveled, and 67.9% strongly agreed or agreed that they had additional time, money and interest to travel. In addition, helping the nation and world recover economy were not the main reason to travel, among which 47.9% of the respondents kept neutral attitude. (Table 13)

### **3.4. The Attitude and behaviors of residents towards current tourism trend and future tourism sector development in China**

#### **3.4.1. The Attitude and behaviors towards current tourism trend**

Cultural tourism, ecotourism and sustainable tourism are the new and current trend of travel in China under the COVID-19 epidemic. There were 29.64% of the respondents having heard about the concept of cultural tourism, followed by those who have heard about ecotourism (27.54%). Besides, the three concepts were all heard by some respondents (18.26%). As for the experience of the new trend, 29.55% of the respondents said that they took part in cultural tourism before, followed by the number of respondents (9.09%) who only participated in ecotourism. However, half of the respondents (50%) expressed that they have never participated in both cultural tourism and ecotourism. Although the previous participation of the respondents was not in a high rate, respondents had a positive attitude towards the future participation of cultural tourism and ecotourism, 77.27% of the respondents whoever joined such kinds of tourism or didn't have an opportunity to experience all showed that they were willing to experience the two tourism forms in the future. In addition, to further analyze whether their choices of experiencing cultural tourism and/or ecotourism are influenced by social demographic profiles, we used Logical regression and we mainly analyzed the relationship between willingness to participate in both ecotourism and cultural tourism (77.27% of respondents) in the future and the profiles. We can see that in general there is no significance level ( $P > 0.05$ ) when involving gender, age, place of residence, education background and personal monthly income. However, it had certain relationship with the occupation which significant level is 0.048\*\* . We can know that such a choice is influenced by the occupation, and most of the respondents'

occupations are students (47.65% of the student respondents chose join both of the tourism forms) Since students have many holidays and vacations and meanwhile they would like to broaden their horizons and learn more knowledge from nature and culture. Besides, 50% of the respondents who are students only picked cultural tourism, this is because cultural tourism (especially in Zibo which is famous for its barbecue culture) is really popular in China in the recent months, and also local government has provided students many benefits by policies.

**Table 14**

The result of Logical regression between willingness to participate two new tourism forms and social-demographic profiles

Would you like to participate or say still participate in ecotourism and/or cultural tourism in the future? = 1.0	Regression coefficient	Standard error	Wald df	P	OR	OR value: 95% confidence interval	
						UCL	LCL
constant	10.479	4.805	4.75618	0.029**	35577.992	2.888	438220629.305
What is your age?	0.118	0.399	0.08818	0.767	1.126	0.515	2.458
What is your gender on your ID card?	-1.848	1.273	2.10918	0.146	0.158	0.013	1.908
Where do you live in China?	-0.024	0.064	0.13918	0.710	0.976	0.862	1.107
What is your occupation? - Selected Choice	-0.423	0.214	3.91518	0.048**	0.655	0.431	0.996
What is your highest level of education you have completed ?	-0.288	0.533	0.29118	0.589	0.75	0.264	2.133
What's your personal monthly income (Chinese Yuan), including getting from parents (for students totally don't have jobs)?	-0.119	0.222	0.28718	0.592	0.888	0.574	1.373

Notes: 1.0 means the option of participating in both ecotourism and cultural tourism; UCL means upper confidence limit; LCL means lower confidence limit

Source: complied by the author

As for the current tourism trend, 79.55% of the respondents considered that the current trend of cultural tourism and ecotourism would have a positive effect on the future development of tourism sector in China. While, in regard to the personal financial support of the trend, 37.3%

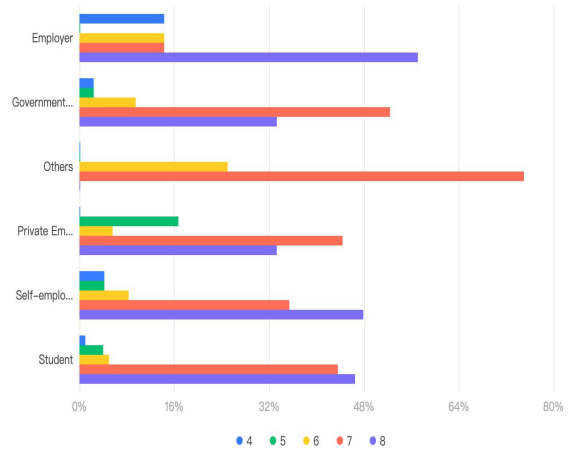
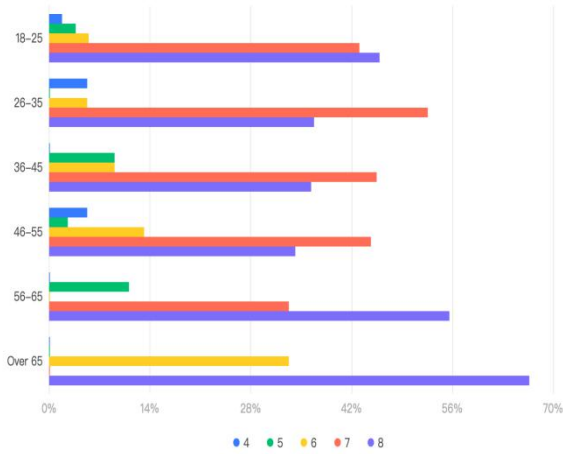
of respondents showed that they had a neutral attitude towards the willingness to pay more travel expenses to support the trend, besides, the percentage of respondents who agree and strongly agree (33.63%) is slightly higher than that of who disagree and strongly disagree (28.63%). Besides, the majority respondents strongly agree or agree that there was a need to promote the development of the trend and also a need to support it from policies (87.28%), government (85.91%) and social media (89.1%).

### **3.4.2. Future behaviors in future travel**

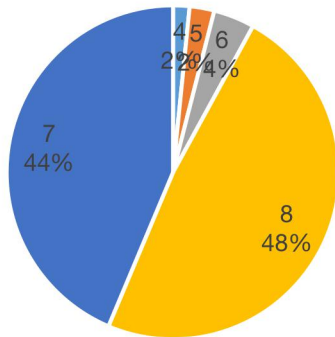
After the end of the COVID-19 epidemic, 85.91% of the respondents strongly agree and agree that they would like to travel in China, while only 59.09% of the respondents showed the same attitude towards the willingness to do outbound tourism. Besides, under the influence of the COVID-19 epidemic, half of respondents expressed that they would like to change the choice of mode of transportation (50%) and type of accommodation (54.6%) with the approval and strong approval. However, 80% of the respondents expressed that they had a preference for self-guided tour in the future based on the influence of the COVID-19 epidemic. Besides, using online reservation by travel websites or applications was supported and strongly supported by the majority of the respondents (79.55%). Such future behaviors may influence the marketing target group of suppliers, tour operators and tourist agencies and then impact the tourism sector development, therefore, we used cross tabulation analysis to analyze the specific group (especially the main feature age, gender and occupation) who will have the future behaviors, and we only chose the future behaviors which has been agreed and strongly agreed by the majority of respondents (over 80%), including Q21-1 I would like to domestic travel, Q21-5 preference for self-guided tour and Q21-6 preference for using online reservation.

### **Figure 5**

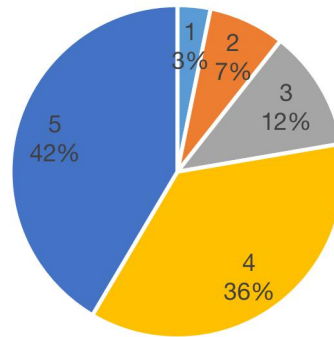
The result of cross tabulation between preference for domestic travel and demographic profiles



Female



Male

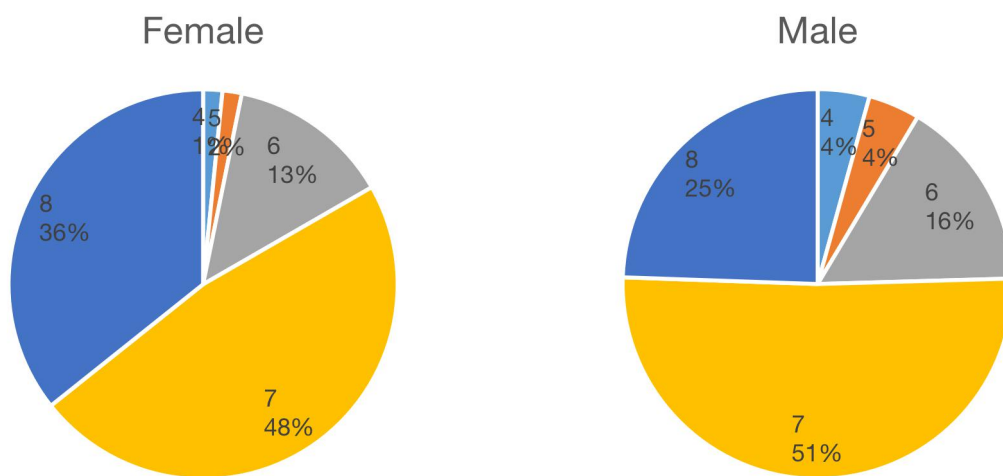
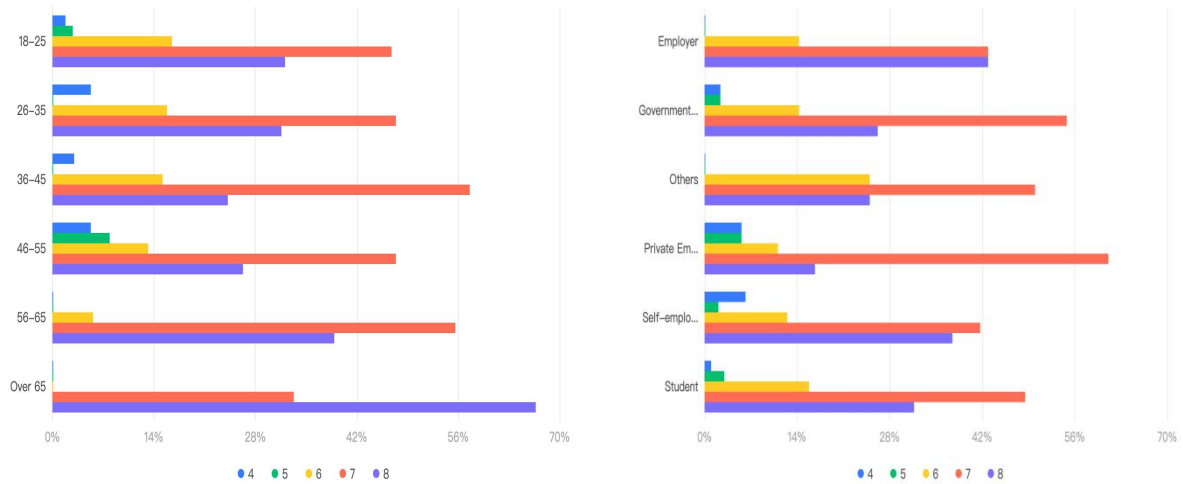


Source: compiled by the author

According to the result (Figure 5), we can see that employers, self-employed workers and students whose age are between 18 years old and 25 years old, and also between 56 years old and 65 years old would like to do domestic tourism more (including strongly agree and agree). Besides, since there was rare sample size of respondents who is over 65 years old and those who have other occupations, therefore we didn't count them in this result. In addition, there is no big difference in gender.

**Figure 6**

The result of cross tabulation between preference for self-guided tour and demographic profiles



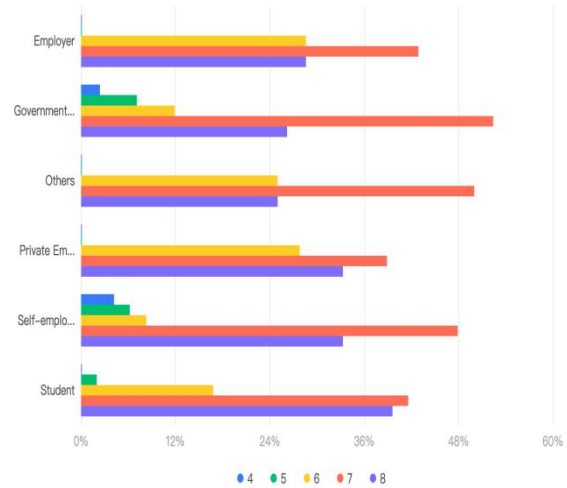
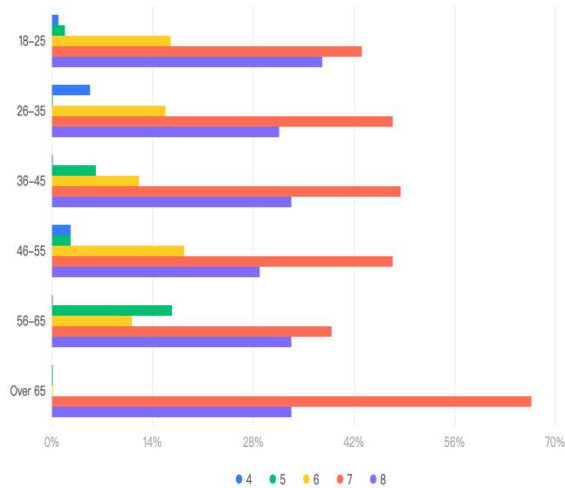
Source: compiled by the author

Based on the result of Figure 6, we can know that private employees and government employees whose age between 36 years old and 45 years old agreed that they had more preference for self-guided tour. Besides, the difference in gender is also not significant.

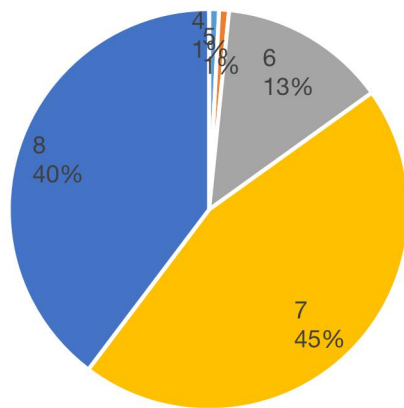
**Figure 7**

The result of cross tabulation between preference for online reservation and demographic profiles

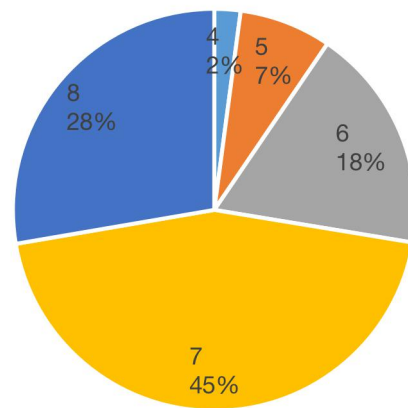




Female



Male



Source: compiled by the author

From Figure 7, it can be seen that all age groups and gender (female and male) prefer to use online reservation by travel websites or applications, as for the occupation, government agreed their preference for using online instruments, and students and self-employee workers showed their strongly approval about the appliance of online reservation.

### 3.4.3. The Attitude towards the impact of COVID-19 on tourism sector development

From the perspective of half of the respondents, they strongly disagree and disagree that the COVID-19 epidemic stimulated the future development of tourism sector in China, and 25% of them considered that the epidemic not only seriously hit the tourism sector but also gave a new way and chance to the develop tourism sector. As for the sustainable tourism, 30.46% of the respondents strongly disagree and disagree that the COVID-19 epidemic created the chance to

promote the practices of sustainable tourism in China. That's why . However, the majority of respondents strongly agree and agree that they had a positive attitude towards the tourism sector development after the end of the epidemic, and didn't think the prospects of the tourism future was terrible and negative (69.09%). Meanwhile, we also found that the people surrounding around the respondents also had a strong positive attitude (81.37%), and 70% of the respondents had the awareness of prioritizing the sustainable and responsible tourism practices.

**Table 15**

*The attitudes towards tourism sector development (N=220)*

<b>Factor</b>	<b>Statement</b>	<b>S disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>S agree</b>
---------------	------------------	-----------------------	-----------------	----------------	--------------	--------------------

1	I think COVID-19 epidemic stimulate tourism sector development in China	17.73 %	35.00 %	25.00 %	18.64 %	3.64%
1	I believe that the pandemic has created an opportunity to promote sustainable tourism practices in China.	7.73%	22.73 %	29.55 %	32.27 %	7.73 %
1	I'm positive to tourism sector development in China after the epidemic ends	0.45 %	3.64 %	10.00 %	56.36 %	29.55 %
1	The prospects of tourism sector development in China is terrible and negative after the epidemic ends	20.4 5%	48.64 %	13.18 %	12.27 %	5.45 %
2	People I know are supportive and positive of the development of the tourism sector in China after the epidemic ends	1.82 %	2.73 %	14.09 %	59.55 %	21.82 %
2	Other tourists I know prioritize sustainable and responsible tourism practices when traveling.	2.27 %	6.82 %	20.91 %	49.09 %	20.91 %
2	My families and friends think the epidemic has had a significant impact on tourism sector development	1.82 %	3.18 %	11.36 %	49.55 %	34.09 %
3	I have extra time, money and energy to support the tourism sector development in China by travel	2.27 %	12.73 %	17.73 %	47.27 %	20.00 %

Notes: 1 means Attitude towards the behaviors; 2 means social norm; 3 means perceived behavior control

Source: compiled by the author

In addition, we used Linear regression to analyze whether and how respondents' actual travel times (after January 8, 2023) would be influenced by attitudes towards behaviors, social norms, perceived behavior control and social demographic profiles.

**Table 16**

***The result of linear regression between actual travel times after Jan 8 and statement based on TPB framework***

		Unstandardized		standardized	t	P	VIF	R <sup>2</sup>	Adjusted R <sup>2</sup>	F
		coefficients	Std.error	Beta						
		B								
Constant		2	0.887	-	2.256	0.026**	-			
I think COVID-19 epidemic stimulate tourism sector development in China	strongly agree	0.614	0.473	0.133	1.299	0.196	1.905	0.271	0.095	F=1.537 P=0.049**
	neutral	0.328	0.301	0.146	1.089	0.278	3.243			
	disagree	-0.144	0.256	-0.074	-0.561	0.576	3.186			
	agree	0.247	0.342	0.104	0.722	0.471	3.735			
I believe that the pandemic has created an opportunity to promote sustainable tourism practices in China.	strongly agree	-0.446	0.476	-0.134	-0.937	0.350	3.694			
	neutral	0.28	0.363	0.139	0.77	0.443	5.912			
	disagree	0.291	0.352	0.129	0.825	0.411	4.448			
	agree	0.346	0.391	0.174	0.886	0.377	6.992			
I'm positive to tourism sector development in China after the epidemic ends	strongly agree	0.282	1.464	0.14	0.193	0.847	95.027			
	neutral	1.112	1.422	0.344	0.782	0.436	35.081			
	disagree	0.643	1.351	0.139	0.476	0.635	15.56			
	agree	0.181	1.448	0.097	0.125	0.901	108.602			
The prospects of tourism sector development in China is terrible and negative after the epidemic ends	strongly agree	-0.552	0.347	-0.154	-1.593	0.114	1.7			
	neutral	0.038	0.329	0.013	0.114	0.909	2.313			
	disagree	-0.025	0.233	-0.014	-0.108	0.914	2.854			
	agree	-0.185	0.331	-0.065	-0.559	0.577	2.457			
People I know are supportive and positive of the development of the tourism sector in China after the epidemic ends	strongly agree	-0.396	0.935	-0.185	-0.423	0.673	34.806			
	neutral	-0.707	0.94	-0.225	-0.753	0.453	16.23			
	disagree	-0.353	1.006	-0.065	-0.351	0.726	6.247			
	agree	-0.591	0.912	-0.312	-0.648	0.518	41.902			
Other tourists I know	strongly	0.458	0.986	0.208	0.465	0.643	36.192			

prioritize sustainable and responsible tourism practices when traveling.	agree								
	neutral	0.475	0.954	0.202	0.498	0.619	29.871		
	disagree	0.837	1.021	0.215	0.82	0.414	12.458		
	agree	0.65	0.953	0.35	0.682	0.496	47.671		
My families and friends think the epidemic has had a significant impact on tourism sector development	strongly agree	0.436	0.754	0.227	0.579	0.564	27.99		
	neutral	0.793	0.789	0.23	1.006	0.316	9.473		
	disagree	0.367	0.834	0.074	0.44	0.661	5.111		
	agree	0.335	0.758	0.18	0.442	0.659	30.092		
I have extra time, money and energy to support the tourism sector development in China by travel	strongly agree	0.3	0.932	0.142	0.322	0.748	35.134		
	neutral	-0.207	0.939	-0.077	-0.221	0.826	22.2		
	disagree	-0.44	0.937	-0.144	-0.47	0.639	17.026		
	agree	-0.206	0.914	-0.111	-0.226	0.822	43.758		

Notes: \*\*\*, \*\*, \* respectively stands for the significance level of 1%, 5%, 10%

Source: compiled by the author

According to the result (Annex 2) that social-demographic profiles didn't influence the travel times after January 8, 2023 and based on the result (Table 6), we can also know the actual travel times was influenced most by self attitude towards behaviors and social norms, which all presents a higher significance level, and it means that the travel times of respondents are impacted by whether they had a positive attitude towards COVID-19 and how people surrounded them react (attitudes and behaviors) while perceived behavior control was not the main factor when they traveled after January 8, 2023.

### 3.3.4. Suggestions of tourism sector development in China

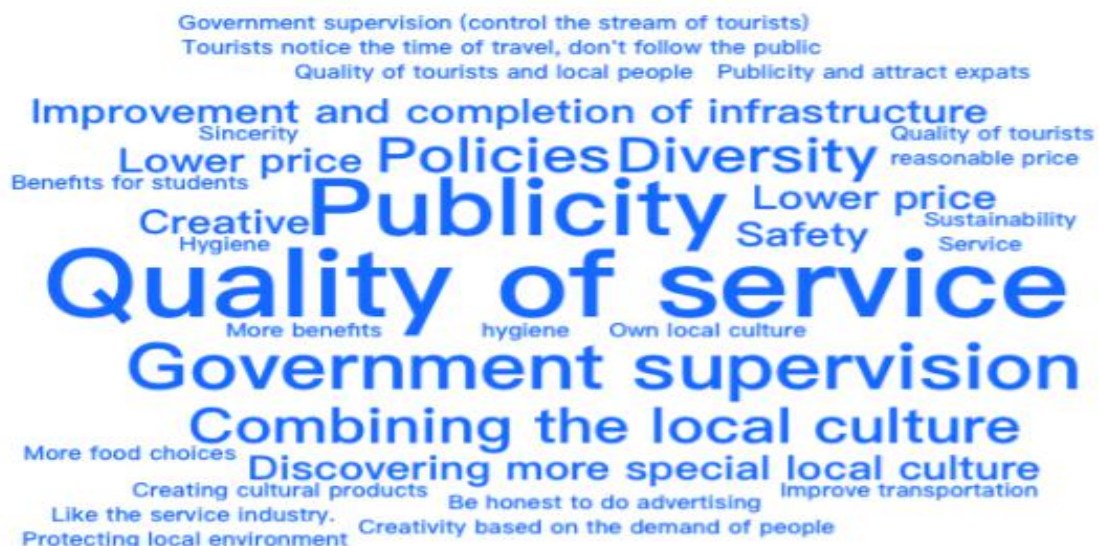
Researching the suggestions of respondents is quite vital, since it can be a feedback of current tourism and guidance of future tourism development. Meanwhile, it can also be used to analyze what the influence of COVID-19 epidemic on tourism sector development in China based on the perspectives of consumers (influenced subjects), since the suggestions generally are based on the lack of current situation.

In regard to improve the competitiveness of tourism sector in China in the future, The majority of the respondents strongly agree and agree that improving the service quality, offering more attractive tourism products and services, strengthening the management of hygiene, disinfection, etc., strengthening marketing strategies, and improving brand awareness and cooperating with other industries to provide more diversified tourism products and services all

could be the instruments to improve the competitiveness of tourism sector in China. Besides, 54.09% of the respondents strongly agree that the improvement of managing hygiene problems. In addition, to better know respondents' more suggestions, we used the open-ended question to provide the respondents a way to express other suggestions. For better visualizing, we applied the word cloud to deal with the qualitative data and the author translated the sentences into English before analyzing the data since most of respondents typed in Chinese. According to the word cloud, we can see that improving the quality of service is also the main suggestion, besides 6.94% of the respondents mainly stressed that there was a need to strengthen the publicity of tourism in China which not only aimed at residents in China but also targeted at the foreign tourists. Meanwhile, 5.56% of the respondents only hoped that the government could reinforce management and punished the illegal behaviors of suppliers, tour operators and travel agents. In addition, maintaining the special local culture, and creatively combining it with the modern life were also one of the crucial suggestions from respondents.

**Figure 8**

Word cloud of respondents' suggestions of tourism sector development in China



Source: compiled by the author

In general, the two hypothesis meet the result of the analysis of the questionnaire. The COVID-19 epidemic has affected the tourism behavior of respondents, which showed in the changes in travel plans, travel destinations and actual travel times. Besides, indirect and direct

factors of COVID-19 on tourism all had an influence on the actual travel behavior of respondents, in particular the direct factor (clinical seriousness and transmissibility of COVID-19). Moreover, respondents had a positive attitude to the current trend of tourism sector and Although there was a difference of the understanding about the concept of new current trend, most of respondents hoped to take part in both cultural tourism and ecotourism whatever they heard about it and experienced it before, besides, the majority of the respondents would like to support tourism development by future travel behaviors, which influenced by their own attitudes, social norm (relatives, friends, etc.) and perceived behavior control (time, money, etc.) .

## CONCLUSIONS AND PROPOSALS

Combining the background of the COVID-19 epidemic, relevant previous studies and collected data from the questionnaire, we conclude the paper as below:

After the analysis of the literature considering tourism supply chain and COVID-19, it can be concluded that the COVID-19 epidemic seriously impacts the 4 components tourism supply chain. As for suppliers, tour operators and tourist agencies, it's because they are the main part of contact-intensive sector such as accommodation sector and transportation sector, while because of the transmissibility of the COVID-19, the prevention and control policies mainly focus on quarantine and avoiding contacting which is quite different and even opposite from the concepts of contact-intensive sector. As for the consumers, they are one of the components of a supply chain, and also a part of the tourism supply chain. Their behaviors will influence the development of tourism sector, since the behaviors will be embodied in the whole process of tourism, including pre-visit, on-site and post-visit to a particular destination, and they mainly do is buying and using a product or service which will directly influence the other 3 components of tourism supply chain, and at the end the whole tourism sector and its development will be impacted.

Based on the previous studies from other authors, we summarized that there are two main the influencing factors of the COVID-19 epidemic on tourism sector, one is the direct factor which is related to the clinical seriousness and transmissibility feature of COVID-19. The other one is indirect factor which involves the prevention and control polices. Since the policy, such as full lockdown, limit the tourism behaviors of consumers and also other key components of tourism supply chain. The reason why they are influencing factors, from the aspect of the direct factor, it's because people know the danger, symptom and side-effect of coming down with the virus by personal experience, families' experience or news. As for the indirect factor, it's mainly because those policies limit the relevant travel activities of people. Besides, we can also know that these factors both negatively and positively influence current tourism sector situation but also its development, one thing is that the economy of tourism sectors is disrupted. During the epidemic, accommodation sector (like hotel), and attractions sector (like museums) usually face the situation of stopping the business because of the policies in China, transport sector (like aviation) usually face the problem of cancellation and limitation of airlines, while tourism



services sector and tourist boards' sector needed to adjust the plan of marketing and management, and also needed to renew and inform the latest news of prevention and control policies (or the situation of clinical seriousness) to tourists (consumers), they are the challenges for tourism sector. Meanwhile, it's also a kind of chance for tourism sector development, since other new tourism forms (cultural tourism and ecotourism) which can stimulate the economy become more popular and even become the trend in China. In addition, consumers also will also have a higher demand in the hygiene of accommodation, transportation and tourist attraction, and it can improve the products and services of relevant sector with the increasing demand.

The results of consumers' behavior questionnaire have showed that COVID-19 epidemic has impacted the respondents' travel plans, choices of travel destinations, actual travel times. However, we couldn't conclude the COVID-19 epidemic has a positive or negative influence on consumers' behaviors based on the questionnaire, and meanwhile it's hard to judge the influence is in a positive or negative way since it is from person to person, for example, when facing the cancellation of flight because of the control policies of the COVID-19 epidemic, some consumers may think it has a bad impact on their tourism plans and it is inconvenient to cope with the refund process, while some consumers may consider it saves money unintentionally and they can change the travel destination and choose to go to another better destination with refund. In this case, we can know that the impact of COVID-19 on consumers' behavior is like a double-edged sword. However, the impact of the COVID-19 epidemic can be embodied in the change of consumers' tourism behaviors whatever it affected positively or negatively.

Through the result of cross tabulation analysis of domestic travel destination between the epidemic (from 2020 to 2022) and January 8, 2023. We conclude that there is a significant relationship between the two period which means that respondents' choices were influenced by previous travel experience (from 2020 to 2022), therefore domestic tourism will still be the popular tourism form in China, especially the east and south area of China. Linear regression result shows that how respondents behave in tourism from 2020 to 2022 are mainly impacted by the dangerous feature of COVID-19 and strict policies, in particular, the direct factor of the COVID-19 epidemic.

The results of Cross tabulation analysis between future behaviors and social profiles presents that most of respondents have a preference for domestic tourism, self-guided tour and

using the approach of online reservations in the future, especially among students and self-employee workers. It also means that in the future domestic tourism is still a more popular tourism form even after the end of the epidemic, and self-guided tour will be more welcomed by people, meanwhile tour operators and tourist agencies need to change their marketing plans according to the behaviors and future demand of consumers, besides, tourism websites and relevant applications will be more personalized and complete, at the same time the digitalization and technology in tourism sector will be trendy and it will be improved based on consumers' behaviors, demand and feedback.

Moreover, the results of linear regression between actual travel time after Jan 8, 2023 and statement based on TPB framework shows that under the situation of the epidemic, consumers' tourism attitudes and behaviors are influenced by the COVID-19 epidemic, and meanwhile it will be embodied in the tourism sector development. Besides, most of respondents keep a positive attitude in the future development of tourism sector, and based on the TPB framework, their families or friends, etc. also have the same attitude (social norms) which is also one reason why respondents thought the prospects of the tourism sector development was not terrible. In addition, extra time, money and energy to travel (perceived behavior control) is also the reason to support the tourism sector development in China.

Furthermore, the two Linear regression results show the development of tourism sector was limited under Zero COVID-19 policy and consumers' behavior also have been changed a lot during the epidemic. However, with the relaxation of the prevention and control policies after January 8, 2023, the prospects of tourism sector development in China is further positive and also more consumers will be willing to enjoy travel to support the tourism sector development in China.

To encourage and support the tourism sector development in China, most of respondents came up with many sincere and useful ideas. Combining the reply of respondents to the closed-end question and open-ended question (about suggestions of tourism sector development in China), we can conclude 5 keywords, they are: quality, policies, management, maintenance and innovation. In regard to quality, there are two aspects, one is for suppliers, tour operators and tourist agencies, they need to improve the quality of products and services, including the hygiene aspects, personalized services, etc. And the other one is for consumers, they need to notice their behaviors during travel, such as showing respects to local culture and protecting

local environment. Policies means not only improving the original one but can come up with new polices, and these policies aim at providing more benefits to tourist or targeted group (like students) and also protecting their rights. Management mainly refers to the government supervision, they should manage the illegal and unfair behaviors in tourism sector, for example, some retailers charge tourists higher price than that of local people. Maintenance means maintaining great and special local culture (tradition costume, diet culture), such as Bejing Opera, Zibo barbecue, etc. Innovation refers to cooperate with other industries to provide more diversified tourism products and services and also try to do publicity more creatively to attract more tourists.

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# COVID-19 POVEIKIO KINIJOS TURIZMO SEKTORIAUS PLĖTRAI ANALIZĖ: VARTOTOJŲ POŽIŪRIS

Yixuan Tang

## MAGISTRO BAIGIAMASIS MAGISTRO DARBAS

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Šidlauskaitė-Riazanova,

Vilniaus, 2023

### SUMMARY IN LITHUANIANSANTRAUKA

56 puslapių, 16 lentelių, 7 paveikslų, 127 nuorodų.

Pagrindinis šio magistro darbo tikslas - išanalizuoti COVID-19 epidemijos įtakos veiksnių poveikį turizmo sektoriui Kinijoje, [remiantis vartotojų požiūriu ir elgsena. Ar reikia tai pridėti po Kinijoje] ir įvertinti, kaip vartotojų požiūris ir elgsena veikia turizmo sektoriaus plėtrą Kinijoje.

Magistro darbą sudaro trys pagrindinės dalys: literatūros apžvalga, tyrimo metodika ir atitinkami tyrimo rezultatai, taip pat išvados ir rekomendacijos.

Literatūros analizėje apžvelgiamos pagrindinės turizmo sektoriaus sąvokos, jo plėtra vystymasis ir turizmo formaformos. Be to, pateikiama turizmo tiekimo grandinės apibrėžtis ir struktūra, taip pat nurodoma, kokią įtaką COVID-19 epidemija daro keturiems turizmo tiekimo grandinės komponentams. Be to, taip pat atsižvelgiant į jos svarbą ir įtaką darančius veiksnius pristatyta planuojamos elgsenos teorijos sistema. Apibendrinti ir išanalizuoti tiesioginiai ir netiesioginiai COVID-19 įtakos turizmo sektoriaus plėtrai veiksniai, išanalizuota, kaip COVID-19 paveikė turizmo sektorių ir jo plėtrą.

Tyrimo rezultatai statistiškai analizuoti naudojant SPSS programinę įrangą. Tyrimo patikimumui ir Likerto (vertinimo) skalės klausimų suderinamumui užtikrinti pritaikėme Kronbacho alfa koeficientą. Jo reikšmė visų skalės klausimų atvejais buvo didesnė nei 0,6, o tai rodo, kad visos dimensijos buvo suderintos. Atliktas tyrimas parodė, kad visi tiesioginiai ir netiesioginiai COVID-19 epidemijos veiksniai turėjo įtakos respondentų turizmo elgsenai, taip pat atskleidė, kad respondentai teigiamai vertino turizmo sektoriaus plėtrą Kinijoje.

Išvadose ir pasiūlyme apibendrintos pagrindinės literatūros analizės koncepcijos ir tyrimo rezultatai. Autorės nuomone, kad šis darbas gali būti naudojamas kaip gairės kitiems autoriams, analizuojantiems COVID-19 poveikį, taip pat atsižvelgia į vartotojų turizmo elgseną, todėl gali būti naudingas paslaugų tiekėjams, kelionių organizatoriams ir vyriausybėms.

# THE ANALYSIS OF IMPACT OF COVID-19 ON TOURISM SECTOR DEVELOPMENT IN CHINA BASED ON CONSUMERS' ATTITUDES

Yixuan Tang

## MASTER THESIS

### GLOBAL BUSINESS AND ECONOMICS MASTERS PROGRAMME

Faculty of Economics and Business Administration, Vilnius University

Supervisor: Doc.dr. Giedrė Dzemydaitė and asist. Brigita Šidlauskaitė-Riazanova,

Vilnius, 2023

## SUMMARY IN ENGLISH

56 pages, 16 tables, 7 figures, 127 references.

The main aim of this master thesis is to analyze the influencing factors of the COVID-19 epidemic on tourism sector in China, and to evaluate how consumers' attitudes and behaviors towards the tourism sector development in China.

The Master thesis consists of three main parts: the literature review, the research methodology and relevant results, as well as a conclusion and recommendations.

Literature analysis reviews the basic concepts of tourism sector, and its development and tourism form. Besides, it also presents the definition and structure of tourism supply chain, and how the COVID-19 epidemic influences on the four components of tourism supply chain. In addition, theory of planned behavior (TPB) framework has also be introduced from its importance and influencing factors. In addition, the direct and indirect influencing factors of COVID-19 on tourism sector development are also summarized and analyzed, as well as analyzes the how tourism sector and its development affected by COVID-19.

The results of the research were statistically analyzed by using the SPSS programme batch. We adopted Cronbach's Alpha coefficient to ensure the reliability of the study and the alignment of the Likert scale questions. In general, it was over 0.6 of all scale questions which indicates that the all dimensions were consistent. Moreover, the performed research proved that the direct and indirect factors of COVID-19 epidemic has all affected the tourism behavior of respondents, and also revealed that respondents had a positive attitude to the tourism sector development in China.

The conclusions and proposal concluded the main concepts of literature analysis and research results. The author believes that the paper can be used as a guideline to other authors who also

consider the consumers' tourism behavior when analyzing the impacts of COVID-19 and can provide suggestions to suppliers, tour operators and governments.

## ANNEXES

### Annexe 1. Questionnaire of consumers' behavior towards tourism sector development

Q1 Have you ever had a travel plan from 2020 to 2022?

- Yes
- No

Q2 Have you ever canceled your travel plan during this period because of the COVID-19 epidemic?

- Yes
- No

Q3 If yes, what's the main reason that you cancelled your travel plan during the COVID-19 epidemic?

- Clinical seriousness and transmissibility of COVID-19
- Prevention and control policies, e.g. lockdown, flight cancellation
- Income reduction and even unemployment
- others \_\_\_\_\_

Q4 How many times have you traveled from 2020 to 2022?

- 0
- 1
- 2
- 3
- 4
- 5 and more

Q5 Where did you go?



- Traveled within the province of residence
- Traveled outside the province of residence
- Domestic tourism
- Outbound tourism
- All of them

Q6 If you choose 'outbound tourism' or 'All of them', where did you go? (more than one choice is possible)

- Asia
- Europe
- North America
- South America
- Africa
- Oceania

Q7 What's the most vital reason to choose the outbound tourism during the epidemic?

- The epidemic has been comparatively slowed down in other countries
- Enjoyed my life and I had relevant documents (visa, residence permit, etc.)
- The prevention and control policies of other countries was not strict
- Work and study
- Visited families and friends
- The trust to vaccines
- Others \_\_\_\_\_

Q8 If you choose 'travelled outside the province of residence' or 'domestic tourism' or 'All of them', where did you go (more than one choice is possible)?

- North China (Beijing, Tianjin, Hebei, Shanxi, Inner Mongolia)

- East China (Shanghai, Jiangsu, Zhejiang, Anhui, Jiangxi, Shandong, Fujian, Taiwan)
- Central China (Henan, Hubei, Hunan)
- South China (Guangdong, Guangxi, Hainan, Hong Kong, Macao)
- Northeast China (Heilongjiang, Jilin, Liaoning)
- Southwest China (Chongqing, Sichuan, Guizhou, Yunnan, Tibet)
- Northwest China (Shaanxi, Gansu, Qinghai, Ningxia, Xinjiang)
- No, only outbound tourism

Q9 What's the most vital reason to choose the domestic tourism during the epidemic?

- The epidemic has been comparatively slowed down in China
- Lower travel expense
- More tourist attractions
- Hard to travel overseas because of prevention and control policies of every country
- Work and study
- Visited families and friends
- The trust to vaccines
- Others\_\_\_\_\_

Q10 China has ended COVID quarantine since January 8, 2023 and has also dropped some strict restrictions after that, which has made a major shift from Zero-COVID Policy. Therefore whether you have traveled from January 8 to May 3rd?

- Yes, and I chose the domestic tourism
- Yes, and I chose the outbound tourism
- Yes, and I enjoyed both of them
- No

Q11 If you choose 'domestic tourism' or 'I enjoyed both of them', where did you go (more than one choice is possible)?

- North China (Beijing, Tianjin, Hebei, Shanxi, Inner Mongolia)
- East China (Shanghai, Jiangsu, Zhejiang, Anhui, Jiangxi, Shandong, Fujian, Taiwan)
- Central China (Henan, Hubei, Hunan)
- South China (Guangdong, Guangxi, Hainan, Hong Kong, Macao)
- Northeast China (Heilongjiang, Jilin, Liaoning)
- Southwest China (Chongqing, Sichuan, Guizhou, Yunnan, Tibet)
- Northwest China (Shaanxi, Gansu, Qinghai, Ningxia, Xinjiang)

Q12 If you choose 'outbound tourism' or 'I enjoyed both of them', where did you go? (more than one choice is possible)

- Asia
- Europe
- North America
- South America
- Africa
- Oceania

Q13 How many times did you travel from January 8 to May 10th?

- 1
- 2
- 3
- 4
- 5 or more

Q14 Please choose your level of disagreement or agreement with the statements below regarding your travel since January 8, 2023.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Since the COVID-19 epidemic is under control now, and I won't be infected and I really want to relax and enjoy my life by travel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Since the prevention and control policies of my country has been relaxed, and I can finally travel without limitation of the COVID-19 epidemic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because I desire to help the recovery of national or/and world economy and tourism sector via travel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because lots of my relatives, friends and colleagues have been traveling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because I have time, money and interest to travel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q15 Have you ever heard about ecotourism, cultural tourism and sustainable tourism? (more than one choice is possible)

- Yes, I have heard about ecotourism
- Yes, I have heard about cultural tourism
- Yes, I have heard about sustainable tourism
- Yes, I have heard all of them
- No

Q16 Have you ever participated in ecotourism and/or cultural tourism?

- I have participated in ecotourism
- I have participated in cultural tourism
- I haven't participated in both of them
- I have participated in both of them

Q17 Ecotourism is a kind of sustainable tourism and it aims at protecting environment, including go hiking, bird watching, etc. Cultural tourism is focused on learning about and experiencing the cultural heritage of a destination and it usually includes activities such as visiting museums, historical sites, art exhibitions, and cultural festivals. Would you like to participate or say still participate in ecotourism and/or cultural tourism in the future?

- Yes, I would like to participate in both of them
- Yes, I would like to participate in ecotourism
- Yes, I would like to participate in culture tourism
- No, I wouldn't like to participate in both of them

Q18 Please choose your level of disagreement or agreement with the statements below regarding ecotourism and cultural tourism.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I'm willing to pay more travel expenses to support the development of ecotourism and cultural tourism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think ecotourism and cultural tourism will positively affect future development of tourism sector in China	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think ecotourism and cultural tourism need to be strongly supported by policies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think ecotourism and cultural tourism need to be strongly supported by government regulation and supervision	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think ecotourism and cultural tourism need to be strongly supported by advertising and promotions by social media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q19 How have the epidemic specifically affected tourism sector from your perspective? (more than one choice is possible)

- Changes in the demand of consumers
- Adjustment in marketing strategies
- Upgrade in products and services
- Others \_\_\_\_\_

Q20 Please choose your level of disagreement or agreement with the statements below regarding tourism sector development in China.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I think COVID-19 epidemic stimulate tourism sector development in China	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe that the pandemic has created an opportunity to promote sustainable tourism practices in China.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm positive to tourism sector development in China after the epidemic ends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The prospects of tourism sector development in China is terrible and negative after the epidemic ends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People I know are supportive and positive of the development of the tourism sector in China after the epidemic ends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other tourists I know prioritize sustainable and responsible tourism practices when traveling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My families and friends think the epidemic has had a significant impact on tourism sector development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have extra time, money and energy to support the tourism sector development in China by travel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q21 Please choose your level of disagreement or agreement with the statements below regarding your future travel.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I'm willing to do domestic tourism after the epidemic ends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm willing to do outbound tourism after the epidemic ends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will change the mode of transportation after the epidemic ends, e.g. from flying to driving	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I intend to change in type of accommodation, e.g. from hotels to vacation rentals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a preference for self-guided tour after the epidemic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a preference for using travel booking websites or apps after the epidemic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q22 Please choose your level of disagreement or agreement with the statements below regarding improve competitiveness of tourism sector in China during the post-COVID19?

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Improving the service quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Offering more attractive tourism products and services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strengthening the management of hygiene, disinfection, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strengthening marketing strategies, and improving brand awareness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cooperating with other industries to provide more diversified tourism products and services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q23 What any other suggestion do you have for the tourism sector development in China?

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Q24 What is your age?

- Under 18
- 18-25
- 26-35
- 36-45
- 46-55
- 56-65
- Over 65

Q25 What is your gender on your ID card?

- Male
- Female



Q26 Where do you live in China?

▼ Hebei (1) ... No relevant option (35)

Q27 What is your occupation?

- Student
- Private Employee
- Government Employee
- Employer
- Self-employed workers (including freelancer)
- Others \_\_\_\_\_

Q28 What is your highest level of education you have completed?

- Middle school
- High school and equivalent
- Vocational degree
- Bachelor's degree and equivalent
- Master's degree and above

Q29 What's your personal monthly income (Chinese Yuan), including getting from parents (for students totally don't have jobs)?

- 5000 & Under 5000
- 5001-8000
- 8001-11000
- 11001-14000
- 14001-17000
- >17000

## Annexe 2. Result of Linear regression between actual travel times after Jan 8 and profiles

	Unstandardized		standardized		t	P	VIF	R <sup>2</sup>	Adjusted R <sup>2</sup>	F
	coefficients		coefficients							
	B	Std. error	Beta							
Constant	3.08	0.612	-		5.036	0.000***	-			
What is your age? _26-35	-0.599	0.37	-0.154		-1.62	0.107	1.477			
What is your age? _36-45	-0.444	0.342	-0.177		-1.301	0.195	3.032			
What is your age? _46-55	-0.667	0.356	-0.281		-1.875	0.063*	3.671			
What is your age? _56-65	-0.64	0.393	-0.192		-1.63	0.105	2.273			
What is your age? _Over 65	0.669	0.766	0.079		0.873	0.384	1.334			
What is your gender on your ID card? _Male	0.307	0.219	0.164		1.402	0.163	2.257			
Where do you live in China?	0.009	0.011	0.07		0.812	0.418	1.218			
What is your occupation? - Selected Choice_Government Employee	-0.035	0.505	-0.016		-0.069	0.945	8.427			
What is your occupation? - Selected Choice_Others	-0.594	0.788	-0.085		-0.754	0.452	2.103	0.128	0	F=0.997 P=0.471
What is your occupation? - Selected Choice_Private Employee	0.353	0.541	0.102		0.652	0.516	4.037			
What is your occupation? - Selected Choice_Self-employed workers (including freelancer)	-0.007	0.501	-0.003		-0.014	0.988	7.637			
What is your occupation? - Selected Choice_Student	-0.27	0.578	-0.145		-0.467	0.641	15.71			
What is your highest level of education you have completed ? _High school and equivalent	0.096	0.437	0.019		0.219	0.827	1.268			
What is your highest level of education	0.196	0.187	0.091		1.048	0.296	1.235			

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you have completed ? \_Master's degree

and above

What is your highest level of education

you have completed ? \_Middle school 0.834 0.634 0.12 1.315 0.191 1.364

What is your highest level of education

you have completed ? \_Vocational degree -0.081 0.287 -0.025 -0.281 0.779 1.295

What's your personal monthly income

(Chinese Yuan), including getting from parents (for students totally don't have jobs)?\_14001-17000

0.184 0.364 0.055 0.506 0.613 1.952

What's your personal monthly income

(Chinese Yuan), including getting from parents (for students totally don't have jobs)?\_5000 & Under 5000

-0.128 0.356 -0.069 -0.361 0.719 5.987

What's your personal monthly income

(Chinese Yuan), including getting from parents (for students totally don't have jobs)?\_5001-8000

-0.277 0.32 -0.109 -0.865 0.388 2.587

What's your personal monthly income

(Chinese Yuan), including getting from parents (for students totally don't have jobs)?\_8001-11000

-0.197 0.319 -0.069 -0.618 0.538 2.062

What's your personal monthly income

(Chinese Yuan), including getting from parents (for students totally don't have jobs)?\_>17000

0.189 0.393 0.053 0.479 0.633 1.982

Independent variable: How many times did you travel from January 8 to May 3rd?

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Notes: \*\*\*, \*\*, \* respectively stands for the significance level of 1%, 5%, 10%

Source: compiled by the author