Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Management

Bachelor Thesis

How a natural disaster impacts tourism – a case study of Tohoku earthquake and Tsunami in Japan (2011)

Begimai Saitova

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Economics Policy and Administration
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Thesis title

How a natural disaster impacts tourism – a case study of Tohoku earthquake and Tsunami in Japan (2011)

Objectives of thesis

The main aim of the thesis is to identify how natural disasters affect tourism and propose a solution that can be implemented to regain the lost number of tourists to the affected area.

Methodology

This thesis has two main parts: Theoretical and Practical.

The theoretical part will be based on a thorough review of current literature taken from academic and other trustworthy sources.

The practical part will include secondary and primary analysis such as questionnaire addressed to the tourists (primary analysis) and statistics of the tourist flow changes and fluctuations before and after natural disaster in the chosen regions (secondary analysis).

The secondary analysis will be based on the statistics of tourism flows published by the official statistical authorities of the chosen country – Japan. Japan is a huge country where tourism is a large part of the economy. The earthquake and tsunami in Japan received extensive publicity, and increased social awareness of the natural disasters. The main question to answer is whether tourism in Japan decreased in the period after this natural disaster and when tourism returned to its before-earthquake level.

The proposed extent of the thesis

Approx 40-50 pages

Keywords

Disaster management, earthquake, economy, Japan, natural disaster, tourism, tsunami

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Recommended information sources

Mak J., (2003) Tourism and the economy, University of Hawaii Press USA., 296pp, ISBN-13 : 978-0824827892

Ritchie B.W., Campiranon K., et al (2014), Tourism crisis and disaster management in the Asia-Pacific, CABI Publishing, 284pp, ISBN-13 : 978-1780643250

Ritchie B.W., (2009), Crisis and Disaster Management for Tourism, Channel View Publications Ltd., UK, 214pp, ISBN-13 : 978-1845411053

Scott N., Laws E., Prideaux B. [Eds] (2009), Safety and Security in Tourism: Recovery Marketing after Crises, Roualledge UK., 288pp, ISBN-13 : 978-0789037831

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The Bachelor Thesis Supervisor

Ing. Richard Selby, Ph.D.

Supervising department

Department of Management

Electronic approval: 12. 3. 2021

prof. Ing. Ivana Tichá, Ph.D.

Head of department

Electronic approval: 14. 3. 2021

Ing. Martin Pelikán, Ph.D.

Dean

Prague on 15. 03. 2021

Declaration

I declare that I have worked on my bachelor thesis titled "How a natural disaster impacts tourism – a case study of Tohoku earthquake and Tsunami in Japan (2011)" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break any copyrights.

In Prague on March 15th 2021 _____

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I would like to thank thank and express sincere gratitude to my supervisor Ing. Richard Selby, Ph.D. for providing guidance throughout my work on this thesis. I am extremely grateful to my family and friends for their care and constant support

How a natural disaster impacts tourism – a case study of Tohoku earthquake and Tsunami in Japan (2011)

Abstract

This bachelor thesis focuses on the impact of natural disasters on tourism, primarily in Japan, and provides practical solutions to restore lost visitors to affected areas.

The theoretical part is based on the academic literature review. It includes a general understanding of tourism and its impact on the economy. It covers the concept of natural disasters and their relationship with tourism and explains the application of disaster management models and recovery strategies.

The practical part includes a case study of the Tohoku earthquake and tsunami that occurred in Japan. It shows the situation of tourism before and after the disaster based on the statistics of tourism flows published by the Japanese government and their actions to attract attention and return tourists. This part is followed by a questionnaire addressed to the tourists on attitude to the natural disasters and their desire to travel to the affected areas to obtain a model that will help countries to restore tourism destination.

Keywords: Disaster management, earthquake, economy, Japan, natural disaster, recovery, tourism, tsunami.

Vliv přírodní katastrofy na cestovní ruch – případová studie zemětřesení a tsunami Tohoku v Japonsku (2011)

Abstrakt

Tato bakalářská práce se zaměřuje na dopad přírodních katastrof na cestovní ruch, primárně v Japonsku, a poskytuje praktická řešení obnovy ztracených návštěvníků v postižených oblastech.

Teoretická část vychází z přehledu odborné literatury. Zahrnuje obecné porozumění cestovního ruchu a jeho dopadu na ekonomiku. Dále se pokrývá koncept přírodních katastrof a jejich vztah s cestovním ruchem a vysvětluje se použití modelů krizového managementu a strategií obnovy.

Praktická část obsahuje případovou studii o zemětřesení a tsunami Tohoku, ke kterému došlo v Japonsku. Ukazuje situaci cestovního ruchu před katastrofou a po ní na základě statistik toků cestovního ruchu zveřejněných japonskou vládou a jejich akcí k přilákání pozornosti a návratu turistů. Na tuto část navazuje dotazník adresovaný turistům o postoji k přírodním katastrofám a jejich touze cestovat do postižených oblastí za účelem získání modelu, který pomůže zemím obnovit turistickou destinaci.

Klíčová slova: Cestovní ruch, ekonomika, Japonsko, krizový management, obnova, přírodní katastrofa, tsunami, zemětřesení.

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List of abbreviations

DMO – Destination Marketing Organisation
EM-DAT – the Emergency Events Database
GDP – Gross Domestic Product
JMA – Japan Meteorological Agency
JNTO – Japan National Tourism Organisation
JTA – Japan Tourism Agency
MLIT – Ministry of Land, Infrastructure, Transport and Tourism
NPA – National Police Agency
UNDRR – the United Nations Office for Disaster Risk Reduction
UNWTO – the United Nations World Tourism Organization
WTTC – World Travel & Tourism Council

1 Introduction

Tourism has grown tremendously in recent decades. Technological advances in the area of transportation helped to connect many destinations, no matter the distance and allowed people to travel worldwide. Nowadays tourism is considered an influential industry that plays a vital role in the economy creating business and employment opportunities. However, tourism is vulnerable and can be easily affected by global environmental, economic, political and other changes.

On March 11, 2011, Japan suffered the Tohoku earthquake and tsunami with a magnitude of 9.0 on the Richter scale. This event severely damaged the northeast Pacific coast of Japan, caused more than eighteen thousand deaths and destroyed infrastructure and buildings. All of these actions had a dramatic impact on international inbound tourism of the country. According to the World Travel & Tourism Council, in April 2011, inbound tourism fell by 90%. The decrease in demand was felt nationwide, not only in regions directly affected by the earthquake and tsunami. Proactive promotion measures were taken to restore tourism and stimulate international travel demand in the affected areas by reinforcing the framework for hosting visitors from abroad and implementing new visa policies.

When natural disasters occur in the travel destinations, they negatively affect not only tourism industry but also sectors connected to it. Natural disasters also impact the physical base of tourism, image and reputation of the destination. Therefore, effectively planned and managed disaster management strategies are critical in mitigating the impact of disasters.

This thesis is directed at identifying how tourism is affected by natural disasters, and what measures or models can be considered in managing natural disasters in tourist destinations to rehabilitate tourism and restore tourist number based on a literature review in theoretical part and a case study & survey in practical part.

2 Objectives and Methodology

2.1 Objectives

The main objective of the thesis is to identify how natural disasters affect tourism destinations and propose a solution that can be implemented to rehabilitate tourism and restore the number of tourists in the affected area.

2.2 Methodology

The thesis contains two main parts: Theoretical and Practical.

The theoretical part is based on a thorough review of current literature taken from academic and other reliable sources for a better understanding the subject matter. This part consists of three main sections:

- Explanation of tourism and its impacts on economy
- Definition a natural disaster and its impact on tourism
- Disaster management processes

The practical part comprises a case study of the Tohoku earthquake and tsunami in Japan. Actions of the government will be considered in resolving the occurred disaster. Based on the statistics of the tourist flow changes and fluctuations before and after a natural disaster in the chosen region (secondary analysis), the answer on how fast tourism returned to its before earthquake level will be given.

Second section is questionnaire addressed to people on their attitude to natural disasters and willingness to travel to the affected areas. Based on the answers from the conducted survey it is possible to extract a scheme for faster restoration of tourist numbers in the post-disaster and recovery phases.

3 Literature Review

In this section, the existing academic literature will be analysed in order to obtain a better understanding of the subject matter.

The section provides a general understanding of tourism and its categories and determines the impact of tourism on the global economy and on the Japanese economy individually; covers the concept of natural disasters and their effects on the global tourism industry and introduces a more complex idea of earthquakes; reviews the disaster management model and its implementation in tourism disaster recovery strategies.

3.1 Definition of tourism

There are many terms that describe tourism, and the application of it depends on whether the term is used in terms of supply or a demand[1]. However, there is a general term created by the United Nations World Tourism Organization (UNWTO) and defines tourism as "a social, cultural and economic phenomenon that entails people's movement to countries or places outside their usual environment for personal or business/ professional purposes"[2].

Based on this definition, tourists are people who travel outside the environment in which they usually live. In terms of location, tourists can travel inside or outside their country of residence. The concept of domestic and international tourism is applied here. International tourism, in turn, is divided into inbound where non-residents travel to the country and outbound where residents travel outside the country.

The motive of one tourist travelling abroad may differ from the motive of another tourist[3]. The type of vacation they choose depends on a variety of variables. Here tourism can be classified according to the purpose. Leisure tourism is the most popular and common type. It is a trip where a traveller can relax, stay in a hotel, lie on the beach or go sightseeing. In the minds of most people, tourism is associated precisely with this type. Other no less popular gastronomic tourism is a journey to other countries to taste their local cuisine and traditional dishes with unique ingredients and flavours. Visitors travelling to a meeting or

[1] Ritchie, B. W. *Crisis and Disaster Management for Tourism*. 2009, p.30
[2] *International Recommendations for Tourism Statistics 2008*, United Nations Publication, 2010, p.1
[3] Mak, J. *Tourism and the Economy: Understanding the Economics of Tourism*. 2003, p.3

conference for a work purpose belong to the category of business tourism. Visitors also travel for healthcare to receive various treatments against deceases and belong to the category of medical tourism[4].

3.1.1 Role of tourism in the economy

Tourism is considered to be one of the most successful developing industries that drive economic growth, creates new jobs and improves social development. The tourism industry, being a combination of goods and services, involves many sectors such as accommodation (hotels, hostels), food and beverage services (restaurants, cafés), recreation and entertainment (skiing, fishing), transportation (planes, cars, taxi), and travel services (tour operators). For example, actions of a tourist travelling to another country by plane, staying in the hotel room, taking a guided tour around the city, using public transport and eating out in restaurants, etc.- have a crucial effect on the mentioned sectors of the tourism industry.

In 2019, travel and tourism accounted for 10.4 % of world gross domestic product (GDP) with a contribution of $8.9 trillion. In terms of impact on global GDP by sector, the tourism was ranked fourth after the mining, automotive and agricultural sectors. Globally, the value of tourism exports is increasing from year to year, and in 2019, tourism exports exceeded $1.7 trillion, which is 6.8 % of total exports and 28.3 % of global commercial services exports[5].

The effect of tourism is felt in many economic sectors, as most sectors of the local economy are in some way connected with tourism, creating a multiplier effect[6]. The multiplier effect means that spending in one place provides economic benefits in another.

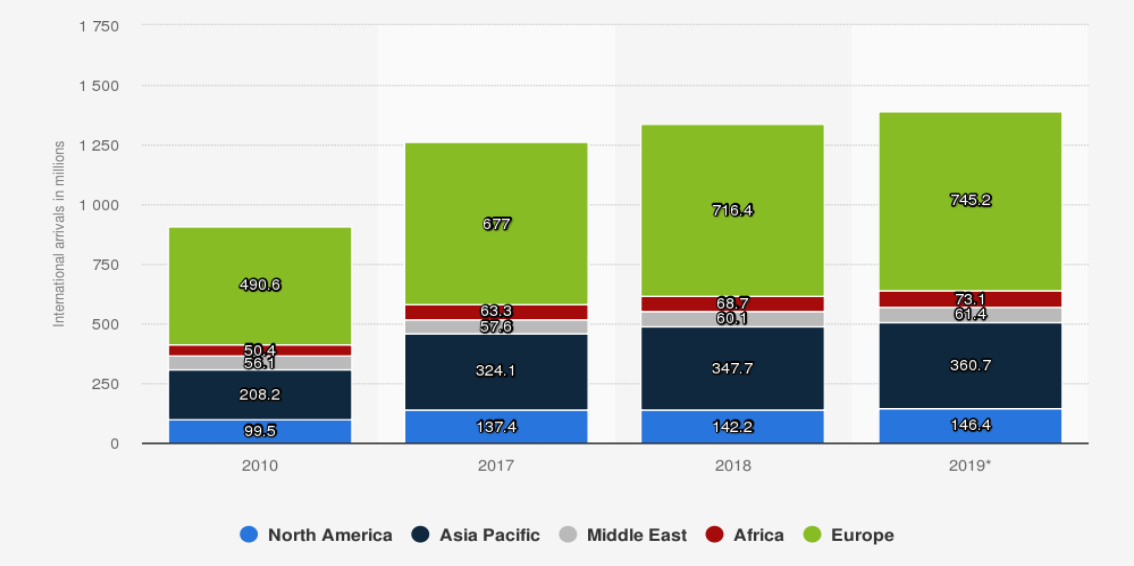
The growth of international tourism creates great opportunities for employment. According to WTTC's Economic Impact Report, the tourism industry provides 10 % of global employment, 330 million jobs[7].Because these jobs require labour efforts, socially and economically marginalized communities such as teenagers, women, immigrants, low-

[4] *International Recommendations for Tourism Statistics 2008*, United Nations Publication, 2010, p.17
[5] *Economic Impact Reports*. WTTC, 2020
[6] Meyer, N. & Meyer, D. *The role and impact of tourism on local economic development: A comparative study*. 2015, p. 200
[7] *Economic Impact Reports*. WTTC, 2020

qualified and low-wage workers use these direct and indirect employment and income opportunities[8].

The tourism industry also helps to create and develop various economic activities. Many developing countries like Philippines and India have successfully built their economy by playing a more active role in economic life through tourism development[9]. According to the United Nations World Tourism Organization, tourism is considered an essential tool for promoting economic growth and fighting poverty as an alternative to traditional economic sectors.

Figure 1. International tourist arrivals worldwide 2010 - 2019.



Source: Statista Research Department, (26.11.2020).

In Figure 1 we can see the number of international tourist arrivals by regions in period from 2010 to 2019. The most visited zone is Europe which is followed by Asia Pacific, North America, Africa and Middle East. However, when counting the growth of international tourists in 9 years, we can observe:

Europe: increase by 52 % (490.6 million tourists in 2010 to 745.2 million in 2019).

Asia Pacific: increase by 73 % (208.2 million tourists in 2010 to 360.7 million in 2019).

[8]Khan. N. et al. *Factors Affecting Tourism Industry and Its Impacts on Global Economy of the World*. 2020, p. 6

[9] Meyer, N., Meyer, D. *The role and impact of tourism on local economic development: A comparative study*. 2015, p. 197.

North America: increase by 47 % (99.5 million tourists in 2010 to 146.6 million in 2019).
Africa: increase by 46 % (50.4 million tourists in 2010 to 73.1 million in 2019).
Middle East: increase by 9 % (56.1 million tourists in 2010 to 61.4 million in 2019).

Of all world regions, Asia Pacific has grown the fastest in international tourist arrivals by 73 % and this increase in international travel can be explained by rapid economic growth in a region, combined with rising air connectivity, travel facilitation, large infrastructure projects and especially thanks to wealthy middle class with enough disposable income to travel. An important factor in the Asia Pacific tourism market is that almost 80% of travel is intraregional with outbound demand driven by China[10].

3.1.2 Economic impact of tourism in Japan

Tourism plays a significant role in the economy of Japan and is considered to be one of the primary income sources. Travel & Tourism contributed $390.9 billion to the gross domestic product, 7,5 % of the total economy in 2019. Tourism has also created employment opportunities and provided 5,359,900 jobs in Japan, accounting for 8 % of total employment of the country[11].

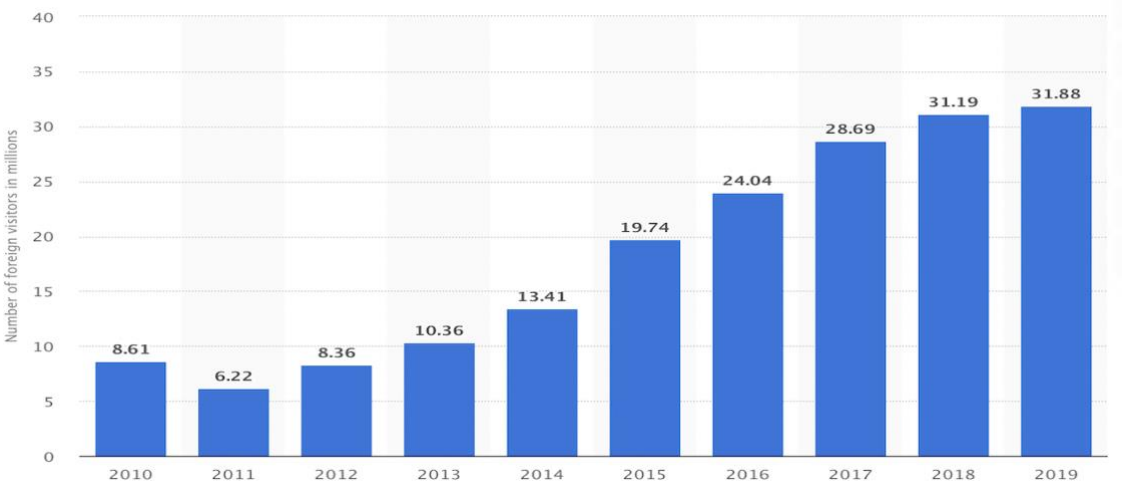
Even though international tourism has increased significantly in recent years, domestic tourism still accounts for most of Japan's travel and tourism expenditure because Japanese visitors still favour travelling around their country for vacations. Domestic travel spending accounted for about 81% of direct GDP from travel and tourism, while international tourism spending accounted for 19%. Depending on the purpose, 69 % of expenditure goes for leisure and 31 % for business[12].

On the graph below it is possible to observe the number of international visitors in millions travelling to Japan from 2010 to 2019. In the period of nine years the number of visitors increased by 3.7 times from 8.61 million foreign visitors in 2010 to 31.88 million foreign visitors in 2019. The change in trend is seen in 2011, where the demand for tourism decreased. It is explained by the destructive earthquake and tsunami which brought

[10] *Annual Report on Asia Tourism Trends, 2017 Edition – Executive Summary*, UNWTO, 2017, p. 2
[11] *Japan. 2020 Annual Research: key highlights*, WTTC, 2021, p.1
[12] *Japan. 2020 Annual Research: key highlights*, WTTC, 2021, p.1

considerable damages in tourist destinations, but thanks to the fast and precise disaster management, it was possible to restore the number of travellers by the next year.

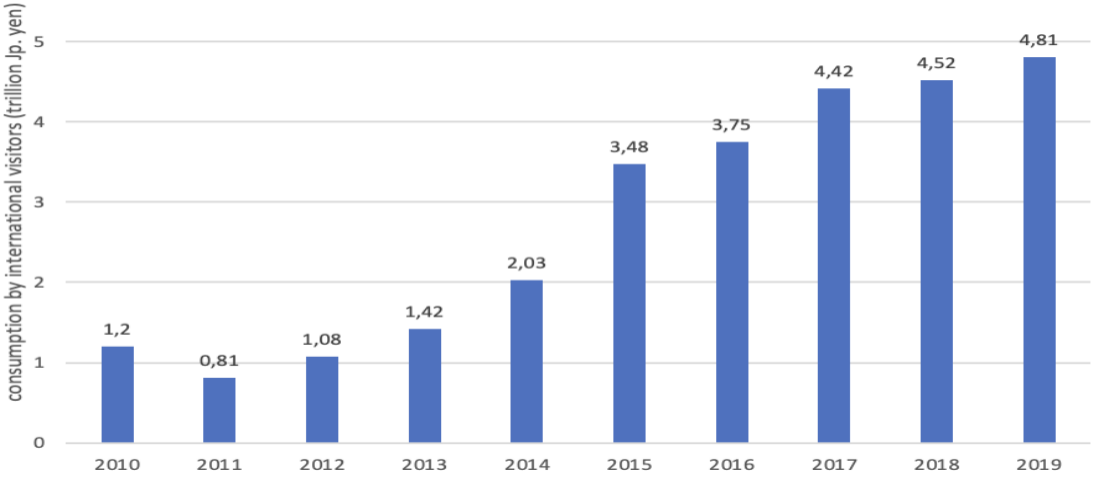
Figure 2. Number of international tourists in Japan from 2010 to 2019.



Source: Statista Research Department (13.10.2020)

Figure 3 shows the amount of consumption by international visitors from the years 2010 to 2019 in Japan. In 2011, the decrease in consumption was -66% compared to 2010 due to the earthquake and tsunami, which caused a decline in foreign tourist arrivals and, as a consequence, a decrease in spending. Despite this, a constant growth of consumption by 4.5 times is observed from year 2012 with amount of 1.08 trillion yen to year 2019 with amount of 4.81 trillion yen.

Figure 3. Consumption by international tourists in Japan from 2010 to 2019.



Source: Japan Tourism Agency (June 2020)

According to Japan National Tourism Organization Japan ranks 11th globally and 3rd in Asia by the number of foreign visitors entering the country in 2019[13].

In Table 1 we can observe the number of international tourists travelling to Japan by country. China is on the first position and accounts for 9.59 million visitors, 30,1 % of all international visitors entering Japan, followed by South Korea with 5.58 million visitors (17.5%), Taiwan 4.89 million (16.3%), Hong Kong 2.29 million (7.2%) and the USA 1.72 million (5.4%). When examining the amount of consumption by international visitors by country in 2019, it is seen that China leads and stays first with 1.770.4 trillion yen (36.8%). Next is Taiwan at 551.7 billion yen (11.5%), South Korea at 424.7 billion yen (8.8%), Hong Kong at 352.5 billion yen (7.3%), the United States 322.8 billion yen (6.7%). These Top-5 countries accounted for 71.1% of the total consumption expenditure.

Table 1. Tourist arrivals and expenditure in Japan, by country in 2019.

Country	Visitor arrivals (millions)	Percentage %	Consumption expenditure (trillion Jp. Yen)	Percentage %
China	9,594,394	30,1 %	1,770,4	36,8 %
South Korea	5,584,597	17,5%	424,7	8,8 %
Taiwan	4,890,602	16,3 %	551,7	11,5 %
Hong Kong	2,290,792	7,2 %	352,5	7,3 %
United States	1,723,792	5,4 %	322,8	6,7 %
Thailand	1,378,977	4,1 %	173,2	3,6 %
Australia	621,771	2 %	151,9	3,2 %
Rest of the world	5,857,055	17,4 %	1,062,8	22,1 %

Source: JTA (June 2020) & JNTO (2020)

Statistics show that most of arriving tourists come mainly from Asian countries due to Japan's close geographic location to them. For Asian tourists, Japanese cuisine and high quality and relatively inexpensive shopping are the main reasons for visiting Japan, while visitors from the West are more culturally oriented and travel to discover nature and learn about history and culture of this country.

[13] *White Paper on Tourism in Japan, 2020 summary*. JTA, 2020, p.4

3.2 Definition of natural disaster

In recent years natural disasters such as earthquakes, floods, tsunamis or droughts have become more common. They cause destruction and bring irreversible consequences for people's lives, economic sectors and industries like tourism. In the last 20 years, 7348 natural disasters have been registered worldwide. They took lives of 1.23 million people and affected more than 4.03 billion people. Also, the global economic loss from natural disasters was estimated at $2.97 trillion[14].

Scientists tried to understand disasters by defining them. Hills suggests that disaster is a sudden event occurring for a short period of time in a distinct location. Although a time of disaster is limited, disaster recovery can be time-consuming and some of the victims may not be able to fully recover[15]. Twigg writes that there are no natural disasters, but natural hazards and impact of a hazard results disaster. He also mentions that natural disasters throw into disorder the functioning of society and cause widespread human, material, economic and environmental losses[16]. Natural disasters always occur in places subject to vulnerability.

3.2.1 Impact of natural disasters on tourism

Tourism and natural disaster individually present entirely different images, but due to tourism's vulnerable nature to crises and disasters, they may intersect with each other, and play a crucial role in many spheres.

The environment of travel destinations can be dangerous because of the occurrence of natural disasters which destroy the physical base of tourism and threaten the lives of visitors, residents and local businesses[17]. Based on Ritchie's book *Crisis and Disaster Management for Tourism* (2009), it was concluded that natural disasters have a severe impact on the local tourism industry. Depending on the form of disaster, impacts may include:

[14] *The human cost of disasters: an overview of the last 20 years (2000-2019)*, UNDRR, 2020, p.6
[15] Hills, A. *Seduced by recovery: The consequences of misunderstanding disaster*, 2002, p. 165
[16] Twigg, J. *Disaster risk reduction: mitigation and preparedness in development and emergency programming*, 2004, p. 22
[17] Ritchie, B. W. *Crisis and Disaster Management for Tourism*. 2009, p.27.

- Reduce in demand for travel to the areas affected by natural disasters because of a negative image in travellers' eyes and scariness for their lives.
- Decrease in money spending in the location due to lack of visitors.
- Physical damages at the affected area (destroyed valuable properties, tourist sites, buildings and infrastructures).
- Increase of unemployment rate due to the loss of jobs.
- Decrease in the income of businesses connected to the tourism sphere.
- Destruction of the agriculture and ground fertility and further inability to grow products. The decline of the supply of specific products by farmers to the restaurants and further inability to serve some dishes to tourists.
- Increase of specific travellers like researchers or volunteers to the affected areas and growth of dark tourism.

Natural hazards are beyond human control. However, it is possible to foresee the location of hazards as they repeatedly occur in the same geographical areas because of their relation to climatic conditions or physical characteristics of an area.

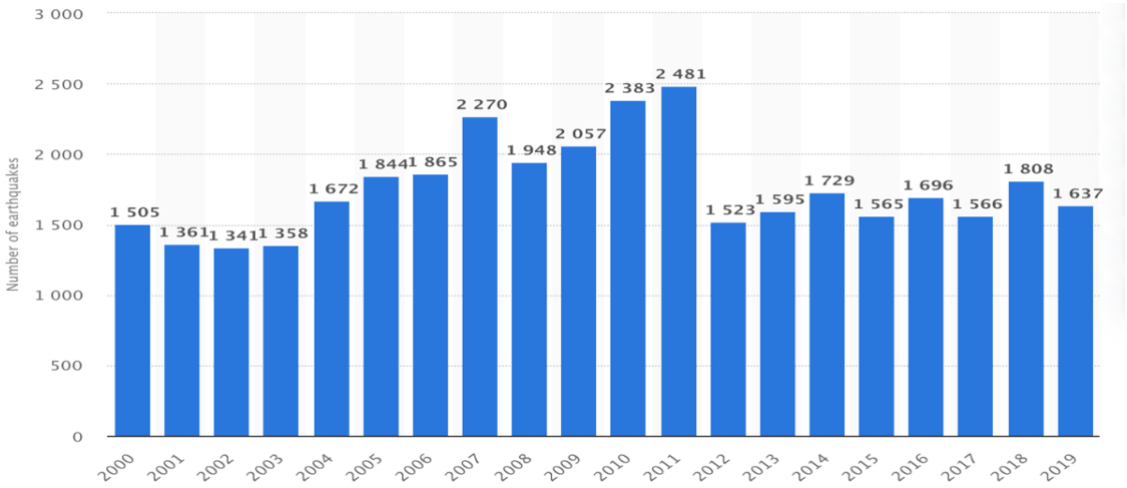
3.2.2 The most destructive natural disaster

Earthquakes are considered to be the most destructive and life-taking among all types of natural disasters. Earthquake itself is the process of sudden ground shaking due to the earth's crust movement at the boundaries of lithospheric plates[18]. The strength of the earthquake is usually estimated by the Richter scale, where the higher the number, the greater the earthquake (1-rarely felt, 9 or more- extreme damage).

An interesting phenomenon caused by the earthquake is tsunami. “A tsunami is a series of strong waves caused by an underwater earthquake, landslide, or volcanic eruption”[19]. An earthquake can trigger a tsunami if it is strong enough to cause strong ground motion that can displace large amounts of water. All earthquakes that caused tsunamis had a magnitude of over 7.5 on Richter scale.

[18] Bolt, B. A. *Earthquake*. Encyclopedia Britannica, 2021
[19] *Tsunamis: Facts About Killer Waves*. National geographic, 2020

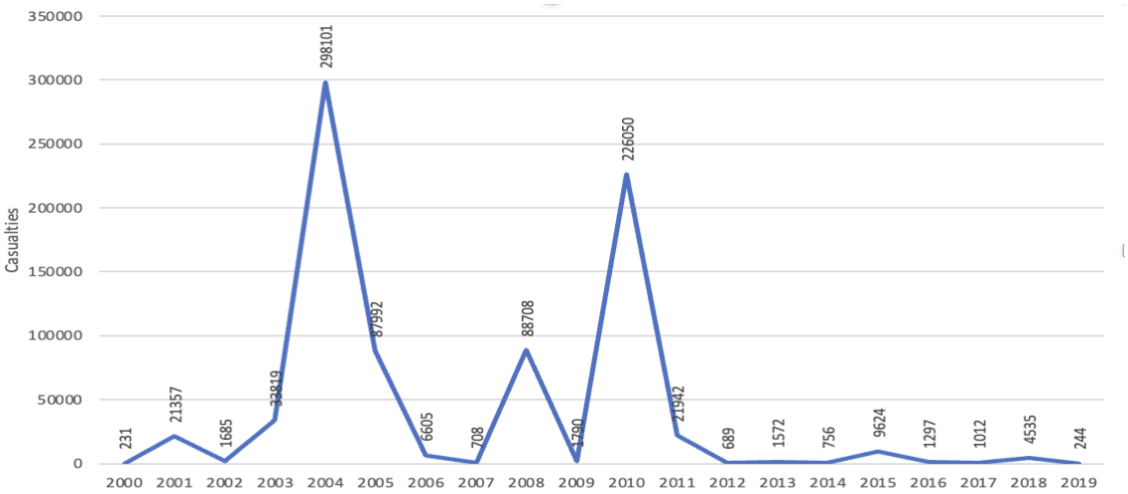
Figure 4. Number of earthquakes worldwide from 2000 to 2019.



Source: Statista Research Department (01.12.2020)

In the last two decades, more than 35 thousand earthquakes with a magnitude of 5 and over were recorded worldwide. Figure 4 above demonstrates that in 2019 there were 1637 earthquakes in total. The highest number of earthquakes was fixed in 2011 and reached 2481. It is seen that trends are erratic, with jumps every few years. Although technology has improved since the 20th century, it is still tough to predict earthquakes.

Figure 5. Casualties caused by earthquake worldwide from 2000 to 2019.



Source: EM-DAT (2020)

In total more than 800 thousand lives of innocent people have been taken by earthquakes in the last 19 years. The figure 5 shows that the highest number of deaths was 298,101 in the

year 2004. The second leader by the number of casualties was 2010 with 226,050 deaths globally. A tremendous decline is seen from 2010 by 99% to present year.

Approximately 90 percent of all earthquakes happen in the Pacific "Ring of Fire", the most seismically active place in the world where the Pacific Plate meets multiple neighbouring tectonic plates[20]. The most destructive earthquakes that happened in the 21st century in a Circum-Pacific belt zone is shown in Table 2.

Table 2. The worst earthquakes in the Pacific Ring of Fire.

Year	Event	Magnitude	Deaths	Affected	Damage (000 US$)
2004	Sumatra – Andaman earthquake and tsunami	9.1	165,708	532,898	4,451,600
2011	Tohoku earthquake and tsunami	9.0	19,846	368,820	210,000,000
2010	Chile earthquake and tsunami	8.8	562	1,861,222	50,000,000
2008	Sichuan earthquake	8.0	87,476	45,610,00	85,000,000
2015	Nepal earthquake	7.8	8,831	5,621,790	5,174,000

Source: EM-DAT (2021)

In terms of casualties, the Sumatra-Andaman earthquake and tsunami ranks first. With a magnitude of 9.1, it caused more than 165 thousand casualties and counted economic damages of US$ 4.4 billion. In terms of cost of destruction, the leader is Tohoku earthquake and tsunami in Japan, with a magnitude of 9, which counted damages of US$ 210 billion and caused 19,846 deaths.

From the above content, it becomes clear that countries of Asia - Pacific are particularly vulnerable to earthquakes due to one of the main factors as geographic location, so in the next chapter, measures to eliminate or mitigate the disaster will be discussed. In case the natural disaster is imminent, measures of recovery will be reviewed.

[20] *USGS, Earthquake glossary- Ring of Fire*. Available: https://earthquake.usgs.gov/learn/glossary/?term=Ring%20of%20Fire

3.3 Definition of disaster management

All negative effects of natural disasters are not avoidable, but effective disaster management can help mitigate them. Disaster management is a general term that includes organisational and governmental decisions, activities related to the different stages of a disaster and includes plans, structures, and arrangements designed to incorporate systematic efforts[21]. "Integrating disaster management into municipal departments' daily operations and coordinating disaster response across sectors is regarded as an important way of building resilience"[22].

3.3.1 Disaster management model

Several models were developed to help managers and researchers understand the life cycle of a crisis or disaster. Ritchie provides a model of disaster management from the tourism perspective, which categorizes four phases of disaster life cycle: pre-disaster, disaster (emergency), post-disaster phase (short-term response) and recovery (long-term). Each phase's timing differs depending on the nature of the crisis and disaster, its severity, and the actions undertaken to contain it[23].

Figure 6. Disaster management Life Cycle

Source: Ritchie B. (2014, p.217)

[21] Lettieri, E. et al. *Disaster management: findings from a systematic review*. 2009, p.117
[22] Blackburn, S., & Johnson, C. *Making cities resilient report 2012 – my city is getting ready.* 2013
[23] Ritchie, B. W. *Tourism Crisis and Disaster Management in the Asia-Pacific*. 2014, p.216

3.3.2 Pre-disaster phase

Pre-disaster phase aims to prepare for potential disasters that have not yet occurred, and precautions as prevention and preparedness are considered to achieve it.

Prevention includes measures to reduce or eliminate the threats of natural disasters. Managers and planners must collect and verify information on potential problems and consider methods of implementation plans in case of emergency. Understanding the types of natural disasters or emergencies to which destinations are exposed is critical in developing appropriate strategies to prevent or limit the impact of such events. Ritchie points out that decisions made before the onset of a crisis will help to handle the disaster more effectively by reducing risk, wasted time and inefficient resource management. When a potential emergency or disaster is identified, strategies can be used to prevent it[24].

In case a natural disaster is inevitable, preparedness can help reducing the impact of the disaster. Preparedness phase involves emergency assessment, analysis for short and long-term impacts, warning of officials to implement an evacuation plan and measures to place practices to protect human lives and property[25]. Preparedness also includes actions related to the disaster management system, including state, and federal authorities and citizens. Developing a crisis plan must take into account the identified risk, training of personnel to support critical areas of response operations, and identifying resources and materials needed in an emergency.

3.3.3 Disaster phase

When a disaster is felt and its aftermath occurs, the most important thing is to limit the extent of the damage. At this point, the phase of emergency response begins, which starts dealing with an event as soon as it occurs, including reaction to warnings and emergency relief. Response actions are carried out by identifying the resources and materials needed in an emergency. Properties in tourist destinations must be protected. In order to save people, evacuation procedures are carried out, people are provided with temporary housing and food, and the injured receive medical assistance.

[24] Ritchie, B. W. *Crisis and Disaster Management for Tourism*. 2009, p.161-162
[25] Nguyen D. et al. *Disaster Management in Coastal Tourism Destinations: The Case for Transactive Planning and Social Learning,* 2016, p.8

3.3.4 Post-disaster phase

In this phase short-term needs of affected people have to be addressed and resolved by teams of emergency response. The main objective is to restore the community to normal as quickly as possible by introducing temporary stability. The process involves repairing and rebuilding of infrastructure such as highways, hotels, transport and other services, reconstruction of environmentally damaged areas, and restoration of disrupted social and economic activities[26]. Due to the excessive amount of media attention focused on the destination, correct media communication strategy is crucial in this phase.

3.3.5 Recovery

Recovery is a continuation of the post-disaster phase, but everything that was not or could not be resolved immediately is attended to at this stage. The period of recovery is highly important for tourism. In this phase, the safety of affected areas is at some point at risk, and insecurities about the restoration's success will have a notable influence on future reservations and economic prospects[27]. Witnesses take part in convincing tourists to visit the affected area by sharing real disaster recovery information. Tourism organizations in a lead with Destination Marketing Organizations play a crucial in role of communication[28]. DMOs have detailed knowledge of local tourism services and infrastructure, and also have connections with media channels. All the resources they have would play an important role in the partnership between tourism companies and national and regional authorities and rescue services.

[26] Masterson, J. et al. *Planning for Community Resilience A Handbook for Reducing Vulnerability to Disasters*. 2014, p.91
[27] Ritchie, B. W. *Tourism Crisis and Disaster Management in the Asia-Pacific*. 2014, p.221
[28] Gurtner, Y. K. *Crisis in Bali: lessons in tourism recovery*. 2007, p. 85

4 Practical Part

The practical part of the study focuses on Tohoku earthquake and tsunami that took place in Japan in 2011. In this section author covers the following topics:

- the timeline of a natural disaster and its aftermaths
- the impact of disaster on inbound tourism demand
- actions taken by authorities for disaster management
- estimates whether tourist arrivals have returned to normal.

In the second part, an analysis of a conducted survey on the attitude of tourist to natural disasters and their desire to travel to the countries impacted by natural disaster will be made to obtain a model that will allow countries faster rehabilitate tourism industry.

4.1 Case study: Tohoku earthquake and tsunami in Japan in 2011

The Tohoku Earthquake, also known as Japan's Great Eastern Earthquake, hit Japan on Friday, March 11th, 2011 at 2:46 p.m. local time. According to Japan Meteorological Agency, the magnitude 9.0 earthquake occurred 77 km from the east coast of Honshu island with a hypocentre at a depth of 24 km and was caused by the split of a segment of the subduction zone associated with the Japan Trench. The duration of an earthquake was three minutes, with the highest surface seismic intensity of 7 in Kurihara City of Miyagi Prefecture[29]. Numerous aftershocks have been registered over the course of several weeks, but the biggest aftershock with magnitude 7.3 occurred the same day at 3:15 p.m. JST[30].

The earthquake triggered a powerful tsunami, waves of which reached the height of about 10 meters. It struck Japanese mainland 30 minutes after the quake causing damage to several cities and villages along the coastline of prefectures Miyagi, Iwate, Fukushima and Ibaraki. The tsunami also spread across the Pacific Ocean, reaching Hawaii in 8 hours, North America in about 12 hours, and even Antarctica in 18 hours[31].

[29] *Information on the 2011 Great East Japan Earthquake*. JMA, 2012
[30] *Information on the 2011 Great East Japan Earthquake*. JMA, 2012
[31] Pletcher, et al. *Japan earthquake and tsunami of 2011*. Encyclopedia Britannica, 2021

4.1.1 Consequences of the natural disaster

Tohoku earthquake and tsunami had severe consequences which were felt all around the country. According to the National Police Agency report, a total of 7,482 people went missing, 15,467 people died, and 12,143 of them drowned[32]. In terms of damage, 282,941 buildings were heavily affected, 748,461 buildings were partially damaged and 121,996 were totally destroyed. In northeast region of Japan 470 thousand people were left without homes and needed food, temporary housing and medical services. Japan's transportation system was also affected by the disaster. The main expressway connecting Tohoku and the Kanto region, 15 ports, 62 railways, and Sendai Airport were severely damaged, and 23 train stations were fully destroyed[33]. When flood returned to the sea, it left 25 million tons of debris.

The disaster heavily damaged several nuclear and thermal power plants. It caused reducing the power supply and more than four million households in eastern Japan were left without electricity. The most significant damage was in nuclear power plant Daiichi Fukushima. Due to the tsunami, there was a blackout of a whole station, which caused the failure in the work of cooling systems. The reactor's temperature continued to rise and caused an explosion of explosive mixtures. The radiation level in the surrounding environment has risen sharply and posed a deadly threat to local residents[34].

The earthquake in Japan seriously hit the economy of the country. The Cabinet Office accounted that total damage was more than 16.9 trillion yen or US$210 billion, making it the costliest natural disaster ever happened. The earthquake also caused rapid appreciation of Japanese yen against the US dollar, which hurts the economy of country because of its dependence on exports. Global auto production has declined as many large automakers such as Toyota, Nissan and Honda, as well as steel manufacturers such as Nippon Steel, were affected and forced to temporarily stop production[35]. Since many of the industries were in Tohoku region, their destruction had widespread economic consequences that many crisis managers did not expect.

[32] *Special Report I: Police Activities and the Great East Japan Earthquake*. NPA, 2012, p.1
[33] Japan reconstruction agency: https://www.reconstruction.go.jp/english/topics/GEJE/index.html
[34] Pletcher, et al. *Japan earthquake and tsunami of 2011*. Encyclopedia Britannica, 2021
[35] Government of Japan. *Economic Impact of the Great East Japan Earthquake and Current Status of Recovery*. 2011, p.10-11

Table 3. Cost of damage

		Great East Japan earthquake disaster (Cabinet office, disaster management)
Buildings, etc. (housing, residential land, shops, offices, factories, machinery, etc.)		About ¥10.4 trillion
Lifeline facilities (water supply, gas, electricity, communications, broadcasting facilities)		About ¥1.3 trillion
Social infrastructure facilities (rivers, roads, ports, sewage works, airports, etc.)		About ¥2.2 trillion
Others	Agriculture, forestry, and fisheries production	About ¥1.9 trillion
	Others	About ¥1.1 trillion
Total		About ¥16.9 trillion

Source: Cabinet Office (2011)

Table 3 indicates the financial cost of damage from occurred earthquake and tsunami, which counts 10.4 trillion yen of damage to houses, 1.3 trillion yen to lifeline services, 2.2 trillion yen to social infrastructure facilities, 1.9 trillion yen to agriculture sector and 1.1 trillion yen to other areas.

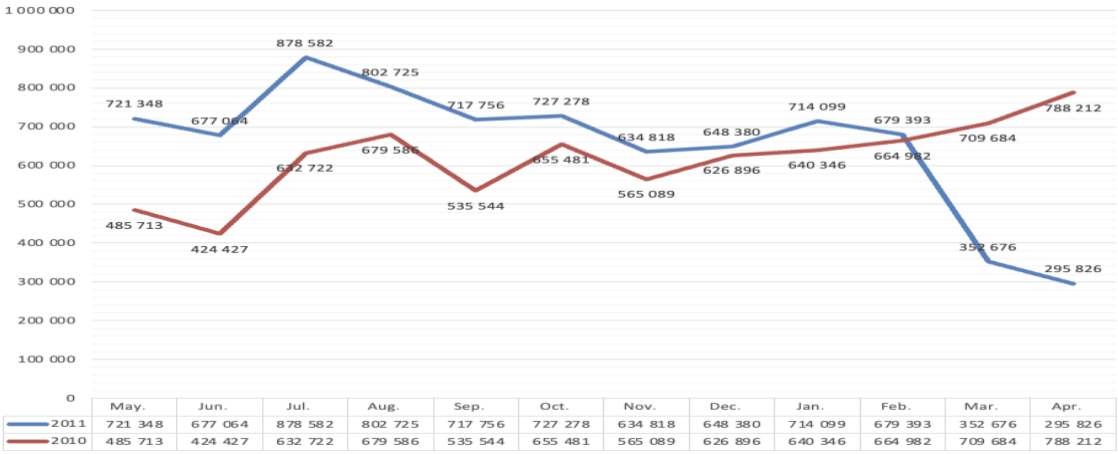
4.1.2 Impact on inbound tourism in Japan

The direct effects of the Tohoku earthquake and tsunami on tourism of Japan were pretty serious. Approximately 25% of all hotels in six prefectures of Tohoku, including eight heavily damaged ones, have stopped operating for a short period of time[36]. There was a significant decline in tourist arrivals, and it was felt not only in the directly affected areas but nationwide. According to the Japan Tourism Agency, about 61% of reservations were cancelled for March and 48% for April[37]. Also, great number of planned international conventions were cancelled around Japan.

In Figure 7 it is possible to observe that the number of international tourists visiting Japan in months decreased by 50.3% from 709,684 in March 2010 to 352,676 in March 2011. In April 2011 decrease was by 62.5% reaching from 788,212 in 2010 to 295,826 in 2011. The Japan Tourism Agency called it to be the worst months by a decrease in comparison with previous years.

[36] *White Paper on Tourism in Japan, 2011. Summary*. JTA. 2011, p.4
[37] *White Paper on Tourism in Japan, 2011. Summary*. JTA. 2011, p.5

Figure 7. Impact of a natural disaster on number of foreign tourists visiting Japan



	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
2011	721 348	677 064	878 582	802 725	717 756	727 278	634 818	648 380	714 099	679 393	352 676	295 826
2010	485 713	424 427	632 722	679 586	535 544	655 481	565 089	626 896	640 346	664 982	709 684	788 212

Source: Japan National Tourism Organization (2021)

4.1.3 Disaster recovery management

Being a country prone to natural disasters, Japan has an extensive disaster preparedness plan which includes the Prime Minister's Central Council of Accident Prevention, an agreed set of rules for immediate response to unexpected events and intensive public education on natural disasters. According to the plan, people, authorities and rescue services know precisely what to do in the event of disaster.

On March 11, after the occurrence of Tohoku earthquake the Japanese government held a meeting at 3:45 p.m. JST and established a National Crisis Committee under the command of Prime Minister[38]. The government announced an emergency situation in the affected areas and sent Japanese Defence forces to rescue operations. The Ministry of Health was responsible for arranging water supply and designating hospitals to treat the injured and radiated people. The Ministry of Finance was in charge of providing food, blankets and all other essential items to witnesses. Refugees were temporarily living in shelters, schools, public buildings and hotels. Construction of temporary homes began eight days after the event, and 52,921 buildings were completed within 2,5 months[39]. The Tohoku expressway, the main artery of an island, was reconstructed in 13 days. Sendai airport was fully restored in 17 days thanks to the cooperation of Japanese self-defence forces with US Armed forces.

[38] *The Great East Japan Earthquake (126th report): Outline*. MLIT, 2014, p.1
[39] *Policies of MLIT to the Great East Japan Earthquake*. Emergency Headquarters, MLIT, 2012, p.1

About 93% of production bases in affected areas have restored and 80 % returned to its pre-disaster level by the end of June[40].

Before the accident on nuclear power plant Fukushima Daiichi owned by TEPCO the Japanese government declared that plant was indicating the danger of nuclear reactors and about 140 thousand people got evacuated to a relatively safe distance within 20 km away. After the accident steps to mitigate radiation were taken, and one month later environmental radioactive contamination level in capital of Japan was smaller than the level in New York. United Nations agencies, including World Health Organization, also reported low levels of radioactive contaminants and no health or transportation risks, and did not advise any restrictions on travel to Japan[41].

4.1.4 Tourism response

Immediately after the natural disaster all measures were taken to provide safety of tourists. For foreign tourists who were in Japan and for tourists considering visiting this country Tourist Information Centre changed usual working hours and provided 24/7 phone inquiry support in different languages till 11th of April 2011. The Japan National Tourism Organization prepared and provided full, accurate information on the earthquake, tsunami, state of local transport infrastructure, level of radiation and others on their official website also in multiple languages.

In order to restore the flow of foreign tourists, especially in the Tohoku region, land, air and sea transport was reconstructed quickly after the disaster period, improving access to the country[42]. To get rid of the consequences faster, the Japanese government ordered the Japan Travel Agency Association to and organize volunteer trips. It was a program, where volunteers were sent to the affected areas to help with recovery process.

In the meantime, the Japan Tourism Agency has begun to disseminate truthful and reliable information about the earthquake, tsunami and accident at the nuclear power plant and began

[40] *Economic Impact of the Great East Japan Earthquake and Current Status of Recovery*. Government of Japan, 2011, p. 7
[41] *Economic Impact of the Great East Japan Earthquake and Current Status of Recovery*. Government of Japan, 2011, p. 19
[42] *White Paper on Tourism in Japan, 2012. Summary*. MLIT. 2012, p.19

working with the governments of countries where most of the foreign tourists come from, asking them to loosen travel bans and restrictions, and in turn, simplifying of the visa regime and issuing multiple-entry visas (primarily to China)[43]. To show the real situation, media representatives and travel agencies were invited to Japan. To encourage international conferences and prevent an increase in cancellations, the head of the Japan National Tourism Organization sent a letter to the convention organizers asking them to provide accurate information on the situation. Actually, a lot of work has been done to develop tourism and provide adequate coverage of the situation.

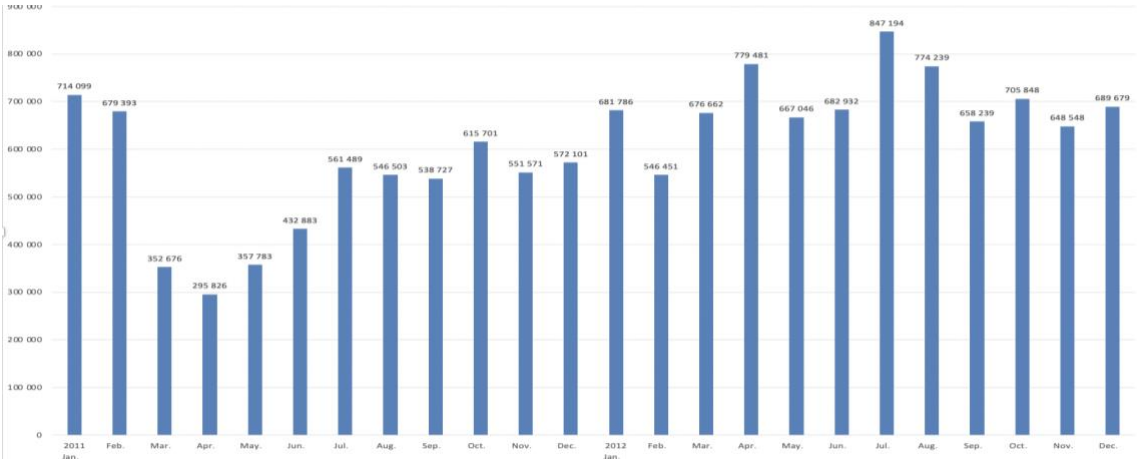
The Japanese government has launched various advertising campaigns to attract foreign tourists' attention and help restore tourism and other connected industries[44].

- On April 21st, 2011, the first advertising campaign "Never Give Up, Japan" was launched in collaboration with representatives of local community and tourism, transportation and other industries.
- Later that year, the "Visit Japan" campaign was held, which was aimed at attracting international tourists to all parts of Japan, not only affected ones.
- In February 2012, the new "Japan. Thank you" campaign began to express appreciation for the world for not leaving Japan in difficult moments and helping on the way of recovery of Japanese travel demand. It brought positive image on the country.

In April 2012, the 12th WTTC Global Summit was held in Tokyo and Sendai with the participation of the leaders of the world tourism industry. 53 countries and 1200 participants discussed affected areas, security conditions and ways of increasing travel demand, negotiating with foreign travel agencies and holding PR events[45]. The advertisement was done by inviting media representatives who wanted to make stories about Japan and foreign travel agents who were interested in developing tourism products for Japan, including Tohoku on their routes. All the efforts put in have paid off and bear fruit.

[43] *White Paper on Tourism in Japan, 2012. Summary*. MLIT. 2012, p.20
[44] *White Paper on Tourism in Japan, 2012. Summary*. MLIT. 2012, p.21
[45] *White Paper on Tourism in Japan. The tourism situation in FY2012,* MLIT, 2012, p 25

Figure 8. Recovery of inbound tourism



Source: Japan National Tourism Organization (2021)

Looking at Figure 8 we can say that the number of foreign tourists has returned to its before-earthquake level in April 2012, counting 779,480 travellers. Author compared the number of arriving tourists with January 2011, when natural disaster hasn't yet occurred, and total arrivals of travellers counted 714,099. In total, it took 12 months to recover inbound tourism from the minimum point of 295,826 foreign tourists in April 2011 to 779,481 in April 2012.

4.2 Questionnaire on the attitude of tourists to the natural disaster and their willingness to travel to the country affected by a natural disaster

The aim of the following questionnaire is to derive a plan for a faster recovery of tourists' number and improve tourism in tourist destinations after a natural disaster based on the answers of respondents who participated in the following survey.

Method and procedure

Survey on attitudes of travellers toward natural disasters and their willingness to travel to disaster-affected areas was conducted in a time range from 23rd of February to 2nd of March 2021. The results were collected using an online questionnaire created in docs.google that was publicly available to anyone.

A total of 116 responses were received from respondents. As following questionnaire was created for tourists, 10 responses of participants who have never travelled before were excluded from the survey, and we obtained the final sample size of 106. The responses were anonymous and participation in survey was in a voluntary form.

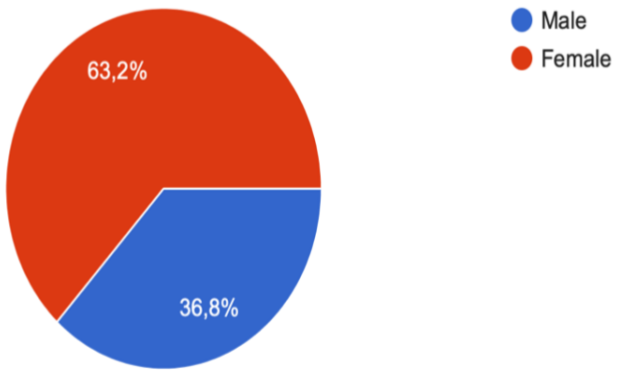
Questionnaire design

The questionnaire consisted of three sections. First section requested demographic information like gender, age, country of residence, education level and occupation of participants. Second section requested questions relating to the travel frequency, previous experience and attitudes to natural disasters, future desire to visit affected destinations, and as well questions that asked reasons of those who intended to travel to affected areas, and those who showed unwillingness to visit such places. Section three of the questionnaire was intended to identify the influence of natural disasters on attitude of respondents to travel destinations, likelihood of respondents to change the decision of visiting chosen travel destination in case of disaster occurrence, and concern on personal safety in case of catastrophe happens during their stay.

4.2.1 Results and recommendations

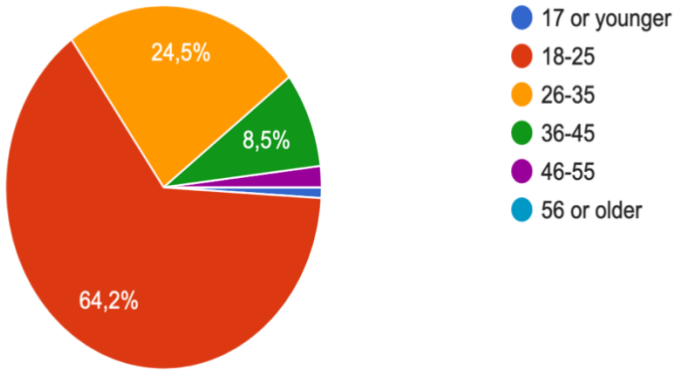
In the beginning, demographic profile of 106 respondents was analysed in the survey.

Figure 9. Gender of respondents



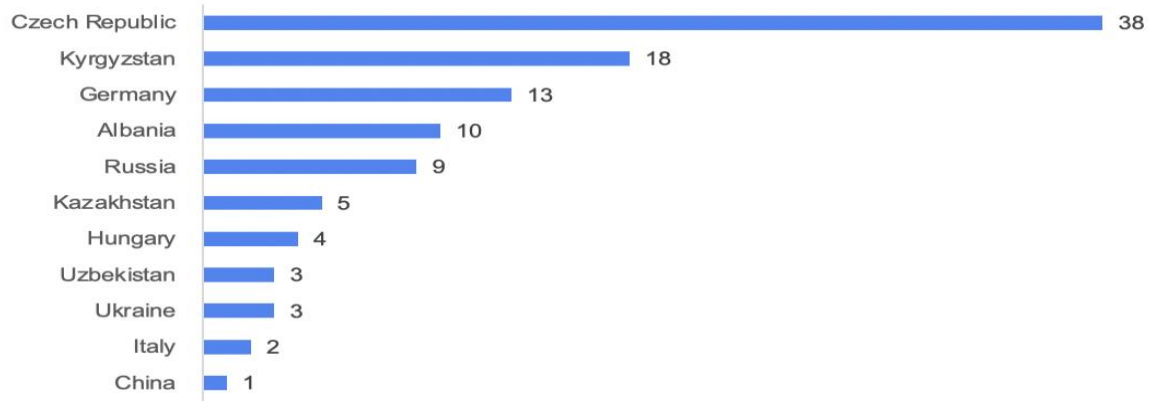
The first question to be answered was about gender identity. As shown in Figure 9, females were strongly represented amongst respondents and counted 63,2 %, while males represented 36,8 %.

Figure 10. Age of respondents



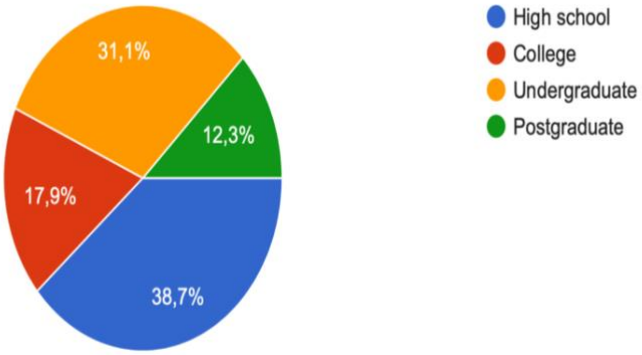
The Figure 10 shows age of respondents which ranges from 17 to 55. As seen, most of respondents are in category of 18-25 years and count 64,2 % followed by category 26-35 years that obtained 24,5 % of answers.

Figure 11. Country of residence of respondents



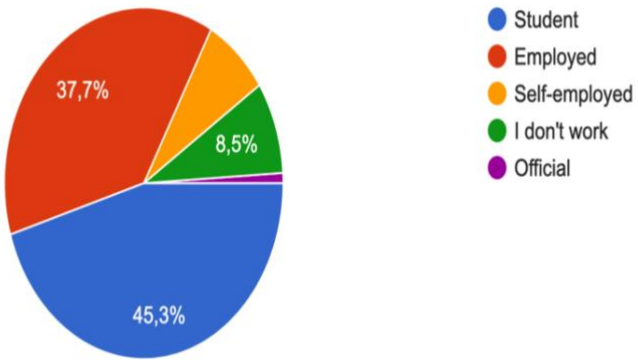
The question about country of residence was in a form, where respondent had to fill in his/her current place of living in a given space. Based on the answers, respondents live in continents of Asia and Europe. To be more precise, 35,85 % of respondents are from Czech Republic, 16,98 % from Kyrgyzstan, 12,26 % from Germany. Other countries represented the minority but are shown in Figure 11.

Figure 12. Education level of respondents



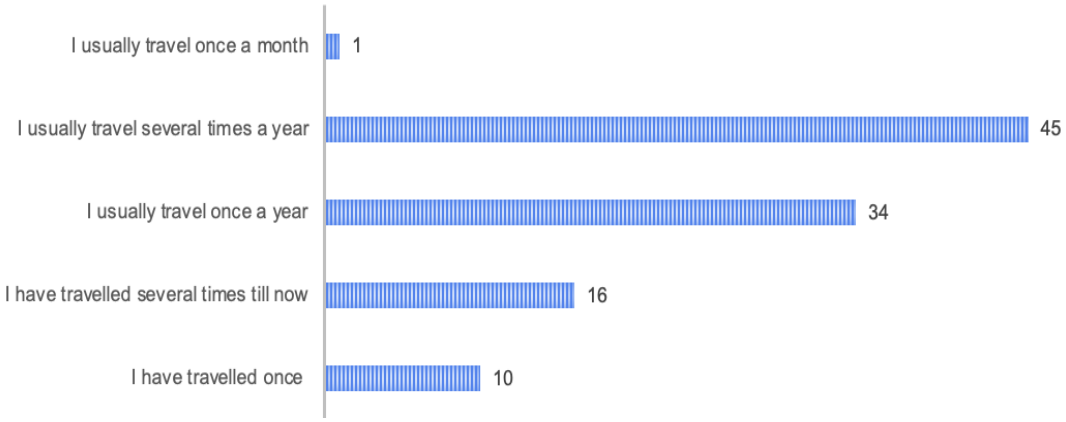
In the following question, participants were asked to choose the highest level of obtained education. The majority of respondents (38.7 %) completed high school. Almost one-third (31.1 %) has completed undergraduate degree. Smaller groups of residents had completed college (17.9 %) and postgraduate degree (12,3 %).

Figure 13. Occupation of respondents



With regard to occupation, the students accounted for the largest number of respondents (45,3 %). Those who were employed accounted 37,7 %, self-employed 7,5 %, had no job 8,5%. As there was a possibility to write down own answer, one respondent chose this option and filled in a job position “official”, that can be seen in Figure 13.

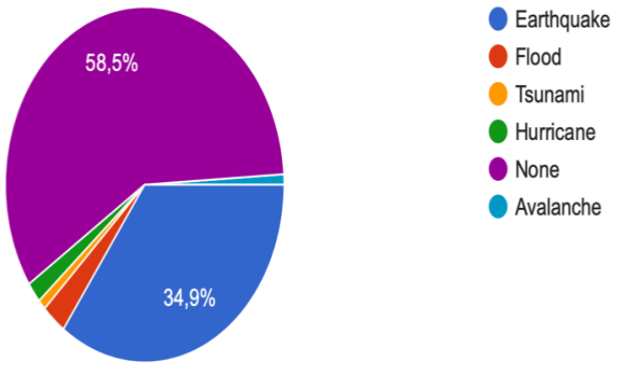
Figure 14. Travel frequency of respondents



According to obtained data, 42,5 % of respondents are experienced tourists and travel several times a year. 32,1 % of respondents travel once a year. The rest of them have less experience and have travelled several times or once till now, as shown in Figure 14.

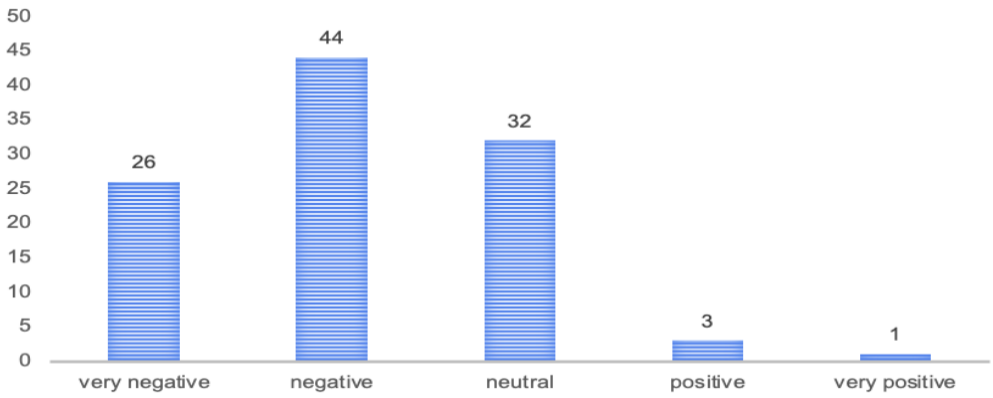
It was also found that the majority, namely 60,4 %, travel in groups with someone (friends, family or others), and only 39,6 % of respondents travel alone.

Figure 15. Natural disaster experience of respondents



Conducted survey shows that 42 respondents (39,6 %) have experienced a natural disaster in their lives. As can be observed in Figure 15, out of total number of respondents, 34,9 % have experienced earthquake, 2,8 % flood, 1,9 % hurricane, 0,9 % tsunami and 0,9 % avalanche.

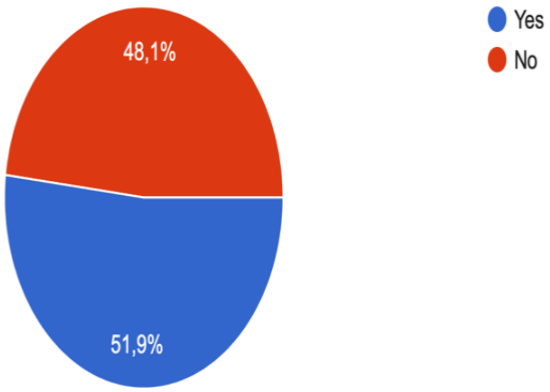
Figure 16. Attitudes of respondents towards natural disasters



Based on the survey research it was found that 41,5 % of respondents have very negative, 24,5 % negative attitudes towards natural disasters. 30,2 % respondents feel neutral, and almost no signs of positive attitudes have been found.

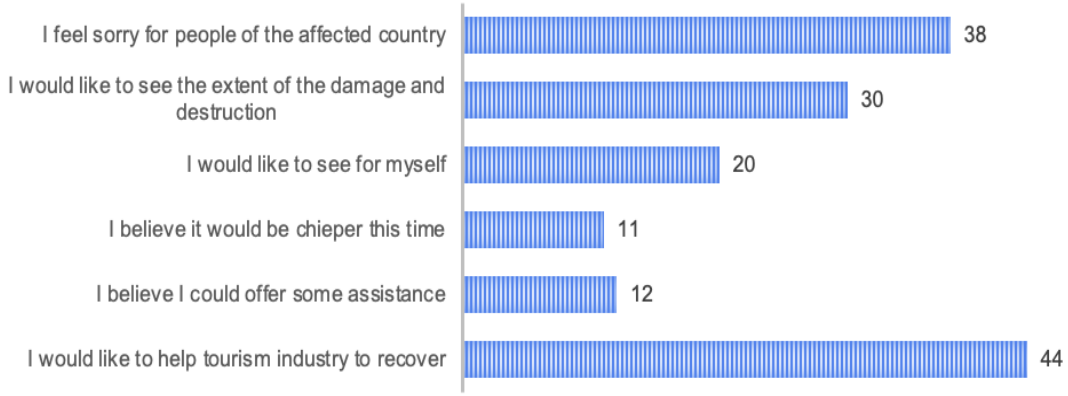
Regarding the question of previous experience of travelling to a country affected by a natural disaster, majority (84 %) of respondents have never travelled to affected destinations and only 16 % had experience in it.

Figure 17. Travel intention to a country affected by a natural disaster



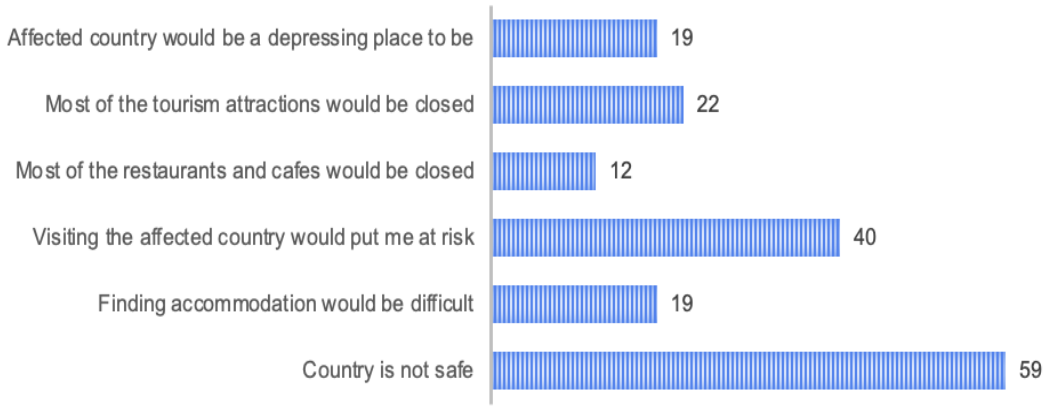
The following question to answer was about their willingness to travel to destinations affected by natural disasters in future. Surprisingly, 51,9 % of participants have shown their desire to visit disaster-affected countries, and 48,1 % respectively expressed their reluctance.

Figure 18. Reasons of respondents for visiting affected countries- MCQ



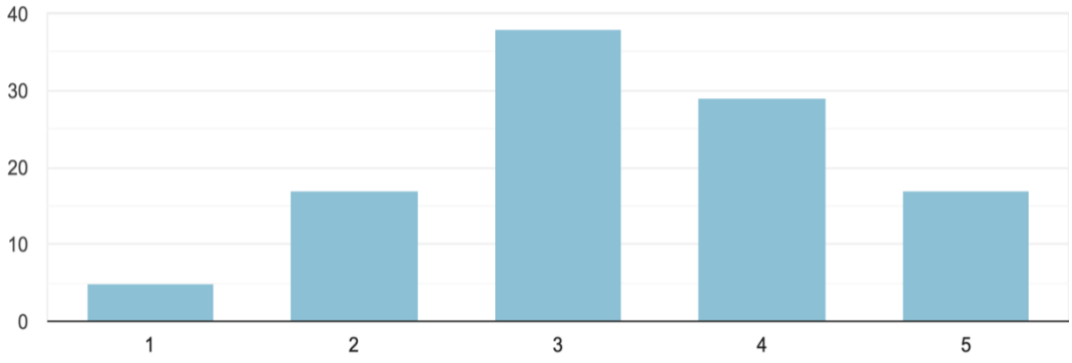
Author has prepared six statements that would show the reasons and motives of respondents to travel to affected areas. Only those participants who indicated their willingness to travel were asked to answer this multiple-choice question. As shown in Figure 18, the main motivation of most respondents was to help tourism industry to recover, and to support local people because of feeling compassion to them. However, others would travel to see the extent of damage and destruction caused by disaster with own eyes. Scores also showed that tourists are less likely to be lured by the prospects for cheaper trips after catastrophic events.

Figure 19. Reasons of respondents for not travelling to affected countries - MCQ



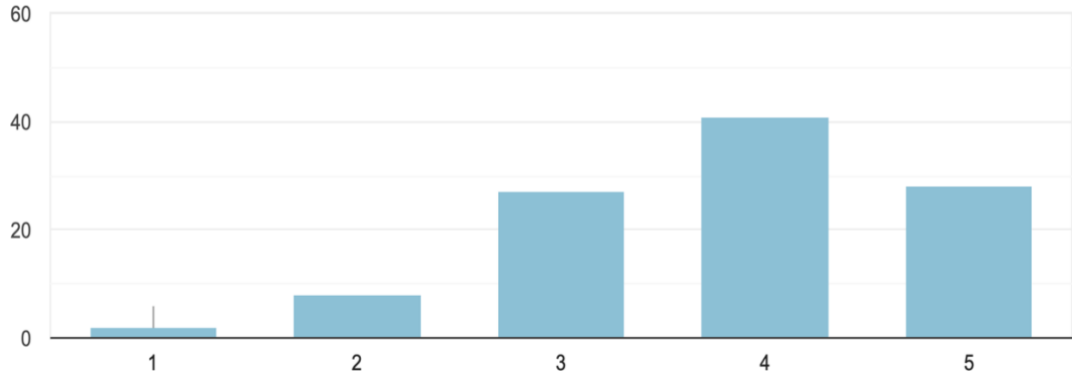
Respondents who indicated an unwillingness to visit affected countries were asked to choose one or more given statements that represent common image related perceptions of a destination after the natural disaster. The data shows that the main reasons respondents do not want to visit affected countries was due to their perceptions that country is not safe and their belief that visit will put respondents at risk. There was less concern amongst participants with regard to the availability of travel and tourism services, restaurants and accommodation.

Figure 20. Likelihood to change a decision to visit destination in case of disaster occurrence



The majority (35,8 %) felt neutral regarding the possibility of cancelling an already booked trip in case of a sudden natural disaster occurrence, due to its dependence on various factors. However, 27,4 % and 16 % of respondent would likely and very likely cancel the trip. One of the reasons can be seen in Figure below.

Figure 21. Concern about personal safety of respondents in case of disaster occurrence in a chosen travel destination



Based on the responses to the following questions, 38,7 % of survey participants would be worried and 26,4 % very worried for their personal safety in case natural disaster happens during their trip. Minority of respondents would feel calm in this situation.

Recommendation

This survey examines the attitude of tourists after catastrophic events and identifies motives of those who are willing to travel to the affected destination despite the incident, and those who showed reluctance to do so. It was found that among tourists most likely to travel to the affected area, the main motive was to help tourism to recover, and to see the extent of damage and destruction with own eyes. Reason of those not willing to travel to affected areas were because of belief that country is unsafe and visitation will put respondents at risk. Based on these results, in order to speed up the recovery of tourists' number, author recommends to pay special attention in some steps of disaster recovery plan like improving safety measures and offering updated information to change tourists' perceptions of safety concerning a destination, informing current and potential tourists of successful physical rehabilitation of an area, organising volunteer trips, protecting and rebuilding a positive destination image, organising temporary tours to heavily damaged places for tourists desiring to see the extension of occurred event, and helping to reshape the functionality of the destination offers based on the situation to support local travel businesses.

5 Conclusion

The main purpose of this thesis was to determine how natural disasters affected tourist destination, whether the number of tourists declined, and what measures were used to recover. As a result of the study, it was necessary to provide a solution for faster tourism recovery by restoring the number of tourists in the affected area that can be practically implemented in the future.

Destructive nature of natural disasters has long-term effects on the destinations and negatively impacts the tourism industry. The disaster destroys the physical base, damages tourist facilities and attractions, deteriorates the image of the destination and discourages tourists from traveling to the country.

Based on the study of Tohoku earthquake and tsunami above, author can conclude that although tourist arrivals have dramatically declined in Japan, they have successfully recovered and restored tourist numbers in a short period of time, taking into account the level of damage after the natural disaster. In order to achieve the same successful result and restore tourist numbers it is necessary for all interested parties to work cohesively towards the goal and perform the following steps: develop management strategies, reconstruct damaged facilities, create attractive and competitive destination with a usage of PR campaigns and positive broadcasting of destination in media space, constantly inform updates on the situation progress, try to save main cultural heritages of the country. One of the effective ways on the beginning phases of tourism recovery is visa relaxation for particular countries and organisation of various promo actions.

Also knowing the main motivation and fear of tourists obtained from a questionnaire, it is important to devote efforts to satisfy the requirements of travellers with creating a better environment. For tourists from abroad to be able to travel with an easy mind, an essential prerequisite is safe environment to be assured in time of disaster. Furthermore, it is possible that the memory of a tragedy itself can become an attraction and a potential tourism opportunity, so development of trips for this purpose can be introduced.

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7 Appendix

Questionnaire form.

Dear Respondent,

I am a student at the Czech University of Life Sciences and currently conducting a research on the impact of natural disasters, primarily earthquakes and tsunamis, on tourism.

Please, take a moment to fill out the following form about your attitude towards natural disasters and your willingness to travel to the affected area.

1. What is your gender?
   - Male
   - Female

2. Which category represents your age?
   - 17 or younger
   - 18-25
   - 26-35
   - 36-45
   - 46-55
   - 56 or older

3. What is your country of residence?

4. What is your highest level of education?
   - College
   - Undergraduate
   - Postgraduate

5. What is your occupation?
   - Student
   - Employed
   - Self-employed

- I don't work
- Other

6. How often do you travel?
- I have never travelled before
- I have travelled once
- I have travelled several times till now
- I usually travel once a year
- I usually travel several times a year
- I usually travel once a month

7. Do you travel alone?
- Yes
- No

8. Have you ever experienced a natural disaster?
- Yes
- No

9. Which of the following natural disasters have you experienced?
- Earthquake
- Flood
- Tsunami
- Hurricane
- None
- Other

10. What is your attitude to natural disasters? *
- Very negative
- Negative
- Neutral
- Positive
- Very positive

11. Have you ever travelled to a country affected by a natural disaster?
- Yes
- No

12. Would you like travel to a country affected by a natural disaster?
- Yes
- No

13. Why would you travel to a country affected by a natural disaster?
- I would like to help tourism industry to recover
- I feel sorry for the people of affected country
- I believe I could offer some assistance
- I believe it would be cheaper at this time
- I would like to see for myself
- I would like to see the extent of the damage and destruction
- Other

14. Which of the following reasons would stop you from travelling to a country affected by a natural disaster?
- Country is not safe
- Finding accommodation would be difficult
- Visiting the affected country would put me at risk
- Most of the restaurants and cafes would be closed
- Most of the tourism attractions would be closed
- Affected country would be a depressing place to be
- Other

15. How much will your attitude to the travel destination be influenced by a natural disaster?

1- lowest. 2 3 4 5 – highest

16. Do you agree with the following statements?

Strongly disagree Disagree Neutral Agree Strongly agree

- natural disaster makes journey dangerous
- the environment of travel destination becomes fragile
- Natural disaster highlighted in the media rather scares tourists off

17. How likely would it be for you to change the decision to visit a destination in case some natural disasters happen there?
    - 1 - is not likely at all.
    - 2 – not likely
    - 3 - neutral
    - 4 - likely
    - 5 - it is very likely

18. How much would you be concerned about your personal safety in case a certain natural disaster occurs at the destination in which you are spending your vacation?
    - 1 - very calm
    - 2- calm
    - 3- neutral
    - 4 - worried
    - 5 - very worried