

Master Thesis

# Clarifying Information Seeking and Evacuation Behavior of Foreign Visitors to Japan

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## Abstract

As we all know, before the COVID-19, foreign visitors to Japan were likely to increase year after year. Given that Japan is prone to earthquakes, many surveys show that it is extremely difficult for foreigners to seek information and evacuate with appropriate behaviors during previous disasters in Japan. In addition, given the government's ongoing focus on security and safety issues in the tourism industry, it is necessary to understand foreign visitors' behaviors during disasters. To assist foreign visitors in Japan, the Japan Tourism Agency has developed an application called Safety Tips, which can notify disaster information in 14 languages.

The purpose of this study is to better understand the information-seeking and evacuation behavior of foreign visitors to Japan, as well as to explore their behavior patterns when a disaster occurs. This study also looked at how international visitors perceive Safety Tips and how their personal backgrounds influence their attitudes about them. The primary data for this study was an internet-based web survey that included demographic questions, personal experiences, and knowledge, also respondents' information seeking and evacuation behaviors in the Tokyo Metropolitan Earthquake scenarios, and finally their perception of Safety Tips.

First, this study examined the usage experience of all respondents and discovered that Safety Tips is more popular and well-known in Indonesia, China, and Thailand than in the U.k. and Korea. Safety Tips are not used by more than 70% of individuals who know about them or have heard about them before. We also figure out the differences among different nationalities and their different attitude based on their experience of usage. Secondly, this study used Structural Equation Modeling to investigate how personal attributes influence people's attitudes about safety tips. As a result of the findings, we can determine that 'disaster knowledge' could have a positive impact on respondents' attitudes toward Safety Tips. What is more, this study also compared the differences between information-seeking and evacuation behaviors and showed that evacuation behaviors should be utilized more often than information-seeking actions. Evacuation behaviors have also been prioritized over information-seeking activities. Furthermore, non-face-to-face information-seeking activities should be utilized more frequently than face-to-face information-seeking behaviors. In the top three activities, following evacuation advice behaviors should be used more than self-evacuation behaviors. Finally, this study attempts to apply the findings of the study to provide Safety Tips with some acceptable recommendations for future development.

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# Chapter 1

## Introduction

### 1.1 Background

As you may be aware, Japan has long been one of the most popular tourist destinations in Asia. Before the spread of Covid-19, the number of foreign visitors to Japan gradually increased. According to Japan National Tourism Organization (JNTO) statistics, the number of foreign visitors more than quadrupled between 2012 (8.36 million) and 2019 (31.9 million) that shown in Figure 1.1. As a result, the Japan National Tourism Organization has been working hard over the years to assist foreign visitors to have a better experience in Japan. Considering that Japan is a relatively disaster-prone country, disaster prevention for foreign visitors during their stay in Japan has been an issue of great concern to the Japan National Tourism Organization.

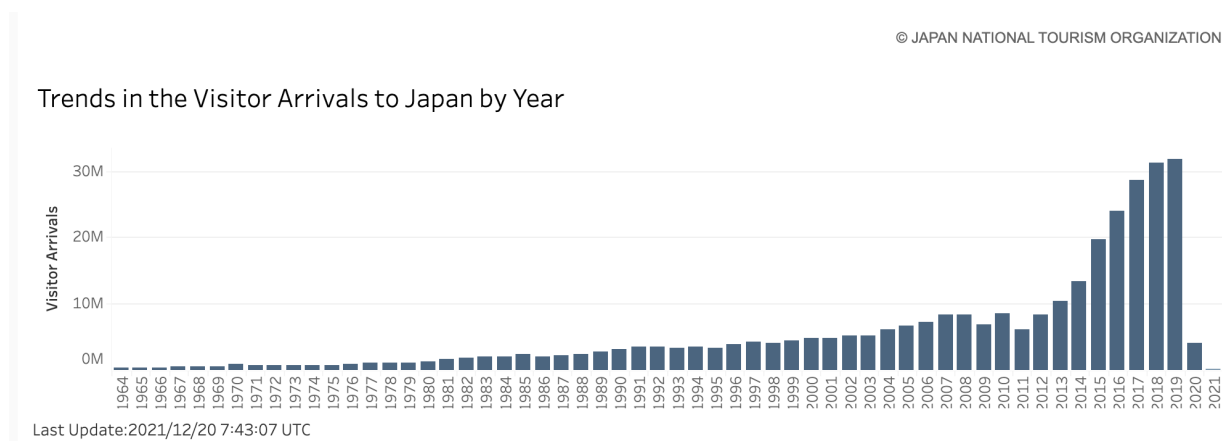


Figure 1.1: Foreign visitors number in Japan by year.<sup>1</sup>

After the 2018 Hokkaido Eastern Iburi earthquake, Survey Research Center, Inc. conducted a *survey*[1] on the evacuation behavior of foreign visitors to Japan. Survey Research Center, Inc. completed this survey in collaboration with JTB Corporation. The survey

<sup>1</sup><https://statistics.jnto.go.jp/en/graph/#graph-inbound-travelers-transition>

was completed on September 8th (Saturday) and 9th (Sunday), 2018. The survey chose the Hokkaido Tourism Information Center on Tanukikoji Shopping Street as the survey spot, and interviews were conducted by foreign-language speaking surveyors using the survey questionnaire. The survey collected 185 valid samples from foreign tourists visiting Japan who stayed in Hokkaido on September 6, 2018, asking about their behavior during the earthquake, evacuation guidance provided by accommodation facilities, and problems encountered during the earthquake. Mainland China, Taiwan, Hong Kong, the United States, and South Korea accounted for 70% of the respondents' nationalities. The study's findings reveal a number of significant findings, including difficulties in earthquakes, behaviors have taken after the disaster happened, and desired response in the event of an earthquake.

First, the survey result of difficulties encountered by foreign visitors during the earthquake was shown in *Figure2 – (a)*. The inability to access information due to power outages and the inability to charge cell phones were the top-ranked difficulties. The third most difficult problem was a lack of supplies in supermarkets and convenience stores. The fourth-ranked difficulty was the schedule change caused by the earthquake. The fifth concern was not knowing where to go or what to do because of a language barrier. Lack of food/water supplies, uncertainty about the next trip, inability to understand earthquake information shown on TV, lack of information provided by transportation agencies/airports, and lack of earthquake evacuation manuals for foreigners that make it difficult to know what to do were the sixth to tenth-ranked difficulties. The lack of multilingual disaster/transportation/evacuation information in cell phones, the lack of evacuation instructions in hotels, the lack of information about the earthquake in Japan, the lack of information about what to bring to evacuate, and the lack of information from medical institutions were the eleventh to fifteenth difficulties. According to the results, the most common difficulties during the earthquake, were related to power outages, such as "power outages made it difficult to get information" and "power outages made it difficult to charge smartphones, etc" (67.0%). Due to unforeseen circumstances caused by the earthquake, the response of "lack of supplies at convenience stores and supermarkets" (46.5%) was also common. Respondents were concerned about modifications to their itinerary as a result of transportation disruptions, such as "all my itineraries were disrupted and I had to pay a lot of money" (37.3%) and "I couldn't predict what would happen to my itinerary in the future" (27.0%). Another common difficulty was related to language issues like "I didn't know where to go because I didn't understand the language" (29.2%).

Second, *Figure2 – (b)* shows the survey results of behaviors that occurred after the earthquake. Following the earthquake, the top three common actions were "tried to get information via the Internet or SNS" (49.7%), "stayed where they were and checked on the situation" (44.3%), and "kept in touch with family and friends via the Internet, e-mail, and SNS such as Facebook and Line" (39.5%). Calling family/friends (31.9%), getting information about the earthquake from TV or radio (31.4%), contacting the hotel front desk (27%), and contacting fellow travelers (20%) was the fourth to seventh popular responses. So, based on the survey results, we can conclude that after the earthquake, people prefer to stay in the area to look into the matter while gathering information and confirming their safety via the Internet and social media. In particular, we can discover that

there are two main ways for respondents to gather information. The first is face-to-face information-seeking behaviors, such as asking people around, hotel staff, and so on. The other type of information-seeking behavior is no-face-to-face information-seeking behaviors. The other is no-face-to-face information-seeking behaviors, which primarily rely on television/radio/social media/internet. We will also divide people's information-seeking behaviors into these two types in the follow-up study to see whether people's behavioral patterns are more inclined to contact people or not.

Third, as shown in *Figure2 – (c)*, popular desired responses in the event of an earthquake were "Provide charging points, etc." (50.8%) and "Enhance information centers" (42.2%), followed by "Distribute manuals in native languages" (38.4%). And the next most common responses can be roughly divided into three categories. The first is a requirement for multilingual services, such as "want evacuation guidance in a language I understand" (36.2%) or "want disaster/traffic/evacuation information to be provided in multiple languages via smart phones, etc." (35.1%), "Would like TVs and other media to display information in English" (30.8%), "Would like information signs in my native language" (24.9%). Another requirement was for a place of evacuation, such as "providing places to stay and other accommodations" (34.6%), "Would like the hotel where I was staying to serve as a disaster information hub" (22.2%). The last category was for providing information, such as "Would like information centers to be set up to provide information on transportation and flights" (25.4%), "Provide telephone consultation services" (15.1%), and "Would like pamphlets and other materials that show what to do after an evacuation" (14.1%), and "Wish to learn more about medical institutions" (9.2%).

Combined with the previous findings in the survey, it is clear that there is a need to provide sufficient places for foreign visitors to recharge in order to ensure that they can contact their family/friends and gather the necessary disaster information from social media/networks. The following step is to provide information in their language as well as evacuation assistance.

Considering the Japan Tourism Agency has constantly concern with issues of security and safety in the tourism industry. So, under the supervision of the Japan Tourism Agency, R.C. Solutions, Inc. developed a free application called Safety tips, which can notify foreign visitors of earthquake early warnings, tsunami warnings, eruption alerts, special warnings, heatstroke information, national protection information, evacuation advisories, and other disasters that occurred in Japan. *Figure3* shows the Safety Tips interface. During disasters, safety tips can provide a variety of purposes for foreign visitors to Japan. It is available in 14 languages (15 languages), including Japanese, English, Chinese (traditional and simplified), Korean, Spanish, Portuguese, Vietnamese, Thai, Indonesian, Tagalog, Nepali, Khmer, Burmese, and Mongolian (as shown in *Figure4*). Safety Tips is an important part of this study. The study will compare the difference in attitudes toward Safety Tips among respondents of various nationalities, as well as the differences in attitudes toward Safety Tips among people from various upbringing backgrounds.



- 1.2 Problem Identification
- 1.3 Research Goal and Objective
- 1.4 Hypothesis
- 1.5 Significance of the study
- 1.6 Thesis Structure

# Chapter 2

## Background

This is Chapter 02!

### 2.1 Methods of Computing

# Chapter 3

## c3

This is Chapter 03!

### 3.1 Methods of Computing

# Chapter 4

## c4

This is Chapter 04...

### 4.1 Methods of Computing

# Chapter 5

## c5

This is Chapter 05

### 5.1 Methods of Computing