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Research on an international comparison of risk perception

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Abstract

Tourism industry is vulnerable to external shock such as natural and human-caused disasters. Covid-19 shows an example of vulnerability and threat for tourism industry. In the future, the possibility of the risk like these threats cannot be denied. This study employs a quantitative approach, conducting an online survey on risk perception of Japanese, Chinese, and Taiwanese. Respondents are asked about degree of risk perception when going on an oversea trip. To measure the degree of risk perception, Steel-Dwass test will be used to analyze the multiple comparisons of each respondents' evaluation. The results of this study clarify that there are significant differences among Japanese, Chinese, and Taiwanese respondents in some items of the questionnaire survey. It is important to discuss risk management plan considered characteristics of the people of country or region.

1 Introduction

This study is to clarify differences of risk perception among Japanese, Chinese, and Taiwanese as international comparison. Until the outbreak of the Covid-19 pandemic, number of inbound tourists continued to increase year on year in Japan. According to the World Travel & Tourism Council (WTTC), travel and tourism directly contributed 8.9 trillion US dollars to the world's GDP in 2019. The tourism and travel sector contributed to 10.3% of the world's GDP and created 330 million jobs. It is approximately 1 in 10 jobs around world. In Japan, contribution of tourism industry to GDP was at a level of US$375.4 billion, which accounts for 7.5% of Japan's GDP in 2019.

The Japanese government started to put greater effort in promoting inbound tourism. In 2003, the Japanese government launched the Visit Japan Campaign (VJC) to increase international tourists. Its goal was to achieve ten million foreign visitors by 2010. The Japan National Tourism Organization (JNTO), national institution of Japan, plays a pivotal role in the VJC. The Basic Act for Promoting a

Tourism-Oriented Country was enacted in 2007 and then the Japan Tourism Agency (JTA), a division of the Ministry of Land, Infrastructure, Transport and Tourism, was established in 2008. The law aims at promoting inbound tourism as an integral part of the nation's grand scheme for economic development. Also, the mission of the Japan Tourism Agency is to promote domestic and international tourism by formulating marketing strategies and conducting various surveys.

The number of international tourists increased drastically in 2007. The number of foreign tourists to Japan decreased to 6.79 million in 2009 and 6.22 million in 2011 because of some reasons such as financial crisis and natural disaster. Afterwards, the number of inbound tourists moved gradually toward recovery. In 2013, the number of international tourists to Japan finally exceeded the government target of 10 million and then 19.73 million international tourists visited Japan in 2015. The number of inbound tourists surpassed the number of outbound tourists, outnumbering outbound tourists for the first time in the past 45 years. In 2016, the Japanese government raised the target number of inbound tourists higher to 40 million in 2020. The number of the international tourists continued to increase, breaking the record for the seventh consecutive year by 2019. The number of the international tourists broke the record for the seventh consecutive year by 2019. However, international tourists drastically decrease due to the Covid-19 pandemic in 2020 as shown in Figure 1.

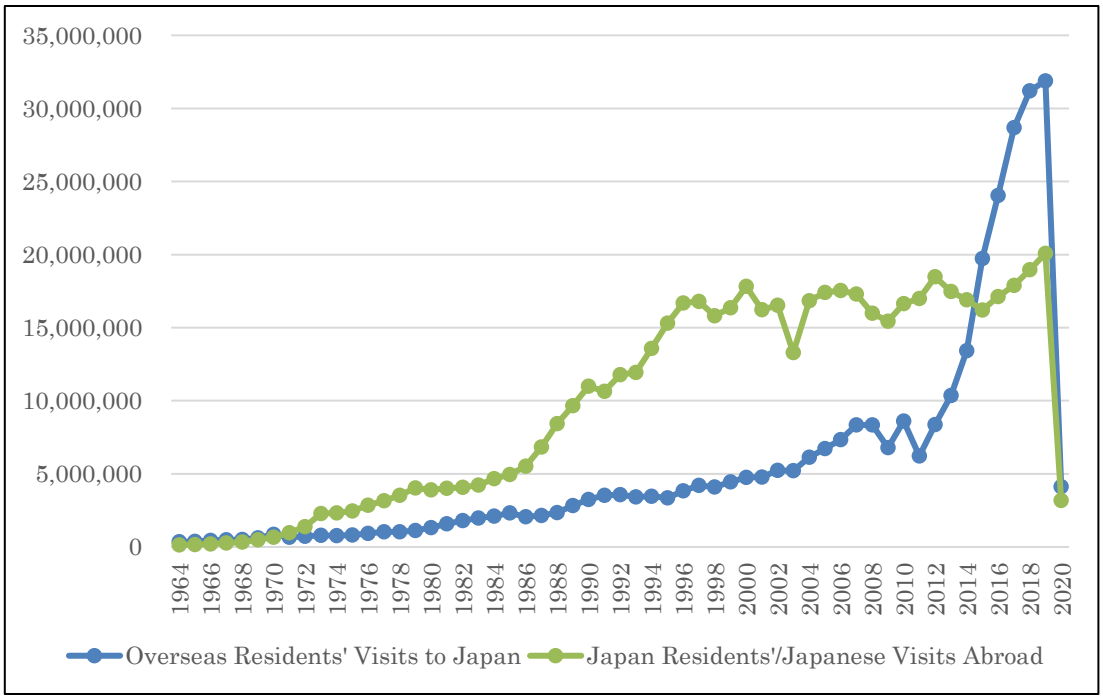

Figure 1. Tourism Statistics (1964 to 2020) for Japan
Source: Japan National Tourism Organization (JNTO)

Figure 2 clarifies how much impact Covid-19 outbreak has, comparing number of foreign visitors to Japan in 2009 and 2011 to number of foreign visitors in 2020 and 2021. Due to the global economic slowdown after the collapse of Lehman Brothers, the number of foreign tourists visiting Japan was decreased in 2009. Earthquake hit the Tohoku region, Japan in 2011 and total number of foreign visitors to Japan dropped 28%, compared to the previous year. As shown in figure 2, foreign visitors to Japan drops 99.9% in April to June, 2020. The number of foreign visitors to Japan increases very slightly after July. The Government of Japan still continues to enforce strict travel regulations to non-resident foreigners. Japanese citizens and foreign residents with a reentry permit are generally allowed

to reenter Japan, but they must comply with strict pre- and post- travel testing requirements and quarantine upon arrival. Even after two years that Covid-19 spread globally, it is not converged.

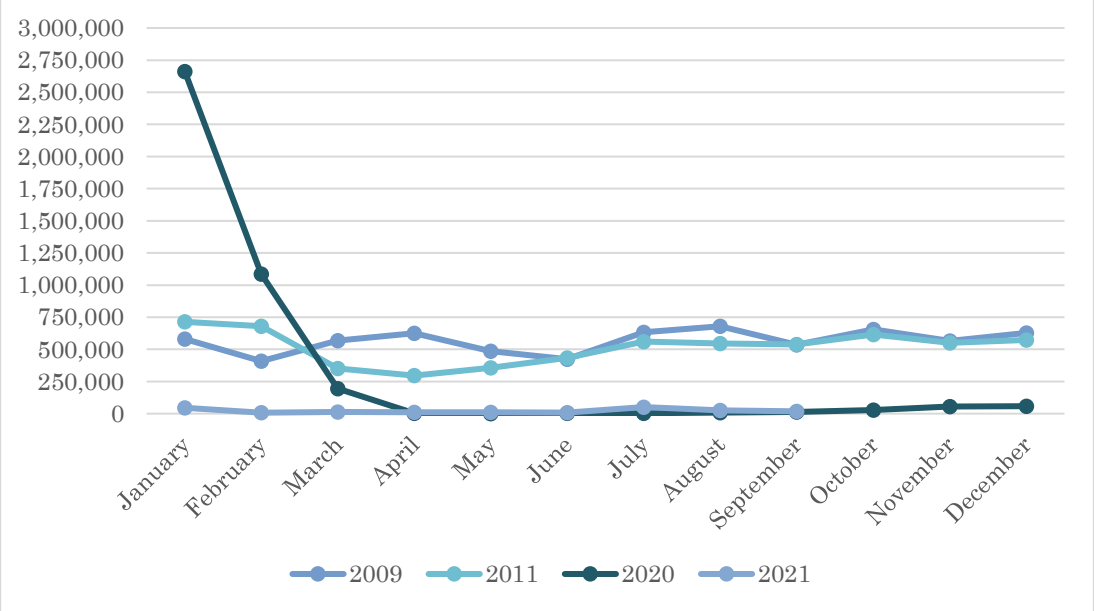

Figure 2. Monthly statistics of foreign visitors to Japan in 2009, 2011, 2020 and, 2021.

Source: Japan National Tourism Organization (JNTO)

As stated above, tourism industry can be expected to have an economic effect, but is always vulnerable to external shock such as natural and human-caused disasters. Covid-19 shows an example of vulnerability and threat for tourism industry. In the future, the possibility of the risk like these threats cannot be denied. It is necessary to assume that any threats will occur and consider the effect on people. Therefore, this study employs a quantitative approach, conducting an online survey on risk perception of Japanese, Chinese, and Taiwanese. Research on risk perception in international comparison is still limited, so the results of this study are helpful for researches who have similar interest in this topic.

2 Literature Review

There are previous studies that focus on crisis in tourism industry. The tourism industry is highly vulnerable to natural and human-caused disasters (Sönmez, Apostolopoulos, & Tarlow,1999). Natural disasters are classified as hurricanes, volcanic eruptions, and torrential rains, while social or political disaster identified by Lepp & Gibson (2003) are terrorism, war and political instability, health concerns, and crime. Poorly managed aftereffects of a disaster can easily destroy the destination's image of safety while evolving into a long-term crisis for the local tourism industry.

According to Richter (2003), Dimanche & Lepetic (1999), and Basala & Klenosky (2001), there are five major risks related to tourism: terrorism, war and political instability, health, crime and cultural and language difficulties.

Tourism industry always has the above-mentioned risk. Risk perception can be explained as the degree of the risk for a threatening situation (Moreira, 2008). Compared with the past, tourism industry is more vulnerable to natural, and human-caused disaster than before because of mutual interconnections of the global economy. In addition, Mayer, Bichler, Pikkemaat, & Peters (2021) emphasizes on the special attention of health crisis by disease outbreak such as SARS, MERS, and Covid-19 and points out the necessity of media' role in shaping public discourses around crisis.

Yeh (2021) describes that tourism industries need to have countering and recovery strategies. Chan, Nozu, & Cheung (2019) also insist that the hospitality industry need to develop a framework for understanding and implementing risk management strategies. Neuburger & Egger (2020) conducted a questionnaire survey to examine the risk perception and travel behavior on Covid-19 among travelers in the DACH region. The results showed that there was a significant increase in risk perception after Covid-19 was declared a pandemic. Primary goal of tourism industry is to fulfil people's travel desire and holidays' expectations.

In order to achieve those goals, providers of tourism industry need to make sure that safety and security are given priority and respected. Even though many previous studies have already clarified risk factors and their negative effects, very little research is done about people's risk perception. Therefore, any risk on natural and human-caused disaster, not just like infectious disease such as Covid-19, will be expected in the future, so analyzing the people's risk perception is useful when considering countermeasures.

If people's risk perception is different from each country or region, it is important to provide potential foreign tourists necessary information for early recovery of inbound tourism. In this study, the respondents of the questionnaire survey are the people from East Asian countries, so their mentality may be similar to each other. This study clarifies whether there is a significant difference among groups of three even though their mentality is similar.

3 Data and Method

To clarify the research objectives, this study employs the statistical data of questionnaire survey on the risk perception among Japanese, Chinese, and Taiwanese. The main objective of the questionnaire survey is to measure the degree of risk perception among groups of three. The questionnaire items to measure the risk perception are based on the previous studies dealing with risk factors. The risk factors referred from the previous studies are measured on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The authors collected 379 questionnaires, of which 108 questionnaires were Japanese, 141 questionnaires were Chinese, and 130 questionnaires were Taiwanese from August to September 2020. The targets are those who live in their home country.

The survey instrument is divided into two parts. In the first part, the questionnaire includes demographic information regarding the respondent's background (e.g., gender, age, country, and occupation). In the second part, respondents are asked about degree of risk perception when going on an oversea trip. The questionnaire survey of risk perception referred from the previous studies are consisted of 16 items such as traffic accident, theft and fraud, injury and assault, sexual assault, leisure and sports accident, earthquake, typhoon, local heavy rain, tsunami, volcanic eruption, radiation leakage, war, terrorism, riot, demonstration, and infection.

As a methodology, descriptive statistics is used in the demographic factors and Steel-Dwass test will be used to analyze the multiple comparisons of each respondents' evaluation.

4 Results

The demographic profiles of the respondents of each group (N = 379) are shown in Table. The gender ratio (female: male) of the respondents was in Japanese, in Chinese, and in Taiwanese. In terms of age group, the highest age group was 10s in Japanese, 20s in Chinese, and 20s in Taiwanese. 80% of the Japanese and Chinese respondents was under 30s. In Taiwanese respondents, the second highest age group was 50s. For occupation, 90% of the Japanese, 60% of the Chinese, and 80% of the Taiwanese respondents were full-time employee and undergraduate students.

TABLE Ⅰ. DEMOGRAPHIC INFORMATION OF RESPONDENTS

	Japanese (n = 108)		Chinese (n = 141)		Taiwanese (n = 130)	
	Frequency	Percent (%)	Frequency	Percent (%)	Frequency	Percent (%)
Gender						
Female	66	61	104	74	77	59
Male	42	39	37	26	53	41
Age						
10s	49	45	7	5	4	3
20s	38	35	92	65	57	44
30s	10	9	20	14	6	5
40s	8	7	15	11	19	15
50s	1	1	4	3	40	31
60s	2	2	2	1	2	2
70s	0	0	1	1	2	2
Occupation						
Full-time employee	26	24	48	34	82	63
Undergraduates	72	67	34	24	24	18
Graduates	3	3	7	5	3	2
Part-time job	2	2	1	1	10	8
Housewife/ Househusband	3	3	29	21	8	6
Others	2	2	22	16	3	2

Authors conducted Steel-Dwass test and found a significant difference among Japanese, Chinese, and Taiwanese respondents. In the figures, ***, ** and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

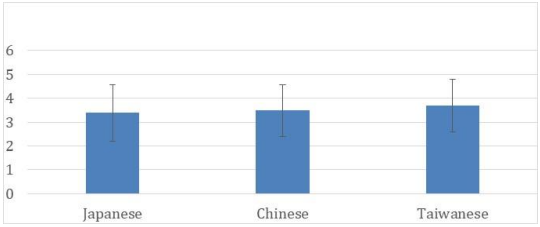

Figure 3. Traffic accident.

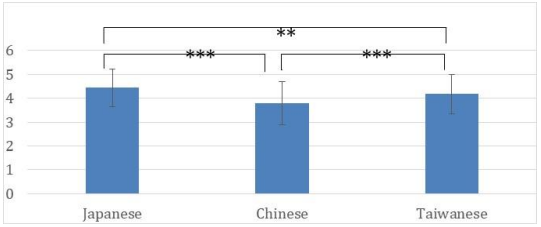

Figure 4. Theft and fraud

Figure 3 shows the statistical results of traffic accidents. Each mean score is higher in order of Taiwanese, Chinese, and Japanese respondents, but there is no significant difference among them.

Figure 4 shows the statistical results of theft and fraud. Each mean score is higher in order of Japanese, Taiwanese, and Chinese respondents. In addition, there is a significant difference in all combinations such as 'Japanese/Chinese', 'Japanese/Taiwanese', and Chinese/Taiwanese, which means degrees of the risk perception on theft and fraud are different among groups of three.

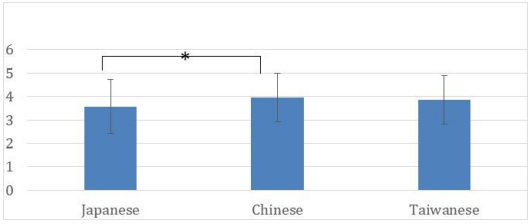

Figure 5. Injury / assault

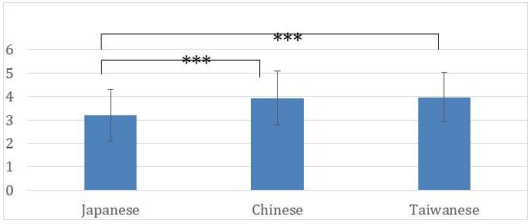

Figure 6. Sexual assault

Figure 5 shows the statistical results of injury and assault. Each mean score is higher in order of Chinese, Taiwanese, and Japanese respondents. Moreover, in the groups of three, there is a significant difference in only a pair of Japanese and Chinese respondents. The results imply that degrees of the risk perception between Japanese and Chinese are different, but there is no significant difference in others.

Figure 6 shows the statistical results of sexual assault. Each mean score is higher in order of Taiwanese, Chinese, and Japanese respondents. Also, there is a significant difference in a pair of 'Japanese/Chinese' and 'Japanese/Taiwanese'. Therefore, the degrees of risk perception on sexual assault are different in groups of three.

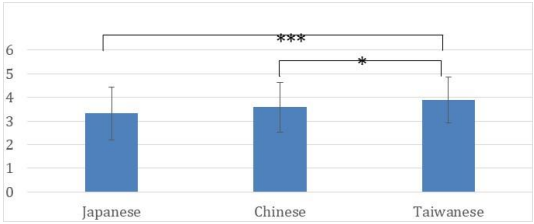

Figure 7. Leisure / sports accident

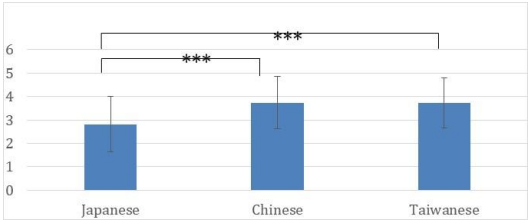

Figure 8. Earthquake

Figure 7 shows the statistical results of leisure and sports accident. Each mean score is higher in order of Taiwanese, Chinese, and Japanese respondents. Moreover, there is a significant difference in two combinations of 'Japanese/Chinese' and 'Chinese and Chinese/Taiwanese'. This means that degrees of risk perception on leisure and sports accident are different in groups of three.

Figure 8 shows the statistical results of earthquake. Each mean score is higher in order of Taiwanese, Chinese, and Japanese respondents. This means that degrees of risk perception on earthquake are different in groups of three.

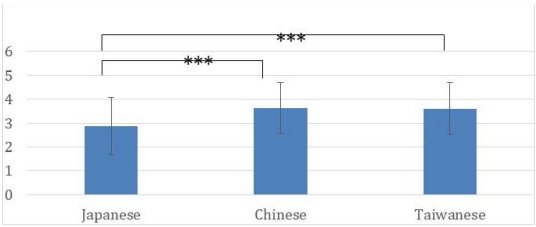

Figure 9. Typhoon

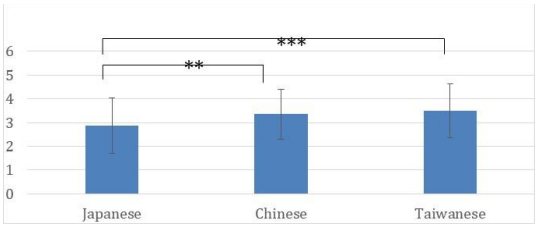

Figure 10. Local heavy rain

Figure 9 shows the statistical results of typhoon. Each mean score is higher in order of Chinese, Taiwanese, and Japanese respondents. In addition, there is a significant difference in combinations of 'Japanese/Chinese' and 'Japanese/Taiwanese'. This means that degrees of risk perception on typhoon are different in groups of three.

Figure 10 shows the statistical results of local heavy rain. Each mean score is higher in order of Taiwanese, Chinese, and Japanese respondents. There is a significant difference in a pair of 'Japanese/Chinese' and 'Japanese/Taiwanese'. Therefore, the degrees of risk perception on local heavy rain are different in groups of three.

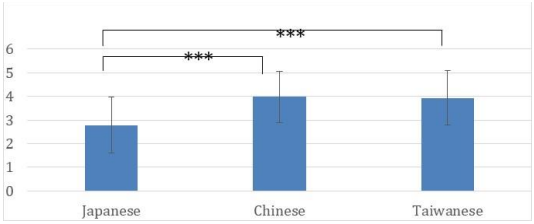

Figure 11. Tsunami

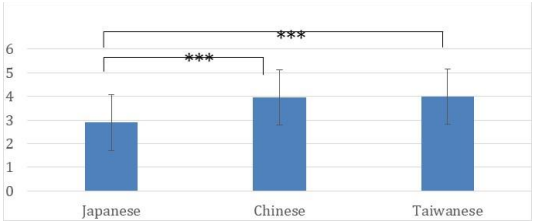

Figure 12. Volcanic eruption

Figure 11 shows the statistical results of tsunami. Each mean score is higher in order of Chinese, Taiwanese, and Japanese. Moreover, there is a significant difference in combination with Japanese/Chinese and Japanese/Taiwanese. This means that degrees of risk perception on tsunami are different in groups of three.

Figure 12 shows the statistical results of volcanic eruption. Each mean score is higher in order of Taiwanese, Chinese, and Japanese. Also, there is a significant difference in combination with Japanese/Chinese and Japanese/Taiwanese. This means that degrees of risk perception on volcanic eruption are different in groups of three.

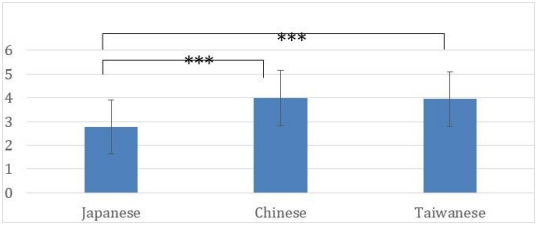

Figure 13. Radiation leakage

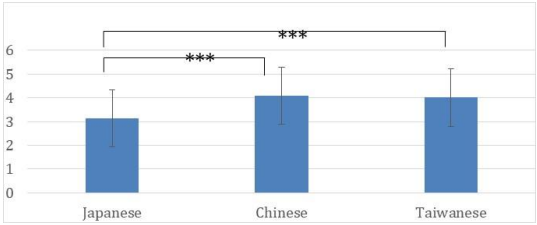

Figure 14. War

Figure 13 shows the statistical results of radiation leakage. Each mean score is higher in order of Chinese, Taiwanese, and Japanese respondents. In addition, there is a significant difference in a pair of Japanese/Chinese, and Japanese/Taiwanese. This means that degrees of risk perception on radiation leakage are different in groups of three.

Figure 14 shows the statistical results of war. Each mean score is higher in order of Chinese, Taiwanese, and Japanese. In addition, there is a significant difference in combination with Japanese/Chinese and Japanese/Taiwanese. This means that degrees of risk perception on war are different in groups of three.

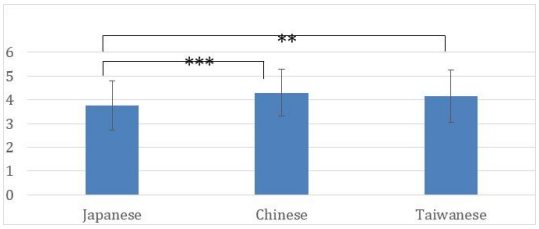

Figure 15. Terrorism

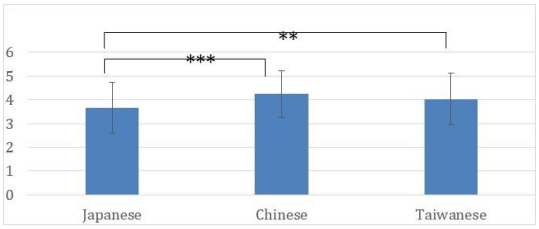

Figure 16. Riot

Figure 15 shows the statistical results of terrorism. Each mean score is higher in order of Chinese, Taiwanese, and Japanese. In addition, there is a significant difference in combination with Japanese/Chinese and Japanese/Taiwanese. This means that degrees of risk perception on terrorism are different in groups of three.

Figure 16 shows the statistical results of riot. Each mean score is higher in order of Chinese, Taiwanese, and Japanese respondents. Moreover, there is a significant difference in combination with Japanese/Chinese and Japanese/Taiwanese. This means that degrees of risk perception on riot are different in groups of three.

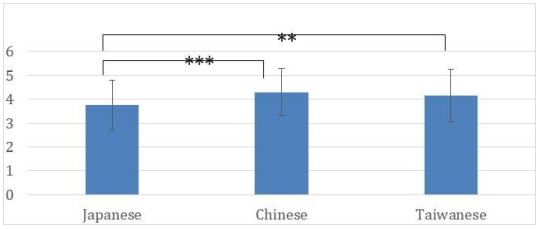

Figure 17. Demonstration

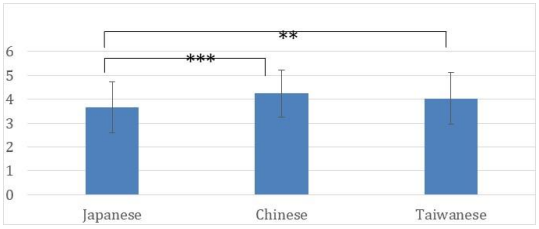

Figure 18. Infection

Figure 17 shows the statistical results of demonstration. Each mean score is higher in order of Chinese, Japanese, and Taiwanese respondents. Moreover, there is no significant difference in in groups of three.

Figure 18 shows the statistical results of infection. Each mean score is higher in order of Taiwanese, Chinese, and Japanese respondents. In addition, there is no significant difference in in groups of three.

5 Discussion

The results of this study clarify that there are significant differences among Japanese, Chinese, and Taiwanese respondents in some items of the questionnaire survey. The results show that Japanese respondents tend to have higher risk perception on theft and fraud than Chinese and Taiwanese respondents do. The highest mean score of all questionnaire items in the Japanese respondents is theft and fraud, so Theft and fraud might be one of the most dangerous things for Japanese when they are traveling abroad.

The questionnaire items that Chinese and Taiwanese respondents have higher risk perception than Japanese respondents do when going on an oversea trip are 'sexual assault', 'earthquake', 'typhoon', 'local heavy rain', 'tsunami', 'volcanic eruption', 'radiation leakage', 'war', 'terrorism', and 'riot'. In addition, the only questionnaire item that Taiwanese respondents have higher risk perception than Chinese and Japanese respondents is 'leisure and sports accident'. When compared Japanese

respondents' risk perception with Chinese and Taiwanese respondents', The results show that Chinese and Taiwanese respondents tend to have higher risk perception than Japanese respondents do.

On the other hand, there are no significant difference in traffic accident, demonstration, and infectious disease. The reason why the mean score of infectious disease among groups of three is relatively high in the other questionnaire items is due to Covid-19.

Even though cultural backgrounds and geographical conditions of each country and region like Asia are similar, the results show that there are significant differences between countries and regions. Especially, tourism industry is vulnerable to natural and human-caused disasters and sometimes, it takes a long time to recover because these disasters have damaged image of the country and region.

To aim for early recovery of inbound tourism, it is important to discuss risk management plan considered characteristics of the people of country or region.

6 Conclusion

This study clarifies that there are significant differences among Japanese, Chinese, and Taiwanese respondents in some items of the questionnaire survey. When going on an oversea trip, Chinese and Taiwanese respondents tend to have higher risk perception than Japanese respondents do. Degree of risk perception differs from country to country and region to region. Therefore, it is necessary to have risk management plan considered characteristics of the people of country or region.

In addition, the limitation of this study is that most of the Japanese and Chinese respondents are 10s and 20s, so the result of this study is somewhat biased. In the future research, it is necessary to continue this questionnaire survey and conduct it to people from different countries and regions.

ACKNOWLEDGEMENT

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