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吴丽慧◎著

Earthquake Disaster Preparedness for the Tourism Industries in Japan and China



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## Abstract

Tourism has been encouraged and promoted by many countries and regions over the decades, as it can bring considerable contribution in economic, social, cultural sectors. For example, it can provide employment opportunities, generate foreign exchange, increase government revenues, broaden educational and cultural horizons, and promote interregional communication and understanding. According to the World Tourism Organization, tourism has experienced continued growth and deepening diversification to become one of the fastest growing economic sectors in the world. However, as Murphy and Bayley (1989) indicated, tourism is especially vulnerable to a range of disaster occurrences because it depends on so many components and individual businesses. Tourism demand is sensitive to catastrophic influences, and part of the long-term volatility of tourism demand is due to the variety of shocks to the tourism system from external events.

This book takes Japan, a developed country, and China, a developing country in Asia and the Pacific region as the cases to explore earthquake disaster preparedness. Both of them are earthquake-prone countries and have experienced huge earthquakes causing large loss in tourism business. It is reported that the 2008 Wenchuan earthquake with a magnitude of 8.0 on the Richter scale, killed 54 tourists in Sichuan Province, and caused more than 50 billion yuan (7.24 billion U. S. dollars) loss in Sichuan's tourism sector until June 13, 2008. The report released by Japan National Tourism Organization suggests that soon after the Great East Japan Earthquake during the period between 12 March and 31 March, the international visitor arrivals to Japan fell off sharply by 72.7% as compared with the same period in 2010. However, there are few researches in tourism earthquake preparedness. The aim of this research is to promote tourism resilience in destination by case studies of Japan and China.





# Preface

Tourism in East Asia and the Pacific is thriving. The World Tourism Organization (UNWTO) reported that East Asia and the Pacific has been the fastest growing destination region over the past 30 years. Forecasts for the international tourist arrivals to the region show that there will be 397 million arrivals in 2020. However, tourism is sensitive to catastrophic influences and part of the long-term volatility of tourism demand is due to the variety of shocks to the tourism system from external events. Hence, to improve resilience of tourism becomes of importance.

This book takes Japan, a developed country, and China, a developing country in Asia and the Pacific region as the cases to explore earthquake disaster preparedness. Both of them are earthquake-prone countries and have experienced huge earthquakes causing large loss in tourism business.

Firstly, a literature review of tourism and disaster is conducted. It is found that most papers explored disasters' impact on tourism demand, emphasizing on natural disasters such as earthquake and tsunami, terrorist attack, epidemics and fire. Also, a large number of researches focused on general disaster management for tourism industry. However, the literature has rarely dealt with specific disaster preparedness, such as earthquake preparedness, which may play a critical role in influencing continuity in tourism development in the destinations.

Next, the principal part of this book is divided into four sections. A preliminary study is to test the sensitivity of tourism demand due to huge earthquakes applying the analysis of Autoregressive Integrated Moving Average (ARIMA) model with dummy variables. Then, intervention analysis is used to explore the main disasters that negatively and significantly impact tourism



demand. The third section is to investigate tourist perception and attitude toward earthquakes by a case study of recent Chinese large earthquake disasters, that is, from the perspective of tourism demand. The final section is to examine tourism sector preparedness in the zone with high seismic risk by a case study of the National Capital Region of Japan.

Several distinct findings are obtained. First, huge earthquakes actually and significantly impacted tourism demand. Recovery process is unique that it gets quick recovery in early stage but becomes slow as time goes on. Compared with other disasters, huge earthquakes largely affected tourism demand. Second, word of mouth plays an important role in travel decision making. Tourist satisfaction was directly impacted by perceived earthquakes' impact on tourism, which was influenced by risk perception and travel motivation. Third, the respondent business in the survey region was well prepared in emergency response plans and drills. Disaster prevention for foreign visitors was lower. And less business bought insurance for disaster. Overall preparedness level for the estimated Tokyo Inland earthquake is low. Business preparedness is comparatively higher. Most respondents were not sure whether the communities, councils, central government and country have well prepared.

Lastly, it is hoped that these findings will shed lights on policy-making in tourism destinations. The stakeholders can get a better understanding of earthquake influence on tourism. Moreover, tourism researchers can conduct intensive research on disaster preparedness in high-risk areas.



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# Chapter 1

## Introduction

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East Asia and the Pacific has been the fastest growing destination region over the past decades, including Japan and China. However, tourism is especially vulnerable to a range of disaster occurrences because it depends so much on numerous components and individual businesses (Murphy and Bayley, 1989). Tourism demand is sensitive to catastrophic influences, and part of its long-term volatility is due to the variety of shocks to the tourism system from external events (Frechtling, 2001). Fig. 1-1 shows the inbound tourist arrivals in China and Japan from 1995 to 2012. It is evident that the development of tourism in both two countries is promising. However, negative effects on tourism demand occurred due to shocks such as earthquakes. Meanwhile, the tourism industry is unique compared with other traditional industries characterized by commodity flows, as if consumers of tourism (tourists or visitors) want to buy the goods (mainly travel experience), they have to move to the tourism destination. Therefore, general disaster management planning is not appropriate for the tourism industry. Currently, there are no sufficient studies or discussions which are made specially for earthquake disaster preparedness.

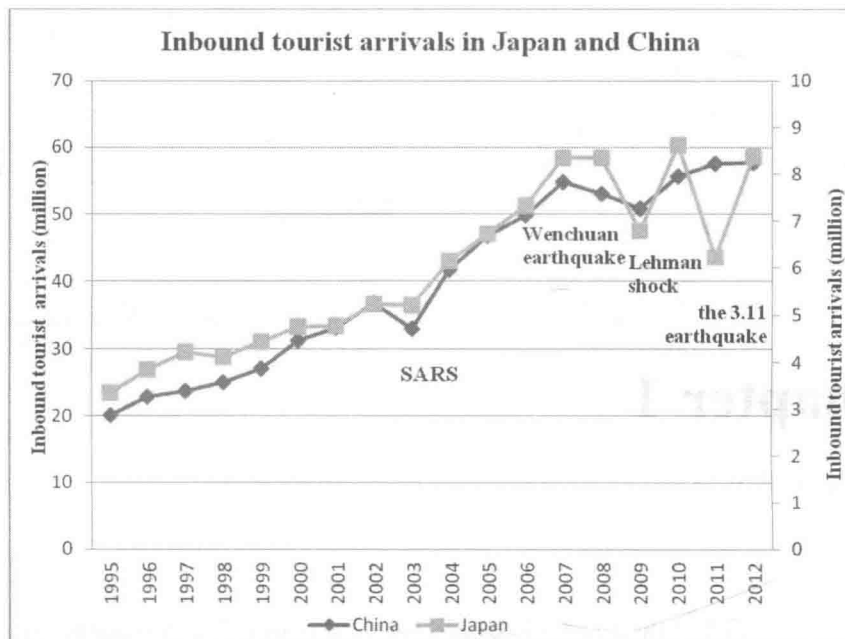


Fig. 1-1 Inbound tourist arrivals in China and Japan from 1995 to 2012

(Data source: the World Bank <http://data.worldbank.org/indicator/ST.INT.ARVL>)

## 1.1 Tourism

### 1.1.1 Definition

There are many definitions of tourism according to the purposes (e. g. Wahab, 1975; Jafari, 1977; Leiper, 1979; McIntosh and Goeldner, 1990). Compared with other definitions, the definition given by UNWTO has been widely accepted by most national statistical offices as the guide for the statistics of international tourism. It is defined that tourism comprises the activities of persons traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes (UNWTO, 1995).



### 1.1.2 The components

Tourism mainly comprises three components: the tourist; catalyst, planning, development, promotion, and management organizations; and operating sectors of the tourism industry, as shown in Fig. 1-2 (Goeldner and Ritchie, 2009). The tourist represents tourism demand and covers tourist behavior, motivation, perception, and so on. Catalyst, planning, development, promotion, and management organizations called as tourism organizations in short, mainly comprise public sector components such as official tourism departments and private sector components including non-government tourism industry associations. Operating sectors of the tourism industry mainly refer to businesses that provide tourists what they need in food, hospitality and accommodation, traveling, shopping and entertaining. Operating sectors consist of travel sectors, accommodation sectors, tourism

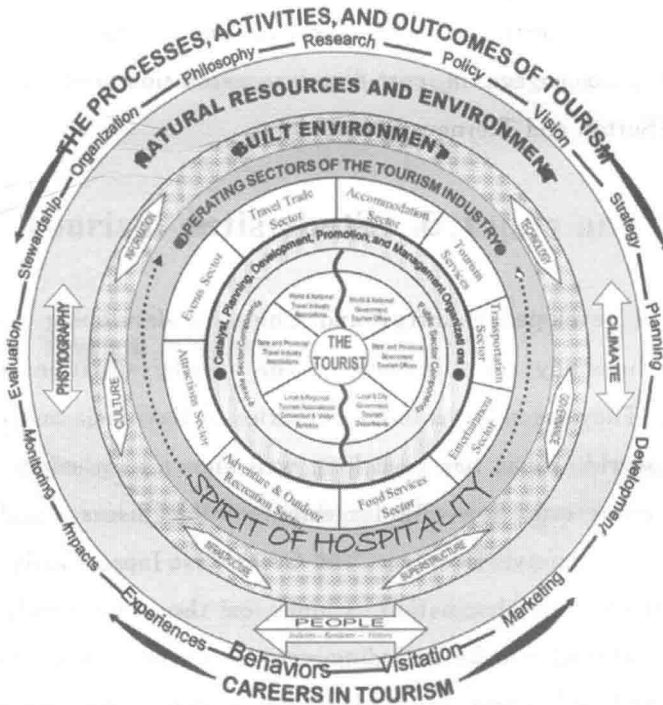


Fig. 1-2 Components of tourism and tourism management

(Source: Goeldner and Ritchie, 2009)





services, transportation sectors, entertainment sectors, food service sectors, adventure or outdoor recreation sectors, attraction sectors, events sectors, and travel trade sectors.

## 1.2 Disasters and disaster preparedness

A disaster refers to a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources. (UNISDR, 2007).

Disaster preparedness encompasses measures aimed at enhancing life safety when a disaster occurs, such as protective actions during an earthquake, hazardous materials spill, or terrorist attack. It also includes actions designed to enhance the ability to undertake emergency actions in order to protect property and contain disaster damage and disruption, as well as the ability to engage in post-disaster restoration and early recovery activities. (Sutton and Tierney, 2006).

## 1.3 Study sites

Japan, a developed country, and China, a developing country, are selected as the study cases in view of the specific situations of the two countries. ① They are representative countries in East Asia and the Pacific, even in the world. Japan has been long well-known as a safety destination with a low crime rate, low risk for communicable diseases and free from concerns for food safety. However, the Great East Japan Earthquake broke the image of the safe destination. China, on the other hand, is usually affected by external shocks including natural disasters such as the 2008 Wenchuan earthquake, and man-made disasters such as the 2003 severe acute respiratory syndrome (SARS). ② Japan is well-prepared for disasters. Disaster management in Japan is carried out at every stage of disaster