Sustainable Tourism for Rural Revitalization

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Union Press

Sustainable Tourism
for
Rural Revitalization

For the prosperity of tourism industries in Asia

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Preface

Japan has been facing a full-scale depopulating society and it is difficult to increase the gross domestic product (GDP) rapidly. The number of domestic travelers is decreasing but the tourism industry is full of activity in recent years. The main factor is the increase of foreign visitors to Japan (inbounds) and travel consumption. The growth rate of international tourists is 5 % in the world and for Japan it is about 25 % recently, according to the United Nations World Tourism Organization (UNWTO). Japan has achieved a high rate. To cover the decrease in GDP, the role of economic effect due to the consumption of inbound tourists will increase moreover.

Sixty percent of inbound tourists make a tour known as the "Golden-route" (Tokyo-Hakone-Mt. Fuji-Kyoto-Osaka) and there is a tendency to concentrate on Tokyo and Osaka especially. It occupies 60 % of the overall consumption of inbounds in these two areas. When the inbound tourists are concentrated in some specific areas, it also causes disadvantages such as "over-tourism" which is a type of tourism pollution. Therefore, it is an urgent task to guide the inbound tourists to country areas. Over-tourism causes some environmental deteriorations (noise, garbage problems, deterioration of drainage and traffic jams), and inbound tourists have some troubles with residents as a result.

Globalization goes on when the tourism industry develops due to inbounds, and the inflow of manpower, goods and capital occurs across borders, which is called "hyper-globalization." There is a possibility that the following kinds of issues occur: the tourist market cannot be controlled by national and local policies, for example, the significance of home currency diminishes when the visitors pay for accommodation and shopping fees by

a smartphone (cashless system). The use of virtual currency (cryptographic asset) is also an important issue.

It is necessary to construct tourism strategies for rural areas while putting the above mentioned issues into the field of vision. It is also required to enhance tourism attractions for inbound tourists as well as the satisfaction level and consider more deeply the feelings of local inhabitants; namely the policies that the inhabitants can accept and their complaints should be minimized. It is necessary to prepare an accessible environment and improve hospitality (*omotenashi* in Japanese) to increase tourist satisfaction, and it is necessary to reflect the data analysis results into strategies. The tourism industry should analyze the resources (including activities) sought by tourists. It is also necessary to make safe and secure measures at the time of a disaster. The departure place of tourists should be diversified to manage the tourist number sustainably and it is also necessary to increase the number of repeating tourists. It is essential to utilize information and communication technology (ICT) and develop human resources to execute these strategies looking to globalization. Especially, an open data system that is easy to use is important.

The Japan version of DMOs (Destination Management/Marketing Organization) are being established throughout Japan and they are involved in regional tourism strategies. There are many network systems (for example "Michi-no-Eki" and "Umi-no-Eki") to provide safe and secure tourism information, including disaster information. The Japanese government has put forward "Society 5.0" for a human-centered society. The tourism industry should construct strategies in line with the governmental proposal and achieve economic development as well as solving various kinds of social problems. Inbound tourists, as well as domestic tourists, are attracted to areas where it is easy to live and easy to visit.

The current situation of the Japanese tourism industry is useful for tourism-developing countries as well as Asian countries and this book is written for this reason. The book is written (including case studies) by four authors, two chapters each, so it is composed of eight chapters. It is our hopeful pleasure that it is helpful for other countries. Chapter 1 takes an overview of Japanese social circumstances, and the way that the tourism industry is expected to play an important role to solve various issues in the society, especially a revitalization in rural areas in which the population is declining. It is strongly required to increase the number of domestic and foreign visitors in such areas. At the same time, the counterplan for SDGs

and the Japanese version of DMOs should be considered when tourism policies are implemented. The use of ICT including IoT, robots, big data and open data based on Society 5.0 is also essential.

In Chapter 2, Japanese tourism associations and their roles in local regions from a functional perspective are described. The principal purpose of the associations is to attract visitors to the area and they have three functions: economic, political and social. They have contributed to regional areas through tourism. The evaluations of the associations are indicated from various points of view using data. Several prefectural tourism associations have merged recently in order to form DMOs. The differences between the functions of these organizations are indicated in detail. This study used a KH Coder provided by Koichi Higuchi.

In Chapter 3, "green tourism" which is a type of new tourism is introduced and it is a leisure activity in order to enjoy nature, culture and exchange while staying in rural areas. The content of the chapter includes a case study of Usa City (Oita Prefecture). The city is known as an advanced case of green tourism. Tourism has a potential to boost and revitalize local economies. This chapter introduces several examples regarding green tourism, including the case of Noto Peninsula.

In Chapter 4, the features of Michi-no-Eki, which is a rest area along normal roads and designated by the Japanese government, are described. There are 1,145 facilities spread all over Japan as of April 2018 and there are three main features: rest area, provider of information and regional linkage. Moreover, they take on the roles of tourism industrial development, disaster prevention and welfare services. This chapter introduces Michi-no-Eki's present situation and efforts in tourism, especially local tourism promotion.

The utilization of bicycle tourism is described in Chapter 5. There are many benefits to utilize bicycles: such as health, environmentally-friendly, easy-to-use and convenient. Some European countries are famous as bicycle countries and they promote bicycling not only in their daily life but also for tourism, and bicycle tourism is becoming popular in Japan. The current situation of bicycle tourism in Japan is explained, especially in view of foreign tourists. This chapter introduces the importance of utilizing bicycles to promote inbound tourism, current situations of bicycling in European bicycle countries, bicycle tourism for foreign tourists and some ideas about the development of bicycle tourism in urban and local areas in Japan.

In Chapter 6, utilizing examples of open data to the tourism industry are introduced, which could promote Society 5.0 advocated by the Japanese

government. Data sharing between the government, municipalities, and private business operators is indispensable in achieving Society 5.0. Open data is available for secondary use and it is also expected to boost the tourism industry by making use of regional resources. Some trial examples to create open data sets on tourist information are described and the data was collected in cooperation with local governments and citizens.

The utilization of regional resources is described in Chapter 7. The utilization has a high potential to revitalize local areas, however, many inhabitants are not aware of the resource values. This chapter suggests a framework that uses ICT as a way to discover regional resources and to archive the benefits for inhabitants to live there. The usefulness of developing a website is also confirmed through the results of a questionnaire conducted after a demonstration experiment held in the Suki area of Kobayashi City in Miyazaki Prefecture. Part of the research in Chapters 6 and 7 was supported by JSPS Grants-in-Aid for Scientific Research (KAKENHI) 15K00448 and 15K16097.

The change of the number of passengers of Shinkansen and airplanes is explained, following the Shinkansen extension, in Chapter 8. The Hokuriku Shinkansen (terminal station Tokyo) was extended from Nagano City to Kanazawa City on March 14, 2015 and the airplane users fell sharply. There are three airports in the Hokuriku district which includes three prefectures. The airports are Komatsu, Toyama and Noto. The passengers flying toward Haneda (Tokyo) from Komatsu decreased by approximately 37 %, and from Toyama decreased by 54 %. The users of Noto Airport increased. As a result, the rate of airplane passengers is decreasing because the seat-load time of the Shinkansen is shorter.

Regional revitalization is essential for taking into account the current situation (for example economic and population situations) in Japan. This book describes the situation of the Japanese tourism industry, including case studies on tourism. Tourism has the potential to become a driving force for regional revitalization. There are many tourism resources in areas and many inhabitants are not aware of the value. However, information dispatch is developing in the areas and the utilization of ICT will become a clue for regional revitalization. Data analysis must be constantly carried out in every area and the results should be applied to tourism and political strategies. Japan is praying for tourism industry development in many countries and also the promotion of peace diplomacy.

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CHAPTER ONE

Tourism strategy for regional revitalization and trend of inbound tourism

Abstract

Japan's population remains roughly unchanged recently but it has entered into a decreasing phase. In particular, a falling birthrate and aging society are advancing remarkably in rural areas and the continuation of some communities is difficult. There is also a gradual decrease in the GDP. Development of the tourism industry is given as one of the policies to reduce these matters in Japan. The tourism industry could extend the number of visitors and make up for the decrease of the residential population. When the population is declining, an increase in the domestic tourist population is generally difficult. Therefore, it is strongly required to increase the number of foreign visitors. Regarding this, the counterplan for SDGs and the Japanese version of DMO are important matters. Establishment of DMO will revitalize rural areas. It is also necessary to develop human resources and the use of ICT including IoT, robots and big data based on Society 5.0 which is a new Japanese policy.

1. Introduction

More than 150 years have passed since 1868, the first year of the Meiji era, and Japan made a new start as a turning point in 2018. The Meiji era was an important period in which the state of present-day Japan was established. Japan has had various experiences since then, namely political and economic reforms and innovation which have exceeded our expectations. As an important point, the progress of globalization due to human

and information exchange is pointed out. However, various problems have appeared as the 21st century begins. These are global issues which are represented by environmental, food and population problems. It is difficult to solve these problems as only one country and it is necessary to settle them on a global scale, as part of the Asian region. It is necessary to remove both country and regional fences and to progress globalization. The demand for an exchange of human and information has been increasing especially, in addition to goods and capital which are important resources. It is essential to adopt a conscious policy in regions (especially rural areas).

In Japan, it is necessary to construct new measures as population and advanced urban functions become intensely concentrated in Tokyo. *Genkai shuraku* (Japanese language) are increasing in rural areas, and these are the villages where 50 percent of the population has reached or exceeded the age of 65 because of depopulation (especially young people). It is difficult to maintain a social symbiosis such as ceremonial occasions and festivals in these areas. Maintaining agriculture, forestry, and fishery industries is difficult. Mountains and rivers cannot be managed and the continuation of the community is difficult. The labor in primary industry is severe, and it is necessary to reduce the labor load and to substitute the use of advanced technology. However, there is the feeling that it is too late. Information technology is a core for revitalizing rural areas. Tourism is a basis of human exchange and it is necessary to make up for the decrease of the residential population by using exchange. Therefore, the power of the private sector is progressively required. The district should be developed sustainably using innovative measures and information technology. Of course, human resources development is essential, and an increasing measure of inbound tourism is strongly required.

2. Society 5.0 and SDGs

Society 5.0 is a main catch phrase to construct a super-smart society in Japan. The phrase was decided by the Fifth Science and Technology Basic Plan of Japan (from 2016 to 2020). The process of "Society" is indicated in Figure 1-1. The meaning is to establish a human-centered society with economic growth. Of course, advanced information technologies (network, open data, cloud, robots, artificial intelligence (AI) and internet of things (IoT) etc.) have to be applied positively in the society and they should be activated not only in manufacturing (secondary industry) but also in other

| Society 1.0 (Hunting and gathering) | Society 2.0 (Agrarian) | Society 3.0 (Industrial) | Society 4.0 (Information) | Society 5.0 (Human) |
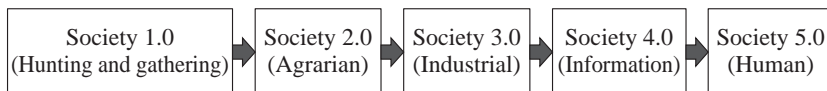
Figure 1-1 Flow until Society 5.0
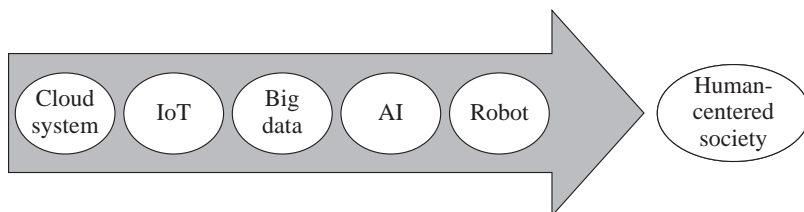
Figure 1-2 Application of ICT for establishing Society 5.0

industries including tourism (tertiary industry). Then, a human-centered society has to be finally constructed. The schema is shown in Figure 1-2. Social changes have to be made to construct the society, and one of the important goals is healthy life extension in a super-aged society. The Japan Economic Organization Federation (Keidanren) is strongly recommending Society 5.0 as a new growth model for Japanese problem solving and future creation. Keidanren consists of leading companies in Japan, and the following is the goal: areas that are good and advanced for living are also easy to visit for tourists. Construct a good livable society (not only in urban but also regional areas) by spreading the achievements of science and technology to all industries in Japan.

On the other hand, the Sustainable Development Agenda 2030 was adopted in the United Nations in September 2015. The Sustainable Development Goals (SDGs), which consist of 17 goals and 169 targets, were indicated in the agenda, and the concept is that no one will be left behind. Keidanren intertwined Society 5.0 and SDGs, and made a new slogan "Society 5.0 for SDGs." The federation is proposing it to solve various kinds of social challenges while developing the economy for achieving SDGs by utilizing innovation technologies to the maximum.

It is necessary to carry out business activities while putting the slogan in the field of vision even in the tourism industry. This means to achieve SDGs according to Society 5.0. The seventeen goals of SDGs are indicated below and the goals can be roughly classified into the following three fields:

- Economics (economic growth, innovation, working style reform etc.)
- Society (poverty and hunger, health, education, life, discrimination etc.)
- Environment (climate change, clean energy, water etc.)

Four goals (No. 8, 11, 12, 14) are related to the tourism field. Each goal has some targets and there are 169 targets in total.

Goals of SDGs
 1. End poverty in all of its forms everywhere
 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
 3. Ensure healthy lives and promote well-being for all at all ages
 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
 5. Achieve gender equality and empower all women and girls
 6. Ensure availability and sustainable management of water and sanitation for all
 7. Ensure access to affordable, reliable, sustainable and modern energy for all
 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
10. Reduce inequality within and among countries
11. Make cities and human settlements inclusive, safe, resilient and sustainable
12. Ensure sustainable consumption and production patterns
13. Take urgent action to combat climate changes and its impacts
14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

3. Circumstances surrounding Japan and the measures for inbound tourism

Japan currently has the state of a declining birthrate and aging population. The largest population of Japan was about 128 million in 2008, however, there is a reported estimation that it may become less than 100 million by 2050. The exponential increase of the gross domestic product (GDP) cannot be expected as there is a strong correlation between population and GDP. It is a future consideration to develop and maintain the whole nation in a well-balanced state. In the 1980s, population and advanced urban functions became intensely concentrated in Tokyo, causing income disparity to widen. It is necessary to overcome this over-concentration and decentralize people and functions from Tokyo, and those resources have to be interspersed to other districts (especially rural areas). In this chapter, rural is used in comparison with Tokyo. The Japanese government chants "regional revitalization" in consideration of those backgrounds and it is promoting development of the regions due to innovation in tourism and agricultural industries [Ogawa and Yamaguchi, 2017]. Especially, the role of the tourism industry (one of the service industries) has become bigger. The production efficiency of the service industry is, however, still low and there is a potential to force up GDP largely.

Japan continues to experience a current account surplus, about 19 trillion yen in 2018, according to a report by the Ministry of Finance. However, it gets closer gradually to the value before the failure of the Lehman Brothers. The balance of international tourism (subtract the expenditure by Japanese in foreign countries from the expenditure by foreign tourists in Japan) was surplus and it exceeded about 2.3 trillion yen in 2018, and this tendency is continuing. The role of foreign visitors (inbound) will become more important due to the falling birthrate, aging society and shrinking population. The change of numbers for inbound and outbound (Japanese tourists travelling abroad) is indicated in Figure 1-3. The data was published by the Japan Tourism Agency (JTA) as a preliminary value. The targeted value of inbounds was 10 million people per year at the time of the former Prime Minister Junichiro Koizumi (Visit Japan Campaign (VJC) was developed in 2004). This value (10 million) was finally achieved in 2013. The number of outbound tourists has been changing to about 17 million recently and there has not been a big change for the last decade. The increase of inbound tourists is remarkable due to the Cool Japan Strategy

(million)

(a) Inbound

(million)
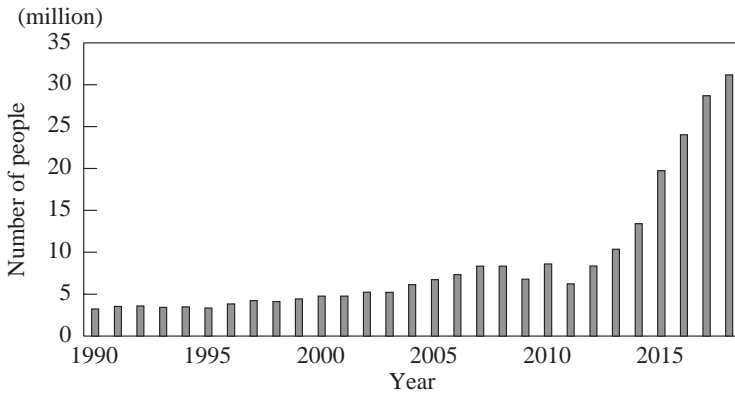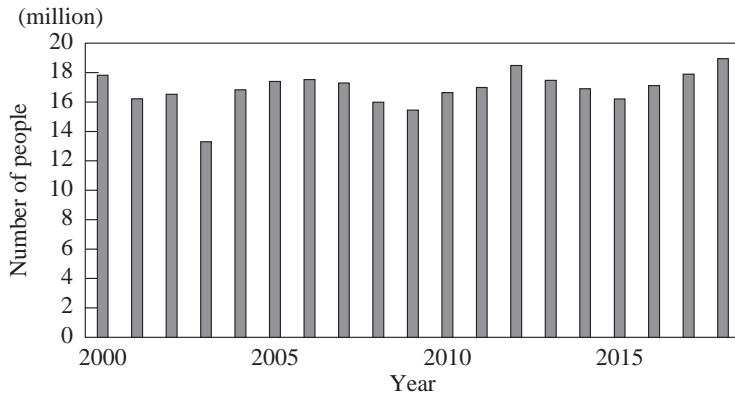
(b) Outbound

Figure 1-3 Change of inbound and outbound tourists
Source: Created by the author based on Japan Tourism Agency (2019).

(governmental policy) and an increase of various plans. The policy sup-
ports and promotes the development of a demand from overseas for excel-
lent Japanese products and services. The inbound tourists will continue to
have a positive economic impact and it is an important element.

The number of inbounds was 31.2 million in 2018 according to the JTA
document and the percentage of Chinese was 27 %. The details of the de-
parture countries and regions are shown in Figure 1-4. The rate of Asia oc-
cupies about 85 % and the one for Greater China (China, Taiwan and Hong
Kong) occupies 49.3 %. The goal of the Japanese government is to increase
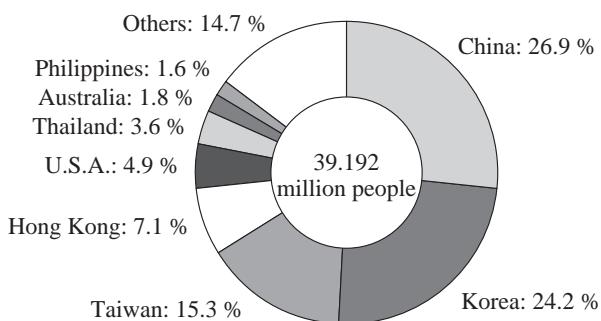
(a) Number of tourists visiting Japan in 2018

Others: 14.7 %
China: 26.9 %
Philippines: 1.6 %
Australia: 1.8 %
Thailand: 3.6 %
U.S.A.: 4.9 %
Hong Kong: 7.1 %
Taiwan: 15.3 %
Korea: 24.2 %
39.192 million people
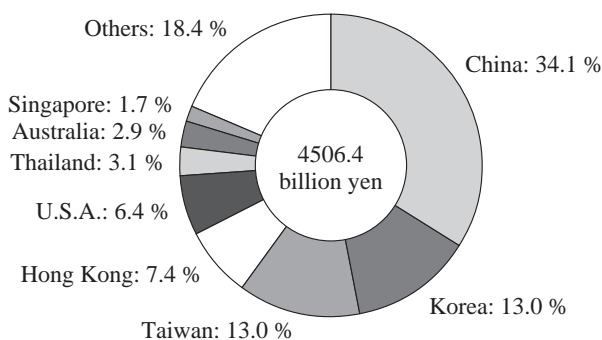
(b) Travel consumption by inbounds in 2018

Others: 18.4 %
China: 34.1 %
Singapore: 1.7 %
Australia: 2.9 %
Thailand: 3.1 %
U.S.A.: 6.4 %
Hong Kong: 7.4 %
Taiwan: 13.0 %
Korea: 13.0 %
4506.4 billion yen

Figure 1-4　Departure countries and regions and travel consumption for inbound tourists

the inbound number to 40 million in 2020 when the Olympics and Paralympics will be held in Tokyo, and anticipates 60 million in 2030. If there are no big disasters or economic shocks, the goal of 2020 will be achieved. It is an important factor to achieve 60 million in 2030 after the Tokyo Olympics. The travel consumption (4.5 trillion yen) by inbounds in 2018 is also expressed in the figure. The percentage of the consumption for Chinese is 34.1 % and it covers a large portion. The government aim is 8 trillion by 2020 and 15 trillion yen by 2030. The consumption expenditure per person was about 152.6 thousand yen in 2018 and it has been decreasing slightly every year. The expenditure for Europeans and Americans is relatively high. The scatter diagram between the percentages of the visitor number and expenditure in every country is indicated in Figure 1-5. The number
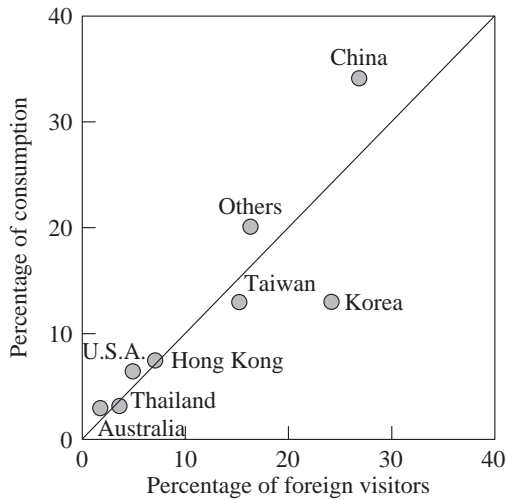
Figure 1-5 Scatter diagram between percentages of visitor number and expenditure in every country

and the expenditure of China are big, and Chinese visitors will continue to play an important role for the goal of the Japanese government. It is thought of as a main target to achieve the goal when the ratio of population and the economic growth are considered. The visitor does not purchase high-priced souvenirs during the trip because the latest trends and purchases are through the Internet. It is necessary to promote new measures for Chinese visitors. China had the world's best GDP until the early 1800s [Maddison, 2004], however, it greatly decreased at one stage. China has the world's second place of GDP in the world at the present and it is expected to take the first place in the near future. Therefore, China is a big market for Japan. It is also necessary to increase the expenditure of Korean tourists because it is at present too little. New measures for Korean visitors are required, for example the combination of golf and medical treatment with a high added value. An area of importance will be *koto* (Japanese language) consumption, which is value-based consumption (intangible goods consumption). There is also *mono* (Japanese language) consumption in contrast. *Koto* consumption means the lifestyle in which one pursues a better quality of life and *mono* consumption means the lifestyle that one pursues through material possessions.

Travel consumption for foreign visitors in Japan is explained in Figure
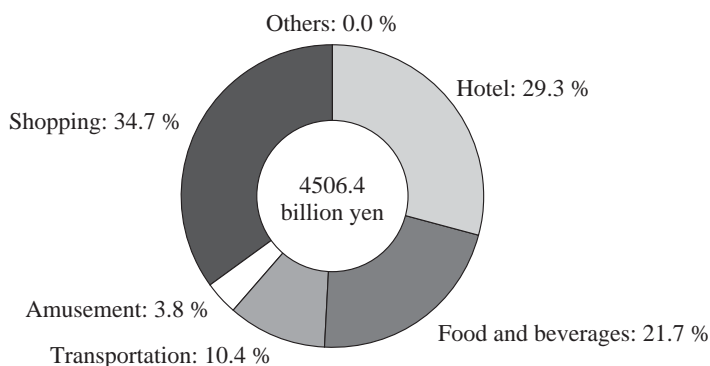
Figure 1-6 Travel consumption for foreign visitors in Japan
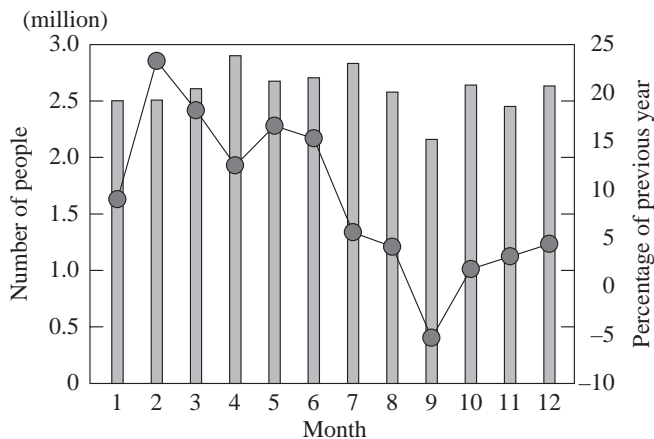
Figure 1-7 Monthly change in foreign visitors and the ratio to same month of previous year

1-6, which is the estimated value in 2018 published by the Tourism Agency of Japan. Shopping fees, accommodation and eating and drinking expenses have the majority. The total ratio of the three elements is 85.7 %. The ratio for shopping is as big as usual. The one for transportation expenses is about 10 % and it is somewhat low. It is necessary to construct a transport system in which inbound tourists can easily move in the districts. The monthly foreign visitor number in 2018 is represented in Figure 1-7. There are about 2.5 million inbound tourists in each month except for September, however, there are relatively many domestic visitors in this month. It is a good condi-

tion for tourist sites. There are fewer domestic visitors in winter but there is a relatively large number of inbounds in the season, which is also an advantage. Each site should decide the various tourism strategies in consideration of the conditions.

4. Golden-loop

Fairness is important as a tourism measure, namely there should be no discrimination between Japanese and foreigners. It is always necessary to consider fairness regardless of a country and an area. It is essential to improve the language environment for foreign visitors, especially in the case of a natural disaster, such as an earthquake. Many foreign travelers were confused at the recent times of earthquakes and floods including the Hokkaido earthquake (September 6, 2018). They could not receive accurate information even when visiting the Tokyo area.

Many inbound tourists visit the "Golden-route" (Tokyo-Hakone-Mt. Fuji-Kyoto-Osaka) and the rate is about 60 %. It is important to distribute the visitors from the Golden-route to other districts. Each district should have a striking attractiveness as a tourist spot putting a focus on inbound tourists. The Hokuriku Shinkansen (refer to Chapter 8) started operation from Nagano City to Kanazawa City (the terminal station is Tokyo) on March 14, 2015 and many inbounds have been visiting Kanazawa [Oyabu et al., 2017]. The passenger rate is maintaining 2.7 times higher (in 2018) compared with the one before the opening of business. Some hotels are under construction in Kanazawa City. The Shinkansen line is going to extend to Tsuruga by the end of March 2023 and extend to Shin-Osaka (by about 2046) through Kyoto. It is desirable to open business to Osaka as soon as possible because the Hokuriku Shinkansen has a bypass function of the Tokaido Shinkansen. A loop of the Shinkansen will be constituted at the opening of business as far as Osaka [Hokuriku Chunichi Shimbun, 2018]. Some people call the loop a "Golden-loop" in contrast to the Golden-route. There are some attractive resources for inbound tourists in the loop which includes the cities of Takayama and Matsumoto. Wide-area sightseeing is possible by the loop and visitors will increase in the districts. It can break the dependency on the Golden-route and has a substitute function of the Tokaido Shinkansen. The loop and the areas will have a big promotive chance because JR Tokai will start operation of the Linear Chuo Shinkansen Line (from Tokyo to Nagoya) in 2027. It will take about 40 minutes between both cities. Wide-

area tourism products with a story line can be provided at that time by forming the new loop. The loop includes Tokyo, Hokuriku, Kyoto, Osaka and Nagoya areas, and various kinds of JR tickets could be provided. This is better for inbound tourists.

5. Subjects to increase inbound tourism

Inbound tourists visiting Japan disseminate various kinds of information through social networking service (SNS). A tourism industry office should not lose their attention as they transmit both good and bad aspects using IT apparatus. Japanese tourism competitiveness is in the fourth place according to the World Economic Forum [Hokuriku Chunichi Shimbun, 2017]. The countries within the top ten are Western countries and Japan. The culture and transport infrastructure were evaluated but the environmental aspect was evaluated badly, and Japan should play a more active role in combating global warming. SDGs are worked on positively in Japan. Sustainable development is required strongly even in the tourism industry. There are still so many points on environmental issues to be improved in Japan, for example measures against global warming, inflection of renewable energy and reducing dependence on nuclear power. Japan occupied 16th place (in 2016) in the number of inbound tourists [Yomiuri Shimbun, 2017]. The first place was France and the number was 82.6 million and this is more than the total population of France (about 67 million). The rank of Japan was 11th in 2018. Japan will be evaluated more and more in various fields, even in the tourism environment, and it is constructing a satisfying countermeasure system for inbound tourism and contributing greatly to world peace.

The following items are the subjects of inbounds visiting Japan:

- Cannot communicate with staff
- Wi-Fi environment
- Multi-language environment (map, traffic sign and travel brochure etc.)
- Difficulty of using the public transportation system
- Card utilization

The above-mentioned items are concerned with information and communication technology (ICT). Some portable interpreters are on the market and the automatic translation environment is also well regulated. A multi-

language environment will be improved rapidly if apparatus can be used easily. The National Institute of Information and Communications Technology (NICT) is developing a free translation software (named "VoiceTra") designed for smartphones and the function will be enriched considerably by 2020, the year the Olympics and Paralympics will be held in Tokyo. It also provides great assistance for an evacuation path if a disaster occurs. It is essential to offer appropriate information using ICT apparatus at the time of disasters such as an earthquake or tsunami. It is necessary to provide high environmental safety, so everyone can go sightseeing safely.

The Japanese version of destination management/marketing organization (DMO), including the representatives of local inhabitants, is an effective organization. It is being established in each region and various tourism strategies for those regions are being settled with the inhabitants [Takahashi, 2017]. Various key performance indicators (KPIs) are usually decided and the indexes have to be achieved in tourism policy.

6. Human resources development and utilization of ICT

Many visitors are traveling to the Hokuriku district, even more than expected, following the extension of the Hokuriku Shinkansen and the hotel occupancy rate is high. The area could not estimate the number of visitors correctly or the behavior of the visitors following the extension. Some issues are occurring in the district because the effect of the Shinkansen is large. The first problem is labor shortage and the active opening ratio (effective opening-to-application ratio) is over 1.9 in the district. Specialized personnel is also insufficient. The human resources development familiar with inbound tourists is an important issue because the great increase of domestic tourists could not be expected. This issue is not limited to the Hokuriku district and it is a problem that faces the entire of Japan.

A system in which the following personnel can find employment easily should be established, namely people who are native of the district and feel a strong attachment to the area. They are always recognizing the regional problems and cultivating the capability to solve the problems through all education, including junior high school and high school in addition to university. Various support to the local permanent residents is the most important. Emigrated persons, including U-turn and I-turn, are given attention these days, however, it is most important to develop the employment situation of the graduates from local schools (university), who can easily find a

job in a local company. It is necessary to correct bad customs, for example long working hours and wage differential, and create ideal workplaces. Education on the tourism field is also important because the number of inbound tourists is increasing remarkably in Japan. Many people are visiting from various countries and talented workers have to look after the guests. Visitors from Islamic nations are also increasing and it is necessary to provide meals which consider halal. The cultures of the each nation should be understood enough and Japanese hospitality (*omotenashi* in Japanese language) should be offered. It is essential that the workers in the tourism industry touch upon foreign cultures and understand them. Many inbounds will visit Japan by developing human resources and the increase has a good influence on Japanese peace-oriented diplomacy.

It is important to create a good labor environment (salary, safety and well-being) and improve productivity by utilizing ICT apparatus. The starting salary of Japan is the lowest in developed countries and especially workers in the tourism industry are even lower. Robots are working at some hotels in Japan and the labor productivity is improving, for example front desk tasks, porter, meal serving and answering to customers' inquiries. Robots will support many operations along with AI and IoT development. Human resources, having high quality hospitality-capabilities, are required rather than robots in high class hotels. Districts where inbound tourists can feel satisfied with the hospitality have to be formed constantly. It is necessary to improve the labor productivity using information technology and to correct various wage differentials. Now is the time for action to create dynamism of Japan.

7. Conclusion

The local good points should be improved and enriched constantly, and it is essential to attract not only Japanese tourists but also foreign tourists. Some tourism-related Japanese and citizens living in local regions can understand this matter. There are also some troubles among tourists and local residents, for example noise pollution and crowds of people. Tourists (regardless of nationality and gender) are interested in various tourism resources, and it is necessary to understand their needs and construct tourism strategies for them quickly. In order to do these matters, tourism industries and working persons have to evaluate systematically the number of the hotel guests, the number of visitors and the amount of consumption for numerical targets,

for example KPIs. DMO has to be utilized positively, and it is necessary to create a good environment to which tourists and local inhabitants can agree. Effective KPI has to be decided in DMO. It is essential to change the policy from "product out" (promoting the tourism resources in the positions close to the residents and local tourist agents) to "market in" (promoting the resources from the position close to the tourists) and understand that tourists are preferring the consumption for *koto* (Japanese language: lifestyle in which one pursues a better quality of life) to the one for *mono* (Japanese language: lifestyle in which one pursues material possessions). The various demands of tourists can be grasped using the local residents' capability and skill in detail because they are familiar with the local area. This capability is of importance for inbound tourism measures.

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CHAPTER TWO

Tourism associations as a prototype of Japanese DMO

Abstract

This chapter examines Japanese tourism associations and their roles in local regions from a functional perspective. A tourism association is a membership organization consisting of members who engage in the regional tourism industry. Its principal purpose is to attract visitors to the region. This chapter also articulates the three functions of tourism associations; economic, political, and social function. Tourism associations have greatly contributed to regional tourism in Japan through these three functions, which explains their nationwide expansion. On the other hand, tourism associations sometimes acted as interest groups and might have implemented lobbying in the regional political system. When evaluating tourism associations it should be noted that their activities have this negative aspect. Recently several prefectural tourism associations have merged in order to form a destination management/marketing organization. This chapter considers the differences between the functions of these organizations through their official documents using text mining software.

1. Introduction

1.1 Why TAs are important in regional tourism

Recently, many people have come to recognize the importance of promoting tourism in order to stimulate regional economies in Japan. The tourism industry is labor intensive and is expected to absorb some of the labor

force in Japan's regions. Therefore, various economic enterprises and local governments have been attempting to promote the tourism industry, and many tourism associations (TAs) have been established. Although TAs are involved in the promotion of tourism on many levels, we do not fully understand their roles and functions. Thus, this chapter intends to clarify this issue.

Attempts have been made since the 1960s to analyze tourism from a systems approach, based on the realization that tourism is a complex phenomenon that involves interdependencies, energy flows and interaction with other systems [Weaver and Lawton, 2010]. This chapter also regards regional tourism as a system and considers TAs to be key players in the tourist destination region (Figure 2-1).
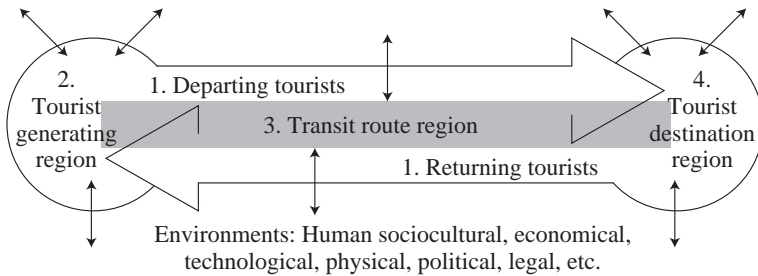
Figure 2-1 A basic whole tourism system
Source: Created by the author based on Leiper [2004].

1.2 Previous studies on tourism associations

Research in the field is quite limited, as discussed below. This study obtained documents concerning 47 prefectural TAs, such as balance of payments statements, business reports, and business plans. The few studies on TAs can be classified into two categories: functional studies and institutional studies.

Functional studies on TA tend to focus on the function and role of regional associations. Shimojima [2006] attempted to clarify the "real state" of the TAs in Nagasaki Prefecture. He postulated that the major role of the TAs is the execution of a "communication strategy" and tried to categorize them. According to Shimojima, TAs in Nagasaki Prefecture can be classified into two types: "stand-alone" and "regional cooperation" types. The former correspond to TAs in the Sasebo area and the latter to TAs in

Shimabara Peninsula.

Narusawa [2002] discussed the TA's role and the transition in France from a historical point of view. He discussed the tourist office (Syndicat d'initiative) and Tourism Association (Office de tourisme), which have become the center of tourism policy for French municipalities. He claimed that a new role, engagement in regional tourism policies, was added to TAs in addition to their traditional roles (e.g., providing information, various events, and promotional activities). His research focused on discussing the current situation of French tourism associations rather than discussing Japan's TAs.

Shikida and Morishige [2007] defined tourism association as a "platform" for managing the relationship between the regional tourism system and the extra-regional tourism system. They divided the tourism system into two categories: the "outer-regional tourism system" comprising stakeholders of departure locations (tourism officials and related businesses, tourists) and the "regional tourism system" comprising the regional stakeholders of tourist destinations (e.g., tourism officials and government, residents). They proposed an approach by which regional tourism stakeholders could build and manage an autonomous relationship with the outer regional tourism. According to them, tourist destinations are so dependent on the large outer tourism system that regional stakeholders should manage and build such a relationship.

Institutional research analyzes the TA by focusing on the influential institutions that affect them. Yamauchi [2007], Matsuzono [2009], and Nobe [2009] discussed the impact of institutional changes such as laws and covenants on TAs. Yamauchi described the roles of NPOs and their cooperation with governments and companies, referring to specific cases of NPO activities related to tourism. Since the Act on the Promotion of Specified Nonprofit Activities was enacted in 1998, the granting of legal status to TAs as NPO corporations has increased.

Matsuzono [2009] argued that the amendment of the Enforcement Regulations on the Travel Agency Act in 2007 made TAs a new major player in regional tourism. Since the late 1990s, a long-term recession has exacerbated the finance of municipalities in Japan, and TAs suffered from reductions in municipal subsidies.

Other institutional research includes Nobe [2009] and Hasegawa [2010], who discussed the impact of institutions on TAs. However, they discussed only specific institutions and TAs rather than provide an overview of the

relationship between institutions and TAs as a whole.

2. What is a tourism association?

2.1 Definition of "tourism association"

Broadly, TAs are organizations established in the region to help develop the regional economy by promoting tourism. Then, a tourism association could be defined as an organization that fulfills the conditions below:

- It is a membership organization that consists of members who engage in the tourism industry in the region.
- The principal purpose of the organization is to attract visitors to the region.
- Members engage primarily in promoting tourism in the region and other related activities.

However, this definition is not necessarily clear, and the organizational forms involved are diverse. For example, while many TAs have been formed as voluntary organizations and lack legal status, some are limited companies, incorporated associations, foundations, and NPOs with legal status.

Corresponding to Japan's jurisdictional organization, TAs comprise a three-layer hierarchy consisting of national, prefectural, and municipal TAs. Below, this chapter discusses the governance and finance structure of the prefectural TA. Prefectural TAs are focused on for several reasons. First, they are larger than municipal TAs and thus implement many different kinds of activities. Also, the organization of municipal TAs varies, from forms comparable to prefectural TAs to small organizations without legal status. Second, prefectural TAs are more likely to disclose their information to the public, making it easier to obtain information from them.

2.2 Organization of the tourism association

At the prefectural level, many TAs have adopted the form of incorporated association. According to the membership list of the Japan Travel and Tourism Association, 37 of the 47 TAs that have enrolled in the association are incorporated associations (*shadan houjin*), and the remaining 10 are foundations (*zaidan houjin*). In municipalities (i.e., cities, towns, and villages),

TAs are usually voluntary organizations without legal status. The Niseko Resort Tourist Association Co., Ltd. is an exception; it formed as a corporation organization.

In a survey conducted by Shimojima [2006] on 71 TAs in Nagasaki Prefecture (the number of respondents was 39), incorporated associations represented 5 % and foundations 2.6 % of the total, while about half were voluntary organizations without legal status (the survey was conducted from October 2003 to January 2004). They also had diverse names, such as "convention & tourist bureau," "tourist bureau," and "tourist federation."

The governance structure of TA is quite similar to that of a company (Figure 2-2). The general meeting of members corresponds to the general meeting of company shareholders. The TAs also have their own Board of Directors and auditors.
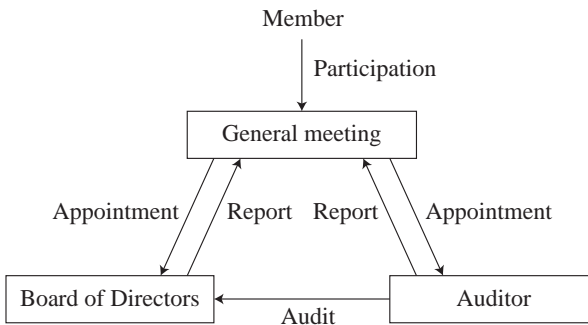
Figure 2-2 Governance structure of tourism association

2.3 Overview of TA

Table 2-1 presents the number of Board of Directors members in the rosters of each prefectural TA. They usually number from 21 to 40 people.

As shown later, the average association budget is only about 400 million

Table 2-1 Number of board members in prefectural TAs

From 11 to 20	2 organizations	From 41 to 50	6 organizations
From 21 to 30	22 organizations	From 51	1 organizations
From 31 to 40	10 organizations	Unknown	6 organizations

Source: Yamamoto [2012].

yen. The number of TA board members would thus seem excessive for such small organizations.

Two reasons could be proposed for this situation. First, most of the board members in ordinary TAs work part-time. Thus, the cost of their salaries is not great. According to a survey report conducted by Japan Travel and Tourism Association [2012], the numbers of full-time board members are much less (Figure 2-3). The number of staff is also small as well as that of board members. The average number is 21.9.
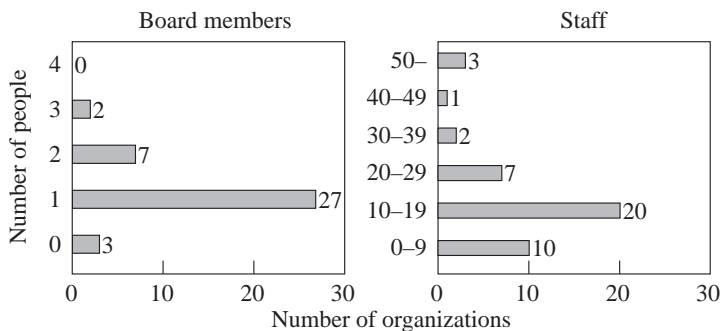
Figure 2-3 Number of full-time board members and staff in prefectural TAs

Source: Created by the author based on Japan Travel and Tourism Association [2012].

Second, the tourism sector includes many elements, such as travel agents, hotels, and bus companies. Therefore, the number of board members inevitably increases when the representatives of all the elements are incorporated as stakeholders into the boards.

As stated above, a TA is a membership organization and thus its activity and budget is based on its members. Generally, the members are companies, who engage in the regional tourism industry, and municipalities. For instance, there are various kinds of groups of members in the Japan Travel and Tourism Association [2018] (Table 2-2).

Figure 2-4 shows the number of members in prefectural TAs and that averages 312.7. According to the survey [Japan Travel and Tourism Association, 2012], 35 percent of the prefectural TAs answered "decreasing" to the questionnaire (Figure 2-5).

Table 2-2 Number of members by industry type of Japan Travel and Tourism Association

	Membership
Prefectures	47
Municipality	141
Prefectural Tourism Association	47
Municipal or other tourist associations	135
Tourism related group	67
Transportation companies	57
Travel industry	42
Tourist facilities / accommodation	41
Other	136
Total number	713

Source: Japan Travel and Tourism Association website, http://www.nihon-kankou.or.jp/home/gaiyou/kaiinmeibo/g20180511/.

Figure 2-4 Number of members in prefectural TAs

Source: Created by the author based on Japan Travel and Tourism Association [2012].
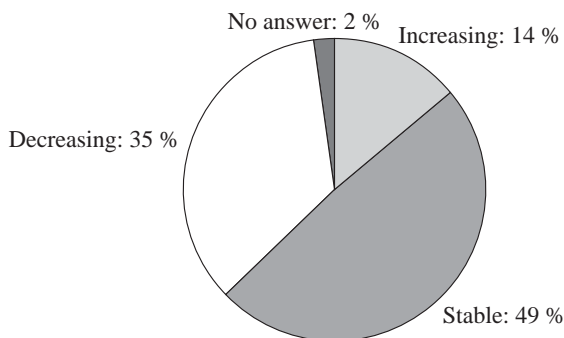
Figure 2-5 Tendency in number of members in prefectural TAs

Source: Created by the author based on Japan Travel and Tourism Associa-
tion [2012].

3. Function of TAs

As mentioned, there are two approaches to TAs; functional studies and institutional studies. This chapter discusses TAs from a functional point of view. Any social system consists, in the narrow sense, of three sub-systems; economic, political, and social (see Figure 2-6).

The TA could be regarded as an entity that pursues economic value in the economic system (economic function) and aims to realize the public interest in the social system in the narrow sense (social function). When problems occur in the course of those activities, TAs require a redistribu-
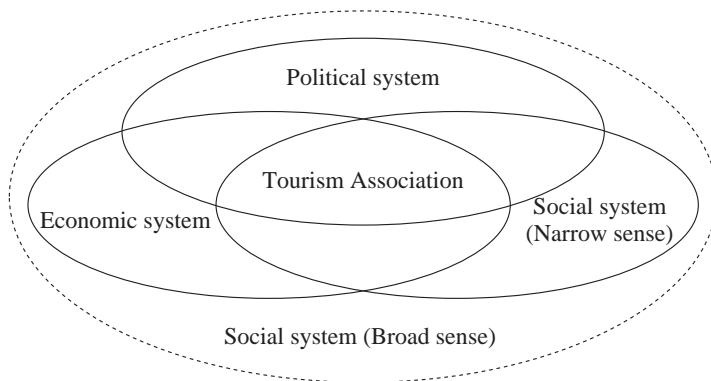
Figure 2-6 Social system and TAs

tion of values within the political system (political function).

The tourism association carries out various projects. Let us take the above-mentioned Japan Tourism Association as an example, the following projects are listed in its articles of incorporation:

- Proposal and petition to tourism-related organizations
- Dissemination, promotion of understanding and publicity of tourism
- Promotion of protection, preservation, development and use of tourism resources
- Promotion of regional revitalization through the development of sightseeing spots and tourist routes and tourism promotion
- Promotion of tourism exchanges
- Human resources development that contributes to the promotion of tourism
- Improvement of tourism-related services and promotion of convenience
- Survey and research on tourism
- Development of statistics on sightseeing
- Publication of materials on sightseeing
- Raising and managing funds to ensure the smooth implementation of projects concerning promotion of tourism and revitalization of the region
- Duties related to property insurance agency business
- Other necessary projects to achieve the objectives of the organization

3.1 Economic function

The economic function consists of transactions of goods and services in the market. TAs implement various kinds of business related to tourism in a region. Principally, they publish journals on regional tourism and hold related events. These activities can be described as follows:

- Planning and sales of travel products
- Holding tourist events and conventions
- Publication of regional tourism magazines and brochures

Figure 2-7 shows that most of the prefectural TAs are engaging in promotional activities of regional tourism. As for travel products, 16 % of TAs (Ibaraki, Gunma, Kanagawa, Yamanashi, Fukui, Yamaguchi and Kochi) are under license and are dealing with both planning and sales of them (Figure 2-8). 71 % of TAs dealing with travel products regarded their work as effective in revitalizing regional tourism business (Figure 2-9).

Figure 2-7 Prefectural TAs jobs concerning tourism promotion

Source: Created by the author based on Japan Travel and Tourism Association
[2012].

Figure 2-8 Current situation of planning/sales of travel products by
prefectural TAs

Source: Created by the author based on Japan Travel and Tourism Association
[2012].
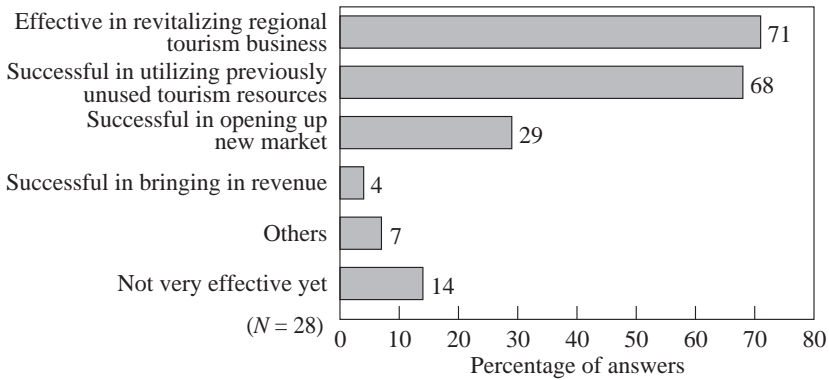
Figure 2-9 Evaluation of planning/sales of travel products by prefectural TAs

Source: Created by the author based on Japan Travel and Tourism Association [2012].

From the tourists' point of view, 25.5 % of internet users have used a brochure provided by a TA so far, whereas 52.3 % of those utilized the website of a TA (Table 2-3). According to Nukui [2010], 11.7 % of those who decided where to go on a trip viewed the TA's website, while 15.5 % of them viewed a travel agency website (Table 2-4).

Table 2-3 Percentage of utilization experience of tourism association information by age

	Total	20's	30's	40's	50's	60's
Brochure	25.5	12.5	13.8	30.0	27.5	43.8
Website	52.3	38.8	57.5	53.8	52.5	58.8

Source: Nukui [2010].

3.2 Political function

The political function consists of interactions for the re-distribution within the political system (Figure 2-10) in the region. According to the definition of Easton [1965], politics is the "authoritative allocation of values to society." TAs have been playing an instrumental role in the political system as interest groups.

Almond [1970] has pointed out that the interest group had the following

Table 2-4 Behavior after destination determination (%)

Behavior	Total	20's	30's	40's	50's	60's
View Tourism Association website	11.7	5.0	7.5	18.8	12.5	11.3
Order a brochure from Tourism Association	2.8	3.8	0.0	1.3	1.3	7.5
Visit Tourism Association	1.0	1.3	1.3	0.0	1.3	1.3
View travel agency website	15.5	15.0	12.5	15.0	17.5	17.5
Buy a guidebook	15.0	23.8	21.3	13.8	12.5	3.8
View website of inn	14.5	16.3	15.0	13.8	13.8	13.8
View travel website	11.0	3.8	13.8	11.3	13.8	12.5
View website of tourist site	11.0	11.3	8.8	10.0	11.3	13.8
Buy travel magazines	3.8	3.8	2.5	3.8	5.0	3.8
Buy a magazine featuring the relevant travel	3.5	5.0	2.5	3.8	5.0	3.8
View websites/blogs of people who have traveled to the site	1.8	2.5	1.3	2.5	0.0	2.5
Listen to information from families/acquaintances who have traveled to the site	1.8	2.5	1.3	2.5	0.0	2.5
Watch TV programs	1.8	2.5	0.0	1.3	3.8	1.3
Look at the website/blog of people who live locally	3.3	2.5	7.5	2.5	2.5	1.3
Other	2.5	2.5	3.8	2.5	2.5	1.3

Source: Nukui [2010].
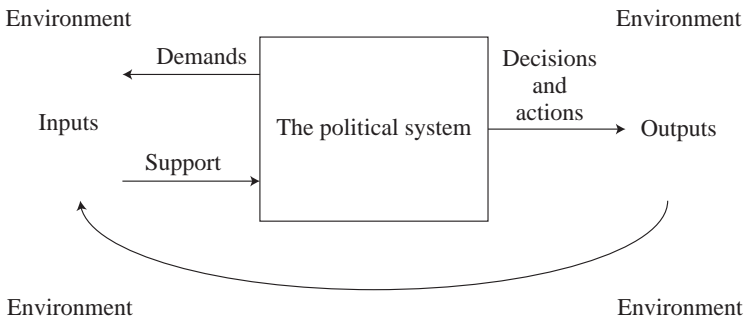
Figure 2-10 Model of political system (Easton)
Source: Created by the author based on Easton [1953].

functions:

- Political socialization and recruitment
- Interest articulation
- Interest aggregation
- Political communication

Local politicians are often included in the board members of reginal TAs [Yamamoto, 2012]. Those members can be considered to act as a mediator between TAs and local government.

According to the Articles of Incorporation of the Japan Travel and Tourism Association, the business of the association consists of the following activities: proposal and petition to tourism-related organizations. The political activities of prefectural TAs could be seen as successful if measured by the amounts and proportions of the subsidies described above.

Each TA's budget is likely to be small. Yamamoto [2012] obtained a balance statement for 38 organizations out of the 47 prefectural TAs and documentation on annual revenue for one TA. Their average annual revenue was 377.8 million yen. Figure 2-11 illustrates the distribution of each TA's financial scale. Most organizations have annual revenue of between 100 to 300 million yen. With the exception of metropolitan areas and popular tourist destinations, many associations are getting by on small budgets and operating as micro-enterprises.

Many associations rely heavily on subsidies granted by local governments. The names of local government leaders can be found on association
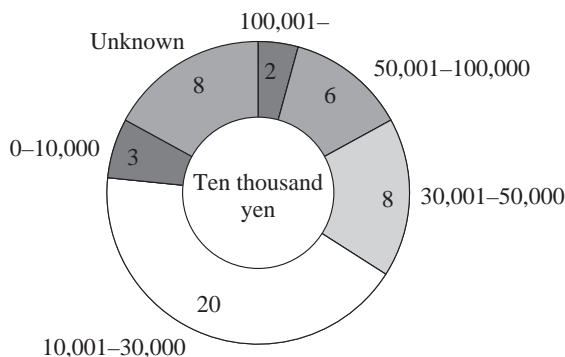
Figure 2-11 Number of organization and annual revenue of prefectural TAs

Source: Created by the author based on Yamamoto [2012].

rosters, suggesting a close relationship between the two. The financial situation of each association also reflects this link.

Table 2-5 and Figure 2-12 show the subsidy income and the ratio of subsidies to annual income of each prefectural TA. The ratio represents the magnitude of their dependence on local governments. Some organizations have a very high ratio, exceeding 80 %.

Then, what is causing such an income gap between those groups? Yamamoto [2012] attempted to find out the cause of the gap. The more tourists in a prefecture, the more revenue the association in the region might be likely to earn. Figure 2-13 suggests the slight impact of popularity of a region on the organization's finance.

Another possibility that can be thought of is the larger the population a prefecture has, the more revenue a TA in the region might gain simply because those prefectures should house a number of big companies. However, significant correlation between population in each prefecture and revenue of each TA could be hardly observed (Figure 2-14).

Table 2-5 Subsidy income of prefectural TAs (Ten thousand yen)

0–3,000	3,001–5,000	5,001–10,000	10,001–30,000	30,001–50,000	50,001–	Unknown
10 organizations	6 organizations	10 organizations	8 organizations	3 organizations	1 organization	9 organizations

Source: Yamamoto (2012).
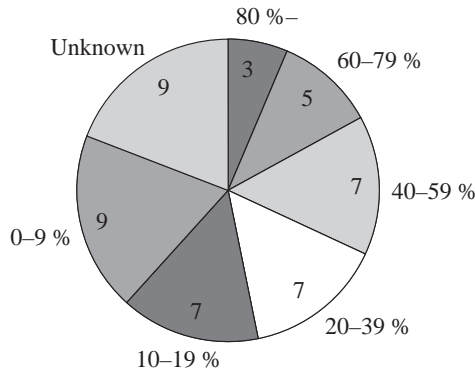
Figure 2-12 Number of organization and ratio of subsidies to annual revenue of each TA

Source: Created by the author based on Yamamoto [2012].
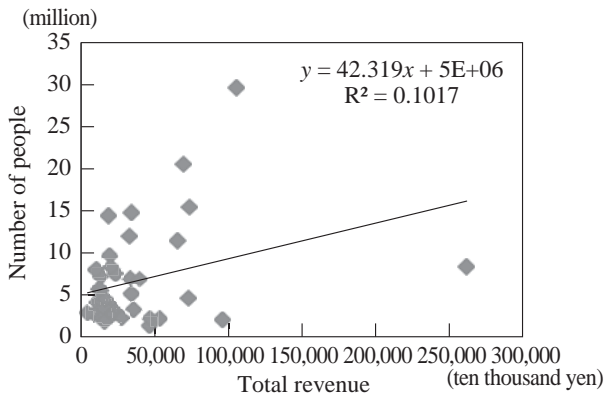
Figure 2-13 Correlation between number of net visitors at hotels in each prefecture and revenue of each TA

Source: Created by the author based on Yamamoto [2012].

How about each TA's dependency on subsidies? If a TA already succeeded in attracting numerous tourists, they would not have to rely on subsidies. Figure 2-15 indicates a slight correlation between the number of visitors and the dependency, while there seems to be little correlation between population and the dependency (Figure 2-16).

(million)

$y = 6.9932x + 3E+06$
$R^2 = 0.0118$

Number of people

Total revenue   (ten thousand yen)
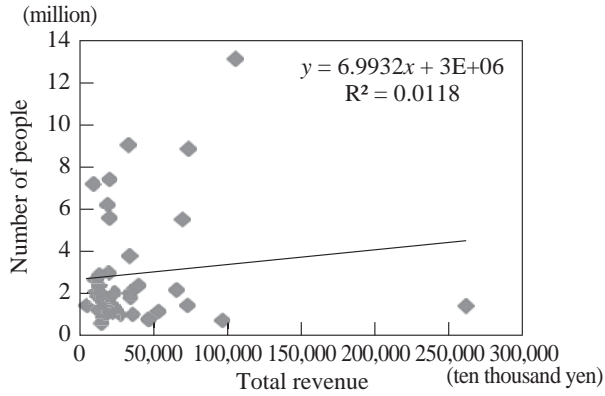
Figure 2-14 Correlation between population in each prefecture and revenue of each TA

Source: Created by the author based on Yamamoto [2012].

(million)

$y = -69315x + 9E+06$
$R^2 = 0.1064$

Number of people

Percentage of subsidies
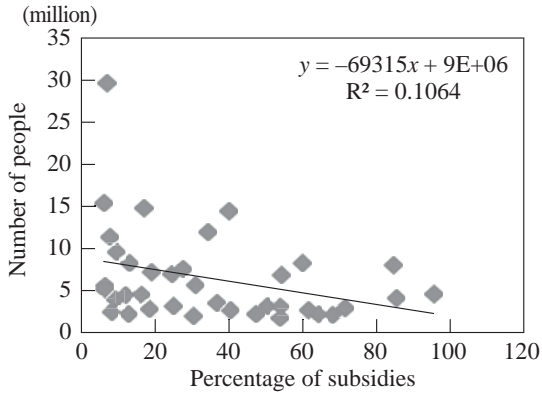
Figure 2-15 Correlation between number of net visitors at hotels in each prefecture and percentage of subsidies of each TA

Source: Created by the author based on Yamamoto [2012].

3.3 Social function

According to the articles of incorporation of Japan's national TA, the social functions of the TA are reciprocal, educational, and public interest.

First, the reciprocal function is as follows:
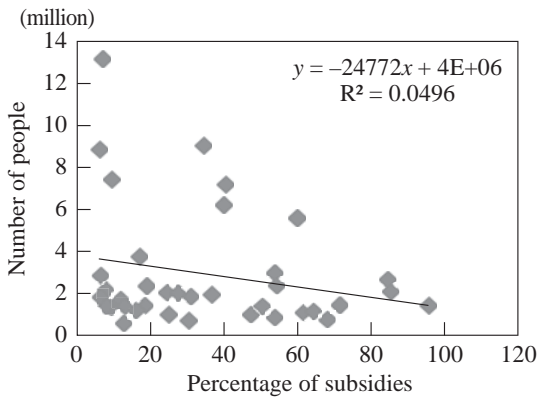
Figure 2-16 Correlation between population in each prefecture and percentage of subsidies of each TA

Source: Created by the author based on Yamamoto [2012].

- Development and promotion of tourist destinations and tourist routes
- Maintenance of tourism-related facilities
- Raising funds to promote tourism in the region

Second, the educational function can be described as follows:

- Guidance on the management of tourist facilities
- Improvement of the quality of tourism employees
- Improvement of tourist hospitality

Finally, the public interest function is as follows:

- Development and protection of tourism resources in the region
- Beautification of tourist destinations
- Surveys and research on tourism
- Gleaning and providing tourist information

Figure 2-17 shows that prefectural TAs have been engaged in those kinds of activities. 84 % of the TAs have been involved in "Training for service staff and guides" and 47 % in "Training of tourism managers" as well. The former's high percentage might indicate the fact that the TAs regard activities to nurture human resources as quite important.
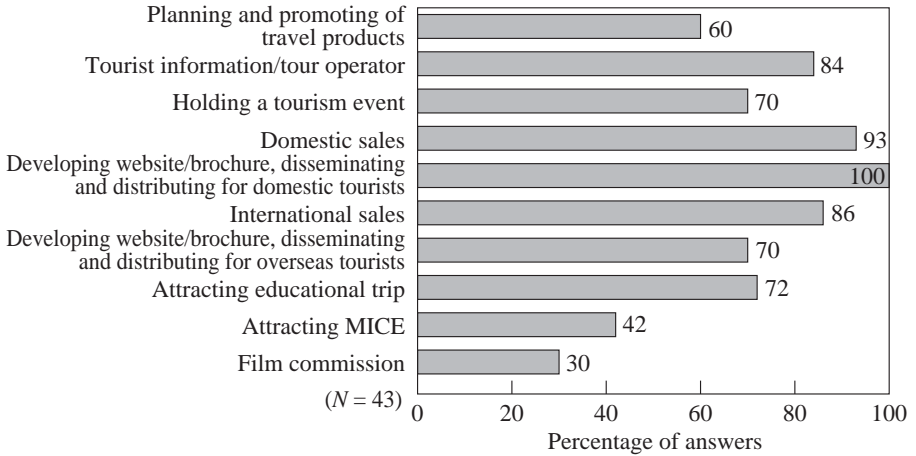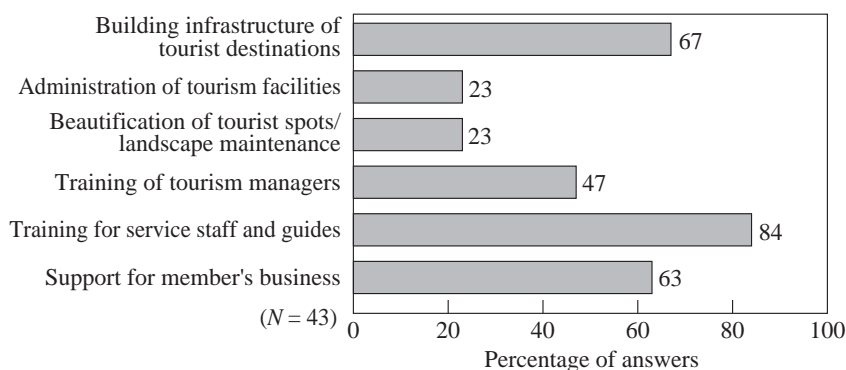
Figure 2-17 Prefectural TAs jobs concerning their social functions

Source: Created by the author based on Japan Travel and Tourism Association
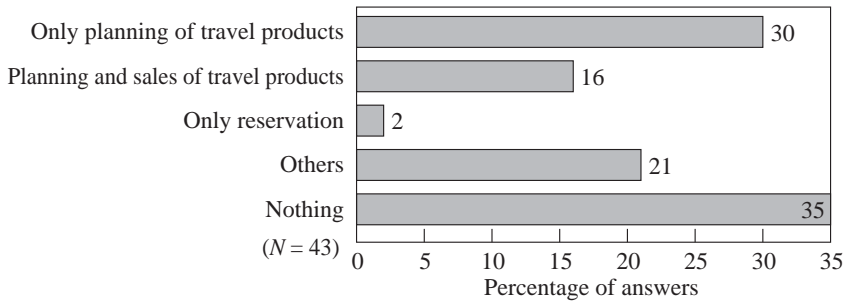 [2012].

4. Differences between TAs and Japanese DMOs

In recent years, there are moves to form so-called Japanese destination management/marketing organization (DMO) in various areas in Japan. The difference between DMO and TA is not necessarily clear partly because some of the DMOs have been founded from joint organization of prefectural TAs.

4.1 What is DMO?

According to the Japan Tourism Agency, Japanese DMO can be defined as a corporation with the several characteristics below:

- Creating tourism areas from the perspective of tourism management
- Cooperation with diverse stakeholders
- Strategies to realize the creation of local tourism communities based on a clear concept
- Adjustment function to steadily implement the strategy

Currently, there are eight registered wide area Japanese DMOs (Table 2-6). Let us look at their characteristics. Figure 2-18 indicates frequently used keywords in explanatory sentences about themselves on each DMO's website. Those words have been extracted through text mining software. Although it is not very easy to distinguish the DMO's role from that of a TA, a

Table 2-6 Registered Japanese wide area DMOs

DMO	Region
Hokkaido Tourism Promotion Organization	Hokkaido
Tohoku Tourism Promotion Organization	Aomori, Iwate, Akita, Miyagi, Yamagata, Fukushima, Niigata
Central Japan Tourism Organization	Toyama, Ishikawa, Fukui, Nagano, Gifu, Shizuoka, Aichi, Mie, Shiga
Kansai Tourism Division	Fukui, Mie, Shiga, Kyoto, Osaka, Hyogo, Nara, Wakayama, Tottori, Tokushima
Setouchi Tourism Promotion Organization	Hyogo, Okayama, Hiroshima, Yamaguchi, Tokushima, Kagawa, Ehime
San'in Inbound Organization	Tottori, Shimane
Kyushu Tourism Promotion Organization	Fukuoka, Saga, Nagasaki, Kumamoto, Oita, Miyazaki, Kagoshima prefecture
Okinawa Tourism & Convention Bureau	Okinawa

Source: Japan Tourism Agency website, http://www.mlit.go.jp/common/001265815.pdf.

DMO tends to prefer terms of business administration such as marketing and strategy. DMOs include non-tourism businesses such as Toyota and Denso in their membership at times. Those companies could make differences.

4.2 Challenges to TAs

Finally, this chapter considers challenges posed to the Japanese TAs. Nowadays several TAs, such as Niseko Resort Tourist Association, are dealing with travel products. However, most of the staff are part-time workers as described above. Consequently, they are confronted with difficulties due to short-handedness (Figure 2-19).

With regards to inbound projects, 53 % of respondents pointed out budget shortfall (Figure 2-20). 37 % referred to shortage of professional staff, and 21 % mentioned "connection with foreign travel agent" and "partnership with other stakeholders/regions." More than 40 % of respondents require support in promotion overseas, joint promotion and teaching know-how (Figure 2-21).

Concerning human resources development, roughly one third of TAs are struggling to secure a lecturer, adviser and training venue (Figure 2-22), and 58 % require dispatching or introducing experts (Figure 2-23).
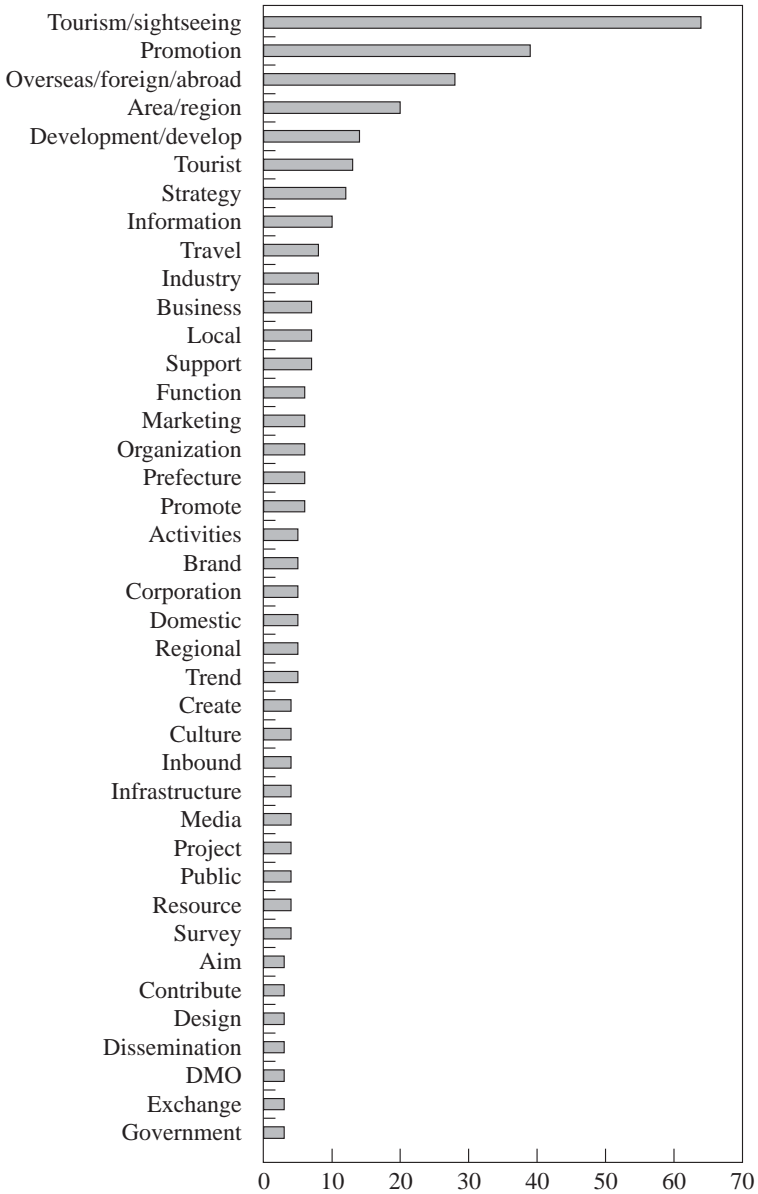
Figure 2-18 Frequently used keywords on each DMO's website

Difficulties many TAs are facing are summarized in Figure 2-24. Today, the tourism industry in Japan enjoys a rapid increase in inbound tourists and therefore TAs should play a more instrumental role. When promoting tourism comprehensively, DMOs can take over the TA's roles. However, in some areas where tourism industries demand more support, TA should keep behaving as a key player.
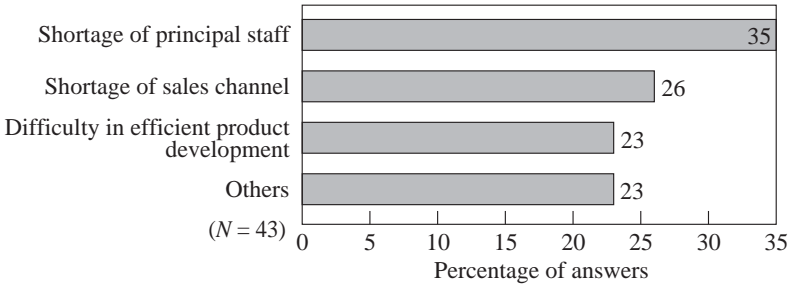
Figure 2-19 Challenges to prefectural TAs in marketing

Source: Created by the author based on Japan Travel and Tourism Association [2012].
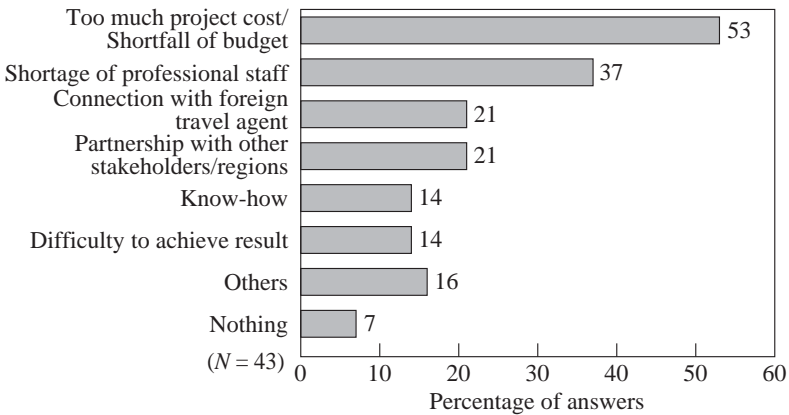
Figure 2-20 Challenges to prefectural TAs in inbound project

Source: Created by the author based on Japan Travel and Tourism Association [2012].

Support in promotion overseas — 47
Joint promotion — 44
Teaching know-how — 42
Introducing foreign travel agent — 19
Dispatching or introducing experts — 16
Mediating regional partnership — 7
Others — 2
(N = 43)

Percentage of answers
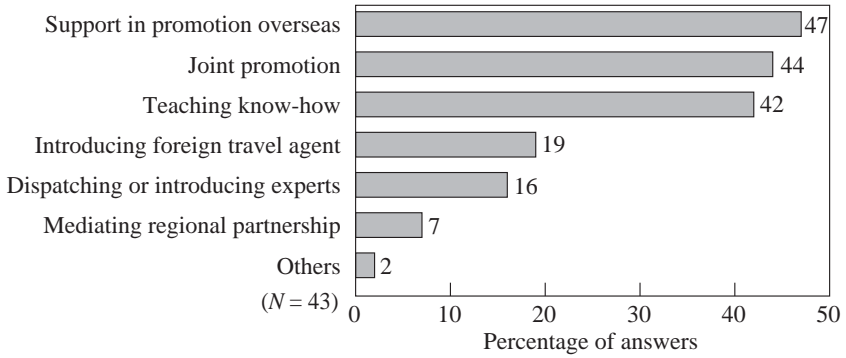
Figure 2-21 Support required by prefectural TAs in inbound project
Source: Created by the author based on Japan Travel and Tourism Association [2012].

Difficulty in securing lecturer, adviser, and training venue — 37
Accumulating know-how about semiar — 26
Providing opportunity after training — 19
Difficulty in recruiting attendees to programs — 12
Difficulty to achieve result — 9
Others — 16
Nothing — 2
(N = 43)

Percentage of answers
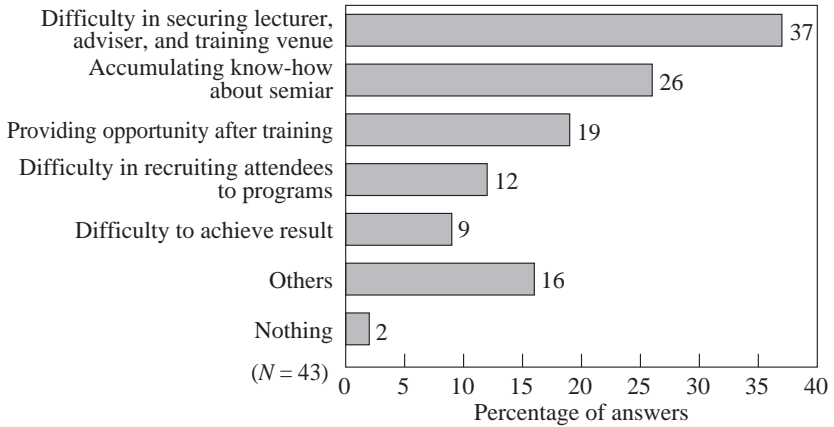
Figure 2-22 Challenges to prefectural TAs in human resources development
Source: Created by the author based on Japan Travel and Tourism Association [2012].

5. Conclusion

This chapter discussed TAs in order to clarify their role from a functional point of view. The research often discussed TAs in the context of local economic development or tourism promotion, centering on their functional aspects.

This chapter also considered the TA as a component of economic, political, and social systems, thus articulating the role of TAs from a functional perspective. The TA has greatly contributed to regional tourism in Japan

Dispatching or introducing experts — 58
Support for holding training program or seminar — 47
Development of a model program or teaching materials for training — 42
Dispatching or introducing personnel — 2
Others — 9
Nothing — 9
(*N* = 43)

Percentage of answers
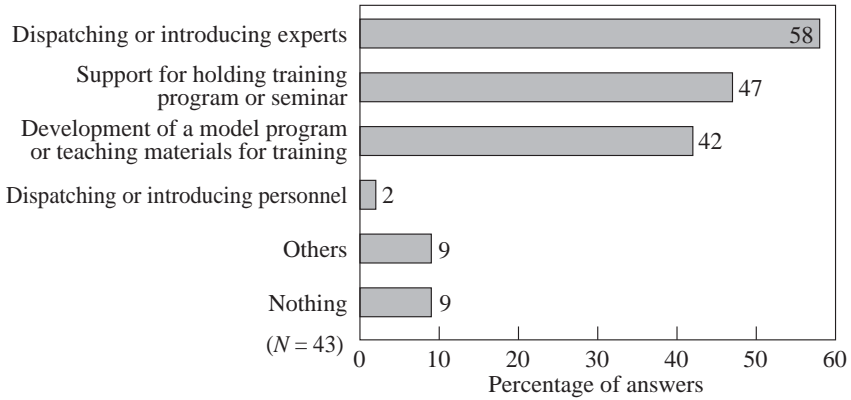
Figure 2-23 Support required by prefectural TAs in human resources development

Source: Created by the author based on Japan Travel and Tourism Association [2012].

Budget shortfall — 60
Dependency on membership fee and subsidies — 49
Ambiguity in TA's role in the region — 37
Shortage in personnel — 33
Trade-off between focusing on specific project and securing fairness — 16
Accumulating know-how — 9
Others — 12
Nothing — 5
(*N* = 43)

Percentage of answers
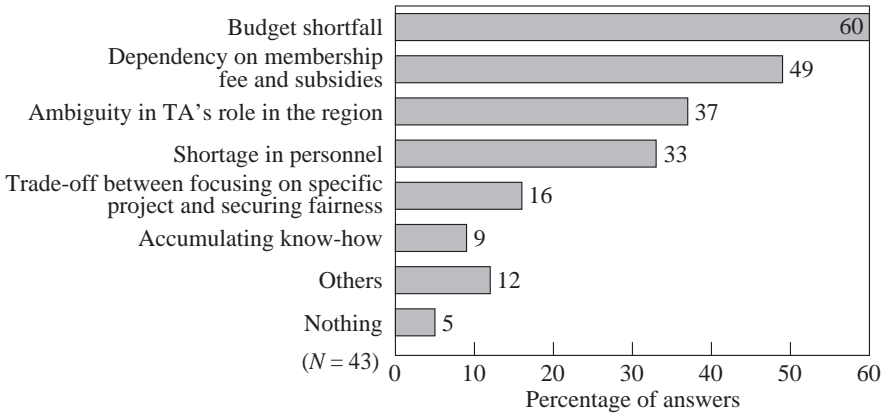
Figure 2-24 Organizational challenges to prefectural TAs

Source: Created by the author based on Japan Travel and Tourism Association [2012].

through these three functions, which explains their nationwide expansion. On the other hand, their function as interest groups should be noted. A proper evaluation of TAs must include the admission that their activities have this negative aspect.

In recent years, the so-called Japanese DMO have been formed in various areas in Japan. As stated above, the differences between DMO and TA are still not necessarily clear although several non-tourism entities are

included in some DMOs. The existence of non-tourism businesses in their membership could make differences.

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CHAPTER THREE

Furthering green tourism to revitalize local economies

Abstract

"Green tourism" is a leisure activity in order to enjoy nature, culture and exchanges while staying in rural areas. This activity is also included in so-called "new tourism," which means a new type of trip that incorporates a variety of experiences and interaction. Recently, regional tourism has received tremendous attention since tourism has a potential to revitalize regional economies. The Japan Tourism Agency has been struggling to attract numerous tourists in rural areas. However, there are not abundant tourism resources in many of such areas. To cope with the situation, a number of attempts have been made to boost the local economy through "green tourism." Usa City, which is located in the northern part of Oita Prefecture, is known as one of the advanced cases of green tourism in Japan. This chapter introduces several examples regarding green tourism and attempts to clarify the challenges posed to them.

1. Introduction

In recent years, Japan's tourism industry has been enjoying an increase in the number of incoming tourists from other countries. According to the Japan National Tourism Organization (JNTO), the number amounted to approximately 31.2 million people in 2018.

However, several famous tourist destinations, such as Kyoto, have come to suffer from so-called "over-tourism," whereas most other places still have room to accept many more tourists. Therefore, attracting visitors to

less popular places should create a win-win situation. Green tourism could be an alternative especially for rural areas that are devoid of famous tourism resources.

1.1 What is green tourism?

The Ministry of Agriculture, Forestry and Fisheries (MAFF) has defined the words green tourism as "a leisure activity in order to enjoy nature, culture and exchanges while staying in rural areas" such as a farming experience (Figure 3-1). While the concept sounds similar to eco-tourism, in that it includes having a good time in nature, green tourism is not necessarily intended to learn and enjoy a natural environment and ecosystem.

Figure 3-1 Farming experience in Noto Peninsula

Originally, green tourism was positioned as "new tourism," which had then been financially supported by the Japan Tourism Agency (JTA). A new tourism is a new type of travel which is experience-oriented and has a clear purpose, different from a traditional one. It includes not only green tourism but also industrial tourism, eco-tourism, health tourism, cultural tourism and long stay. The concept was believed to help boost local economies in Japan.

1.2 Green tourism and society

Green tourism can facilitate interactions between people in urban and rural communities by attracting urban residents into rural areas. Sorokin and

Zimmerman [1969] pointed out the following eight differences between urban and rural worlds:

- Occupation
- Environment
- Size of community
- Density of population
- Heterogeneity and homogeneity of the population
- Social differentiation and stratification
- Mobility
- System of interaction

These eight differences could be the source of reasons for urban residents to visit the countryside. For example, the rural environment can be characterized by a predominance of nature, whereas the urban environment is mostly occupied by numerous artificial structures (see Table 3-1). In rural areas, the mobility of people and the population density are relatively low. These characteristics might lead to a kind of peace of mind that urban residents are said to feel while in the countryside. Conversely, urban life is exposed to excessive stress, which causes people to seek rural life.

From the point of tourism, there are also differences concerning tourism resources in these areas. According to Mizoo [2009], tourism resources can be broadly divided into natural resources and humanities resources (Table 3-2).

Green tourism can also help society to reevaluate and reuse resources in the region, such as abandoned rice fields and closed buildings. In some areas, people started to reuse closed school facilities (Figure 3-2).

Furthermore, agriculture and rural areas are said to play an essential role not only as a place to produce rice and vegetables but also as a provider of a variety of bounty. MAFF called it "multi-functions of agriculture and rural areas." The functions mainly include the following roles:

- Conservation of natural environment and land
- Recharge of water source
- Formation of good scenery
- Tradition of culture
- Prevention of landslide, soil erosion and flood etc.

Table 3-1 Differences in population and society in rural world and urban world (Sorokin and Zimmerman)

	Rural world	Urban world
Occupation	Totality of cultivators and their families. In the community are usually few representatives several non-agricultural pursuits. They, however, do not compose the proper object of rural sociology.	Totality of people engaged principally in manufacturing, mechanical pursuits, trade, commerce, professions, governing, and other non-agricultural occupations.
Environment	Predominance of nature over anthropo-social environment. Direct relationship to nature.	Greater isolation from nature. Predominance of man-made environment over natural. Poorer air. Stone and iron.
Size of community	Open farms or small communities, "agriculturalism" and size of community are negatively correlated.	The size of urban community is much larger than the rural community. In other words, urbanity and size of community are positively correlated.
Density of population	The density is lower than in urban community. Generally density and rurality are negatively correlated.	Greater than in rural communities. Urbanity and density are positively correlated.
Heterogeneity and homogeneity of the population	The populations of rural communities are more homogeneous in racial and psychosocial traits (Negative correlation with heterogeneity).	More heterogeneous than rural communities (in the same country and at the same time). Urbanity and heteregeneity are positively correlated.
Social differentiation and stratification	Rural differentiation and stratification less than urban.	Differentiation and stratification show positive correlation with urbanity.
Mobility	Territorial, occupational, and other forms of social mobility of the population are comparatively less intensive. Normally the migration current carries more individuals from the country to the city.	More intensive. Urbanity and mobility correlated. Only in the periods of social catastrophy is the migration from the city to the country greater than from country to the city.
System of interaction	Less numerous contacts per man. Narrower area of the interaction system of its members and the whole aggregate. More prominent part is occupied by primary contacts. Predominance of personal and relatively durable relations. Comparative simplicity and sincerity of relations. "Man is interacted as a human person."	More numerous contacts. Wider area of interaction system per man and per aggregate. Predominance of secondary contacts. Predominance of impersonal casual and short-lived relations. Greater complexity, manifoldedness, superficiality, and standardized formality of relations. Man is interacted as a "number" and "address."

Source: Sorokin, P. and Zimmerman, C. C., Principles of Rural-Urban Sociology, Kraus Reprint Co, 1969, pp. 56–57.

Table 3-2 Classification of tourism resources

Natural resources	Cultural resources
Mountain	Historic site
Plateau	Temple
Wilderness	Castle and castle ruins
Wetland	Garden and park
Lake	Annual event
Canyon	Monument, image
Waterfall	Building
River	Zoo and botanical garden
Coast	Museum
Moth	Aquarium
Island	Rural landscape
Rock and cave	Local landscape
Animal and plant	Cityscape
Natural phenomenon	

Source: Mizoo [2009].

Figure 3-2 Lodging facility converted from school building (Noto Peninsula)

These functions can be called externalities, which justify the government's financial support for agriculture and rural areas. Green tourism can provide farmers with alternative sources of income, which can reduce the necessity for that support.

2. Current situation of green tourism in Japan

Currently, green tourism accounts for quite a small portion in the tourism industry. Does it have potential great enough to revitalize rural areas? Let us look at the actual situation.

2.1 Potential demand of urban residents for green tourism

Hakuhodo Institute of Life and Living [1999] conducted questionnaire surveys on 400 non-farmers living in the Tokyo metropolitan area in 1990 and 1999, which intended to clarify urban residents' interest in agriculture and rural areas. The result of the survey is summarized below (the percentage shows the rate of affirmative response):

- Would like to have a home garden at my home or nearby farm (59.5 % in 1990/63.3 % in 1999)
- Would like to have a farming experience in the field (45.5 % in 1990/ 63.0 % in 1999)
- Would like to help farmers if easier (45.0 % in 1990/ 57.0 % in 1999)
- Want to have children or grandchildren try farming experience (not asked in 1990/ 81.3 % in 1999)
- Want to visit rural areas more easily (54.0 % in 1990/68.5 % in 1999)
- Want to interact with farmers more easily (not asked in 1990/72.8 % in 1999)

2.2 Market scale of green tourism

However, the market of green tourism is still immature. JTA [2012] investigated regional tourism by category and estimated the market size as follows (unit: million yen):

- Green tourism 4,826
- Industrial tourism 11,264
- Eco-tourism 5,939

- Health tourism 4,258
- Cultural tourism 5,893
- Other local tourism 2,920

Compared to the total amount of travel consumption in Japan by Japanese and foreign visitors in 2017 (26.7 trillion yen), the scale of the market regarding green tourism is extremely small, as well as other types of local tourism. So far, expectation for green tourism has overwhelmingly exceeded reality.

As for the number of guests at lodging facilities regarding green tourism, the increasing trend can be observed since 2005 fiscal year (Figure 3-3). However, the growth is not rapid but slow. Stakeholders need to find out how to make more people enjoy green tourism and accelerate the growth.
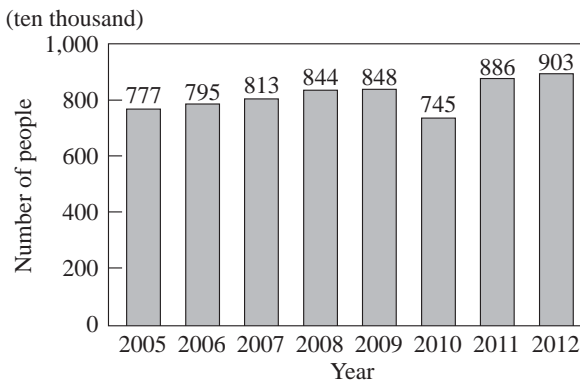
Figure 3-3 Transition in total number of guests at green tourism lodging facilities

Source: Created by the author based on Ministry of Agriculture, Forestry and Fisheries website, http://www.maff.go.jp/j/council/seisaku/kikaku/bukai/H26/pdf/140722_2_2.pdf.

Note: The data of 3 disaster affected prefectures are excluded in 2010.

2.3 Changes in tourism policies of Japan's government

So far, JTA has implemented various nationwide projects to promote green tourism in Japan. Such projects used to be carried out as part of new tourism promotion, but have been replaced by projects which are intended to advance thematic tourism from 2016 fiscal year. The principal new tourism

related projects that have been conducted in recent years are as follows:

- New tourism creation and promotion project (2007–2009)
- New tourism promotional model project (2013)

The former project recruited and selected plans for actions (monitor tours) that local tourism parties would like to take in order to create new tourism travel products that make use of local resources. Additionally, the government carried out a demonstration project paying a part of the expenses to survey the needs of travelers.

There are cases where new tourism related companies have trouble acquiring enough customers to keep business, because most of them are small in scale and they are not recognized well due to poor publicity. The latter project summarized the effective and efficient promotional methods that new tourism practitioners should do to deliver travel products to their customers.

In addition to the above-mentioned projects, various research projects have also been conducted so far as follows:

- Investigation Project on Promotion of New Tourism by Launching Monitor Tours (2010)
- "Destination-type Sightseeing Market Survey Report" (2011)
- "New Tourism Customer Satisfaction Survey Project by Launching Monitor Tours" (2011)
- Domestic Travel Promotion Effect Investigation Project (2011)
- Model Research Project on Tourism Resource Refinement for Future Commercialization (2013)
- Destination-type Sightseeing for Inbound Tourists Investigation (2014)

Despite such financial support, the market for new tourism and green tourism still remains small in Japan.

3. Challenges posed to green tourism organizers/practitioners

The situation with regards to green tourism is not necessarily favorable, even considering the government support stated above. Organizers and practitioners of green tourism are confronting several challenges.

3.1 Decline of social interest in green tourism

Figure 3-4 shows a transition of the search volume of the word "green tour-
ism" through Google since January 2004 to May 2019. One hundred in the
vertical axis represents the maximum value of the search volume. While
the volume has been consistently fluctuating, its long-term trend is in de-
cline. This downward trend indicates that people might have been losing
interest in green tourism in recent years.
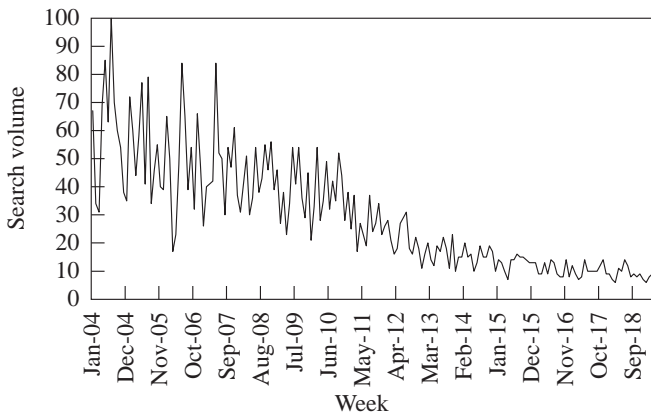
Figure 3-4 Transition of keyword search volume (green tourism)
Source: Created by the author based on data through Google Trends.

3.2 Advent of new competitors

Since Japan's Private Lodging Business Act went into effect on June 15,
2018, the legislation has created new business opportunities for operators.
In addition to a 180-day annual cap for renting out rooms, the new law
requires hosts to confirm the identity of their guests and maintain a guest
registry. The number of reported applications for private lodging business
has steadily increased to 15,720, since the enforcement of the law. As of
April 15, 2019, the number of private lodging businesses is 14,909 due to
811 already having gone out of business.

The increasing trend is remarkable in famous tourist spots. In Kyoto, a
total of 2,291 simple lodging facilities were authorized at the end of March
2018, more than tripling from two years earlier. The number grew further

by more than 100 between March and May in 2018 alone [Nikkei Asian Review, 2018]. The increase in the number of private lodging businesses can lead to more competitors, a decrease in price and instability in green tourism business.

3.3 Enhancing area attractions

Yashiro and Oguchi [2003] conducted a questionnaire survey on tourist destination preferences. They surveyed 98 female college students in Tokyo, who ranged in age from 18 to 23. The question was "what kind of tourist destination would you prefer?" This was followed by a listing of options. Yashiro and Oguchi tabulated the number of respondents who answered "affirmative" or "very affirmative" for each choice. Consequently, the percentage of affirmatives was particularly high for places with natural resources such as "where there are hot springs" (86.7 %), "warm places" (83.7 %), and "where there is a sea" (77.3 %). Non-natural sites, "where there are ruins" (68.4 %), "where there are theme parks" (62.2 %), and "where there are historic sites" (57.1 %) also received relatively high affirmation rates.

Although the subjects were limited to female university students, these survey results suggested that the accumulation of tourism resources may be advantageous in order to attract tourists.

Similarly, according to a 2003 poll by the Cabinet Office, the main reasons for domestic travel were as follows (multiple answers, the top four items):

- Beautiful nature and scenery (mountains, rivers, waterfalls, sea, natural parks, etc.) 65.0 %
- Relaxing in the hot springs 60.1 %
- Local foods at the travel destination 42.5 %
- Historic sites, cultural heritage, and museums 34.8 %

In the same survey, respondents were also asked about the primary activities at the domestic travel destination (multiple answers, the top four items):

- Beautiful nature and scenery (mountains, rivers, waterfalls, sea, natural parks, etc.) 61.1 %
- Relaxing in the hot springs 54.5 %
- Local foods at the travel destination 36.0 %

- Historic sites, cultural heritage, and museums 31.9 %

The utility function when a tourist visits a tourist destination that houses several tourism resources can be expressed as follows:

$U = f(x, y)$
U: utility level, x: time spent on tourism resource X,
y: time spent on tourism resource Y

Generally, the longer you spend at a tourist spot or tourist facility such as a museum, the less the excitement and pleasure you can obtain from it. Thus, it can be thought that the marginal utility decreases as time passes during sightseeing. Therefore, according to the law of diminishing marginal rate of substitution, it can be assumed the indifference curve (U1) is convex to the origin (Figure 3-5). The point of contact A between the downward sloping straight line representing the time constraint and the indifference curve is a time allocation that maximizes the utility within a limited time for this tourist. If this traveler only visits X and does not go to Y (point B), the utility level is U2, which is lower than U1. In other words, the more tourist resources he/she can visit during the stay, the higher utility he/she can expect.

What if another tourist resource (Z) is added? In this case, the same conclusion could be expected, too. Point C would be chosen (Figure 3-6). In a nutshell, the tourist would visit and enjoy three of them.
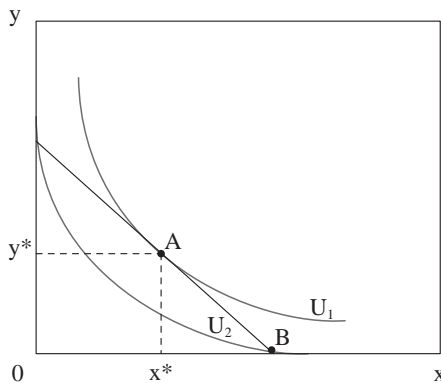
Figure 3-5 Utility of tourist with two resources
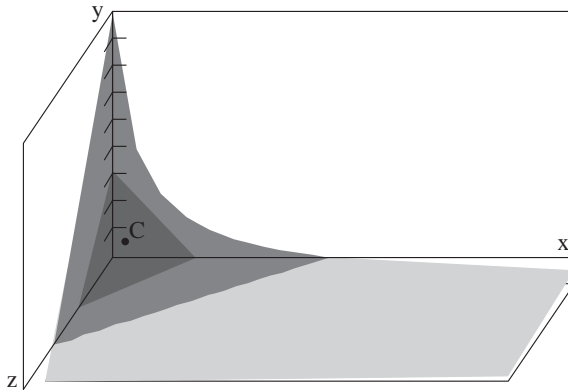
Figure 3-6 Utility of tourist with three resources

Then, let us consider the case where a tourist does not choose to visit multiple tourism resources. If tourism resources X and Y are alternative to each other, the tourist would visit only one place out of X and Y. In other words, if the marginal rate of substitution is always the same value (i.e. the indifference curve is linear), the equilibrium point will be located on the vertical or horizontal axis (Figure 3-7). Even if there are abundant tourist resources which are alternative to each other, it would not make any sense for tourists because they do not want to enjoy them at the same time. In other words, it is necessary that each tourist resource has a certain degree of complementarity, to make use of the accumulation of tourist resources in
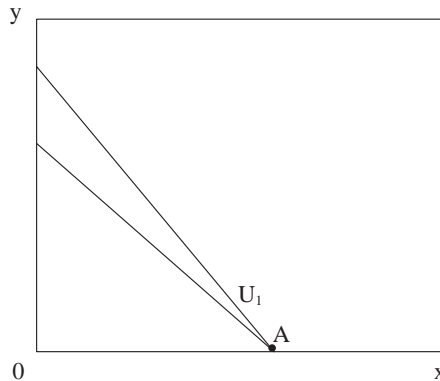
Figure 3-7 Utility of tourist with two alternative resources

order to attract tourists.

Based on these results, it appears as though when the travelers visit tourist sites, their travel is usually based on plural purposes and the actual activities are generally in line with them. The significance of this research can be recognized in that it uncovered what kind of elements travelers consider with respect to their chosen destinations. However, the level to which those elements affected travelers' visit intentions was still unclear.

In general, those who plan to travel need to take several steps before they embark on their journeys. For example, they become familiar with the existing tourist destinations. They also need intent to visit selected sites. Furthermore, planning a trip is also necessary. In order to attract more visitors, it is essential to make potential visitors take action, such as making a reservation to go on a trip. It is also necessary to identify what they would be interested in, what prompts them to visit destinations, and what affects their destination choices. With success, it will be possible to disseminate information regarding regional tourism more effectively and also possible to expect more visitors in the region.

Several factors that influence potential travelers' decision making processes with regard to sightseeing destinations should be examined as well as the conditions that must be met for people to visit particular tourist destinations. Yamamoto [2016] conducted three questionnaire surveys. The first spanned July 22–24, 2014; the second was during July 15–17, 2015; and the third was conducted on December 22, 2015. These surveys targeted university students in the cities of Nagoya and Kanazawa who attended tourism classes. In these classes, there were 459 (187 in Nagoya and 272 in Kanazawa) attendees on the date of survey administration; the total number of respondents was 337 (135 in Nagoya and 202 in Kanazawa).

The first question asked about their interest in tourism resources and local food in the Noto area, one of the leading regions in the field of green tourism in Japan. There were five degrees of interests with 5 equaling "very interested" to 1 equaling "not interested." Figure 3-8 shows the average for all answers to the question. Of the five items, it can be observed that interests in local food and hot springs were relatively high.

The next question centered on whether the respondents wanted to visit the Noto area. A rating of 5 equaled "want to visit," while 1 equaled "do not want to visit." Respondents who lived in the area were asked to answer as if they lived outside the area. The means of Nagoya and Kanazawa were 3.50 and 3.73, respectively, suggesting that the students in Kanazawa were more
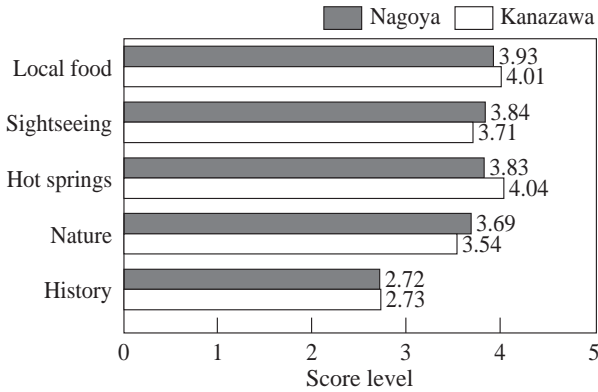
Figure 3-8 Average degree of interest

Source: Created by the author based on Yamamoto [2016].

familiar with the Noto area. Hence, it can be supposed that slightly more students in Kanazawa compared to Nagoya indicated that they intended to visit the region.

The third question inquired about their prerequisites to visit the Noto area. Yamamoto [2016] provided the following multiple answers (Figure 3-9):
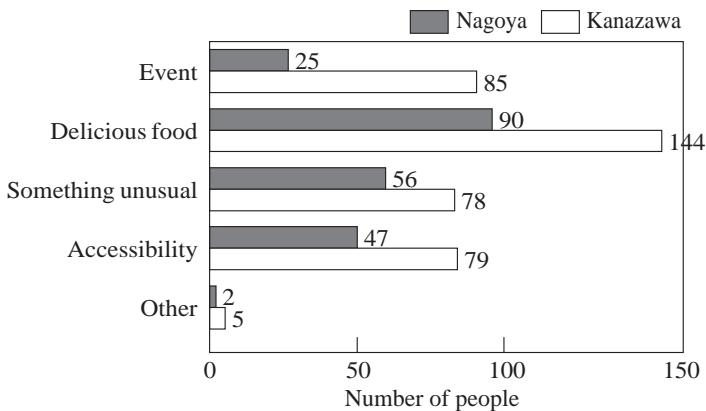
Figure 3-9 Prerequisite to visit Noto area

Source: Created by the author based on Yamamoto [2016].

(1) There is an event
(2) Can eat delicious food
(3) Possible to see something unusual
(4) Easy to access
(5) Other

While many respondents chose answer (2), the second most popular choice could not be determined correctly; students in Nagoya chose (3), while those in Kanazawa preferred (1). This difference could be explained easily; numerous events are held in Nagoya City that the students can enjoy without going outside the city.

Tables 3-3 and 3-4 illustrate the correlation coefficient between the degree of the respondents' visit intention and their interest level indicated in the first question. The values of students in Nagoya can be presented as follows: "tourism" (0.429), "hot springs" (0.365), "local food" (0.338), "nature" (0.310), and "history" (0.263), in the decreasing order of the sizes of the correlation coefficient (Table 3-3).

On the other hand, the highest among these in Kanazawa is "nature" (0.479), which is followed by "sightseeing" (0.433), "history" (0.342), "local food" (0.329), and "hot springs" (0.312).

Tables 3-5 and 3-6 indicate the correlation coefficient between the degree of the respondents' visit intentions and their mean of the degree of interests among the five keywords. These tables also illustrate the correlation coefficient between the visit intention and number of tourist sites with which the respondent is familiar in the Noto area. The values for the former were 0.447 (Nagoya) and 0.528 (Kanazawa), which exceeded those of the five keywords. Conversely, those for the latter were 0.238 (Nagoya) and 0.154 (Kanazawa), suggesting that the correlation was difficult to find.

Originally, the stronger the visit intention was, the more familiar the individual would be about the destination. However, traveler's curiosities might have been diluted if the individuals were familiar with the sites. In addition, some people may have lost their interest after several visits. In some cases, the visit might have led to a revisit. However, some people never revisited sites. Therefore, it could be said that familiarity and recognition do not necessarily help tourist sites.

Table 3-3 Correlation coefficient between degree of respondents' visit intentions and interest levels (Nagoya)

		Intention to visit	Local food	Hot springs	Sightseeing	Nature	History
Intention to visit	Correlation coefficient	1	.338**	.365**	.429**	.310**	.263**
	Significance probability		.000	.000	.000	.000	.002
	N	133	133	133	133	133	133
Local food	Correlation coefficient	.338**	1	.507**	.466**	.378**	.289**
	Significance probability	.000		.000	.000	.000	.001
	N	133	135	135	135	135	135
Hot springs	Correlation coefficient	.365**	.507**	1	.583**	.583**	.268**
	Significance probability	.000	.000		.000	.000	.002
	N	133	135	135	135	135	135
Sightseeing	Correlation coefficient	.429**	.466**	.583**	1	.721**	.452**
	Significance probability	.000	.000	.000		.000	.000
	N	133	135	135	135	135	135
Nature	Correlation coefficient	.310**	.378**	.583**	.721**	1	.469**
	Significance probability	.000	.000	.000	.000		.000
	N	133	135	135	135	135	135
History	Correlation coefficient	.263**	.289**	.268**	.452**	.469**	1
	Significance probability	.002	.001	.002	.000	.000	
	N	133	135	135	135	135	135

Note: ** Correlation coefficient is significant at the 1 % level.
Source: Yamamoto [2016].

Table 3-4 Correlation coefficient between degree of respondents' visit intentions and interest levels (Kanazawa)

		Intention to visit	Local food	Hot springs	Sightseeing	Nature	History
Intention to visit	Correlation coefficient	1	.329**	.312**	.433**	.479**	.342**
	Significance probability		.000	.000	.000	.000	.000
	N	201	201	201	201	201	201
Local food	Correlation coefficient	.329**	1	.535**	.467**	.367**	.159*
	Significance probability	.000		.000	.000	.000	.025
	N	201	201	201	201	201	201
Hot springs	Correlation coefficient	.312**	.535**	1	.517**	.421**	.177*
	Significance probability	.000	.000		.000	.000	.012
	N	201	201	201	201	201	201
Sightseeing	Correlation coefficient	.433**	.467**	.517**	1	.589**	.347**
	Significance probability	.000	.000	.000		.000	.000
	N	201	201	201	201	201	201
Nature	Correlation coefficient	.479**	.367**	.421**	.589**	1	.393**
	Significance probability	.000	.000	.000	.000		.000
	N	201	201	201	201	201	201
History	Correlation coefficient	.342**	.159*	.177*	.347**	.393**	1
	Significance probability	.000	.025	.012	.000	.000	
	N	201	201	201	201	201	201

Notes: * Correlation coefficient is significant at the 5 % level, ** correlation coefficient is significant at the 1 % level.
Source: Yamamoto [2016].

Table 3-5 Correlation coefficient between degree of respondents' visit intentions and average interest levels or knowledge (Nagoya)

		Intention to visit	Interest level (mean)	Number of tourist sites
Intention to visit	Correlation coefficient	1	.447**	.238**
	Significance probability		.000	.006
	N	133	133	133
Interest level (mean)	Correlation coefficient	.447**	1	.321**
	Significance probability	.000		.000
	N	133	135	135
Number of tourist sites	Correlation coefficient	.238**	.321**	1
	Significance probability	.006	.000	
	N	133	135	135

Note: ** Correlation coefficient is significant at the 1 % level.
Source: Yamamoto [2016].

Table 3-6 Correlation coefficient between degree of respondents' visit intentions and average interest levels or knowledge (Kanazawa)

		Intention to visit	Interest level (mean)	Number of tourist sites
Intention to visit	Correlation coefficient	1	.528**	.154*
	Significance probability		.000	.029
	N	201	201	201
Interest level (mean)	Correlation coefficient	.528**	1	.258**
	Significance probability	.000		.000
	N	201	202	202
Number of tourist sites	Correlation coefficient	.154*	.258**	1
	Significance probability	.029	.000	
	N	201	202	202

Notes: *. Correlation coefficient is significant at the 5 % level. **. Correlation coefficient is significant at the 1 % level.

Source: Yamamoto [2016].

4. Furthering green tourism in rural areas

How should green tourism practitioners and organizers work to overcome the above issues? There are several cases to consider.

4.1 Advanced case in Usa City

Usa City, which is located in the northern part of Oita Prefecture on Kyushu Island (Figure 3-10), is known as one of the advanced cases of green tourism in Japan. The city houses several popular tourist spots such as Usa Shrine and its population is 54,524 people (October 1, 2018).

Figure 3-10 Location of Usa City on Kyushu Island

The Ajimu Green Tourism Society (AGTS) was established in 1996 based on the former agri-tourism study group formed in 1993. The AGTS has been working on private lodging farm stays for the first time in the country, and also has been attracting much attention as a pioneer in the field of green tourism.

Generally, the number of guests that the AGTS accepted has been steadily increasing (Table 3-7). It should be noted that the number of student guests has been consistently increasing since 2000, whereas that of non-student guests seems to hit a peak around 2004. The AGTS has set one of its major targets as student groups and implemented sales promotional activities to schools and educational institutions.

Table 3-7 Number of farm stay guests

	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014
Non-student	80	400	630	2,452	2,652	1,712	2,573	1,413	1,514	1,464
Student	–	–	320	243	1,625	3,236	4,405	4,755	5,823	4,972
Total	80	400	950	2,695	4,277	4,948	6,978	6,168	7,337	6,436

Source: Usa City Office Ajimu Branch website, http://www.gensha.shimane-u.ac.jp/geo/
oita2015/9sugimura.pdf.

4.2 Online marketing

When contemplating regional revitalization through tourism, an important key is to attract tourists more effectively at a lower cost. Online marketing can be one of the leading options. As Sheldon [1997] notes, tourism is an information intensive industry. The size of the tourism industry alone suggests that it generates large volumes of information to be processed and communicated. The Internet has fundamentally changed the manner in which tourism related information is distributed and people plan for travel. Thus, keyword advertising has become significantly important in tourism as well as in other industries. Studies on keyword advertising in tourism emerged after 2010, and few have attempted to analyze data about keyword advertising in tourism.

Yamamoto [2018] developed a website to provide information on regional tourism and gourmet food concerning the Noto area in Japan (http://noto-kankou.seesaa.net/), and then examined the visitors of the website utilizing Google Analytics. There are 84 articles and 10 categories on the website.

Table 3-8 shows the channels taken by visitors. The total number of visitors was 7,666 in two years (from January 1, 2015 to December 31, 2016).

Table 3-8 Channels of visitors to website

Channels	Visitors	Rate
Referral	4,535	59.20 %
Organic Search	1,453	19.00 %
Direct	1,055	13.80 %
Social	623	8.10 %
Total	7,666	100.00 %

Source: Yamamoto (2018).

The most common channel was "Referral," followed by "Organic Search," "Direct," and "Social." The words "Referral," "Organic Search," "Direct," and "Social" refer to visitors from other websites, search engines, bookmarks on browsers, and social networking services, respectively.

Figure 3-11 shows the transition of the number of visitors to the website in 2015, 2016 and 2017. The number of visitors fluctuated greatly depending on the month. Of course, changes in search engine algorithms, such as those of Google, might affect the fluctuation. As Xiang and Pan [2011] pointed out, search engine marketing is gaining the status of a major online marketing strategy for many destinations. Search queries are perhaps the most important behavioral aspect of the use of search engines. Keywords in travelers' queries reflect their knowledge about the city and its competitors. Xiang and Pan attempted to identify the patterns in online travel queries across tourist destinations, and offered insights for the manner in which tourism destinations are searched online and implications for search engine marketing for destinations.
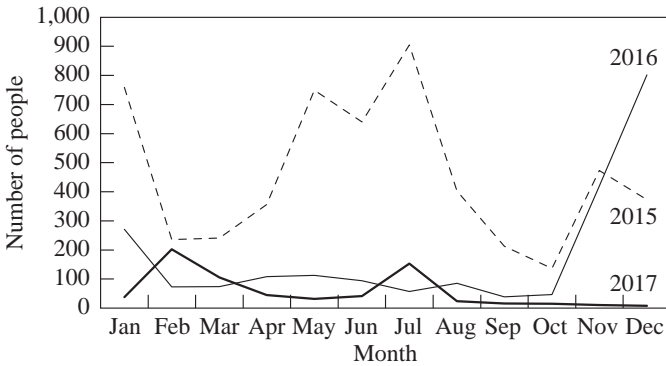
Figure 3-11 Number of website visitors in 2015, 2016, 2017
Source: Created by the author based on Yamamoto [2018].

As Qiao et al. [2017] pointed out; competitive keyword advertising is currently emerging as a new type of advertising which attracts more and more attention from advertisers. According to Kim et al. [2012], one of the most important merits that online advertising has, compared to other advertising media, is that it can be possible to measure its effectiveness in various ways. The impact of online advertising can be measured by the communication effect, which indicates to what extent internet users show their

interest, and by the purchase conversion rate, which is the ratio of visitors who convert casual content views or website visits into actual purchases.

Yamamoto [2018] also conducted a survey to measure the effectiveness and the cost of keyword advertising, utilizing AdWords (a pay-per-click advertising service that Google provides to advertisers) to display advertising on search results of 37 total keywords related to regional tourism, such as "tourism Noto," "Noto tourism," and "Nanao tourism." These advertisements were used to attract visitors to the website. The keyword advertisements included a park's name, the URL of its website, and a brief description of the park intended to attract tourists. When visitors clicked on the advertisement, the website was displayed. In the research, the word conversion (actions that advertisers want site visitors to perform) means the download of the park brochure (PDF) by visitors. Yamamoto measured the percentage of visitors who visited a download (PDF brochure) site through the keyword advertising described above. The brochure consists of the park's history, map, and pictures.

Yamamoto implemented the survey on keyword advertisements twice. The first was conducted from January 20 to April 30, 2015, and the second was conducted from July 15 to July 18, 2017. The advertising cost was 70,427 yen. The limitation of the CPC was 250 yen. As a result, there were 961 advertisement clicks (Table 3-9), whereas there were 661,592 advertisement impressions (the ratio of clicks to advertisement impressions was 0.15 %). The CPC was 73 yen, and clicks that led to conversion occurred 643 times (cost per conversion averaged 110 yen).

The keyword advertising was classified into two categories, and the relative cost-effectiveness of each category was examined through a comparison. Considering each ad group, ad group 1, which was displayed for tourism-related keywords such as "Noto tourism" and "Nanao tourism", cost 50,831 yen (Table 3-10), there were 622 clicks (the average CPC was 81.7 yen). Ad group 2, which was displayed for keywords, related to the region and history or to castles, cost 19,596 yen, and there were 339 clicks (the average CPC was 57.8 yen).

Comparing the cost-effectiveness of the two groups, ad group 2 was superior to ad group 1 in both the average CPC and the average cost per action (CPA). With respect to the CPC, group 1 resulted in 81.7 yen, and group 2 resulted in 57.8 yen. The CPA was 128.4 yen for group 1 and 79.3 yen for group 2. This can be attributed to the fact that because group 1 is comparatively easy to market, it tends to include costly keywords. Consequently, I

Table 3-9 Frequency of advertisement clicks and conversion

Action	Frequency (times)	Rate (%)	CPC/CPA (yen)
Click of ads	961	0.15	73
Conversion	643	66.9	110

Notes: Ad click rate = ad clicks ÷ ad impressions, Conversion rate = number of conversions ÷ ad clicks.

Source: Yamamoto [2018].

Table 3-10 Frequency and cost of advertisement clicks and conversion in 2 ad groups

	Total cost (yen)	Impression (times)	Ad clicks (times)	CTR (%)	CPC mean (yen)	Conversion (times)	CVR (%)	CPA mean (yen)
Ad group 1	50,831	283,508	622	0.22	81.7	396	63.7	128.4
Ad group 2	19,596	378,084	339	0.09	57.8	247	72.9	79.3

Notes: CTR (Click-through Rate) = ad clicks ÷number of ad impressions, CPC (Cost per Click) = total cost ÷ number of ad clicks, CVR (Conversion Rate) = number of conversions ÷number of ad clicks, CPA (Cost per Action) = total cost ÷ number of conversions.

Source: Quoted from Yamamoto [2018].

presume the average CPC and the average CPA of ad group 1 was higher.

However, there does not seem to be much difference in conversion rates. Unless the intent is to attract visitors immediately, keyword advertisements like those used in group 2 might be advantageous. In other words, narrowing down the target visitors to those who are interested in a particular subject could pay off.

Let us focus on each keyword (Table 3-11). First, the advertisements of 14 keywords, such as "Nanao Café," were not clicked (thus, conversions did not occur). The number of impressions for most of these words was less than 300. Considering that the total click rate was less than 2 %, a mere lack of search volume might be the cause (keywords such as "Nanao Café" could possibly have been affected by a mismatch of the search purposes).

Regarding the conversion rate of each keyword, the rate of compound keywords, such as "regional + tourism" was comparatively high. Conversely, the rate of combinations whose purpose was presumably the search for information about other destinations, such as "Noto Aquarium" and "Noto hot spring" was low. These tendencies can be found with respect to the click-through ratio (CTR).

4.3 Necessity for differentiating area

According to Porter [1980], in coping with competitors, there are three potentially successful generic strategic approaches to outperforming other firms in an industry:

- Overall cost leadership
- Differentiation
- Focus

The first strategy is to achieve overall cost leadership in an industry through a set of functional policies aimed at this basic objective. Having a low cost position yields the firm above average returns in its industry despite the presence of strong competitive forces.

The second strategy is one of differentiating the product or service offered by the firm, creating something that is perceived industrywide as being unique. Differentiation, if achieved, is a viable strategy for earning above average returns in an industry because it creates a defensible position for coping with competitors, albeit in a different way than cost leadership.

The third strategy is focusing on a particular buyer group, segment of

Table 3-11 Frequency and cost of Ad Group 1

Keywords	Ad clicks (times)	Impression (times)	CTR (%)	CPC mean (yen)	Conversion (times)	CPA mean (yen)	CVR (%)
Nanao tourism suggestion	0	29	0	0	0	0	0
Noto suggestion	1	284	0.35	239	0	0	0
Noto tourism	12	3532	0.34	141	9	187	75
Nanao tourism	5	749	0.67	124	6	104	120
Noto hot spring	0	15	0	0	0	0	0
Noto tourism suggestion	6	504	1.19	156	5	187	83.33
Noto autumn leaves	1	104	0.96	79	2	40	200
Nanao tourism spot	0	98	0	0	0	0	0
Noto Nanao	11	3985	0.28	151	4	415	36.36
Shokusai market Nanao	1	85	1.18	144	0	0	0
Noto Aquarium	5	696	0.72	110	2	274	40
Wakura hot spring tourism site	3	349	0.86	123	2	184	66.67
Noto tourism site	4	286	1.4	191	0	0	0
Wakura tourism	8	2490	0.32	175	2	702	25
Nanao Shokusai market	0	56	0	0	0	0	0
Noto Nanao tourism	2	245	0.82	34	2	34	100
Nanao Shokusei market	0	42	0	0	0	0	0
Wakura tourism spot	0	80	0	0	0	0	0
Nanao market	0	155	0	0	0	0	0
Noto Wakura hot spring	5	3013	0.17	144	2	359	40
Wakura hot spring tourism spot	2	57	3.51	119	4	60	200
Hot spring Noto	4	3565	0.11	228	1	911	25
Nanao tourism site	0	19	0	0	0	0	0
Nanao Café	0	226	0	0	0	0	0
Nanao gourmet	1	849	0.12	164	1	164	100
Tourism in Noto	87	11554	0.75	171	35	424	40.23

Notes: CTR (Click-through Rate) = ad clicks ÷ ad impressions, CPC (Cost per Click) = total cost ÷ number of ad clicks, CVR (Conversion Rate) = number of conversions ÷ ad clicks, CPA (Cost per Action) = total cost ÷ number of conversions.

Source: Yamamoto [2018].

the product line, or geographic market; as with differentiation, focus may take many forms. Although the low cost and differentiation strategies are aimed at achieving their objectives industrywide, the entire focus strategy is built around serving a particular target very well, and each functional policy is developed with this in mind.

The strategy that should be adopted by regions and practitioners working on green tourism must be differentiation. Today, many areas are struggling to promote tourism despite the fact that society is losing interest in green tourism. It might be necessary to emphasize different characteristics from other areas in order to be selected by travelers under such circumstances. If so, how could they differentiate their regions from others? There are several alternatives, such as local food (Figure 3-12). People's "hospitality" to visitors could also be an alternative to differentiate the region.

Figure 3-12 Local food at green tourism facility in Noto area

5. Conclusion

This chapter discussed the current situation and the challenges of green tourism. Green tourism could not only facilitate interactions between people in urban and rural communities, but also provide a solution to attract more tourists into rural areas that are devoid of famous tourism resources.

However, green tourism accounts for quite a small portion in the tourism industry in spite of practitioners' efforts. Moreover, people may have been losing their interest in green tourism in recent years.

Green tourism practitioners and organizers need to learn from several

successful cases such as the AGTS in Usa City. Despite the fact that the AGTS have accepted numerous groups to learn from other areas so far, Japan's green tourism is still on the way to take off. One of the principal keys to boost the tourism should be that more areas make efforts to differentiate their region from others.

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CHAPTER FOUR

The role of Michi-no-Eki in tourism
The present situation and efforts

Abstract

A Michi-no-Eki is a roadside station that the Japanese government desig-
nated as a rest area along normal roads distinguishing it from rest areas
along highways. In 1993, the Michi-no-Eki system was launched with 103
roadside stations. Since then, many roadside stations have been installed
and there are 1,145 facilities spread all over Japan as of April 2018. Michi-
no-Eki have three distinctive features: rest area, provider of information,
and regional linkage. Moreover, other functions have been added: indus-
trial development, disaster prevention, welfare services, and sightseeing.
A Michi-no-Eki is an essential facility for local communities and tourists
such as drivers of cars and riders of motorbikes and bicycles. It has much
potential to revitalize local communities and to promote local tourism. This
chapter introduces Michi-no-Eki's present situation and efforts, especially
in tourism: the basic information of Michi-no-Eki, its basic and further
functions, and unique features. Lastly, the author makes some remarks
about the important roles of Michi-no-Eki as strategies to promote local
tourism.

1. Introduction

1.1 What is Michi-no-Eki?

Michi-no-Eki means a roadside station in English. It is a unique Japanese
service system based on the concept to create a connection between road

users and local communities. It basically offers rest areas for road users and local residents. However, it is not just a rest area; it also offers locally produced vegetables, fruits, meat, drinks, processed food, arts, crafts, and other special products. It also provides various services for road users and local residents such as cultural, historical and recreational events, and local tourism, medical emergency and traffic information. Nowadays, local unique services are offered in each roadside station. This chapter introduces the basic concepts and functions of the roadside stations and explains the examples of a model station. In addition, current topics regarding local revitalization and roles in tourism are described.

The number of drivers has been increasing and more elderly people drive, especially in rural areas because of the lack of public transportation. The distance of driving is also becoming longer and people who drive cars need a rest area even along the normal road. According to the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) [n.d.] the purposes of establishing Michi-no-Eki are: (1) providing a safe and comfortable road traffic environment to road users; (2) contributing to regional development. Based on these purposes, there are three basic functions as follows:

- Refresh:
  Providing rest areas for road users such as sufficient parking space and clean toilets 24 hours a day for free
- Information:
  Offering information related to the road and local community such as traffic information, local tourist areas, emergency medical services, etc.
- Community:
  Having facilities for regional development such as cultural facilities, tourist recreation facilities, etc.

At first, these functions are mainly for road users and local residents. However, Michi-no-Eki have been utilized in many areas such as agriculture, tourism, welfare, disaster prevention, and so on. Each station has their own functions based on the uniqueness of the local community. In addition, the national government selects some roadside stations that have special features as nationwide models and those that have special themes to give prior support to. Therefore, the roadside station is a kind of organization between national government and local government including prefecture and city levels, and local producers. Figure 4-1 illustrates the functions

Figure 4-1 Michi-no-Eki functions

Source: Created by the author based on Ministry of Land, Infrastructure, Transport and Tourism website, http://www.mlit.go.jp/road/Michi-no-Eki/.

of the roadside stations mentioned above. The basic functions are refresh, information and community. Other functions such as industrial revival, disaster prevention, tourism, and community welfare are also important functions of the roadside stations.

Michi-no-Eki is a public platform. This is a noteworthy feature and it means that national and local governments lead the establishment of the roadside stations. A roadside station is set up by local government or a special group. This group should be sponsored by a prefecture and/or local government that takes more than one third of a stake in this group or should be a public-interest corporation recommended by local government. Therefore, Michi-no-Eki is different from highway rest areas or private roadside facilities.

In addition, the roadside stations provide opportunities to local residents to participate in local community development and/or to expand their business [Yokota, 2006]. Local residents can think and act together about what to provide or what to develop for their future community and sell their products at roadside stations to a wide range of people. Because roadside stations are a rest area for everyone, a large space of parking area is offered to individual passengers by car, motorbike, bicycle, or on foot and to travelers of large-size vehicles. A typical layout of a roadside station is shown in Figure 4-2.

Toilet	Rest facilities, information, shopping, restaurants, etc.	Cultural/ recreation space
Parking area		
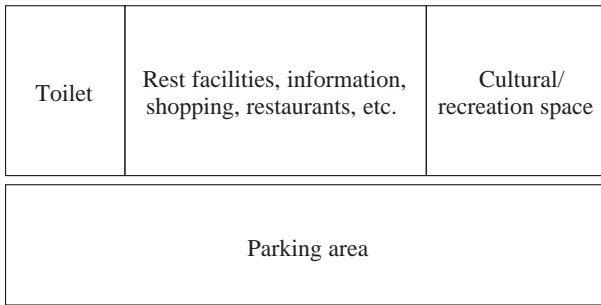
Figure 4-2 Typical Michi-no-Eki layout

1.2 History of Michi-no-Eki and its number

According to the official website of Michi-no-Eki [Ministry of Land, Infrastructure, Transport and Tourism, n.d.], the number of roadside stations has been growing since 1993. As of April 25, 2018, 1,145 roadside stations were registered. Actually, the first roadside stations opened in Yamaguchi, Gifu and Tochigi Prefectures in 1991 as pilot stations. Then, the outline of the Michi-no-Eki system was discussed and fixed in order to formally adopt the system in 1993, setting up 103 roadside stations in total throughout Japan. Figure 4-3 shows the growing number of Michi-no-Eki since 1993. Over the past 25 years, more than a thousand roadside stations have been set up. This growing number could demonstrate the success of the Michi-no-Eki
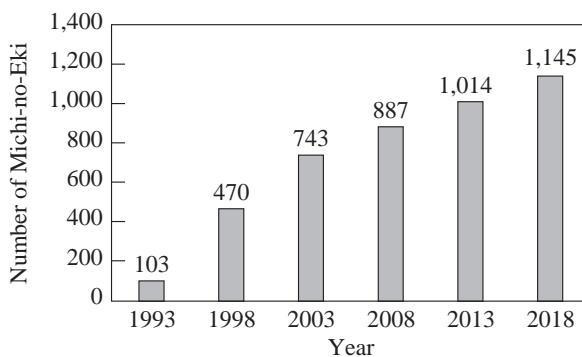
Figure 4-3 Growing number of Michi-no-Eki in Japan

Source: Created by the author based on Ministry of Land, Infrastructure, Transport and Tourism website, http://www.mlit.go.jp/road/Michi-no-Eki/.

system.

In Figure 4-4, these numbers illustrate Michi-no-Eki in each area of Japan. In Japan, there are 47 prefectures, and the following local areas each consist of several prefectures (except for Hokkaido and Okinawa): Hokkai-

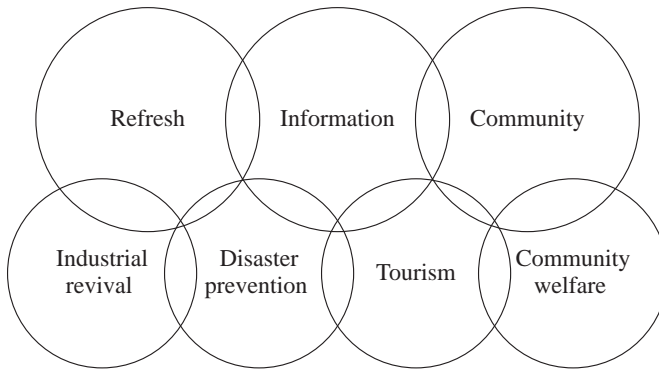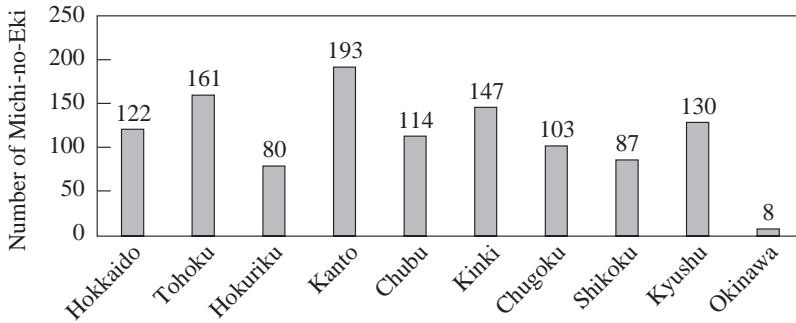**Figure 4-4** Number of Michi-no-Eki in each area

Source: Created by the author based on Ministry of Land, Infrastructure, Transport and Tourism website, http://www.mlit.go.jp/road/Michi-no-Eki/.

Table 4-1 Number of Michi-no-Eki in each prefecture

Areas	Prefectures (No. of roadside stations)
Hokkaido	Hokkaido (122)
Tohoku	Aomori (28), Akita (33), Iwate (33), Yamagata (21), Miyagi (13), Fukushima (33)
Hokuriku	Niigata (39), Toyama (15), Ishikawa (26)
Kanto	Ibaraki (13), Tochigi (24), Gunma (32), Nagano (50), Saitama (20), Chiba (29), Tokyo (1), Kanagawa (3), Yamanashi (21)
Chubu	Shizuoka (24), Aichi (16), Gifu (56), Mie (18)
Kinki	Fukui (15), Shiga (20), Kyoto (18), Nara (15), Osaka (10), Hyogo (35), Wakayama (34)
Chugoku	Tottori (16), Okayama (16), Shimane (28), Hiroshima (19), Yamaguchi (24)
Shikoku	Kagawa (18), Tokushima (16), Ehime (29), Kochi (24)
Kyushu	Oita (24), Fukuoka (16), Miyazaki (17), Kumamoto (31), Saga (9), Nagasaki (11), Kagoshima (22)
Okinawa	Okinawa (8)

Source: Ministry of Land, Infrastructure, Transport and Tourism website, http://www.mlit.go.jp/road/Michi-no-Eki/.

do, Tohoku, Hokuriku, Kanto, Chubu, Kinki, Chugoku, Shikoku, Kyushu, and Okinawa. Table 4-1 shows the prefectures in each area and the number of roadside stations. As a prefecture level, Hokkaido has the biggest number of roadside stations: 122. The number of prefectures in each area varies. Tohoku and Kanto areas have bigger numbers of roadside stations because in the Tohoku area there are three prefectures that have more than 30 roadside stations among six prefectures and in the Kanto area there are nine prefectures included and one prefecture, Nagano, has 50 roadside stations. There is an organization called the All Nippon Michi-no-Eki Network in each area and it initiates cooperation among all the roadside stations in that area.

2. Michi-no-Eki for local revitalization

The Michi-no-Eki system has been attracting attention because this system can accelerate regional revitalization. Roadside stations are located throughout Japan and they are expected to play an important role in the local revitalization project led by Shinzo Abe, Prime Minister of Japan since 2012. This national project was proposed by the Abe administration and the purpose of the project is to make local areas in Japan more active by preventing excess concentration of population and industry in the Tokyo metropolitan area and population decrease in local areas. Therefore, each local community is trying to make Michi-no-Eki help their own revitalization by implementing various activities. In particular, some roadside stations are outstanding due to their special efforts. The Japanese government selects some model Michi-no-Eki that have specific themes to give more support to. Figure 4-5 illustrates selected roadside stations as special models for others and the criteria to be selected in three categories.

    In the three categories, there are roadside stations as a good model for others, with specific themes, and with prioritized support. In the first category, to be selected as a model Michi-no-Eki, the roadside stations should be successful and have been operated for more than 10 years providing effective results to the community. Six stations were selected in 2014. In the second category, the roadside stations should have specific themes and make special efforts on the theme and have great achievement to their goals. Those themes are providing services for local residents and having functions as a hub for regional transportation. For the first theme, six stations were chosen in 2016 and for the second theme seven stations were

Michi-no-Eki as a good model for others
6 stations (2014)

- It continuously fulfills excellent functions as a hub for regional revitalization by utilizing regional resources and providing solutions to regional issues.
- It continuously provides services to the region for more than 10 years.

Michi-no-Eki with specific themes
6 stations（2016）7 stations（2017）

- It implements efforts on specific themes to be a model for others and the achievements are acknowledged.
- As each station has unique functions to make efforts on specific themes to be dealt with are selected: services for local residents (2016) and functions as a hub for regional transportation (2017).

Michi-no-Eki with prioritized support
35 stations（2014）38 stations（2015）

- It has an excellent plan to become a hub for regional revitalization and the effective achievements can be expected with prioritized support.
- Minister of Land, Infrastructure, Transport and Tourism selects stations in consideration for the plan's pioneering concept, effect, and feasibility.

Figure 4-5 Selected Michi-no-Eki as special models for others and the criteria

Source: Created by the author based on Ministry of Land, Infrastructure, Transport and Tourism website, http://www.mlit.go.jp/road/Michi-no-Eki/.

picked up in 2017. Selected roadside stations for the third category were chosen at a stage of planning. As their plans had potential to make them become a hub for local revitalization and had high feasibility to bring effective achievement, the Minister of Land, Infrastructure, Transport and Tourism selected 35 stations in 2014 and 38 stations in 2015 respectively.

Three example cases among the selected roadside stations are introduced in this section.

2.1 Michi-no-Eki: "Joubon no Sato"

The first case is Michi-no-Eki "Joubon no Sato." This roadside station was selected as one of the seven roadside stations with specific themes in 2017. It is located in Ishinomaki City in Miyagi Prefecture. This roadside station has the function as a hub for regional transportation. Ishinomaki City was devastated by a tsunami in 2011 due to the Tohoku earthquake and a large area of this city was affected.

The city is on the way to recovery. There are temporary housings for disaster victims in this city and a housing area is near this station. Therefore, Ishinomaki City planned to support disaster victims by setting up a bus route including the housing area and this station. They cooperated with a local bus company and located a bus stop in front of a waiting space at this roadside station so that people can wait under any weather conditions and the bus goes into the station and people can get on the bus conveniently (see the picture on the upper left in Figure 4-6).
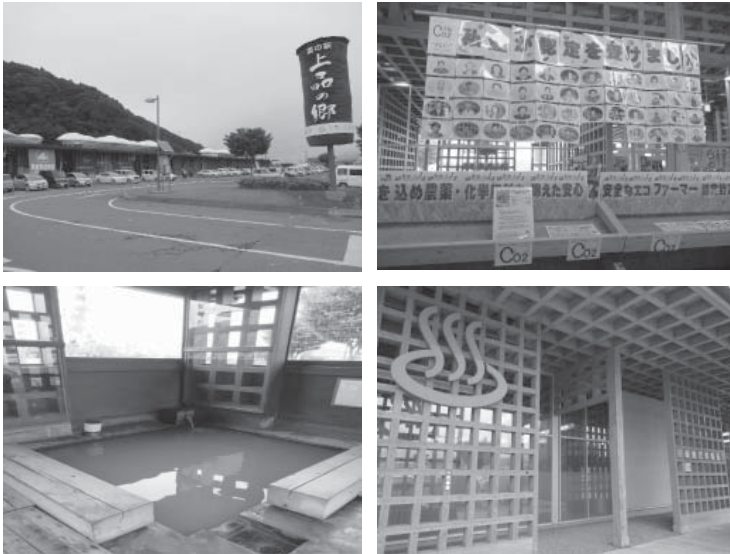
Figure 4-6 Special features of Michi-no-Eki "Joubon no Sato"

This station has a hot spring public bath for a fee and a foot bath for free. Two pictures on the bottom of Figure 4-6 show these *onsen* facilities. A paid *onsen* public bath is on the right and the free foot bath is on the left. The picture on the upper right shows a vegetable display rack with a poster of "eco farmers." "Eco farmer" means a farmer who works on ecological farming such as a reduction of chemical fertilizers and chemical pesticides to conserve the environment for sustainable agriculture. Farmers who received an official accreditation of "eco farmer" by the prefectural governor sell their vegetables here.

In Figure 4-7, two pictures on the upper side show the information sec-

Figure 4-7 Information facility and signboard in multiple languages

tion in the roadside station. Visitors can receive information about how the disaster of an earthquake and tsunami affected the area and about the process of reconstruction. In addition, the information about sightseeing spots (bottom right) and other information (bottom left) are in multiple languages for foreign tourists: Japanese, English, Korean, simplified Chinese and traditional Chinese. The sightseeing map for tourists introduces many sightseeing spots over a wide area.

2.2 Michi-no-Eki: "a·la·Datena Michinoeki"

The second example case is "a·la·Datena Michinoeki." This roadside station was selected as one of the "35 Michi-no-Eki with prioritized support" in 2014. It is located in Osaki City in Miyagi Prefecture. It is a sightseeing hub to utilize local history and culture.

This station especially puts efforts into services for foreign tourists. The homepage of "a·la·Datena Michinoeki" (https://www.ala-date.com/english/index.html) is introduced in four languages: Japanese, English, simplified Chinese and traditional Chinese. There is an information center for foreign tourists inside the station and many pamphlets and advertisements are available in multiple languages. Free Wi-Fi is available and the explanation

Figure 4-8 Services for foreign tourists

of how to connect to Wi-Fi and QR codes for sightseeing spot websites are on the wall. The station also checked the number of foreign visitors and their nationality by asking tourists to put a sticker next to their national flag on the board. Figure 4-8 shows the information center on the upper left and the Wi-Fi or tourist information on the bottom left. The right side picture shows the nationality check board.

Furthermore, they developed sightseeing products (model sightseeing routes) including a famous hot spring area, Naruko Onsen, which is close to the roadside station and regional resources such as historical places related to Masamune Date, a famous Japanese regional ruler from Japan's Azuchi-Momoyama period through the early Edo period. These model sightseeing routes are introduced in a leaflet in several languages and the leaflets are provided at both the roadside station and other information centers. A part of the station's name, "Datena" is named after the ruler Date and it also has the meaning of elegant or fancy.

Special features of this roadside station are explained in Figure 4-9. The picture on the bottom left of this figure shows the place where visitors can take a ride in a hot-air balloon. This station is located in Iwadeyama, Osaki City in Miyagi Prefecture and there is a big annual balloon festival in this city. Visitors can try flying in a balloon here between April and October.

Figure 4-9 Special features of "a·la·Datena Michinoeki"

The picture on the upper left shows a very popular Japanese chocolate shop "ROYCE'" (https://www.royce.com/contents/english/). This shop is inside the roadside station. The picture on the right is a poster explaining the reason why this shop is in the roadside station. Products of ROYCE' are mainly sold in Hokkaido, or shops at airports in Japan, as the headquarters and factories are located in Hokkaido. One of the factories is located in Tobetsu-cho, a town in Hokkaido. There is a special history between Tobetsu-cho and Iwadeyama, which used to be a town, but is a part of Osaki City now. Kuninao Date, a Japanese samurai of the late Edo period and a member of the Date family, left Iwadeyama, Osaki City and opened up the land in Tobetsu-cho in the Meiji period. For this reason, Iwadeyama in Osaki City and Tobetsu-cho in Hokkaido have a sister-city relationship and the shop of ROYCE' is in this station.

2.3 Michi-no-Eki: "Kirari Asahi"

The third case is Michi-no-Eki "Kirari Asahi." This roadside station was selected as one of the "38 Michi-no-Eki with prioritized support" in 2015. It is located in Asahi City in Chiba Prefecture. This station provides services especially about eating. There is a large hospital that plays an essential role

in the area nearby the roadside station. They cooperate with each other to produce special menus using abundant local farm and marine food sources in order to promote local production for local consumption.

Figure 4-10 shows some features of the station. On the left of the figure is a community official mascot, "Asa-P": it is a baby-boy chick wearing a red tomato hat, with green wings inspired by green vegetables, and a tail fin of a sardine. Eggs, vegetables and sardines are special local products and the character promotes them with his entire body. The picture on the bottom right is a pancake shaped like this "Asa-P" and it is sold inside the station. The picture on the upper right shows plastic umbrellas made by the company "White Rose" (https://whiterose.jp/english_index.html). Their factory is located in Asahi City. This umbrella is famous in Japan and it was introduced on TV that the Imperial Family used these umbrellas. This umbrella is sold at the station.

Figure 4-10 Special features of Michi-no-Eki "Kirari Asahi"

Figure 4-11 shows other features of this station. The picture on the upper left of the figure shows a big open stage for special events for local residents. Next to the station, there is a big park with playground equipment for children, shown on the picture at the bottom left of the figure. On the right of the figure, the picture shows a flea market at the station. A flea market is a type of bazaar where people who want to sell their merchandise rent the space. This roadside station provides the space to the flea market.

Figure 4-11 Services for local residents

2.4 Cooperation with universities

A Michi-no-Eki provides opportunities of internship to university students. This system encourages the roadside stations to utilize students' ideas and skills through internship and universities to receive opportunities for their students to plan and carry out their projects for business and receive work experience in the roadside stations. Figure 4-12 illustrates the relationship between Michi-no-Eki and universities. As of December, 2017, 189 stations accept internships [Ministry of Land, Infrastructure, Transport and Tourism, 2018].

There are many internships: product development using local ingredi-
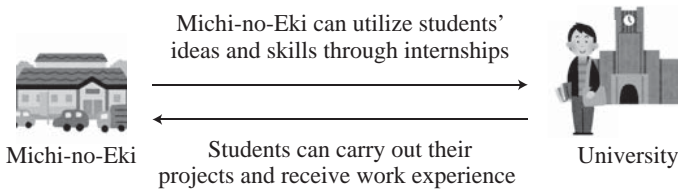
Figure 4-12 Cooperation between Michi-no-Eki and universities

ents, administration of events such as summer festivals, social media marketing survey using Facebook, etc. Students can experience jobs in a real world and they can improve their communication skills through interaction with customers. For example, in Michi-no-Eki "Joubon no Sato" mentioned above, Ishinomaki Senshu University and Michi-no-Eki cooperated and developed a special local food menu called "Ishinomaki Oden Burger" using local ingredients, *age-kamaboko* (fried ground fish meat) and *chikuwa* (fish sausage). It is sold at the roadside station "Joubon no Sato." Additionally, Ishinomaki Senshu University cooperated with the station "a·la·Datena Michinoeki" to implement a workshop between students and staff members to propose a branding strategy of "a·la·Datena Michinoeki" by analyzing the needs of target customers [Ministry of Land, Infrastructure, Transport and Tourism, 2018].

2.5 Regional trading company

Many visitors to Michi-no-Eki usually buy local food such as vegetables, fruits, processed food, and other local products for their everyday life or as souvenirs. Selling local products creates a big business opportunity for local producers. Therefore, a special kind of organization called a regional trading company has been receiving attention. It sells products produced in the local community to the market and helps the local community to earn money. The following are the roles of a regional trading company:

- Making a complete system to sell local products: production, process, and sales
- Developing new products
- Creating a marketing channel
- Carrying out market research and exploring customers' needs

According to the "Comprehensive strategy for construction of town/people/work" [Cabinet Office, Government of Japan, 2018b], the Japanese government is aiming at establishing 100 model regional trading companies to execute a branding strategy for the local community as part of the government's effort of the local revitalization project. There are 64 model regional companies as of 2018.

Also, in this comprehensive strategy, the policy that the regional trading company should develop their business in medium-scale market is set up. This is because local products such as agricultural, forestry, and fishery

products, craftwork, and tourism resources are limited in supply without changing their high level of quality. If local products are supplied in a nationwide-scale market, it is difficult to maintain the quality of products or resources. It is essential to establish an original medium-scale market where customers can evaluate the good quality of local products and resources and establishment of an original medium-scale market can deliver additional value to the local community.

It is notable that a Michi-no-Eki can work as a regional trading company to manage sales of local products and resources to a new market from outside the region, develop new products, and examine the needs of the new market, and so on. Figure 4-13 illustrates the system of a regional trading company. Local producers sell their products to the regional trading company and it finds and opens up a medium-scale market to sell the products and the income goes to the local producers through the regional trading company.

Figure 4-13 System of regional trading company
Source: Created by the author based on Yomiuri Shimbun [2018].

Next, two examples are introduced. The first example is Michi-no-Eki "Romantic Mura" located in Utsunomiya City in Tochigi Prefecture. About 1,400,000 people visit this roadside station in a year. It has a farm stand, a farm where visitors can experience farming, a hot spring facility, and accommodation. The local products or tourism resources are managed by a regional trading company: Farmers Forest (https://www.farmersforest. co.jp/). This company is said to be a pioneer of a trading company in Japan. It owns a shop in the Tokyo area to sell local products to outside of the region, and it also has a delivery service to supermarkets in the center of the metropolitan area. Additionally, it produces a mail-order service promoting the sales of local vegetables and fruits, and produces tourism resources utilizing a place that used to be a rock quarry [Nihon Keizai Shimbun, 2017].

Another example of the roadside station as a regional trading company is Michi-no-Eki "Noto Chirihama." It is located in Hakui City in Ishikawa Prefecture. Hakui City aimed at establishing the roadside station as a regional trading company by 2020. The purpose of the establishment is to create a system where small-scale local companies and farmers can expand their market and increase their income steadily by promoting local food and products to consumers from outside of the region throughout the year. For establishing a regional trading company, Hakui City hired staff members who have knowledge and experience in marketing and created a budget for product development and promotional activity [Yomiuri Shimbun, 2018].

A regional trading company can be a key for further town development and local revitalization because the Japanese government aims at the establishment of 100 model regional trading companies [Cabinet Office, Government of Japan, 2018b] and it pushes and supports local governments to promote the establishment systematically and financially. Furthermore, the Japanese government aims at building 100 world-level destination management/marketing organizations (DMO) by 2020 as part of the government's effort of the local revitalization project [Cabinet Office, Government of Japan, 2018a]. At the stage of 2017, there were 70 Japanese versions of DMOs and 128 Japanese versions of DMO candidates. As introduced in Chapter 2 in this book, a DMO is an organization to revitalize the local tourism by managing the local area and executing marketing strategies. Its activity involves many related parties such as commerce, industry, agriculture, forestry and fishery, transportation, accommodation, restaurants, government, and local residents.

A regional trading company can revitalize local businesses and destination management organization can revitalize local tourism. These two types of organizations can promote local branding inside and outside the community to broaden its market and execute a branding strategy for the local community.

3. Michi-no-Eki for promoting tourism

The efforts of Michi-no-Eki introduced above are essential and they play an important role in local revitalization as well as local tourism. A Michi-no-Eki itself can be a tourism destination and many tourists and even local people go shopping to roadside stations. This section describes the role of Michi-no-Eki in tourism.

3.1 Survey results

A survey to examine the utilization situation of Michi-no-Eki was conducted through a web questionnaire in February, 2019. Questionnaires were made by the author and a web survey was operated by Cross Marketing Inc. (http://global.cross-m.co.jp/index.html). The number of people who answered the questionnaire was 2000 Japanese who traveled domestically more than once in the past year.

Table 4-2 shows the number of people who answered the questionnaire in each age range. The questionnaire was taken by people ranging between 15 years old and 79 years old. Also, the number of males was 1,122 and females was 878. In Figure 4-14, about 70 % people visited Michi-no-Eki

Table 4-2 Number of people in each age range

Age	No. of people
15–19	49
20–29	146
30–39	242
40–49	324
50–59	362
60–69	416
70–79	461
Total	2,000
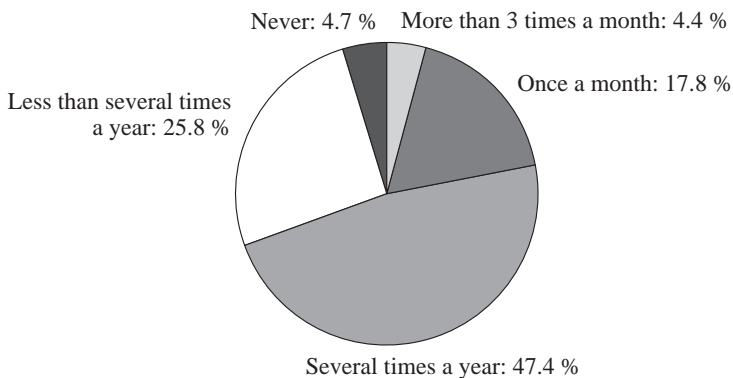
Figure 4-14 Frequency of visiting Michi-no-Eki
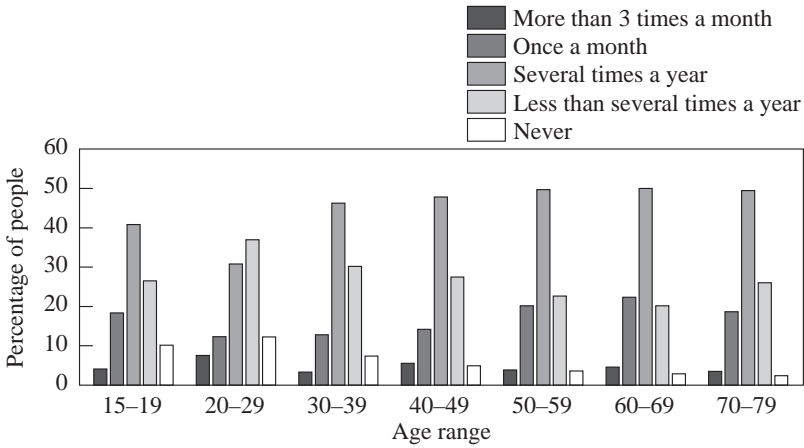
Figure 4-15 Frequency of visiting Michi-no-Eki by each age range

several times a year or more. In particular, those who were over 30 visited roadside stations more frequently than those under 30, as shown in Figure 4-15. The number of those who have never been to a Michi-no-Eki gradually decreased from 10's to 70's. Additionally, more people over 50's go to roadside stations "once a month" or "several times a year."

Figure 4-16 illustrates the purpose of a visit to roadside stations. This question was answered by 1907 people who had been to roadside stations at the time of answering the survey. Multiple answers were allowed for this question. The most popular purpose of a visit is shopping, followed by
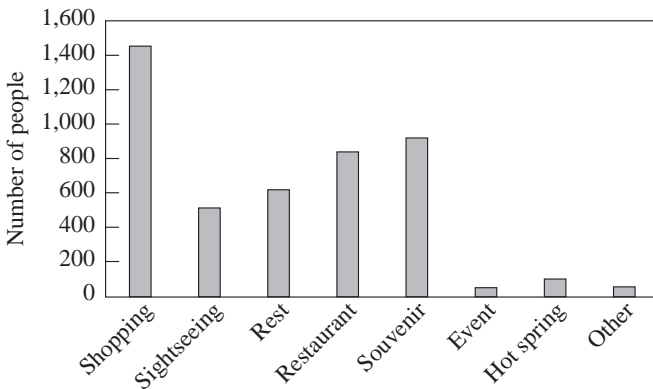
Figure 4-16 Purpose of visit to Michi-no-Eki

souvenirs and restaurant. From the results of this survey, most of the people who visit roadside stations buy something and eat something that the roadside stations promotes locally. Therefore, there is a high possibility that the local products sold at Michi-no-Eki can be a good tourism resource and be in high demand not only in the local area, but also out of the region and abroad.

3.2 Michi-no-Eki for tourism ranking

There is a popular travel website, TripAdvisor, which people use to search for travel information and post comments on sightseeing spots and so on. It analyzes the postings to rank sightseeing spots, restaurants, accommodations etc. Michi-no-Eki was also registered as a tourism site and a ranking of the roadside stations was introduced on the site [TripAdvisor, 2018]. Table 4-3 shows the top 30 best Michi-no-Eki in Japan in 2018.

In the top 30, four roadside stations in both Hokkaido and Chiba are ranked, and three stations in both Okinawa and Gunma are ranked. It seems Hokkaido and Okinawa are popular destinations for Michi-no-Eki in addition to the Kanto area. In the Kanto area, the metropolitan area is included and many foreign tourists visit Tokyo. It is possible to travel to Chiba and Gunma from Tokyo in one day. Moreover, other prefectures in the Kanto area can be reached from Tokyo by a one-day trip or short trip with an overnight stay.

In TripAdvisor, many postings in foreign languages, such as English and Chinese, on many of the roadside stations can be seen. Foreign tourists go to Hokkaido, Kyushu, and Shikoku areas by bus tour or car and sometimes by bicycle. They stop at Michi-no-Eki and they post their comments in TripAdvisor. Some examples of comments in English are as follows:

- Michi-no-Eki Niseko View Plaza (Hokkaido)
  "Worth a wonder and plan a lunch or early dinner."
  "A good spot to relax if you had a long drive. As in all michi no eki the store feature a lot of local produce."
- Michi-no-Eki Salmon Park Chitose (Hokkaido)
  "One of the best meals I had was surprisingly at this roadside station beside the Chitose Salmon Aquarium and Park."
- Michi-no-Eki Aso (Kumamoto)
  "I really enjoyed shopping here - great place to buy some local bread, drinks and vegetables."

- Michi-no-Eki Shodoshima Olive Park (Kagawa)
  "One of the place identify and must come include this Olive Park with the Greek style windmill as iconic landmark."

Foreign tourists spread word of mouth to their family and friends, and more foreign tourists will pay attention to Michi-no-Eki in Japan. Roadside stations could be one of the best sightseeing destinations to introduce the local community and products or tourism resources in the region to the world.

Table 4-3 Top 30 best Michi-no-Eki in Japan 2018

	Name of Michi-no-Eki (Prefecture)		
1	Michi-no-Eki Kitaurakaido Hohoku (Yamaguchi)	16	Michi-no-Eki Yoshiumi Ikiiki-kan (Ehime)
2	Michi-no-Eki Niseko View Plaza (Hokkaido)	17	Michi-no-Eki Kyoda Yambaru Local Products Center (Okinawa)
3	Michi-no-Eki Salmon Park Chitose (Hokkaido)	18	Michi-no-Eki Akita Port (Akita)
4	Michi-no-Eki Laran Fujioka (Gunma)	19	Michi-no-Eki Boyonakayama (Hokkaido)
5	Michi-no-Eki Aso (Kumamoto)	20	Michi-no-Eki Nakasatsunai (Hokkaido)
6	Michi-no-Eki Shodoshima Olive Park (Kagawa)	21	Michi-no-Eki Yamba Furusato Kan (Gunma)
7	Michi-no-Eki Uzushio (Hyogo)	22	Michi-no-Eki Inawashiro (Fukushima)
8	Michi-no-Eki Hota Shogakko (Chiba)	23	Michi-no-Eki Awaji (Hyogo)
9	Michi-no-Eki Kawaba Denen Plaza (Gunma)	24	Michi-no-Eki Tatara Shimanami Park (Ehime)
10	Michi-no-Eki Toyosaki (Okinawa)	25	Michi-no-Eki Yuiyui Kunigami (Okinawa)
11	Michi-no-Eki Mizunosato Sawara (Chiba)	26	Michi-no-Eki Kobuchisawa (Yamanashi)
12	Michi-no-Eki Senmaida Pocket Park (Ishikawa)	27	Michi-no-Eki Munakata (Fukuoka)
13	Michi-no-Eki Sakurajima (Kagoshima)	28	Michi-no-Eki Phoenix (Miyazaki)
14	Michi-no-Eki Yufuin (Oita)	29	Michi-no-Eki Furari Tomiyama (Chiba)
15	Michi-no-Eki Tomiura Biwa Club (Chiba)	30	Michi-no-Eki Doshi (Yamanashi)

3.3 Unique features of Michi-no-Eki

Interesting features of Michi-no-Eki are introduced in this section. Japan is famous for *onsen*, hot spring baths. There are 132 out of 1134 roadside stations that have hot spring facilities as of 2017 [Zenrin, 2018]. People can enjoy Michi-no-Eki and relax in an *onsen*.

Furthermore, the world's largest hotel company, Marriott International are cooperating with Michi-no-Eki to set up their hotels along with the roadside stations in 2020 [Nihon Keizai Shimbun, 2018]. It aims especially at foreign tourists who visit Japan as a repeater in order to provide a new experience in rural areas because local regions have different attractions compared with urban areas or popular tourist areas where foreign tourists usually visit for their first trip to Japan. The hotels are built next to the roadside stations and they provide no meals. That encourages tourists to use the restaurants and to shop for souvenirs at the roadside stations.

This establishment of roadside accommodations with Michi-no-Eki is based on the regional revitalization project, "Trip Base Michi-no-Eki Project" led by Sekisui House, one of Japan's largest housebuilders, and local governments with the purpose of satisfying tourists by car, motorbike, and bicycle and to encourage them to stay longer to promote local economics [Sekisui House, 2018]. The project first opens 15 roadside hotels in 5 prefectures, such as Tochigi, Gifu, Mie, Kyoto, and Wakayama in the fall of 2020. Each planned construction area has fascinating tourism sites. For example, there is abundant beautiful nature including a famous rice terrace in Motegi-machi, a town in Tochigi Prefecture. In Mino City of Gifu Prefecture, there are historical townscapes preserved from the Edo period and old songs and dance. Mihama-cho, a town in Mie Prefecture is famous for Japanese oranges harvested throughout the year and the world heritage Kumano Kodo is placed in this town. Kyoto is a famous tourist site in Japan, but this project site is not in Kyoto City. Miyazu City in Kyoto Prefecture has one of the three most scenic spots in Japan, Amano Hashidate, shaped like a thin strip connecting two opposing sides of Miyazu Bay. In Wakayama Prefecture, hotels are built in two towns, Susami-cho and Kushimoto-cho, and these towns share a national park and geopark, which has geological heritage.

Hence, this "Trip Base Michi-no-Eki Project" brings new tourism to local areas in Japan and this could appeal to more foreign tourists to visit rural areas. Michi-no-Eki has a great potential to expand the functions as a hub of local tourism.

4. Conclusion

This chapter explains the basic functions of Michi-no-Eki by introducing examples of selected roadside stations as models and further functions to activate local economics for local revitalization. Moreover, this chapter describes the efforts of Michi-no-Eki for promoting local tourism.

As mentioned above, a Michi-no-Eki expands its function as a regional trading company to promote local products to increase local producers' income and local economics. The target market could be overseas, but it will consequently require specialized services for foreign customers. For the further development of Michi-no-Eki for local tourism revitalization, some strategies should be formulated. The following issues should be taken into account:

- Michi-no-Eki as a hub of regional transportation:
  Several roadside stations are located within one prefecture and there are many tourism resources around the roadside stations. It could be possible that one of the roadside stations becomes a hub and cooperates with other stations for wide-area tourism. Bicycle tourism has been receiving attention for its environmentally-friendly, healthy, and convenient aspects. Sport utility bicycles can be used to travel around the prefecture for sightseeing. Many roadside stations are equipped with bike stations for taking a rest and fixing troubles with bicycles. Moreover, a highway bus can be utilized for transportation between metropolitan areas and Michi-no-Eki in local areas in addition to local airports. There can be further possibilities to attract more tourists, including foreign tourists, if the roadside station has access to airports or big cities directly.
- Promoting local attractions:
  In rural areas in Japan, there are tours for world heritage leaving from Michi-no-Eki. There are world heritage sites, globally important agricultural heritage systems and Japanese nationally important agricultural heritage systems in Japan. These heritage sites can be included in tours and Michi-no-Eki can promote the tour. Abundant nature, rural scenic areas such as rice fields, local food, hot springs, and more local tourism resources exist around the roadside stations. Tourists can experience unique features of travel in Japan by visiting a Michi-no-Eki.
- Contribution to the local community:
  This should not be left behind. Michi-no-Eki is also for the local com-

munity. The Japanese society is aging and the birthrate is decreasing. Roadside stations can be a hub for the local community and there should be a transportation system convenient for elderly people in the region. In addition, special care for children could be dealt with at Michi-no-Eki. For example, as roadside stations are built on spacious land, children's playgrounds can be equipped. Moreover, day-care functions or small libraries would be appreciated by the local community.

• Importance of providing useful services for information:
Free internet access service is provided in many places in Japan such as airports, cafes, convenience stores, trains and buses, and Michi-no-Eki. To promote inbound tourism, a free Wi-Fi service is a key. If foreign tourists can easily search for information about nearby destinations, they can visit many more places. Furthermore, if the information is provided in multiple languages, satisfaction of foreign tourists would become higher. However, not many Michi-no-Eki offer multi-language websites or some websites are even only in Japanese. Multi-lingualization of information should be promoted further. Luckily, cooperation with Marriott Hotels can accelerate the provision of information in foreign languages. Also, Marriott Hotels have a broad network and information of Michi-no-Eki can be spread to the world.

One of the important roles of Michi-no-Eki can be as an information transmitter about various information of the local community, businesses, and tourism to promote local revitalization. An effective way to transmit and spread information should be studied further.

Fundamentally, services and products should be attractive to tourists and consumers to increase their satisfaction. An increase of satisfaction leads to spreading positive word of mouth and turning satisfaction into loyalty, which makes tourists or consumers become repeaters. It is necessary to put more effort into improving services and products in the local community, i.e. Michi-no-Eki, and send information effectively to an original medium-scale market inside and outside of Japan.

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CHAPTER FIVE

Promoting bicycle tourism for regional revitalization in Japan

Abstract

Local areas in Japan have their own traditions, cultures, and beautiful sceneries. They should attract tourists from both inside and outside Japan. One of the transportation means to travel to local areas can be a bicycle. There are many benefits to utilize bicycles: healthy, environmentally-friendly, easy-to-use, convenient and so on. Using bicycles to promote local tourism is one way for revitalizing the area. In particular, some European countries are famous as bicycle countries and they promote bicycling not only in their daily life but also in tourism. Bicycle tourism is becoming popular in Japan too. It is important to know the current situation of bicycle tourism in Japan especially for foreign tourists. This chapter introduces the importance of utilizing bicycles to promote inbound tourism, current situations of bicycling in European bicycle countries, bicycle tourism for foreign tourists in Japan, and some ideas about the development of bicycle tourism in urban and local areas in Japan. Furthermore, possible measures to promote bicycle tourism in local areas are discussed.

1. Introduction

There are many car-oriented societies in the world, and it can be assumed that it causes global warming. At the same time, many Asian countries have the problem of aging populations and they are tackling the issues by trying to make the society healthier. One of the ways to solve the existing problems can be utilization of bicycles. A bicycle is a transportation for

both commuters and tourists. In addition, it can be an urgent transportation means in an emergency such as a disaster. This section explains the importance of utilization of bicycles.

1.1 Riding a bicycle

A bicycle is a means of transportation. However, it can be used for exercising, sightseeing, moving in case of disaster, and so on. What are the reasons that people ride bicycles? Riding a bicycle brings us a lot of benefits. The possible reasons to ride a bicycle for daily life, sightseeing or emergency can be thought about as follows:

- Good for environment and energy consumption:
  Riding a bicycle instead of driving a car or other public transportation which use electricity or fossil fuels is environmentally and ecologically friendly. A bicycle does not emit CO_2 like cars, buses and motorbikes. It does not use fossil fuels that are running out on the earth. If people want to take action on ecology activity, riding a bicycle instead of other transportation means that give off exhaust gas can be one way to be involved in the activity.
- Good for health:
  An aging society requires solutions that keep elderly people healthy and prevent health problems such as diabetes. Children need to play sports, but technology can make young people more interested in games and internet surfing indoors. A license is not necessary for riding a bicycle. Even elderly people or children can ride a bicycle if they have it as their transportation tool or exercising tool. Moreover, business-people often do not have enough time for exercise. Riding a bicycle for commuting can be good exercise for them. If the distance from their home to their workplace is not far, commuting by bicycle is worth trying. Riding a bicycle is good for a change and stress release as a sport. It has many benefits.
- Helpful for commuters:
  If many people ride bicycles for commuting, it reduces traffic jams, especially in the morning and in the evening. For commuters, they can go by bicycle along the line of cars and buses which often form traffic jams on the heavy trafficked roads. A bicycle is smaller than a car, and it can easily go through narrow roads. As those narrow roads often do not install traffic signals, using a bicycle may be faster to reach their destina-

tions than using a car.
- Helpful for people in a disaster:
  When disaster occurs, public transportation usually stops. A bicycle can be an urgent transportation means and it does not require gasoline and a license to ride. For example, in 2011 in Japan, the Tohoku earthquake and tsunami hit the east area of Japan. At that time, public transportation was stopped in the Tokyo area and there were huge traffic jams on the roads. There were so many people who were stuck near their workplaces or schools. However, some people bought bicycles and used them to go home through the traffic jams. A bicycle is very helpful even in an emergency situation.
- Useful for sightseeing:
  As a sightseeing transportation tool, people can easily enjoy the scenery by bicycling. Experiencing beautiful scenery and fresh air during a ride is an activity for tourists. It is easy to make an unscheduled stop and see the local people's life while riding. If tourists find a beautiful place during a ride, it is easy to stop off and take a picture. If it is a car, it is not so easy because finding a parking space takes time and it is sometimes difficult to find it.

As observed above, there are many benefits for riding a bicycle. If people use a bicycle, it saves transportation fees such as gasoline or electricity expenses for a car, and fees for riding on a bus and train. Even renting a bicycle does not cost much. If local governments make a system for utilizing a bicycle to make money for their community, bicycling can contribute to boosting the development of the area economically.

1.2 Background of promoting bicycles

In 2000, the United Nations established the Millennium Development Goals (MDGs) which consist of eight international development goals for developing countries for the year 2015 [The United Nations, 2000]. The 2030 Agenda for Sustainable Development was adopted in 2015 by all the members of the United Nations [The United Nations, 2015] as the following actions of MDGs. It consists of 17 Sustainable Development Goals (SDGs) which all developed and developing countries should take urgent actions on. The SDGs received more attention from the world since these goals were for all countries, including developed and developing countries.

This worldwide action was a trigger for many countries to make their

own national SDGs models to show that the country commits to SDGs. The Japanese government set up the SDGs Promotion Headquarters for the implementation of SDGs [SDGs Promotion Headquarters, 2016]. They set the Implementation Guiding Principles in 2016 and announced eight priority areas and policies. Some of the SDGs are directly related to developing sustainable cities and people's healthy lives. For instance, the goals are to "ensure healthy lives and promote well-being for all at all ages" (Goal 3) and to "make cities and human settlements inclusive, safe, resilient and sustainable" (Goal 11). Therefore, within the SDGs Implementation Guiding Principles, the priority areas include "Achievement of Good Health and Longevity" and "Revitalization of Rural Areas." The SDGs are incorporated in many companies and local governments for making a better world.

In Japan, the Promotion Plan for Utilization of Bicycles was executed in May of 2017 [Ministry of Land, Infrastructure, Transport and Tourism, 2017]. The bicycle is environmentally-friendly as it does not emit carbon dioxide and also it is useful for health promotion. Reducing the reliance on automobiles and shifting to bicycles can reduce traffic jams. Moreover, in the case of emergency, bicycles can be an effective transportation means. Therefore, utilization of bicycles creates public benefits. One of the objectives of the promotion plan is aiming at the establishment of a tourism-oriented country by promoting bicycle tourism. By looking at ideas about the development of bicycle tourism in other countries, Japan can follow them and make their own policy.

2. Current bicycling situation in Japan and foreign countries

In some European countries such as the Netherlands, Denmark, and Finland, cycling is relatively popular and they are the leading sources for bicycle tourism. Most people in those countries ride bicycles very frequently [CBI, 2018]. They have long histories with bicycles in their societies and their policies and schemes can be a model to promote bicycle tourism in Japan. Japan is not known as a bicycle country but many people recently enjoy bicycling in their daily life. In this section, the current situation of bicycling in Japan and other countries, in addition to the issues to be considered in Japan are discussed.

2.1 Current bicycle sales in Japan

Japan is a car-oriented society, but at the same time, bicycles are popular

and people use bicycles as their transportation means. There are several types of bicycle sold in a bicycle shop in Japan as follows:

- City bicycles
- Bicycles for small kids and children
- Sport utility bicycles including road bikes, mountain bikes and hybrid bikes
- Small bicycles including folding bicycles
- Cargo
- Electrically assisted bicycles

Figure 5-1 shows the trend of domestic bicycle sales in Japan reported by the Japan Bicycle Promotion Institute [2018]. This figure shows annual average sales per shop by illustrating how many times bicycle sales were made each year based on the sales from 2003. Since the way to calculate the sales was changed in 2014, this figure describes the trend from 2003 to 2013. In this figure, the categories of bicycle are city cycle, mountain bike, sport utility bicycle, electric bicycle, and others (folding bicycle and bicycle for kids). Because the sport utility bicycle, such as a hybrid bike or road bike, were not popular compared with a mountain bike at the time when the statistical data was started to be collected, mountain bikes are separated from other sport utility bicycles. Table 5-1 shows the annual average bicycle sales per shop. This table can be observed with Figure 5-1 together. As can
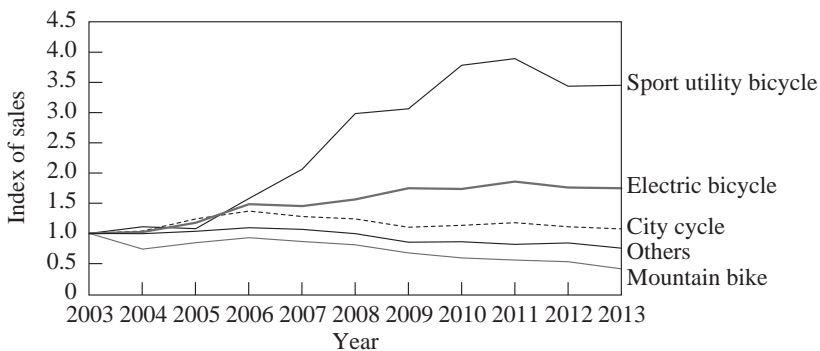

Figure 5-1 Trend of domestic bicycle sales in Japan

Source: Created by the author based on Japan Bicycle Promotion Institute website, http://www.jbpi.or.jp/.

Note: Annual average per shop based on 2003 sales.

Table 5-1 Annual average bicycle sales per shop in Japan

Types of bicycle	2003	2013
City cycle	126.4	135.8
Mountain bike	11.1	4.6
Sport utility bicycle (road bike, hybrid bike)	6.4	22.1
Electric bicycle	9.1	15.9
Others	29.6	22.4

be seen, the number of city cycles did not increase much but sport utility bicycles increased 3.5 times and electric bicycles grew 1.8 times. It can be assumed that there are more people who enjoy bicycling with sport utility bicycles recently and these kinds of bicycles provide possibilities of long ride opportunities.

2.2 Bicycling population in Japan

How many people in Japan are enjoying cycling? According to the results of a basic survey on social life in 2016 by the Statistics Bureau, Ministry of Internal Affairs and Communications [2016], people who enjoy cycling in their free time are mostly in their late 30's to 40's as shown in Figure 5-2.

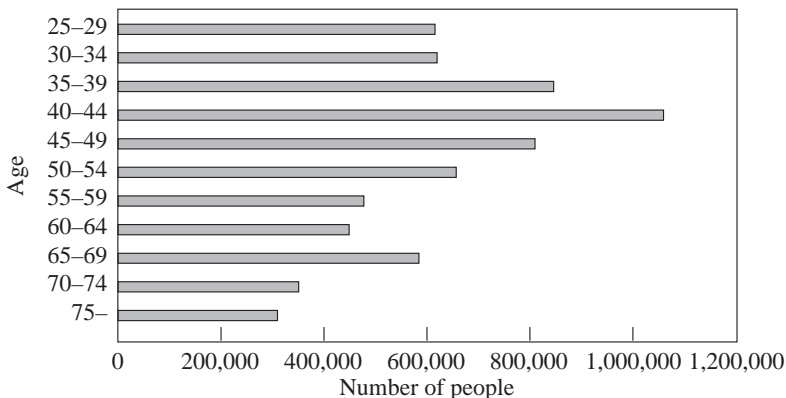**Figure 5-2** Number of people who enjoy bicycling at each age group in Japan

Source: Created by the author based on Statistics Bureau, Ministry of Internal Affairs and Communications website, https://www.stat.go.jp/data/shakai/2016/kekka.html.

This survey asked about the main activities for sports in people's free time. Even in their 60's, people enjoy bicycling as a sport. When people enjoy bicycling as a sport, a sport utility bike is likely to be used. Refering to the data shown in Figure 5-1, the sales of sport utility bikes (road bike and hybrid bike) is growing. As the sport utility bike usually costs more than a city bicycle, people who can afford the money are likely to be in their 40's or over as a typical case in Japan. They are in their most productive years in their work and their children are grown up, and then, they have time to enjoy bicycling.

   For electric bicycles, the sales are gradually growing, as shown in Figure 5-1. There are many kinds of electric bicycles available worldwide. For example, there are electric bicycles that have a small motor to assist when a rider pedals, and ones that have a powerful motor. In Japan, sport utility bicycles with a motor, which is an electrically assisted bicycle, are receiving more attention in the market. It is called an "e-bike." It is already popular in Europe and the performance of the motor is improving. There must be both good and bad points, but it brings greater chances to enjoy bicycling with a variety of types.

2.3 Popularity of bicycles in foreign countries

In Japan, people enjoy bicycles: especially sport utility bikes and electrically assisted bikes recently. Bicycling has a long history especially in European countries. Bicycling is one of the athletic events in the international Olympic Games in modern history. Bicycling has been held as an event since the first Olympics in Athens, Greece in 1896. In Europe, bicycle races are popular, and the Tour de France (www.letour.fr/en/), which is said to be the world's biggest bicycle road race, has been held annually in France since 1903. The Giro d'Italia (www.giroditalia.it/eng/), which is known as the Tour of Italy in English, is also popular as a world-level annual bicycle race. The first race was held in 1909. Moreover, the Vuelta a España (www.lavuelta.es/en/), Tour of Spain in English, has been held annually since 1935 in Spain. These three races are all professional cycling races in a multi-day event. There are many road races held in Europe, and therefore, there are more opportunities that people can see professional racers on the road. It stands to reason that the population of bicycle riders is large in Europe because even children can have many opportunities to see professional riders closely on the road at the races. It seems that young children start riding a bicycle and potentially become a professional. Riding a bicycle is

more closely related to their regular life in those bicycle countries.

This is different from the Japanese case. There are not many big bicycle races and they have not gained much publicity. Children rarely see bicycle races and a bicycle is mainly a means for transportation in daily life. This is related to tourism too. In Europe, the big bicycle races attract cyclists from all over the world and many tourists visit the host country. Promoting international bicycle events should be considered in Japan.

The Promotion Plan for Utilization of Bicycle [Ministry of Land, Infrastructure, Transport and Tourism, 2017] mentioned above includes a goal for the realization of a tourism-oriented country by promoting bicycle tourism. The policies for the goal are holding international bicycle races and creating a world-class environment for cycling by improving the bicycle infrastructure. In Europe, event-infrastructure, bicycle highways, and traffic regulation are well-established. In Japan, it is an urgent issue to make the infrastructure more suitable for riding bicycles and to promote more events that appeal to tourists from all over the world.

2.4 Cycling embassies in foreign countries

Bicycling is popular in Europe and the countries that promote utilization of bicycles put a lot of effort into it. For example, there is a group called the "Cycling Embassy" in Denmark, the Netherlands, the U.K., Finland, and Germany. In addition to those countries, the group is also established in Japan. Their missions are slightly different depending on each country but overall the purpose of these organizations is similar: to make cycling an important part of people's everyday life and make a better environment for bicycle riders. The implementation of a better environment for bicycle riders in a country can attract riders from outside the country and promote bicycle tourism.

The overview of each Cycling Embassy is as follows. The information is from each official website.

- Cycling Embassy of Denmark (http://www.cycling-embassy.dk/): This organization was founded in 2009 and it is the world's first cycling embassy. The members are professionals of all areas related to cycling and they can deliver their know-how to organizations such as national and local governments, civil society organizations, companies related to cycling, students and researchers, and so on. Their know-how includes planning bicycle-friendly cities, policy making, building a safe infra-

structure, making bicycle parking facilities, motivating and educating people to cycle, and so on.

- Dutch Cycling Embassy (https://www.dutchcycling.nl/):
  The Netherlands is also a country of bicycles. This organization provides their know-how to the world. It seems that they were founded in 2010 or so because their activities started in 2010. They have projects to share their knowledge, experience, and technology to the world. They hold workshops all over the world to help cities and countries to develop a good cycling culture. They also have a unique project called "International City Cycling Assessment," which delivers the analysis of the cycling state by providing an overview of the current cycling environment across the world in order to help cities and countries think of the way to promote cycling in their environment.

- Cycling Embassy of Great Britain (https://www.cycling-embassy.org.uk/):
  Their foundation followed the establishment of the Cycling Embassy of Denmark and the Dutch Cycling Embassy. Their website was started in 2010. It seems the group was launched in the same year. Since they have a car culture in the U.K., their main aim is to create a better cycling environment by implementing a bicycle infrastructure and routes to be integrated with trains and buses in cities and local areas. They prioritize the implementation of an infrastructure like highway planning for bicycles and pedestrians rather than promoting bicycles for sports and leisure aspects.

- Finnish Cycling Embassy (https://cyclingembassy.fi/):
  In Europe, Finland and Denmark are bicycle countries. Even during their long cold winter, people use bicycles. According to the website, in Finland, 10 % of adults ride bicycles at least once a week during the winter. The Finnish Cycling Embassy was founded in 2015 aiming at accelerating decision-making by professional planners and introducing Finnish cycling know-how to the world. They work with the Ministry of Traffic and Communication, the Ministry of Foreign Affairs, and the embassies of Finland. It is notable that this organization has experts of cycling "know-how" because they have special knowledge of how to encourage people to ride bikes in cold and snowy conditions. One of their services offers "Winter Cycling Master Classes."

- Cycling Embassy of Japan (http://cycling-embassy.jp/ja/):
  This organization was launched in 2015, and inspired by the Cycling Embassy of Denmark, the Dutch Cycling Embassy, and the Cycling

Embassy of Great Britain. The aims of this organization are import-ing the best cycling practices from the world to Japan and promoting Japan's cycling culture to the world. Their website provides information in English and the embassy published the "Cycling Handbook 2015," which contains useful information regarding Japanese traffic rules for bicycles, the things to be considered for road cycling and parking, and so on. The information is provided from the foreigner's perspective for the cycling environment in Japan.

• German Cycling Embassy (http://www.deutschefahrradbotschaft.de/): The bicycle was invented in Germany in 1817, so they have a long his-tory of bicycles in their country. Since 2017 was the 200th birthday of the bicycle, it seems that this organization was founded in 2015 or 2016. A non-profit organization called the German National Cyclists' Asso-ciation (an abbreviation for this association is ADFC), founded in 1979, took an initiative to establish the German Cycling Embassy. The ADFC presented the concept for a German Cycling Embassy in 2015. E-bike was also initiated by Germany and they have experts for the manufactur-ing of bicycles and bike facilities. They call themselves a cycling nation.

Unique groups called "Cycling Embassy" in leading bicycle countries are introduced above. Each country has their own ideas about promoting bicycling, but they all have important aspects toward people, cities, coun-tries and eventually for the world. When developing bicycle tourism in a country, cooperation with these kinds of organizations should be encour-aged since they are professionals for bicycle matters.

2.5 Important aspects of bicycling

When tourists ride a bicycle, they have to be aware that each city or coun-try has their own traffic rules for bicycles. When tourists visit the city or country and use a bicycle as a means of transportation or join a bicycle tour, they must know information such as the traffic rules or manners for bicycles before riding. Moreover, the infrastructure must be friendly for bicycle riders, such as an expansion of bicycle lanes, cycle highways from main train stations, speed limit signboards for cars in the center of cities where traffic is always congested, and so on.

In Japan, people who ride a bicycle need to improve their awareness of traffic rules. At the same time, drivers of cars and buses need to know the traffic rules of bicycles. For bicycle riders, a rule book should be distributed

at the time of bicycle purchase or rental. Also, for car drivers an opportunity of reviewing bicycle rules from the driver's point of view should be provided at the time of car license renewal. It is necessary for children to receive traffic knowledge and practices as compulsory education in elementary school.

In the Netherlands, primary traffic education for children is very well organized. Students take exams for traffic rules, knowledge, behavior on the road and skills. Students in groups 7 or 8, who are about 10 to 12 years old, take exams called Veilig Verkeer Nederland (VVN) traffic exam (https:// examen.vvn.nl/). In the Japanese system, this is equivalent to the 5th grade and 6th grade students in elementary school. It is natural to incorporate the system into children's education because most elementary school children ride a bicycle in their daily lives. People need a driver's license for driving a car. Likewise, a certain education should be provided to young children for bicycles. These improvements are important for promoting bicycle tourism and this should attract foreigners.

3. Bicycle tourism for foreign tourists

The number of foreign visitors to Japan has been increasing since 2012 according to recent data by the Japan National Tourism Organization [n.d.]
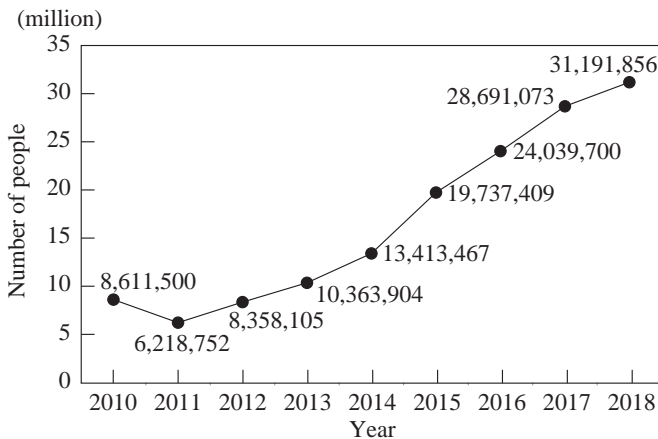

Figure 5-3 Trend of foreign visitors to Japan

Source: Created by the author based on Japan National Tourism Organization website, https://www.jnto.go.jp/jpn/statistics/visitor_trends/.

shown in Figure 5-3. The number in 2018 was 31,191,856 and it was about 3.7 times the one in 2012. In order to attract more foreigners, a useful means of transportation, as well as a means of sightseeing will be needed.

In Japan there is a boom of sightseeing with bicycles. By utilizing bicycles, it would be possible to encourage tourists to visit local areas in order to impress them with Japanese nature and historical sceneries. That could increase repeating tourism. Additionally, bicycles can make travel more comfortable, free and wide to learn about Japan's attractions.

According to questionnaire results from the Chugoku Bureau of Economy, Trade and Industry [2018], foreign tourists who rode a bicycle at a popular cycling road, the Shimanami Kaido, stayed a long time and many of them were repeating tourists. This is just an example. However, there is promotion toward foreign tourists who enjoy cycling in Japan. More analysis and discussion about the questionnaire results are introduced in the following sections 3.2 and 3.3.

3.1 What do foreign tourists want to do in Japan?

There is interesting data from TripAdvisor, which provides the website of travel-related content and reviews on accommodations, restaurants, and other tourism resources. They reported the "Top 30 Activities and Tours in Japan by International Travelers 2018" in June 2018 [TripAdvisor, 2018]. Figure 5-4 shows the categories of the ranking data with percentages. Within the top 30, six cycling tours were ranked and that accounted for the highest percentage followed by food tours. Interestingly, cycling tours were
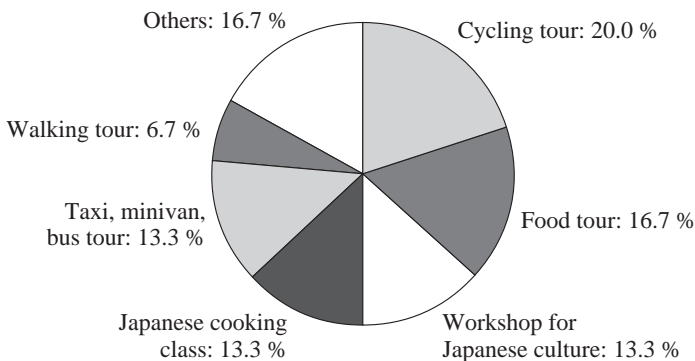

Figure 5-4 Classification of top 30 activities and tours in Japan
Source: Created by the author based on TripAdvisor [2018].

popular for foreign tourists. In terms of the areas where foreign tourists enjoy tours and activities, there were 15 tours and activities in Tokyo, 9 in Kyoto, 3 in Osaka, and one each in Gifu, Okinawa, and Shizuoka. It is said that Tokyo, Kyoto and Osaka are the top 3 popular areas for foreign tourists in Japan. Regarding cycling tours, two tours in Kyoto and Tokyo respectively, and one tour in Osaka and Gifu respectively were ranked. It seems that bicycle tourists can travel around the areas with a different point of view compared to travelling around by car or taxi in the city areas and the bicycle tourists can feel nature in local areas.

3.2 Foreign bicycle tourists: Onomichi City

As mentioned above, there is a popular cycling road called the Shimanami Kaido [Hiroshima Prefecture Tourism Federation, 2019]. It is the Nishi-seto Expressway connecting Onomichi City in Hiroshima Prefecture and Imabari City in Ehime Prefecture. The expressway is integrated with cycle lanes and the cycle route (the Shimanami Kaido) is approximately 70 kilometers. Since there is the Seto Inland Sea between the two cities and there are small islands, the Shimanami Kaido consists of roads and multiple bridges and tourists can enjoy photogenic views.

The Shimanami Kaido became very famous in the world. The Cable News Network (CNN) introduced the Shimanami Kaido as one of the world's most incredible bike routes in 2015 [CNN, 2015a], and in November of 2015, they announced the 7 best bike routes in the world and the Shimanami Kaido was one of them [CNN, 2015b]. CNN is a popular American news channel and the impact of it seems very large. An architecture and design magazine, Architectural Digest, announced the 10 most scenic bike routes in the world in 2018 [Architectural Digest, 2018]. It introduced the Shimanami Kaido as one of the most scenic bike routes. This magazine covers not only architecture, but also art and travel. The headquarters is located in the United States, but the magazine is sold throughout the world.

According to the statistical data of Onomichi City [n.d.] shown in Figure 5-5, the number of foreign tourists is growing every year. Since 2012, the tourists' number to Onomichi City increased by 4.3 times in 2017. It can be assumed that the influence of media that introduced the Shimanami Kaido accelerates the increase.

Regarding the number of foreign bicycle tourists, there is interesting data published from TABIRIN (http://tabi-rin.com/), a bicycle information website for bicycle fans. It analyzed the number of foreign cyclists in Japan
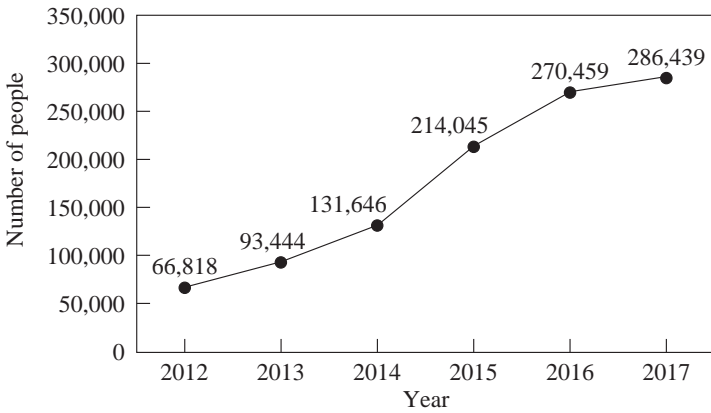
Figure 5-5 Number of foreign tourists to Onomichi City

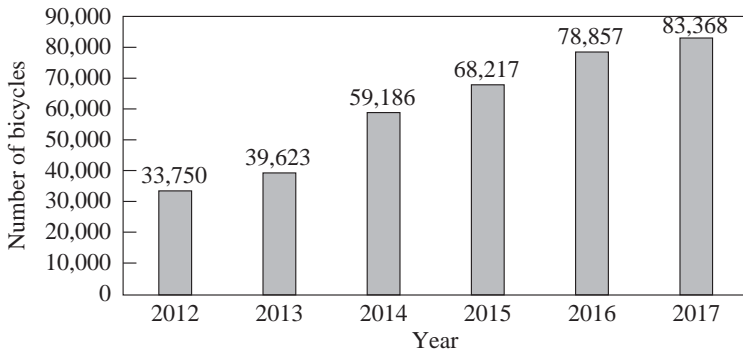Source: Created by the author based on Onomichi City website, https://www.city.onomichi.hiroshima.jp/soshiki/2/18436.html.

Figure 5-6 Total number of rented bicycles at Shimanami Kaido

Note: Created by the author based on TABIRIN website, https://tabi-rin.com/archives/article/24033.

using data from Onomichi City [TABIRIN, 2019]. Figure 5-6 shows the total number of rented bicycles at Shimanami Kaido, and Figure 5-7 shows the number of foreigners who rented bicycles at Shimanami Kaido. These numbers were introduced on the TABIRIN website. The number of rented bicycles grows from 33,750 in 2012 to 83,368 in 2017, which means the increase is about 2.5 times in 5 years. This data shows the number of bicycles rented by both Japanese and foreign tourists. The unit is different in Figure
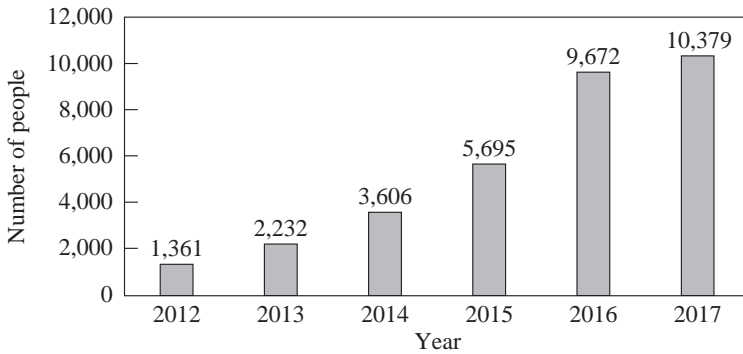
Figure 5-7 Number of foreign tourists who rented bicycles at Shimanami Kaido

Note: Created by the author based on TABIRIN website, https://tabi-rin. com/archives/article/24033.

5-7. This is the number of foreign tourists who rented bicycles. It increased 7.6 times from 2012 to 2017. After the Shimanami Kaido was introduced on CNN in 2015, the number of foreign bicycle tourists grew dramatically.

3.3 What do tourists enjoy by cycling?

According to the 2018 report on a research project to create a new tourism-related industry based on cycling tourism by the Chugoku Bureau of Economy, Trade and Industry [2018], there are some differences in what bicycle tourists enjoy between Japanese tourists and foreign tourists. Figures 5-8 and 5-9 are the results from a survey held in September, 2017. Tourists in their 20s to 70s were asked what they enjoyed by cycling. The numbers were 105 Japanese tourists and 36 foreign tourists. On the questionnaire, multiple answers were allowed. Among foreign tourists, 10 tourists were from Hong Kong, 9 were from Taiwan, 8 were from Australia, and others were from the U.S.A., China, Korea, U.K., and so on.

The answer choices on the questionnaires for Japanese tourists and the ones for foreign tourists were almost the same except one. That was "Experiencing the daily life of the area" for Japanese bicycle tourists but "Experiencing Japanese daily life" for foreign bicycle tourists. For all the tourists, "Sightseeing of nature and scenic spots" was the top. Depending on the transportation means, the ways you enjoy nature and scenic spots are different. By cycling, you can feel nature with the wind and fresh air in a

Figure 5-8 Things Japanese bicycle tourists enjoyed
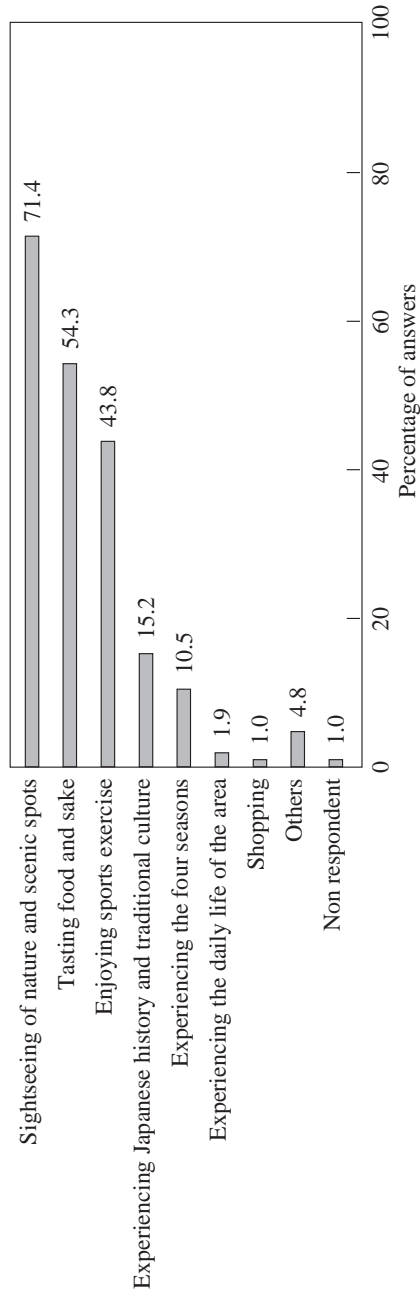
Figure 5-9 Things foreign bicycle tourists enjoyed

Source: Created by the author based on Chugoku Bureau of Economy, Trade and Industry website, https://www.chugoku.meti.go.jp/research/ryutsu/pdf/180320_report.pdf.
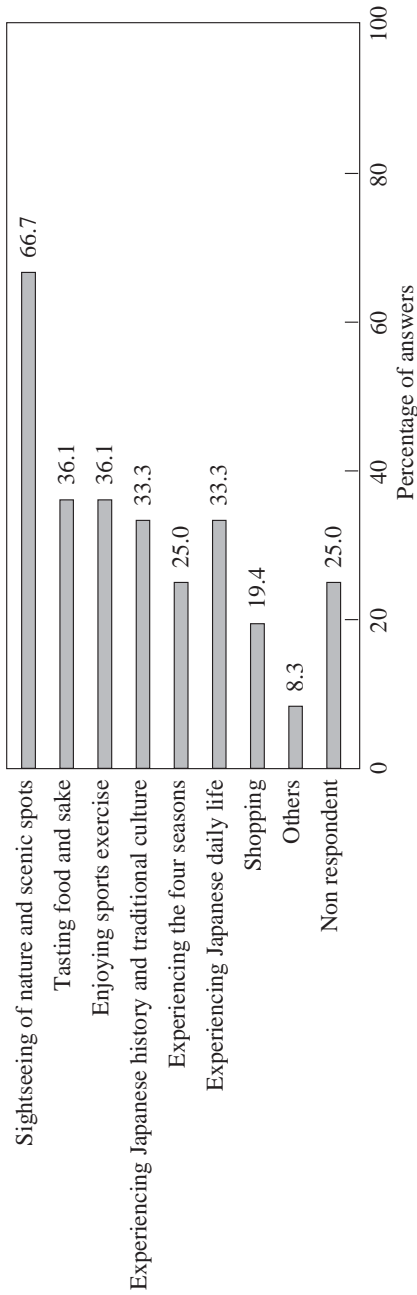
different way from walking. For Japanese tourists, "Tasting food and sake," and "Enjoying sports exercise" are also popular reasons for cycling. Very few Japanese tourists paid attention to "Experiencing the daily life of the area" and "Shopping." On the other hand, foreign tourists enjoyed "Tasting food and sake," "Enjoying sports exercise," "Experiencing Japanese daily life" in addition to "Experiencing Japanese history and traditional culture." Because of the limitation of the carrying capacity of a bicycle, it seems difficult to enjoy "Shopping." Using a bicycle, tourists can enjoy Japanese distinctive scenery such as nature, people's daily life depending on the seasons and they can enjoy exercising at the same time. That is the best part of riding a bicycle. Promoting bicycle tourism can make people healthy.

4.   Developing bicycle tourism in Japan

One way to develop bicycle tourism is using a rental system. Recently, cycle sharing systems are receiving attention and unique services are offered by providers. Cycle sharing systems can be utilized in both urban cities and local areas. However, placing more cycle ports may be an issue to deal with. In addition, the service itself should be developed with systematic application for mobile devices. Developing a navigation system or applications for bicycles are also important issues to promote bicycle tourism in Japan.

4.1 Cycle tourism in urban cities

Operations of cycle sharing systems can be categorized into two types: operating a share-cycle system and offering a cycle sharing system to other operators. Two examples of cycle sharing businesses in Japan are as follows. The outline of their service is based on the information from their websites.

*   DOCOMO Bike Share (https://docomo-cycle.jp/):
    This service is mainly available in Tokyo areas, but it is also operated in various places other than Tokyo. Within many of the 23 wards in Tokyo, you can rent a bicycle and return it wherever you want if there is a vacant port. The system provides services such as searching the best route to the destination, checking the remaining battery capacity, and receiving location information with GPS. The bicycle is colored in red, which is the corporate color of NTT Docomo Inc. (https://www.nttdocomo.co.jp/), the largest mobile phone operator in Japan. DOCOMO

Bike Share Inc., was founded in 2015. It provides the service by using NTT Docomo's communication technology with the system. Many local governments entrust their cycle sharing operations to the company. Even though the systems are slightly different depending on the areas, the user can use their account in many areas. There are three rate plans: one-trip membership, 1-day membership, and monthly membership. For tourists, 1-day membership can be recommended for sightseeing.

- Hello Cycling (https://www.hellocycling.jp/):
  The service is provided centering around the Tokyo area, but also throughout Japan. OpenStreet, whose holding company is SoftBank Corp. (https://www.softbank.jp/en/corp/) provides their system to the business operators. It was founded in 2016. SoftBank Corp. is also a big mobile phone operator. Unlike DOCOMO Bike Share, Hello Cycling only provides their own system. The user needs an account and it is available anywhere in Japan. The user makes multiple reservations simultaneously so that they can rent bicycles with friends and family members. All the systems are available 24 hours a day, and you can select a station from their website. The bicycle has a smart lock which the user unlocks and locks via their smartphone. The bicycle can be returned at different stations unless the station is full. The user can make a reservation from 30 minutes before use. Every 15 minutes, a fee for using is added.

Both systems above are available mainly in city areas and the number of cycle ports are increasing in local areas. The bicycle share service can be used for commuting, shopping, and also sightseeing. From outside Japan, an application of the cycle sharing systems can be installed on the user's smart phone and the prospective users can make their accounts. The systems should be promoted for foreign tourists to make accounts before their arrival to Japan.

4.2 Cycle tourism in local areas

Metropolitan areas are popular for tourists, however, local areas should be promoted more for bicycle tourism. Local areas sometimes have their own bicycle rental or sharing systems and they can promote bicycling actively. For example, Nasu Town in Tochigi Prefecture is promoting the utilization of bicycles. They held the Japanese National Road Race Championship, which is a national bicycle race, in 2015 [Nasu Town, 2015]. In 2016, Nasu

Figure 5-10 Bicycle rack at Michi-no-Eki Yuainomori

Town signed an agreement on a partnership with Onomichi City, Hiroshima Prefecture for cycling business and activities [Sankei News, 2016]. In Nasu Town, there are not so many traffic signals but abundant nature and tourism resources. Even though there are many slopes, it is good environment for bicycle races. Also, there are more than 100 cycle pits (http://cycleland-tochigi.com/oyakudachi), which are bicycle stations equipped with a bicycle rack, repair tools, air pump, and water. Figure 5-10 shows a bicycle rack at Michi-no-Eki Yuainomori in Nasu Town. At this roadside station, people can rent an electrically assisted bicycle and this is one of the cycle pits mentioned above.

Another example is the Japan Eco Track [n.d.]. The Japan Eco Track Committee was established for the purpose of promoting a new style of travelling with human-powered mobility such as canoeing, bicycling, and trekking. The website introduces 17 areas with superb views of mountains, sea, and nature throughout Japan. On each map, model routes, scenic views, sightseeing spots, food, and other local features are introduced. Tourists can experience a variety of nature, local history and culture, and communication with people through the means of mobility such as trekking, kayaking, and cycling to enjoy travelling. Figure 5-11 shows a part of a model route for bicycling in Kami Town, Miyagi Prefecture. Tourists can enjoy riding a bicycle with the view of rice fields and mountains. Tourists can rent a sport utility bike at the starting point of the bicycle route.

There are more ways to promote local areas for bicycle tourism. Scenic

Figure 5-11 One of the model routes of Japan Eco Track (Kami Town, Miyagi)

Figure 5-12 One of the routes of Scenic Byway Japan (a sake brewery in Shiogama, Miyagi)

Byway Japan [Ministry of Land, Infrastructure, Transport and Tourism, n.d.] is a project which leads to the revitalization of national culture by creating Japan's original views with local scenic views, nature, history, and culture. It can also lead to regional revitalization with tourism. Throughout Japan, 142 routes are registered as of March 2019. One of the routes from a sake brewery to Shiogama Shrine in Shiogama City, Miyagi Prefecture is shown in Figure 5-12.

Foreign tourists whose purpose is cycling stay for longer in Japan and they enjoy Japanese nature and scenic spots. Therefore, there must be a unified bicycle sharing or renting system throughout Japan without limiting the sharing or renting areas. Promoting bicycle tourism throughout Japan needs a user-friendly cycling system for tourists, the cycling environment, and resources such as model routes with beautiful scenic views especially in local areas. Cooperation among local governments, companies, professionals for bicycles and residents should be achieved for promoting bicycle tourism to revitalize local areas.

5. Conclusion

A bicycle is not just a means of transportation. It can be used for promoting people's health and environmentally-friendly cities. It can be used as a means for sightseeing, exercising, and emergency transportation. However, compared with foreign countries, such as countries in Europe, Japan needs more promotion of utilizing bicycles in daily life and in the tourism industry. Promoting inbound tourism by utilizing bicycles should be considered throughout Japan to make a unified system. Cities are convenient and they have their own attractions, but local areas have their own beautiful and historical tourism resources to appeal as the attractions of Japan to the world. By using bicycles, tourists can enjoy the attractions in a different way from traveling on foot or by car. For foreigners, riding manners and rules are important information to enjoy bicycling more. Japan should follow the good practices of bicycle countries in the world.

Although maintaining infrastructure for bicycles is an urgent and important issue, the following things need to be achieved for comfortable and attractive cycling: planning the bicycle system in cooperation with public transportation such as trains and buses for a long ride, preparing luggage services, accommodation and rest areas for bicycle tourists, and creating a unified infrastructure and system for bicycles beyond the borders of cities or local areas with cooperation between the national government and local governments.

Furthermore, identifying problems in each area can accelerate bicycle tourism. Research and analysis for the needs and motivation by foreign tourists have to be carried out to develop new and safe model routes. Holding international and national bicycle events can attract tourists from all over the world. It also helps Japanese people to become more familiar with

bicycling and to become aware of the importance of bicycles, which eventually leads to bicycle tourism.

Creating a sustainable bicycle town and city is essential for Japan to become a tourism country. It is necessary to think about how local areas can benefit by utilizing bicycles with professional people and local residents.

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CHAPTER SIX

Open data in tourism

Abstract

The Japanese government has advocated Society 5.0 in recent years to balance economic advancement with solutions to social problems by leveraging innovative science and technologies such as AI, IoT, and robots. It is believed that data sharing between the government, municipalities, and private business operators is indispensable in achieving Society 5.0, and much attention has focused on promoting open data that is available for secondary use. Open data is also expected to boost tourism by making use of regional resources; however, only approximately 30 % of municipalities are currently promoting open data. In this chapter, we introduce examples of trials to create open data sets of tourist information in cooperation with local governments and citizens to promote open data for tourist information. We have created an open data set based on information collected by municipalities in the past and tourist information acquired by citizens. We have developed an event guide application that utilizes this data set and its usefulness is illustrated by the results of the demonstration experiment.

1. Introduction

The Japanese government has been seeking to balance economic advancement with solutions to social issues over the past several years through advocating Society 5.0 and utilizing innovative technologies such as artificial intelligence, IoT and robotics. Much attention has been focused on promoting open data available for secondary use as data sharing between

the government, local governments and private business operators, and it is believed to be indispensable in achieving Society 5.0. There are many local governments, however, that find it difficult to promote open data due to concerns over increasing workloads for their employees and cost effectiveness.

Proposed in 2016, Open Data 2.0 pursues initiatives that go steps further than disclosing data and resolve social and policy agendas. The Tokyo Olympics is one of the fields that the initiative is focusing on. With issues that directly pertain to tourism, such as the promotion of international visitors to Japan and communicating Japanese culture to the world cited, the encouragement of open data in the tourism realm is becoming increasingly critical.

Its effects toward vitalizing regional tourism are also anticipated, as indicated through the Ministry of Internal Affairs and Communications' opening of the Public Cloud System [Ministry of Internal Affairs and Communications, 2015] that aggregates tourism-themed open data from around the country and also Sapporo's development of a tourism infrastructure utilizing open data through its formation of the Sapporo Open Data Council [Sapporo Open Data Council, 2016], as examples. The methods for utilizing remaining regional resources are key in developing tourism attractions. Therefore, open data needs to be promoted through methods compatible with the region's characteristics.

The authors promote making regional sightseeing information into open data while considering the applicable region's characteristics and circumstances. Through research on the promotion of open data for sightseeing information since FY2014, trials were run on this research theme and the contents were developed based on the results. Starting from FY2015, the authors have promoted the creation of open data while taking into account the local government's acceptance level. Here, the acceptance level of local governments refers to the degree of new approaches and technologies being understood, approved and ultimately accepted by the local government and its employees. Based on trials conducted and the actual creation of open data during FY2014, the open data of sightseeing event information backed by local governments were encouraged and an event guide application was developed through utilizing the open data that was made public. The usefulness of making tourism event information open data, together with its issues, will be discussed based on the results of the demonstration experiment that used this application. Furthermore, the authors ran a trial on con-

verting tourism information of residents into open data in FY2016 with the purpose of communicating the region's attractions by promoting open data. The collaboration with residents in promoting open data will be discussed through examining the trial run on making sightseeing information possessed by tourists and volunteer tourism guides into open data.

2. Applicable fields

2.1 Cultural Path

The Cultural Path is about 2 km^2 in area stretching from the central to western parts of Higashi Ward, Nagoya City in Aichi Prefecture. As a district where precious modern historical and cultural legacies remain, including
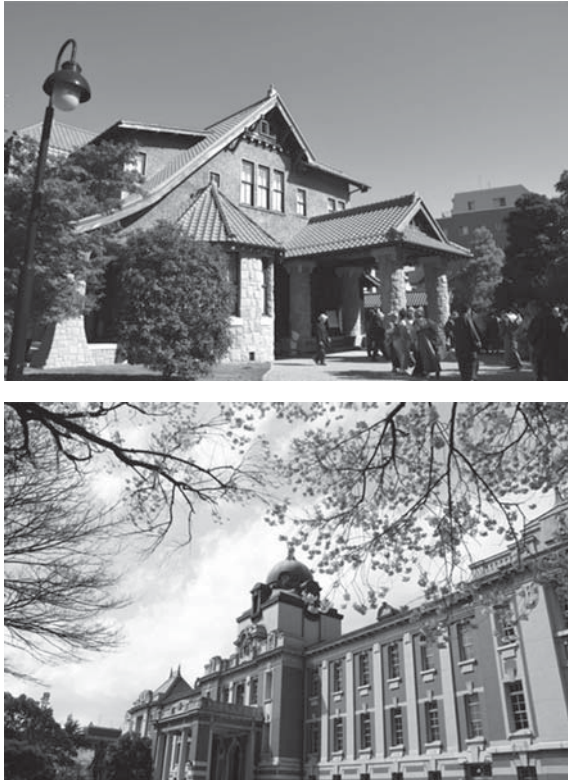

Figure 6-1 Cultural Path Futaba Museum (top) and Nagoya City Archives (bottom)

the former residence of Japan's first actress Sadayakko Kawakami (Figure 6-1, top), the Nagoya City Archives (Figure 6-1, bottom) and buildings related to the Toyota Group, the Cultural Path area is one of the most famous sightseeing locations in Nagoya. The preservation and utilization of tourist attractions are also being promoted in this district as a region home to the remains of modern Nagoya's stylish culture, with tourism guides volunteering. It has become an important area for Nagoya in terms of developing tourism. The heritages are preserved by diverse entities: the prefecture of Aichi, Nagoya, private business operators and local residents. The Cultural Path area also has walking events, historical events and cultural events held by the local government and groups that highlight the district's characteristics and are enjoyed by its residents.

2.2 Arukou! On the Cultural Path event

The Arukou! On the Cultural Path [HigashiNet, 2018] is an annual sightseeing event that takes place on the Cultural Path. Having marked its 17th anniversary in 2016, sightseeing facilities located throughout the district hold stamp rallies, local history events and stage performances run by the Executive Committee. Every year, the Executive Committee, headed by the Higashi Ward Mayor as the Chairman and the Planning and Accounting Section of Higashi Ward, plan and operate the events as part of its municipal services. The prefecture of Aichi, Nagoya, academic institutions and the community, including citizen groups and residents, also take part and hold collaborative events. Visiting tourists can tour the sightseeing facilities in the area with the leaflet published by the Executive Committee in their hands and experience modern Nagoya culture.

2.3 Issues of the Cultural Path

The Cultural Path has its challenges in that its sightseeing facilities are difficult to locate because they are not large in scale. It has also been pointed out that because the Arukou! On the Cultural Path only has a leaflet available as a source of information, it is unclear when and where the event takes place. In addition, the Cultural Path district has been unable to communicate enough information on its attractions and sightseeing that tourists are looking for because its method is ineffective. A means of communication that will spread information on the area's attractions and sightseeing that requires low cost was in need.

2.4 Plans for promoting open data

The Cultural Path district is managed and preserved by diverse organizations and, given their rights, is complex, the authors started by making open data from information pertaining to Arukou! On the Cultural Path which the local government organized. However, the Higashi Ward Planning and Accounting Section, the event operator, did not have sufficient understanding on the promotion of open data because its scope of operations does not pertain to information technology. They were also concerned about additional work they may have to bear on promoting open data given they already had their hands full with other governmental services. With this in mind, the authors experimentally made the information pertaining to the Arukou! On the Cultural Path open data after obtaining approval from the Executive Committee with the goal of raising the acceptance level towards promoting open data. A service to utilize the data was developed, followed by confirmation of its usefulness towards the promotion of open data. Based on the plans described below, the authors worked to gain understanding and approval towards promoting open data.

*   Start with data that can readily be made public
    As data that can readily be made public, the authors chose information printed on the leaflet that the Executive Committee has published annually. The Higashi Ward Planning and Accounting Section organize data obtained from the event organizers using spreadsheet software during the leaflet's editing phase. Incorporating the procedures to promote open data into existing governmental service procedures would minimize additional workload.
*   Present services that utilize open data and address local issues
    In order to provide a solution to the issues mentioned in 2.3, the authors developed an application for mobile devices equipped with a guide feature and route navigation feature. Open data on bus stop locations and bus routes provided by the Nagoya City Transportation Bureau [Nagoya City Transportation Bureau, 2014] were also utilized in incorporating the features.
*   Clarify the data needed by residents
    By having event participants use the services developed, the usefulness of the features and data will be investigated, together with clarifying the type of information needed on the Cultural Path area.

3. Trials in creating open data

3.1 Organization of sightseeing event information

The Arukou! On the Cultural Path leaflet provides information including event names, times, details and genre by venue, together with general facility information (Figure 6-2). Using Fukui Prefecture and Toyohashi City that have already made their sightseeing event information public as open data as references, the authors roughly classified the information into event information and facility information (Figure 6-3). This will make facility

Figure 6-2 Event information on leaflet
Source: Arukou! On the Cultural Path leaflet.

Sightseeing event information
— Event information
  — Event details information
  — Event time information
— Facility information
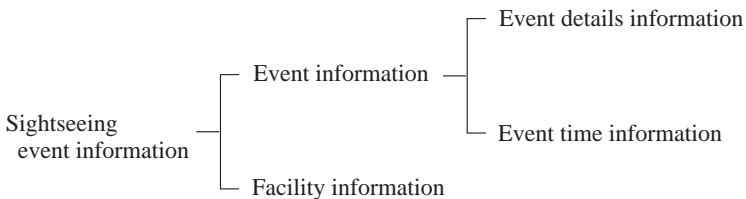
Figure 6-3 Organization of sightseeing event information

information available even when events are not being held and enhance versatility. Event information was further sorted out to event details and event times and dates to enable concise provision of information for events that are held multiple times in a day as well.

Based on the abovementioned classification method, the information was organized into three: Facility information, event details and event dates and times.

- Facility information
  General information on the sightseeing facilities that will be the venue for the Arukou! On the Cultural Path event was compiled (Table 6-1).

Table 6-1 List of facility information

Term	Summary	Example
id	ID number	1
spot_name	Facility name	徳川園
yomi_name	Pronunciation	Tokugawaen
stamp	Stamp rally number	19
comment	Notable information	Special free admission
info	Outline	
open	Opening hours	9:30:00
last_admission	Last admission	17:00:00
close	Closing hours	17:30:00
subway	Nearest subway station	Get off at Meijo Line "Ozone"…
bus	Nearest bus stop	Get off at Meiguru "Tokugawaen"…
tel	Facility phone number	529358988
fee	Usage fee	
map	Address and name when searching map	
url	Website url	http://arukou.higashi-net.net/facil…
img	Photo	http://arukou.higashi-net.net/bunk…
lat	Latitude	35.194478
lng	Longitude	136.932575

The facility names, phone numbers, open hours and designated numbers for the stamp rally printed on the leaflet were gathered. Their addresses, location information, traffic access and holidays were also obtained, organized and compiled from the official event website and Google Maps.

- Event details

  The leaflet was used as a reference in compiling information other than the dates and times of the events scheduled (Table 6-2). Event names, specific locations of venues where the events were planned, event overviews, exhibitors and participation fees were obtained and organized.

Table 6-2 List of event details information

Term	Summary	Example
id	ID number	1
title	Event title	Newly renovated, 10th anniversary concert…
subtitle	Event subtitle	
place	Detailed location in which the event will be held within the venue	Tokugawaen Garden Hall
spot	Venue information ID	1
genre	Event genre ID	2
info	Event details	Commemorative ceremony and concert…
limit	Capacities and information for bad weather conditions	
fee	Participation fee	Free
presenter	Presenters, supporters	Satoko Kakehi, Mamiko Kakehi, Kimura…

- Event dates and times

  Information on event dates and times included in the leaflet were compiled (Table 6-3). Event details were also linked by incorporating the IDs assigned to information on event details to the event dates, start times and end times.

Table 6-3 List of event time information

Term	Summary	Example
id	ID number	1
event_id	Event information ID	1
date	Event date	11/03
start	Starting time	10:00:00
end	End time	11:00:00
comment	Supplementary information	Concert

3.2 Creation of open data

The organized information was converted to open data using LinkData [LinkData.org, 2014], the open data platform. Not limited to local governments, LinkData allows anyone who signs up for an account to make open data public at no cost.

One of the advantages of using LinkData is that open data can be easily made public by organizing information on the spreadsheet software, Microsoft Excel, and uploading the contents. Furthermore, this data can be automatically converted to a machine-readable format such as Resource Description Framework (RDF) to create open data even more easily.

The authors organized the above-mentioned information by using Mi-

Table 6-4 List of open data tested

File name	Details
bunkanomichi_bus_route	Information on bus services operating within the area
bunkanomichi_bus_stop	Information on bus stops in the area
bunkanomichi_event_genre	Information on event genre
bunkanomichi_event_list	Information on event details
bunkanomichi_spot_list	Information on facilities holding events
bunkanomichi_event_timetable	Information on event times
bunkanomichi_kyousanten_genre	Genre of cooperating stores
bunkanomichi_kyousanten_list	Information on cooperating stores
bunkanomichi_station	Information on stations within the area

crosoft Excel and compiled the data uploaded to LinkData as a data set titled, Arukou! On the Cultural Path 2014. In addition to sightseeing event information, information on event co-sponsor stores, traffic information and open data on bus stop location information provided by the Nagoya City Transportation Bureau were organized and likewise saved as a data set (Table 6-4).

In addition, Creative Commons Japan was used as a reference to grant the CC BY license [Creative Commons Japan, 2014] in order to present the usage rule allowing secondary usage. CC BY requires only the original author's credits to be displayed and permits modifications and use for commercial purposes.

3.3 Utilization of open data

A sightseeing event guide application was developed for mobile devices through utilizing the open data made public on a trial basis. App LinkData, a feature in LinkData.org that can be used free of charge by anyone with a LinkData account and an application development environment on their browser, was used for the application development. Through using API made public from the organizing group and LinkData as a database, applications utilizing open data made public on LinkData can be developed. The

Figure 6-4 Arukou! Guide screen display example

research chose this method and developed the Arukou! Guide (Figure 6-4) event guide application for the Arukou! On the Cultural Path event.

3.4 Guide application features

A guide function for sightseeing facilities, including transportation, was added to the Arukou! Guide application. An event search feature was also incorporated to encourage participation in sightseeing events. The application also collaborated with the event's official website to increase the amount of information offered (Figure 6-5). Details of each feature are described below.

- Research venue feature
  This feature enables searching for spots within the area from a list. Similar to the Research surroundings feature, the application added features that link to the spot details page of the official website and guide through routes. Keyword searches for spot names and times were also enabled by adding a search window, and made selection of information possible for users.
- Research bus feature
  Because Arukou! Bunka no Michi is held in the Cultural Path area, aimlessly walking in the event would be quite exasperating even for adults. Following such circumstances, a search function for bus routes running
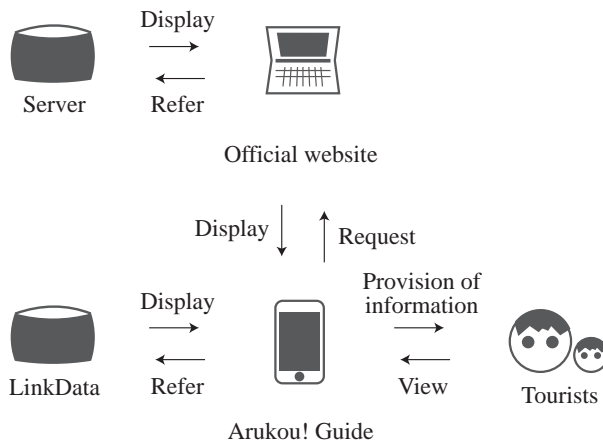
Figure 6-5 Arukou! Guide system configuration diagram

within the area was added. Bus routes are listed to see spots along the way at a glance. In addition, features that link to the spot details page of the official website and guides through routes were also added, similar to the previous features.

• Research events feature

This feature enables searching by genre and time for events held within the area, and lists results. Detailed information for events listed can also be viewed. In addition to information included in the pamphlet, map information around the venue through Google Maps, venue pictures taken from the official website, and transportation methods to event venues are displayed.

• Research nearby stations feature

This feature enables researching of train stations within the area together with surrounding areas. The feature considers needs for when tourists head home after the event, and by adding route guide functions as similar to the previous features, the application can present smooth routes heading home for tourists.

3.5 Demonstration Experiment

A demonstration experiment was conducted to verify the usefulness of the application that utilized the test-converted open data. The usefulness of the event guiding feature was compared with the pamphlet, the conventional guiding method. The promotion of open data on sightseeing event information will be discussed through the experiment results.

The experiment was conducted on the Dai 15 kai Arukou! Bunka no Michi (15th Annual Let's Walk the Cultural Path). There were a total of 22 participants including students and general event participants. Ages ranged from 20s to 50s, with participants in their 20s construing 80 % overall. Participants gathered at the former residence of Sasuke Toyoda in the center of the Cultural Path, and each toured around the area using the pamphlet and application for about six hours after receiving explanation on how to use the application. With 27 spots scattered within the area, the participants went around as they wished. After a certain time passed, all participants gathered at the former residence of Sasuke Toyoda once again, and answered questions on the evaluation sheet.

For the four features that used the test-converted open data for the research, participants evaluated on a scale of 5 (5: Strongly agree, 4: Agree, 3: Neither, 2: Don't agree as much, 1: Disagree). For the event guiding method
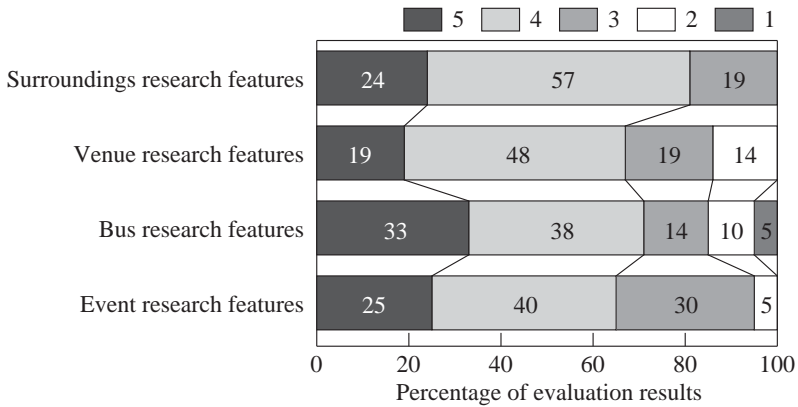
(a) Assessment on features using open data
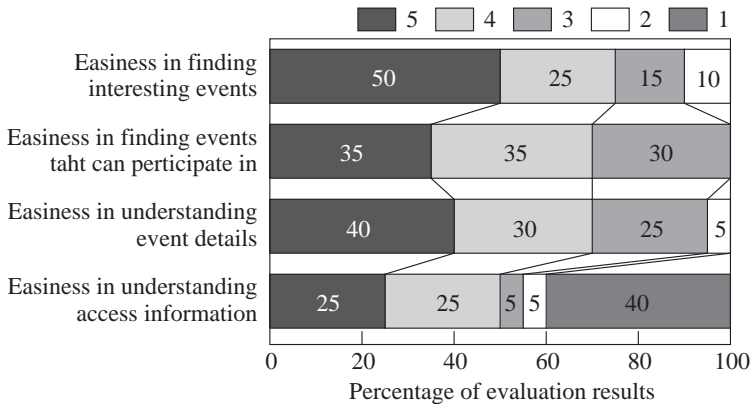
(b) Comparison of the application and pamphlet

Figure 6-6 Experiment results

as well, the application and leaflet were compared on a scale of 5 (5: The application helped, 4: The application helped slightly more, 3: Same, 2: The pamphlet helped slightly more, 1: The pamphlet helped). Evaluations on features are indicated in Figure 6-6 (a), and the evaluations compared with the pamphlet are indicated in Figure 6-6 (b).

Items generally received positive ratings. Meanwhile, all features that utilize open data were rated well, with many participants voicing the route guide feature as "convenient." The feature providing information on nearby

facilities achieved an even higher rating, implying that it effectively addressed the issue of sightseeing facility locations being difficult to identify. In addition, the survey results that compared the application and leaflet revealed that many respondents felt the application made it easier to view events they were interested in or can attend. This indicates the application was effective in making it easier to see where and what events were being held. However, the survey results revealed that the leaflets were slightly more popular for display of access information because the map of the Cultural Path area printed on the leaflet can be viewed together by multiple people.

3.6 Feedback from local government

Following the results of the demonstration experiment, interviews were conducted with the Arukou! On the Cultural Path Executive Committee members and employees of Nagoya's Transportation Bureau to hear their feedback. The Executive Committee commented, "The search and route guidance features, for example, that guide through events are great" and "These types of guide functions couldn't be developed even if we wanted to, and the system was precisely what we have been looking for." Employees of Nagoya's Transportation Bureau pointed out, for example, that "This is our first reported project that utilized open data made public by Nagoya's Transportation Bureau" and "These kinds of examples are valuable in order to have more open data available."

3.7 Services utilizing open data

This chapter has discussed trials, utilization and demonstration experiments on creating open data in order to present services that leverage open data and are necessary to have more local governments welcome the promotion of open data. As a result, the trials run to create open data and the development of the Arukou! Guide event guide application that leverages such data led to encouraging a municipality to utilize open data. According to feedback from local government employees, having case studies on the utilization of open data available facilitate the illustration of specific effects that disclosure of open data has and determine the level of demand and priority levels of data that should next be disclosed. As such, presenting services that leverage data through collaborating with local governments will accelerate the promotion of open data.

4. Publication of local government's open data

Based on the trial conducted in 2014, sightseeing event information was actually published as the local government's open data the following year in 2015. The Arukou! Guide application was also developed through utilizing the data. Here, the demonstration experiment was conducted to confirm the usefulness of making sightseeing event information open data as an initiative to promote local municipalities' open data, its utilization and the usefulness of open data itself.

4.1 Creation of open data

The information that has been communicated through leaflets was chosen as the sightseeing event information to be made into open data. Every year, Higashi Ward gathers information from event sponsors of each venue, organizes them on Microsoft Excel and manages them (Figure 6-7) as information to be printed on leaflets. Conventional Excel data is not necessarily in an ideal machine-readable format because it is usually designed for readability for people, such as having multiple information included in a single cell or having cells combined in complicated ways.

Figure 6-7 Conventional method of organizing event information

To this, the authors prepared an Excel format that allowed conversions to a format that is more machine-readable by using simple functions such as conditional expressions, based on the Excel data (Figure 6-8). This format was used by Higashi Ward to shape data into data that can be published as open data through organizing information in the same way it has for the past years.

Figure 6-8 Information organization method for publishing open data

Creative Commons License of CC BY-SA (Attribution-Share-Alike) was granted for the data subject to be published as open data based on Higashi Ward's intentions of "carefully working on open data because it's the first attempt in doing so" and "a sense of security having the information managed by the local government." And thus, the open data was published in CSV form on the page managed by Higashi Ward in the city of Nagoya's website on October 1, 2015. The information was only made public for two months (from October 1, 2015 through November 30, 2015) based on Higashi Ward's decision that it will be difficult to make them public on periods other than when the event is held when considering the impact on work.

4.2 Utilization of open data

In the same way as the previous year, the 2015 version of the Arukou! Guide sightseeing event guide application was developed through utilizing the open data made public (Figure 6-9). The same features as described in 3.4 were incorporated following the favorable feedback received for the previous year's version. The information missing, such as on facilities, were obtained from the event's official website as needed. And, like the previous year, LinkData was used to make the information open data on an experimental basis.

4.3 Demonstration experiment

A trial was run for the Arukou! Guide application that utilized open data in order to confirm the usefulness of publishing sightseeing event information as open data.

Figure 6-9 Screenshots of 2015 version of Arukou! Guide application

A demonstration experiment was conducted during the 16th annual Arukou! On the Cultural Path event held on November 3, 2015, with a total of 21 participants, comprising students in their 20s and general event participants. Participants gathered at the Akatsuka Shinmeisha Shrine located in the east of the Cultural Path district, and after hearing instructions on how to use the application, participated in the event for approximately 4 hours while touring the district.

Table 6-5 indicates results of the questionnaire filled out by the participants. Participants evaluated the four features that used the open data on a scale of 5 (5: Strongly agree, 4: Agree, 3: Neither, 2: Don't agree as much, 1:

Table 6-5 Comparison of feature evaluations with 2014 results

Question	Evaluation of 2015 (Average)	Evaluation of 2014 (Average)
Was the function to check surroundings useful?	4.05	4.05
Was the function to check event sites useful?	3.81	3.71
Was the function to check buses useful?	3.62	3.86
Was the function to check events useful?	3.52	3.85

Disagree). The averages were calculated and compared with the evaluation results from the demonstration experiment conducted in 2014.

The results came out positive for each question on the questionnaire. Similar to the previous year, participants voiced favorable feedback such as, "I liked how all the information necessary for the event was aggregated into one," and "Being able to search for venues near the current location is convenient." There were also opinions, however, that pointed out, "The map on the leaflet is easier to see," "I'd use printed forms for reference because I don't want my battery to run out." Also similar to the previous year, the evaluations indicate using both print and the application is desirable depending on the circumstances while taking advantage of each of their strengths.

In addition, the residents' needs pertaining to sightseeing events were identified through the demonstration experiment. It revealed information on historical and cultural backgrounds of tourism attractions that lead to their values, information on restaurants in the district and information on restrooms were in demand. This information and information in general on tourism attractions are versatile for tourism not restricted to events running for limited periods. Rather, they are speculated to be in need by many tourism destinations other than the Cultural Path district.

4.4 Feedback from local government

Following the results of the demonstration experiment, interviews were conducted with employees of Nagoya's Higashi Ward Office and the Information Technology Application Department of Nagoya. Higashi Ward employees commented, for example, that "The method incorporated to publish information into open data in the experiment can continually be used because the workload is the same as the workload involved in conventional tasks to organize event information," and "We'd consider publishing information with the CC BY license from next year because there were no issues that occurred during this fiscal year."

However, discussions on further publishing of open data for information needed by tourists led to opinions such as, "Information cannot be made public as a large set of open data because the jurisdiction of the Cultural Path district is complicated and information sources vary," and "There would be challenges for administrative institutions to publish dining information and other information from the private sectors." These feedbacks revealed it is currently not an easy path to make more tourism information

public as open data.

4.5 Framework to continually promote open data

As mentioned in the preceding section, Higashi Ward continued to make sightseeing event information on the 17th Arukou! On the Cultural Path event open data for 2016. The publishing of open data was conducted through collaboration between HigashiNet, a civic group that works on promoting local information and also a member of the event's Executive Committee, and Higashi Ward. The information was organized through using the format developed in the previous year to create open data. Then, on October 1, 2016, the information was made public with CC BY license on Higashi Ward's page on the Nagoya website. Collaborating with local residents as such, in addition to local governments and academic institutions, may be important when establishing a framework to continually promote open data.

4.6 Sightseeing event information as open data

This chapter confirmed the usefulness of open data made public by a local government and residents' needs pertaining to sightseeing event information through actual publishing of open data by a local government and a demonstration experiment using services that utilize the data. The promotion of open data within the scope of conventional operational procedures will allow minimal impact on local government employees and it has led to continual publishing of open data; the method incorporated may be concluded as effective in terms of raising the acceptance level. Meanwhile, information such as historical and cultural backgrounds of tourism attractions has been identified as new demands from residents. It would become necessary, going forward, to also make this information into open data in order to add depth to the open data.

However, making the above-mentioned types of information into open data would not be easy due to issues in terms of administrative jurisdiction, fairness, publicness, credibility and accuracy. It would be important to have local governments within an area or between areas cooperate, involve residents and make information possessed by residents into open data.

5. Creation of open data on sightseeing information by residents

In this chapter, tourism information pertaining to local resources that is difficult to disclose by the local government is suggested to be made into open data by residents and implemented accordingly. Having appealing local tourism information possessed by tourism organizations and tourists as open data and utilizing them will enable local residents to contribute to spreading information on local attractions.

5.1 Proposal of publishing open data

It would be essential to have more information for tourists available as open data in order to vitalize regional tourism through the promotion of open data. Therefore, the authors proposed publishing the information possessed by local residents as open data from the residents. The development of tourism destinations requires establishing a framework that will accept tourists, including visitors from abroad, through the collaboration of various entities in the area [Tourism Agency, 2016]. The promotion of open data likewise requires collaboration between the industrial, governmental, academic and private sectors in the regions, as well as publishing open data on information from the private sector [Working-Level Conference on Electronic Open Data, 2016], making the promotion of open data on local tourism information achieved through collaborative efforts with local residents a key factor. The authors contributed in promoting tourism of the Cultural Path district by making local tourism information that previously could not be published as open data by the local government due to various reasons, including issues of fairness and accuracy and lack of possession by the local government, into open data and also utilizing open data on the Arukou! Guide application and the official website of the 2016 Arukou! On the Cultural Path event to communicate the area's attractions (Figure 6-10).

5.2 Target residents

The measure was targeted to residents involved in tourism businesses and tourists who have local tourism information. Residents involved in tourism businesses were chosen because the local governments of regions with limited budgets and labor sometimes outsource the operation of tourism attractions they manage. The residents who work at these tourism facilities are speculated to have a wide array of appealing information on local attractions. Tourists were also chosen as targets because their perspectives differ
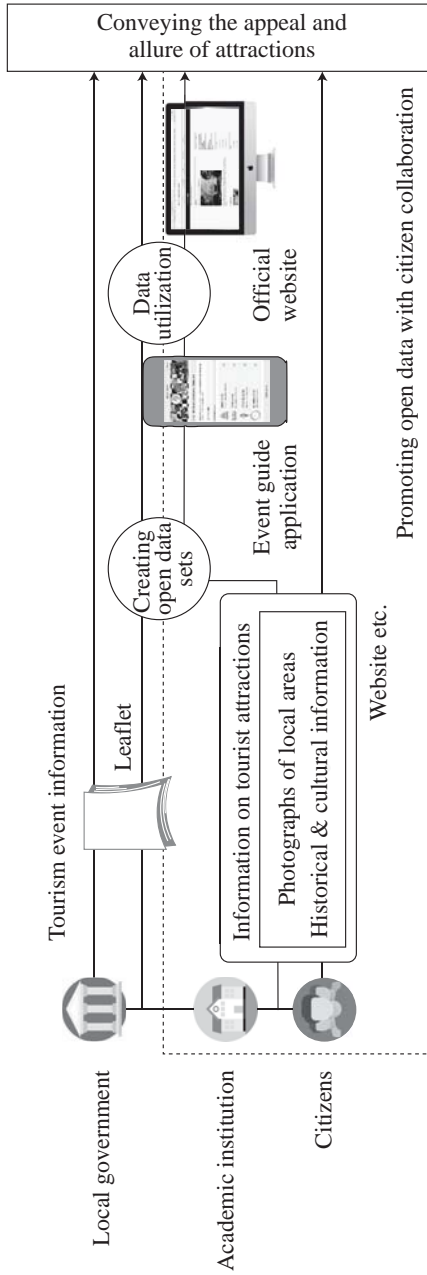
Figure 6-10 Promoting open data on tourism information through citizen collaboration

from those of local governments and others who run tourism facilities, and having information based on various perspectives may facilitate the information on tourism attractions to spread. As such, members of the Cultural Path Volunteer Guide Association in Higashi Ward and participants of the Arukou! On the Cultural Path event fall under this condition for the Cultural Path district.

5.3 Target tourism information

The following information is targeted for publishing open data by citizens.

- Citizen-provided information
  The Cultural Path Volunteer Guide Association in Higashi Ward conducts tours and historical research on the Cultural Path area for tourists every day, and maintains a website where they disseminate much valuable historical and cultural information on the area. Such information is unique to the volunteer guides working in tourism, and we believe that it is useful to convey the appeal and allure of tourist attractions. We therefore decided to create open data sets of the "information on attractions" and "flower photographs" in the area based on the information that the volunteer guides uploaded onto the website.
- Tourist-provided information
  In recent years, visual communication, such as SNS using photographs (e.g., Instagram and Snapchat), have been becoming popular, and the superiority of photographs in information transmission has been recognized. In promoting open data, photographs have also attracted attention due to the ease of conversion into open data. In particular, photos taken by the local citizens of the "3776 Views of Mount Fuji" in Shizuoka Prefecture [Shizuoka Prefecture, 2016] and "Kanazawa Photo Album" in Yokohama City [Kanazawa, Yokohama City, 2016], have been released to the public as the local government's open data. Due to the above-mentioned reasons (such as the superiority, ease, and degree of attention of the information transmission of photographs), we decided to use "photographs" taken by tourists participating in the Arukou! On the Cultural Path event as tourists' information in this study.

5.4 Steps in creating open data sets

The following shows the procedure for the information in 5.3 into open

data.

- Citizen-provided information

  We requested cooperation from the Cultural Path volunteer guides to release the open data of "information on attractions" and "flower photographs" on their website. After they understood the significance of promoting open data, we created a public page of open data on their volunteer guide website, and then respectively released the contents of the "information on attractions" and "flower photographs" as open data of the volunteer guides.

- Tourist-provided information

  We sought the cooperation of tourists participating in the 16th Arukou! On the Cultural Path annual event, and created open data sets on the photographs taken by the tourists during their participation of the event (Figure 6-11). As for the steps in creating the open data sets, we asked the participants to fill in a pledge agreeing to the creation of open data sets after they finished the event, and send us their photographs (including the title and location it was approximately taken) that can be released as open data via e-mail. Upon obtaining permission from Nagoya City on the photographs sent to us by the participants, we and the civic organization, HigashiNet, checked all photographs and only released those that did not infringe on copyright or disclose any personal information.

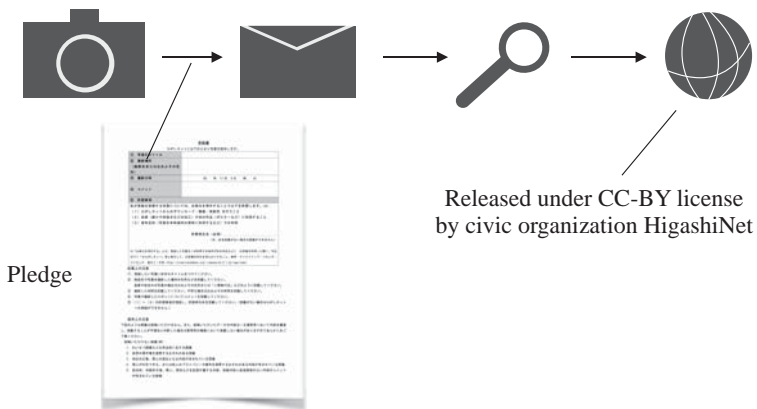(1) Take photographs   (2) Send via email   (3) Conduct check (4) Release to public

Released under CC-BY license
by civic organization HigashiNet

Pledge

Figure 6-11 Release of open data on photographs taken by tourists

5.5 *Publishing open data*

The following shows how to publish the 5.3 information as open data.

- Citizen-provided information
  Upon receiving the approval from the Cultural Path Volunteer Guide
  Association in Higashi Ward [Cultural Path Volunteer Guide Associa-
  tion in Higashi Ward, 2016], we released the information as open data
  of the Volunteer Guide Association in Higashi Ward under a CC BY
  license on the website. For "information on attractions," we released the
  data of all 20 attractions in the form of a CSV file, of which the contents
  were described by "attraction name," "outline," and "photograph." For
  "flower photographs," we keyed in the flower venues and flower names
  on the public page, and uploaded a total of 145 photos in JPEG format
  that were taken from 2013 to August 2016 (Figure 6-12). We took into
  account copyrights and personal information regarding these open data,
  and only made available information that would not cause problems
  even when converted into open data.

Figure 6-12 Open data on "flower photographs"

Source: Cultural Path Volunteer Guide Association website, http://higashib-
gv.com/open/flower.

- Tourist-provided information

  Within the server controlled by HigashiNet, we constructed an open data website using WordPress, which is one type of content management system (CMS), and released the open data on photographs taken by tourists as open data of HigashiNet (Figure 6-13) [HigashiNet, 2016]. We received 64 photos by tourists, but only released 40 of them in JPEG format as open data with a CC BY license after the check conducted by Nagoya City. On the download page, the released photographs were uploaded with the title, location information, and comments from the photographers.

Figure 6-13 Published open data site

Source: Open data site of Arukou! On the Cultural Path website, http://
od.higashinet.net/.

5.6 *Utilization of open data*

We made use of the open data released in disseminating tourism information of the Cultural Path. Further, in our aim to boost the appeal and allure of local tourist attractions, we utilized open data in the official website of Arukou! On the Cultural Path event and the event guide application Arukou! Guide that have been used to disseminate information so far, as well as
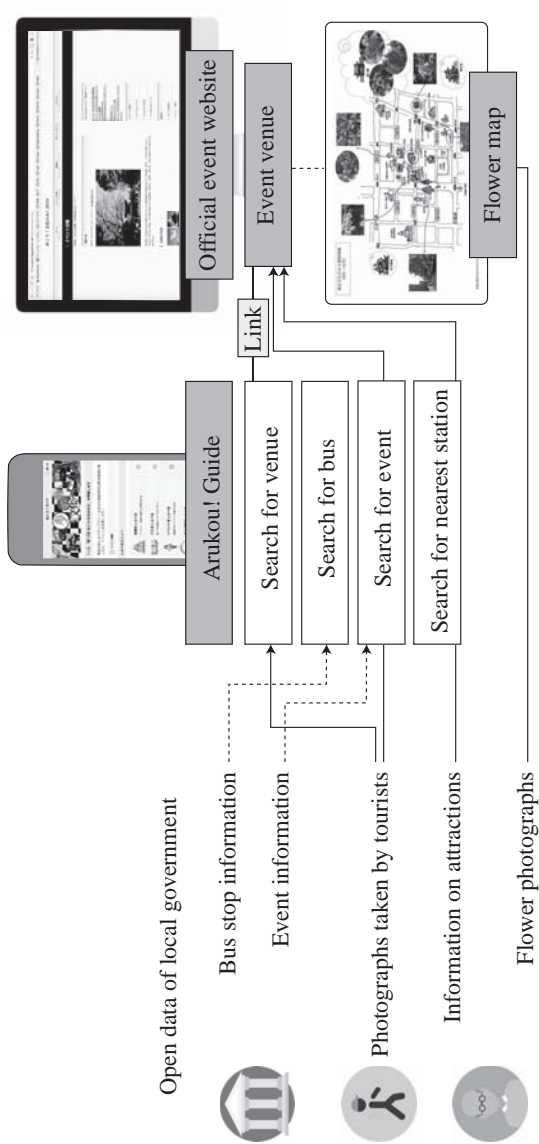
Figure 6-14 Utilization of open data

the flower map of the Cultural Path that we created (Figure 6-14).

- Utilization of official event website
  Only basic information on the attractions and information printed on the leaflet about the events to be held on the day of Arukou! On the Cultural Path (such as the name of attraction, opening hours, address, and telephone numbers) were written on the event venue pages of the existing official website. We therefore decided to use the open data on photographs and information on attractions to improve the photographs of tourist attractions. We also enriched the contents by posting introductory information on the tourist attractions.
- Utilization of event guide application
  We made open data on photographs in the event guide application. In the venue list under the "search venue function" of the application, we posted photographs of the tourist attractions provided by the ward office, but there were also other tourist attractions that had no photographs listed in the event guide application. We decided to use the open data on the photographs taken by tourists in the event guide application so that these tourist attractions can now be displayed with the appropriate photographs.
- Utilization of flower maps
  In the Cultural Path area, there are many floral attractions that start to bloom from the beginning of February, including a street lined with Ohkanzakura (a type of cherry blossom) trees. The volunteer guides have also been disseminating information about the blooming periods on the website on a regular basis for seven years since the website was launched, and it has been highly appraised by tourists who browsed the website. Based on this information, we created the Cultural Path flower map by utilizing open data on flower photographs for the period from fall to winter, which is the best time to attend the Arukou! On the Cultural Path event.

5.7 Proof of concept

We conducted a proof of concept on the 17th Arukou! On the Cultural Path annual event held on November 3, 2016. There were a total of 17 subjects, including students in their 20s and general event participants, of which 8 subjects were first-time visitors to the Cultural Path area. After gathering the subjects at the Akatsuka Shinmeisha (a shrine) in the east of the Cultur-

al Path area, and explaining to them about the flower map and how to use the event guide application, the subjects participated in the event for about 4.5 hours as they toured the Cultural Path area. After they had finished participating in the event, we met them at the Akatsuka Shinmeisha again and asked them to fill in the evaluation form.

In this study, we validated the usefulness of contents that made use of open data on citizens' information to convey the appeal and allure of local tourism to the subjects.

Figure 6-15 shows the subjects' evaluation, split into "all participants" and "first-time visitors," of open data on information about attractions. Subjects were asked to evaluate the question of "Are you now more interested in the Cultural Path from the information on attractions and other points of interest?" on a five-level scale (5: "Very true" to 1: "Not true at all").

In addition, Figure 6-16 shows the subjects' evaluation of open data on flower photographs. Subjects were asked to evaluate the question of "Do
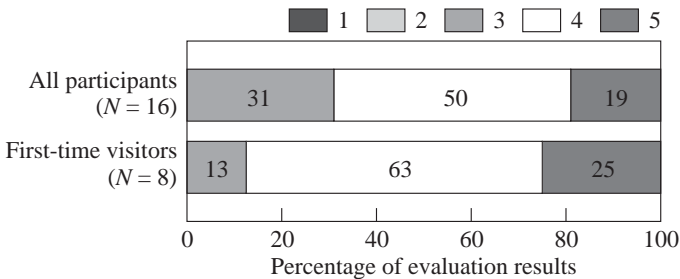
Figure 6-15 Evaluation on the utilization of open data
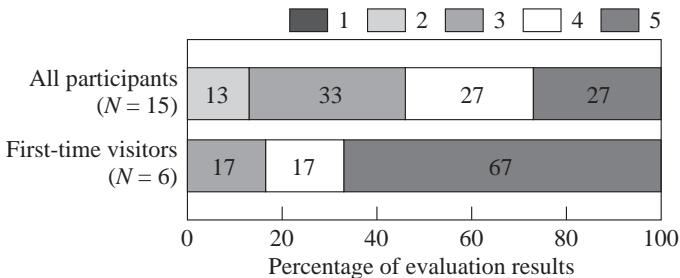
Figure 6-16 Evaluation on utilization of open data on flower photographs

you think the flower map is useful for sightseeing walks?" on a five-level scale (5: "Very true" to 1: "Not true at all").

Table 6-6 shows the subjects' evaluation of the open data on the photographs taken by tourists. Subjects were asked to evaluate the question of "What did you find useful?" regarding the search venue function of the mobile application by checking any of the four responses and writing their comments in the "Others" section (multiple responses allowed).

Table 6-6 Evaluation on utility of search venue function

Reasons	Evaluation of 2016 (*n* = 17)	Evaluation of 2015 (*n* = 21)
Possible to list down all the names and photographs of attractions	41 %	24 %
Basic information of attractions available	35 %	38 %
Route to attraction venues available	35 %	52 %
Possible to search for attraction venues	12 %	5 %
Others	0 %	0 %

We were able to obtain evaluation on the respective contents that made use of open data released by the citizens. The results showed that introductory information on attractions and the flower map could boost the interest of tourists in tourist attractions, especially for first-time visitors who found these contents highly useful. Participants commented that, "This is useful to people who want to see the flowers in person after looking at the (flower) map," and "It was interesting to see how attractive the route that was dotted with various tourist attractions. This method may be used for other applications other than flowers." On the other hand, there were also comments such as, "It would be good if the application doesn't just show us the introductory information on the attractions, but that we also have a volunteer guide to walk us through the area with explanations," and "Since it would be difficult for first-time visitors to estimate the time needed to tour the area, it would be great if the application can suggest routes for us." To further convey the allure and appeal of local tourism, it can be said that it is necessary to not only create open data sets, but also to link the data more closely to the mobile application and the activities of the volunteer guides.

In addition, comparing the results of this year to that of the previous year showed the superiority of photographs taken by tourists since users can now list and have an overview of all the photographs, thereby allowing us to enhance the application's guide function. Participants also commented that, "It was great that we could tell what the event was like from these photographs." We were thus able to create a more intuitive mobile application for users not just via words, but with photographs too.

5.8 Evaluation by citizens

The volunteer guides commented that, "Since the digitization of tour guide activities is going to become more important in the future, the wide range of applications from open data sets is extremely good," and "Using it in the flower map is fantastic. It made me want to work on creating a new type of guide that combines seasonal flowers and temples." The promotion of open data in this study was also a useful initiative for the activities of the volunteer guides. On the photographs taken by the tourists, they also commented that, "As it is impossible to tour all the attractions usually, we are very happy to have such photographs." We thus believe that this has helped to support their usual tour guide activities.

While the tourists commented that, "I am happy that various people saw my photographs," and "I would like to share good photographs that I took," on the other hand, they also honestly revealed that, "I would not think of submitting my photographs if I was not asked," and "Telling me that my photographs may be used in the open data may not exactly be a strong incentive." It can therefore be said that the incentive that we attached behind the creation of open data sets on photographs is important for the tourists. However, there were many favorable comments towards the use of photographs in open data sets, such as, "I will be happy if the photographs of my favorite tourist attraction can attract other people," and "I am happy if the photographs I took are used because it feels like I am being recognized for it."

Further, we also talked to the staff in the Higashi Ward about the photographs taken by the tourists, who commented that, "Permission is required for everything reflected in photographs used in open data: places, people, exhibits, etc. It is difficult to work on it as the local government's open data," and "If the local government decides to release this open data, various procedures such as creating rules need to be in place and this will take us time to implement." Considering the nature of the local government

where they look at impartiality, publicness, and accuracy, we believe that it will also be effective to release such information as open data released by citizens, instead of by the local government in this precedent case.

5.9 Open data promotion through civic cooperation

In this section, we proposed and implemented practical initiatives to release tourism information on local resources that local governments are not able to release as open data by citizens. The citizens in the Volunteer Guide Association in Higashi Ward who run the tourism, and the participating tourists of the Arukou! On the Cultural Path event, respectively created open data sets based on the attractive local tourism information they have, to which we came up with a proposal on how to use this information and through a proof of concept, we clearly demonstrated the usefulness of tourism information held by the citizens.

From the proof of concept and evaluation by citizens, it can be said that it is desirable not only to disseminate information online, but also to collaborate with local tourism such as the volunteer tour guides. In addition to disseminating information on tourist attractions, we believe that we can more effectively convey the appeal and allure of tourist attractions by using open data services in regular tourism activities. In addition, it can be said that our attempt to resolve the challenges of local tourism through such practical efforts has led to the promotion of open data.

On the other hand, the reasons and the incentive to work on the open data of the citizens' information have become more important. It can therefore be said that it is necessary to actively link the promotion of open data to other projects, such as creating privileges (e.g., premium coupons) for the community, and activating the use of open data. There is also the problem of the accuracy of information. In this initiative, there was a discrepancy between the contents of the photograph and its title in the open data on the photographs taken by tourists. It will be necessary to discuss who and how to carry out checks in the future, not just on copyrights and personal information, but also on such errors. To improve the work efficiency of local governments and the resolution of regional issues through the promotion of open data of citizens' information, it is necessary to construct a system to support the efforts of the entire region (such as local governments and private business operators) to promote open data on local information by local governments and citizens.

Furthermore, the promotion of open data on photographs taken by tour-

ists has led to the local government coming up with a new initiative. From the tourism viewpoint, this practical approach to tackle local issues can be expected to lead to better administrative services. From this point of view, we believe that promoting open data on citizens' information can help in developing tourist attractions.

6. Conclusion

This chapter discussed promoting open data of local sightseeing information. The fieldwork in the Cultural Path district in Higashi Ward, Nagoya that experimented on making sightseeing event information open data, used those results and implemented the promotion of open data into existing operations which led to the sustainable publication of the local government's open data and increased the local government's acceptance level towards promoting open data. Furthermore, through having residents publish information they have as open data, after considering the local government's acceptance level towards open data, the tourism destination's attractions were publicized, together with providing an opportunity for the authors to discuss the usefulness of open data promotion through civic cooperation. These efforts toward promoting open data provided solutions to the issues of the Cultural Path district.

Many local governments that have never worked on promoting open data, like the local government that cooperated in this research, are speculated to have concerns toward specific effects and impact on workloads. To have the promotion of open data be more readily accepted in local governments, it would be important to roll out initiatives together with local governments that would eliminate anxieties and worries toward promoting open data, such as by having experts in the field from organizations, including academic institutions and civic technology groups, present actual services that utilize open data and demonstrate their effects or develop open data publication methods compatible with conventional operations that will minimize additional workload.

Moreover, for information that cannot be disclosed by local governments, it would also be effective to publish information from residents, such as private businesses and civic groups, as open data when considering the local governments' level of acceptance towards promoting open data. Making efforts to promote open data through collaboration with residents will lead to the creation of more diverse services that utilize open data.

This will also make the effects from open data promotion more visible, as well as reduce the workload for local governments in promoting open data, by having residents publish the open data. Such efforts will thus facilitate understanding and approval from local governments on promoting open data and consequently improve their acceptance levels toward the promotion, which will in turn anticipate more in-depth measures.

A potentially effective way to resolve local issues, based on the results of the authors' measures, may be to publish open data and develop services that utilize these data that reflect the issues faced by local tourism sites and the needs of tourists. In addition to the Cultural Path district subject to this research, regional tourism sites throughout Japan are presumed to have their own set of challenges and the promotion of open data is just one way to resolve their issues. However, in addition to achieving more in-depth promotion of open data, the implementation of such efforts in these tourism sites will anticipate the development of an environment in which local governments, residents and various other entities collaborate and lead to providing improved administrative services. It will be important for local entities to collaborate based from a bottom-up approach to resolve their local issues, even from the standpoints of today's society such as open innovation. The promotion of open data will pave the way towards the development of cooperative structures in local regions.

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CHAPTER SEVEN

Collecting and utilizing regional resources

Abstract

Regional promotion is currently a noteworthy option to overcome the various challenges faced by regions that include declining birthrates, aging populations and economic stagnation. The utilization of regional resources is also being looked at as a potentially promising way of revitalizing the regions. In addition to projects such as regional branding and community development focused on residents, new forms of tourism that plan and launch travel products and experience programs based on regional resources are also being pushed forward. As such, regional resources can be applied for various situations, and communicating them as the region's attractions will lead to vitalization. This chapter suggests a framework that uses ICT as the way to discover regional resources and to have residents collect and archive the benefits of living there, together with attractive landscape shots, and utilize those as regional resources. The usefulness of developing a website was confirmed through the results of a questionnaire conducted after a demonstration experiment held at the Suki area of Kobayashi City, Miyazaki Prefecture.

1. Introduction

The Japanese government, alongside various organizations, has been placing more focus on the redevelopment and vitalization of regions to resolve issues faced by the country, such as the stagnation of economy, a declining birthrate and an aging population. Here, regional redevelopment refers to

having regions leverage their uniqueness to develop autonomous, sustainable and attractive communities. The government is seeking to have regions independently overcome their issues through local government-led efforts, as indicated through its formulation of the "Act on Overcoming Population Decline and Vitalizing Local Economy in Japan" [Cabinet Office et al., 2018]. Furthermore, the Tourism Agency was launched in 2008 to strengthen the driving force that will make Japan a tourism-oriented nation. The government, private companies, local governments and locally-focused NPOs are working towards the same vision of making Japan a tourism country through various efforts [Tourism Agency, 2018]. The development of regional tourism destinations is particularly catching attention as a way to accelerate regional redevelopment and vitalization, with the encouragement of "new tourism" being an example [Ministry of Land, Infrastructure and Transport, 2007]. New tourism is a term referring to travel that incorporates more experience and interaction-oriented elements compared to conventional sightseeing travel. This includes industrial tourism that provides learning opportunities from factories and their remains with historical and cultural values, ecotourism targeting on rich natural environments and residential green tourism programs designed to interact with nature, culture and local residents in rural villages, and these are anticipated to vitalize regions. The forms of utilization of new tourism are regional resources. Although some regions previously not recognized as tourism destinations succeeded in attracting tourists through utilizing their local resources, the majority do not know which of their resources can potentially attract tourism. The way to identify the attractions of these regions becomes a pivotal issue.

On the other hand, the government and local governments have been promoting the usage of open data that enables secondary use of information and emerged from around 2014. The utilization of open data in the tourism field is particularly viewed as effective. Anticipations toward the momentum on regional tourism are rising, with prominent examples that include the Ministry of Internal Affairs and Communications aggregating open data on tourism throughout Japan on its public cloud system (Ministry of Internal Affairs and Communications, 2015) and the city of Sapporo formulating the Sapporo Open Data Council and developing a tourism platform through utilizing open data [Sapporo Open Data Council, 2019]. Open data needs to be promoted through methods that tailor to the region's characteristics, because the utilization of remaining regional resources are

key to developing tourism destinations.

Through case studies, this chapter will discuss the utilization and structuring of information and communication technology (ICT) intended to develop sustainable tourism, and focus on the collection and utilization of regional resources intended to gather regional attractions and leverage them as beneficial resources. The usefulness of the prospective system developed was verified through conducting a trial in which participants used the system at a local event held in the Suki area of Kobayashi City, Miyazaki Prefecture.

2. Kobayashi City, Miyazaki Prefecture

2.1 Current status of Kobayashi City

Facing declining and aging populations at sharp rates, regions now need to develop autonomous and sustainable societies through emphasizing their uniqueness [Kawai, 2017]. They will drastically lose vitality unless they start working on proactive measures to achieve this. The city of Kobayashi in Miyazaki Prefecture is one of such regions. Located in southwest Miyazaki Prefecture, Kobayashi has a population of 44,581 (as of October 2018). However, its population is expected to dwindle to approximately 39,000 by 2030, which is more than 5,000 less than the current level. Furthermore, the percentage of residents 65 years of age or older is expected

Figure 7-1 Kobayashi City, Miyazaki Prefecture

to reach 41.1 %, or almost one in every two residents being senior citizens. Drastic declines in the population and extreme percentage rates of the elderly potentially destruct the culture, history and identity of the community that have been fostered over generations. In view of such circumstances, regional attractions need to be reexamined together with implementing tourism strategies that leverage these attractions.

2.2 TENANDO Kobayashi Project

The TENANDO Kobayashi Project is a project started by the Planning and Policies Division of the Kobayashi City Office in 2013 [City of Kobayashi, 2013]. Among its activities, include hosting photography and video competitions run by locals to rediscover the area's attractions, holding workshops managed by locals, and producing posters and LINE stamps featuring the Nishimoro dialect (Figure 7-2).

Surrounded by Mount Kirishima and rich nature, the city of Kobayashi is a community in which nature and its residents live in harmony, as demonstrated through farmlands and undeveloped woodlands that change expressions with each season. Kobayashi is also home to many other unique attractions, including tourist spots, historical sites, old-fashioned wisdoms for life, culture and traditions. The project seeks to foster pride and attachment among residents toward their homeland, together with encouraging exchange with the urban population to ultimately increase the non-resident and resident population by publicizing Kobayashi's attractions (scenery, culture, history, lifestyle, locals, dialect, etc.). TENANDO is a word coined from combining *tenamu*, meaning "together" in the dialect spoken in the Nishimoro area that includes Kobayashi, and "brand," representing the

Figure 7-2 Nishimoro dialect posters

Source: Created by the author based on Kobayashi City website, http://www.tenandoproject.com/kobayashi_poster.

project's vision of branding its regional resources.

The project reexamines the attractions of Kobayashi from various approaches and presents them in new forms. One of its most famous examples is its video that promoted the city (Figure 7-3). The promotional video themed on encouraging migration to Kobayashi attracted more than 2.5 million views on YouTube with its innovative contents that took advantage of the Nishimoro dialect.

Figure 7-3 Ndamoshitan Kobayashi promotional video encouraging migration to Kobayashi
Source: Kobayashi City website, http://www.tenandoproject.com/movie1.

2.3 Suki area, Kobayashi City

The Suki area of Kobayashi, Miyazaki was chosen as the venue for the demonstration experiment conducted to study the use and application of ICT that will collect and utilize regional resources. Located in the northwestern area of Kobayashi, the Suki area merged with the city of Kobayashi in 2006 and counts 865 households, totaling 1,650 residents (as of April 2018). The population outflow to urban areas has been causing its population to decline since 1956. The depopulation led to its decrease in a working age population and shortage of successors, which became a primary factor in inhibiting the area's development of its key industries. Amid depopulation, low birth rates and population aging rapidly progressing, the Suki area is working to vitalize its community to "create a community that everyone would want to live and settle into." Announcing its three goals of "creating a community for continuing to live enriched and enjoyable lifestyles," "creating a community that attracts people," and "creating a community through focusing on tourism promotion," the Suki area is promot-

ing experience-type tourism by welcoming new residents from outside [City of Kobayashi, 2016]. It also works to preserve nature, local specialties and history that are potential resources and publicizes the Suki area's attractions through utilizing its portal website and social media.

Reflecting its history of establishment involving the merger of 3 municipalities, the city of Kobayashi is divided into 3 areas. A Kizuna (Bond) Cooperative, composed of residents and organizations, has been established for each of these areas and actively organize community activities. The cooperatives place staff in charge of each area and subsidize activities run by residents to build a more comfortable environment for them [Kobayashi Collaborative Community Development Administrative Promotion Council Working Group, 2012].

The Suki Village Development Council, Suki area's Kizuna Cooperative, carries out activities to vitalize the community. Within the council are the Village Development Committee that is the main driver for the Suki area's vitalization, the Safety Development Committee that works to improve the community's safety, and the Health Development Committee that engages in promoting the health of residents. There is also the Publicity Committee responsible for publicizing information on the community within and outside the Suki area. Established in September 2016, the Publicity Committee works with the purpose to extensively publicize the Suki area's attractions.

The Publicity Committee has primarily worked on producing calendars featuring the Suki dialect and developing/managing the area's portal website. The Suki area produces its own Suki dialect calendars every year. After calling for photography from residents, it compiles selected photographs and Suki dialect phrases into its calendar. Meanwhile, the Suki Village Development Council's website posts contents that include event information and reports, together with a sightseeing map [Suki Village Development Council, 2019] (Figure 7-4). Residents need to actively publicize in order to further vitalize the community.

3. Identifying and utilizing regional resources

3.1 Regional resources

Regional resources include various features that distinguish a region from others such as historically unique buildings and festivals, mountains, rivers and food culture. Given there are many municipalities that are working to

Figure 7-4 Suki Village Development Council
Source: SukiVillage Development Council website, http://sukimura.boy.
  jp/265/.

promote their tourism operations through utilizing these regional resources, the Ministry of Land, Infrastructure, Transport and Tourism launched the "Project to Enhance Tourism Destination Attractiveness Using Regional Resources." The project encourages new tourism that utilizes regional tourism resources such as traditional culture, beautiful scenery and historical landscapes and promotes the development of attractive tourism destinations. In this way, elements familiar to locals have the potential to become regional resources and are boosting the odds of areas that are not famous destinations or key transportation points to attract visitors.

3.2 Identification of regional resources

Residents need to gather information on their region in order to utilize regional resources for tourism. ChibaRepo and FixMyStreet are some examples that collect local information provided by residents. Both are designed to have residents take pictures of issues present in their region and post

them with details so that they will be notified to their local government and be fixed. In addition to the many other examples available that use photos, the authors have also developed a photo-stamp rally that features photos as well as a photo report platform in which users can post regional attractions and issues. There have also been cases in which regional attractions were discovered from pictures posted on social media. The photos posted on social media sparked a buzz for the "Monet's Pond" in Seki, Gifu Prefecture, and developed into a tourist attraction with bus tours to a rural village between mountains where tourists used to barely drop by. It is thus important to gather and build up regional resources by making use of social media and photos that effectively portray a location's attractiveness. The development of a framework that facilitates the use of accumulated regional resources also needs to be considered.

3.3 Utilization of regional resources

One way to apply the collected regional resources extensively is open data, also mentioned in Chapter 6. Open data is data in a format suitable for mechanical reading and made public with usage rules that allow secondary use. With the government and local governments generally playing the central role in promoting open data, their improved transparency and credibility, promotion of public-private collaborations, economy revitalization and enhanced efficiency of administrative procedures are anticipated.

Many local governments have made statistical data, disaster prevention and tourism information some of the first types of information made public as open data because they are readily disclosable. With many local governments posting tourism information as open data, the government has also caught on to this trend of making tourism information open data by launching a public cloud system that compiles open data from local governments [Ministry of Internal Affairs and Communications, 2015].

The Ministry of Land, Infrastructure, Transport and Tourism has indicated that it is important to check for the 4 elements of "directions to the destination," "information for convenience/troubleshooting," "tourism information that appropriately represents the region and season," and "interactive information" as information necessary when providing tourism information [Ministry of Land, Infrastructure, Transport and Tourism, 2018]. Location information applicable for all the aforementioned elements and structuring presenting the region's uniqueness will be needed. The importance of location information is demonstrated as many of the local gov-

ernments that made tourism information open data are utilizing location information. Some websites are also utilizing photos to present regional uniqueness. For example, the Ministry of Economy, Trade and Industry developed a website titled FIND/47 that has pictures of tourism attractions of all 47 prefectures as open data [Ministry of Economy, Trade and Industry, 2017]. The archived pictures in the website can be viewed by prefecture and are free to download. The website also has general users post photos on an invitational basis to provide photography of attractions captured from various angles and available as open data. However, there is unevenness in access between prefectures, making only prominent tourist destinations stand out.

In this way, the government or local governments often manage regional resources, with only noted sightseeing attractions catching attention over a broader range. This calls for greater need to have local residents manage regional resources. Murayama argues that, "The resource called 'regions' are entirely the property of its residents. For that reason, residents are the potential players for the identification of regional resources and creation of regional value" [Murayama, 2011]. This suggests the importance of supporting community groups over governments and leading players. With the number of community groups such as tourism volunteers that manage regional resources growing, having locals understand, maintain and manage their communities' regional resources will foster attachments toward their communities and stir up motivations toward their advancement to the development of a more comfortable community.

4. Development of regional attraction sharing website

4.1 Requirements definition

This project defined the following requirements to develop a website where local attractions, such as lifestyles and scenery publicized by residents, are converted into open data and utilized as regional resources. Broadly publicizing on local lifestyles and sceneries may lead to the identification of new resources yet to be identified by locals through fresh feedback that will come from outside the region. Making the data open to enable unrestricted utilization will also encourage further spreading of attractive information.

- Posts with geotags
  Location information and photos, both necessary in providing tourism

information, will be collected and stored in order to present the region's attractions straightforwardly. In addition to the applicability to maps and allowing tourists to intuitively see their location when travelling to an attraction, geotagging will reveal the relative position of attractions and enable users to view pictures of the same location from various angles as well as facilitate planning of travel routes. The website will incorporate responsive design and make it user-friendly for smartphones, tablets and other mobile devices so that locals can directly post pictures of the region's attractions on the spot.

- Mapping

  Regional attractions will be mapped using the geotags. The map will help tourists see where they are at a glance when travelling to an attraction. It will also reveal the relative position of attractions and enable users to view pictures of the same location from various angles as well as facilitate planning of travel routes.

- Making photos of attractions open data

  The local attractions posted will be accessible to all for secondary use by treating them as regional resources and making them open data. Tourists will have more opportunities to come across regional resources by having local governments, residents, local chambers of commerce and other local groups utilize the resources for various occasions such as brochures and merchandise development.

4.2 Production of attraction sharing website

A regional attraction sharing website that fulfills the requirements described in 4.1 using the open source WordPress CMS was created. A responsive design was incorporated to the site for easier access from smartphones, tablets and other mobile devices so that users can take photography of local attractions with their devices and post them on the spot. The posted attractions are stored on the online server as regional resources and displayed on the website on a map and by genre. The website is composed of an attraction sharing page, photo report map function and attraction introduction pages.

- Attraction sharing page

  The page for posting of attractions is composed of "picture," "title," "genre" "comments" "detailed location" and "geotag." The genre section is further classified into categories such as history, sightseeing
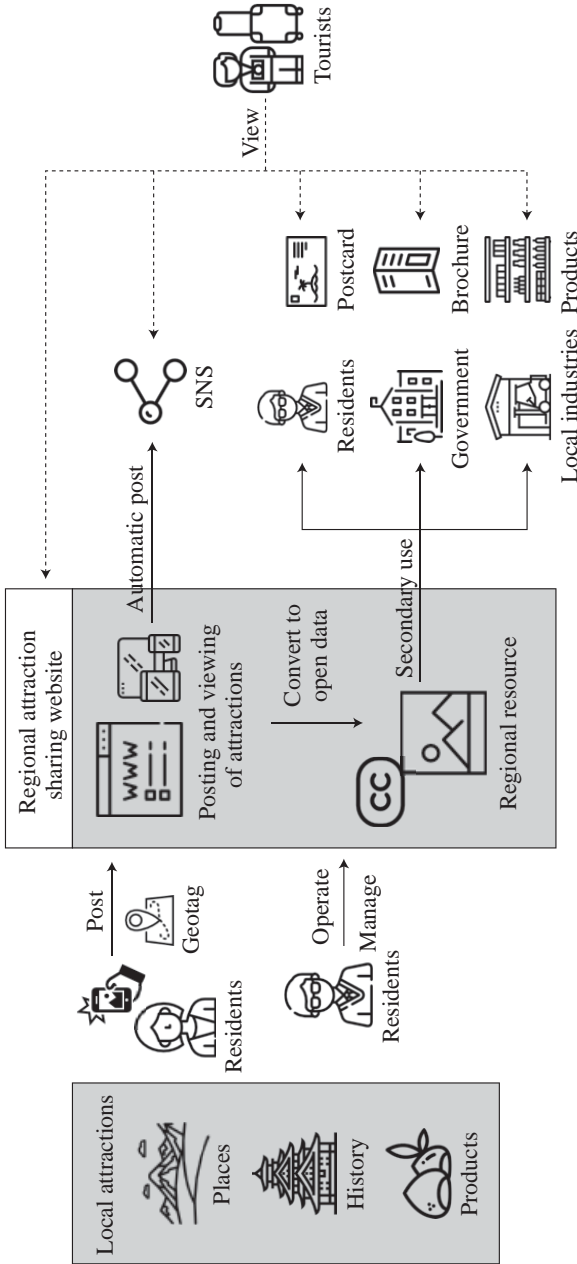
Figure 7-5 Conceptual diagram

Source: Icon made by Freepik from www.flaticon.com.

spots and specialties. Furthermore, themes that will change in a set period will be launched to attract various types of photos and add variation to photography styles. To assist posting, automatic geotagging is enabled when a geotagged photo is selected. The location may also be selected from a map so that information can be registered even when posting pictures without geotags. In addition, a WordPress plugin enables automatic posting of the posts on Facebook to spread posted information into social media.

Figure 7-6 Attraction sharing page

- Photo report map function

  The top page of the website displays a map with attractions tagged by markers representing the genre of the attraction shot. On Google Maps embedded in the website, markers designed for each genre are placed using Google Maps API. The markers of each genre have illustrations that represent their genre and differ in color to be easily distinguishable. Displaying the attractions on a map will also indicate their relevant positions. The title and photo are displayed by clicking on the marker, which further lead to the attraction's introduction page. Figure 7-7 shows an example of how the photo report map function is displayed.

- Attraction introduction page

  A page is created to introduce each attraction posted for users to learn

Figure 7-7 Photo report map function

Figure 7-8 Attraction introduction page

about its detailed location and know more through comments. The information published on the attraction introduction pages is all open data available for reuse by displaying the Creative Commons license on the bottom of pages (Figure 7-8). The CC BY license, the most open license of the Creative Commons license, that allows modifications and commercial use while only requiring that credit is given to the author, was chosen. The size of the pictures displayed on the page has been compressed when posting. The original data can be saved by clicking on the "download photo" link at the bottom of the photo. This allows downloaded pictures to be used freely as regional resources as long as their source is credited. The pages also feature a voting feature in which users can feel free to vote on attractions they like. Voting results are aggregated and displayed on the top page as a ranking in order of popularity.

5. Demonstration experiment

5.1 Experiment overview

A demonstration experiment was conducted in the Suki area of Kobayashi City, Miyazaki Prefecture, to verify the regional attraction sharing website's usefulness. Locals and participants from outside the prefecture participated in this experiment conducted in an event form. Three teams were formed and assigned zones in the Suki area to explore sightseeing attractions. Each participant posted photographs of the attractions they visited

Figure 7-9 Demonstration experiment participants

(Figure 7-9). The participants comprised 32 residents (16 students from a photography club of a local high school, 3 photography enthusiasts and 13 board members of the community association) and 9 participants from outside Miyazaki Prefecture.

After touring the area, a workshop session was held to evaluate the photography of attractions (Figure 7-10). Each participant chose their best shots and printed them. The printed photos were then lined up on the desk. The 'Top 5 Attractions' were decided after having each participant vote on their 3 favorites out of all the pictures.

Figure 7-10 Participants in workshop session

5.2 Experiment results

Despite the rain and volcanic ashes falling on the day of the demonstration experiment, more than 1,000 photos were shot from various angles. Figure 7-11 shows some of the photos voted for by the participants. Pictures capturing Suki area's rich nature, *yuzu* citrus produced as specialties and a suspension bridge, one of its sightseeing attractions, were selected.

For the questions in the questionnaire that asked, "Did you discover a new attraction in the Suki area through participating in the event today?", more than 95 % of participants responded "Yes," or "Somewhat yes," suggesting that they were able to discover new attractions in the area using the developed system (Figure 7-12). Meanwhile, 92 % responded "Yes," or "Somewhat yes," to the question that asked, "Do you think today's event deepened engagement in the area?" (Figure 7-13) Participants of vari-

Figure 7-11 Photography chosen through voting
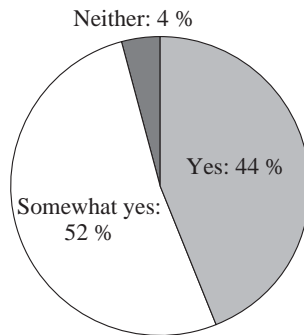
Figure 7-12 Did you discover a new attraction?
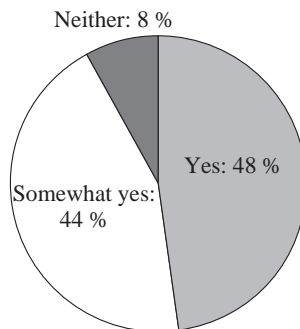
Figure 7-13 Did engagement deepen within the community?
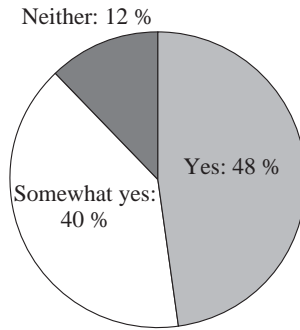
Figure 7-14 Would you be willing to continue posting pictures?

ous generations participated in the event but nonetheless exchanged their thoughts on the Suki area's attractions, and thus also contributed to the promotion of the attractions. In addition, 88 % of respondents answered "Yes," or "Somewhat yes," to the question, "Would you be willing to continue posting pictures?" (Figure 7-14)

Participants also provided feedback such as "I want to discover more of Suki's attractions," and "I was able to see landscapes that I normally don't," together with several participants writing that they would be willing to continue posting or participate in events hosted by the area, indicating that the event successfully contributed to promoting Suki area's publicity.

5.3 Secondary use of information

Since the event, the website has been running through a web-hosting service managed by the Suki Village Development Council, with residents being the website administrator. The website has been continually updated with posts on additional attractions. Anyone can reuse the pictures of the local attractions posted by displaying the source because they are published as open data. Indeed, the open data of photos taken as regional resources has been used in the calendar that the Publicity Committee of the Suki Village Development Council produces every year (Figure 7-15). The photos and comments available as open data were also used in a promotional video of the Suki area with hopes of the contents to be utilized more (Figure 7-16). In this way, open data gathered can potentially be utilized to enhance the value of regional resources and incorporated into new services by indicating how they can be used and what kind of services can be developed.

Figure 7-15 A calendar using pictures taken in event

Figure 7-16 Sample shot of Suki area's promotional video

Additional measures linked to the event were also carried out through opening a booth at the traditional Hoze Festival held in the Suki area. In addition to registering new users for the website, a video showcasing the project produced by utilizing the open data was played, potential posting themes were surveyed, and a treasure hunt game using the regional attraction sharing website was held.

Participants of various generations from small children to adults participated in the treasure hunt game using the regional attraction sharing website and took pictures of the event. Children also had ease at taking photos using smartphones. Pictures taken from varied angles were collected from this event (Figure 7-17).

With many residents, local companies and local government personnel gathering at the Hoze Festival, in which the authors participated, the festival was a great opportunity to make the gathered regional resources known. Furthermore, providing opportunities to try the regional attraction sharing

Figure 7-17 Regional resources collected at Hoze Festival

site and presenting examples for using the resources at a local festival will lead to gaining interest among locals and contribute to the identification and utilization of resources across the entire community through increasing the number of users and application examples.

6. Utilizing ICT for sustainable tourism

The website development involved archiving regional resources using photography, converting archived information into open data, and secondary use of the open data through utilization of ICT. Questionnaire and experiment results also suggested that participants discovered Suki's new attractions and they experienced deepened engagement. After the Suki area touring event, the website has been managed by the Suki Village Development Council and operated by local residents. The archived regional resources made into open data, and free to use, have also been used in the calendar created by residents. A promotional video was produced and shown at a local festival to promote further utilization of these resources. Secondary use was indeed made through making the registered regional resources open data, leading to stronger publicity of Suki's attractions.

Many of the regional resources collected were on the history, scenery, specialty products, events and other attractions of the Suki area already

known. Although these resources may not spark immediate popularity, such as the "Monet's Pond" mentioned earlier, some have drawn out the area's distinguishable points. Posts from non-residents also need to be considered in order to identify regional resources from a newer perspective. For example, many of the photos taken by participants from outside Miyazaki depicted scenery that were familiar and common among locals, suggesting a hint to discover resources to attract tourists. Interestingly, the Kyonan area in Yamanashi Prefecture is attempting to discover knowledge, customs, culture, natural resources, and other elements that may have been overlooked, through the perspective of international students [Ninomiya et al., 2014]. For this, a regular holding of events like the demonstration experiment and a potential partnership with services, like OpenStreetMap, that combines maps and photos from external sources, may need to be considered to reduce the workload for managing residents as much as possible.

Through focusing on the collection of photography and location information, the archived information successfully became resources that display the region's attractions at a glance when using the information for a secondary purpose. Although the experiment made the information into open data through only displaying the Creative Commons license on the applicable regional resource pages, improvements such as converting them to mechanically readable formats that further facilitate secondary use are necessary. More case studies are also needed on what types of services are developed through utilizing the gathered data in order to further leverage the resources.

The local community who is the website administrator will be the most important player when spreading the website to other regions. The Suki area in which the experiment was conducted had residents manage the server and disseminate information, together with organizing issues the community was facing. To achieve smooth website administration by residents, the awareness of issues pertaining to tourism for the region in general needs to be identified and organized, and opportunities need to be created with follow-ups for local governments and colleges to start engaging in the activities. The ways to support regions also need to be reviewed.

7. Conclusion

This chapter focused on regional resources and tourism promotion within the topic of utilizing ICT and discussed developing a framework that iden-

tifies new regional resources, manages the information and prepares them for utilization. Indeed, regional resources were stored in the form of photography, the archived information was made into open data, a regional attraction sharing website was developed for the secondary use of the open data and a demonstration experiment was conducted at the Suki area in Kobayashi City, Miyazaki Prefecture. In a region where non-serial events were regularly held, new resources were successfully identified and utilized through producing calendars featuring these resources and participating in a local event, in addition to publicizing information on the website. Making the data used for collection and application of regional resources open using only one website contributed to linking regional resources to the promotion of tourism in regions that were unable to utilize the resources they found, in addition to helping regions having difficulty in identifying their resources.

The experiment confirmed that identifying the resources that distinguish a region and making them into open data will lead to various forms of application by people of different tastes and generations and publicize information about that region. Although regional resources were collected through photography in the experiment, adding videos and historical materials may expand their applications. Making drone footage that the authors are working on in a separate region and historical materials into open data will strengthen publicity effects and lead to further regional promotion.

Going forward, it is essential to have non-local tourists to post on the website. A framework needs to be developed to generate more users as a means to gather information. Furthermore, improvements on open data formats and the system for enhanced user interface are necessary to facilitate secondary use of information, together with considering the option of applying this to other regions.

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CHAPTER EIGHT

Coexistence of Shinkansen and airplane
Case study in the Hokuriku district

Abstract

The Hokuriku Shinkansen was extended from Nagano City to Kanazawa City on March 14, 2015. There are many visitors from the Tokyo area to the district and the area is crowded with visitors. The number of passengers increased to around 3 times compared with before the extension. On the other hand, the number of passengers on airplanes from Haneda (Tokyo) has been dropping sharply. There are three airports in the Hokuriku area which includes three prefectures. Those airports are Komatsu, Noto Satoyama and Toyama Kitokito. The passengers flying toward Haneda from Komatsu decreased by approximately 37 % and from Toyama Kitokito decreased by 54 %. However, Noto Satoyama increased by 8 %. The Shinkansen line will be extended to Tsuruga (Fukui Prefecture) via Fukui in March 2023. The number for Komatsu will further decrease at that time. It is necessary to verify and estimate the decreasing characteristic, and the states of the Shinkansen and the airlines should be verified as an important transportation infrastructure. As a result of this investigation, the rate of airplane passengers is decreasing as the seat-load time (riding time) of the Shinkansen is shorter. It is necessary to construct a countermeasure for the decreasing characteristics of the two airports, especially after the Shinkansen extension to Tsuruga.

1. Introduction

Japan has an issue of a declining birthrate and aging society, especially in rural areas, and the population decline will not stop [National Institute of

Population and Security Research, 2018]. The exchanging population (visitors) is also decreasing remarkably in rural areas and the output of primary industry declines likewise. The Japanese government chants a slogan "regional revitalization" to improve the rural impoverishment [Ministry of Land, Infrastructure and Transport, 2017a]. Rural means the regions except for large cities such as Tokyo, Osaka and Nagoya. One of the regional revitalization plans is "tourism" [Ministry of Internal Affairs and Communications, 2018]. The clue to stimulate the rural economy could be obtained by increasing the exchanging population, and it supplies the decrease of the residential population. It is necessary to provide attractive resources (for example rural cultures and experiences) and offer information to promote tourism exchange. Furthermore, it is essential to develop "information" and "transportation" infrastructures to make it easy to visit [Japan Tourism Agency, 2018]. Soft infrastructure, including the local *omotenashi* which means a kind of hospitality, should also be integrated to promote a sustainable development [Foundation for the International Cities with Arts, Culture, and Soft Infrastructures, 2017].

The present situation of regional airports is reviewed in this study by analyzing data for the passengers of airplanes and Shinkansen, which are important transportation infrastructures, after the Hokuriku Shinkansen extension. They are a pivot to revitalize rural areas. The investigation area is Hokuriku (Toyama and Ishikawa Prefectures). The Hokuriku Shinkansen Line was extended to Kanazawa City from Nagano City on March 14, 2015. The train can arrive to Kanazawa from Tokyo in about 2 and a half hours. It takes about 2 hours and 15 minutes to Toyama City from Tokyo. There are two airports in Ishikawa Prefecture, namely Komatsu (approximately 32 km away from Kanazawa Station) and Noto Satoyama (approximately 100 km away from Kanazawa Station and Shin-Takaoka Station respectively). There is an airport in Toyama Prefecture, namely Toyama Kitokito (approximately 8 km away from Toyama Station). Many passengers of these three airports are using flights to Haneda (Tokyo). Some interesting characteristics are obtained in the passenger numbers, which depends heavily on the distance to a nearby Shinkansen station and the seat-load time. The coexistence of the Shinkansen line and airports is a big issue to expand the exchanging population in rural areas [Ministry of Land, Infrastructure and Transport, 2017b]. The population of Toyama City, in which Toyama Kitokito Airport is located, is about 0.42 million. The passengers of Haneda flights decreased remarkably in the airport by 54 %. The main

cause of this decrease is due to the mutual nearness, namely Toyama Airport is about 8 km apart from Toyama Station and it takes about 20 minutes by bus. Many people use the Shinkansen instead of airlines because it is easier to utilize. In Komatsu Airport, it is convenient to use the airplane for local residents who are living in Fukui Prefecture (population is about 0.8 million) and Komatsu City (population is about 0.10 million) than the use of the Shinkansen. The residents of Kanazawa City (about 0.46 million) use the Shinkansen and the user can arrive in Tokyo earlier than with the use of an airplane. The number of passengers utilizing airplanes did not decrease in Noto Satoyama Airport, because the airport is far from the nearby Shinkansen stations (Kanazawa and Shin-Takaoka). The number increases by visitors from the Tokyo area and local residents. Recently the visitors from the Tokyo area participate in events like food and art festivals held in the Noto area.

In this study, the passenger numbers of three airports in the Hokuriku area and the Shinkansen line are discussed to increase the exchanging population in the future.

2. Passengers of Hokuriku Shinkansen Line

The Hokuriku Shinkansen Line was extended to Kanazawa from Nagano and it opened on March 14, 2015. It had been running between Tokyo and
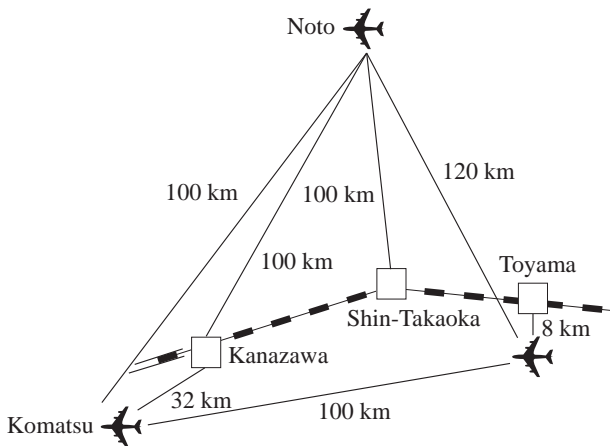
Figure 8-1 Rough geographical location of three airports and nearby JR Shinkansen stations

Nagano (about one and half hours) until that time, and it opened on October 1, 1997. It will extend to Tsuruga (Fukui Prefecture) from Kanazawa in March 2023 and extend to Shin-Osaka via Kyoto (total extension approximately 700 km). The Hokuriku Shinkansen Line can take on a bypass function role of the Tokaido Shinkansen Line after the extension. Five Shinkansen stations will be made newly according to the extension to Tsuruga, namely Komatsu, Kaga-onsen, Awara-onsen, Fukui and Obama, and the users of Komatsu Airport will decrease still more. The positional relation among the Shinkansen stations and three airports is shown in Figure 8-1.

The trend in the passenger number of the Hokuriku Shinkansen Line after the extension to Kanazawa is indicated in Figure 8-2. The measurement was carried out between Joetsu-myoko Station and Itoigawa Station by Japan Railways (JR) [Hokuriku Chunichi Shimbun, 2018a]. In the figure, each year (the abscissa) means the period of March 14 to March 13 of the following year. The line opened on March 14, 2015. Namely the year 2017 means the term of March 14, 2017 to March 13, 2018 and the value (passengers) was 8.569 million. The number of the passengers before the opening of business was 3.17 million, and it exceeded approximately 2.9 times in the first year of opening business and it recorded 2.7 times in the third year. The value is stable. The effect of the Shinkansen line connecting to the Tokyo area (Tokyo, Saitama, Chiba and Kanagawa prefectures) is large. The area population is about 35 million. The Hokuriku Shinkansen
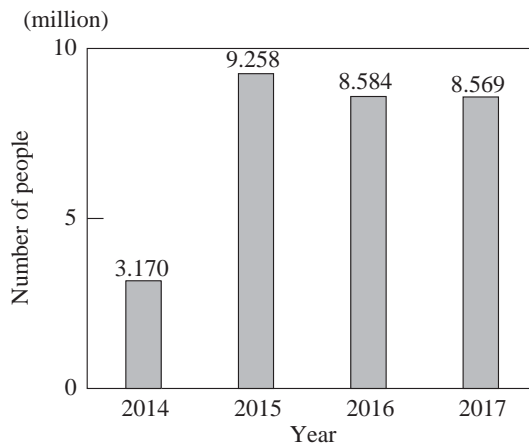
Figure 8-2 Trend in number of passengers from 2014 to 2017
Note: Each year period means from March 14 to March 13 of following year.

Line was not cancelled due to the heavy fall of snow and strong winds in 2018. The passenger number of the Hokuriku Shinkansen was a maximum in August, and the ones in October and November follow. It has few passengers in January and February.

3. Passengers of three airports in Hokuriku

In Japan, airports are classified in four categories by the Airport Act, namely hub airport (28), local government managing airport (54), other airport (7) and military-civilian airport (8). There are 97 airports in total. There are three airports in the Hokuriku district, namely Toyama Kitokito Airport (Toyama Prefecture), Noto Satoyama Airport (Ishikawa Prefecture) and Komatsu Airport (Ishikawa Prefecture). These airports are hereafter called Toyama, Noto and Komatsu airports. Toyama and Noto belong to local government managing airport, and Komatsu belongs to military-civilian airport, which is a common use airport with the Japan Self-Defense Forces (JSDF). There are many airports in the Japanese country areas and the airport infrastructure is important in these areas. Fukui Prefecture also has an airport which is managed by the local government. There are no scheduled flights in the airport and it is used only for training and trafficking of private propeller planes (and gliders), therefore it could not be included in the classification by the Act.

3.1 Komatsu Airport

Komatsu Airport is a common use airport with JSDF and managed by the Ministry of Defense. The airport is always maintained for JSDF airplanes to arrive and depart, and there are few cancelled private flights throughout the year. The users from Kanazawa decreased after the extension of the Hokuriku Shinkansen, however many inhabitants who are living in the southern part of Ishikawa Prefecture (mainly Komatsu and Kaga cities), and the northern part of Fukui Prefecture, are still using Komatsu Airport. Yearly change in plane-passengers of Komatsu Airport is indicated in Figure 8-3 [Hokuriku Chunichi Shimbun, 2018b]. The horizontal axis means the fiscal year (FY: from April to March of the following year). There were 1.51 million in domestic flight users in 2017 (FY) and the value is 71 % of the one in 2014 (before the extension of the Hokuriku Shinkansen). The number of international flight users was about 203 thousand in 2017 and it increased to 7.8 % compared with the one in 2014. This feature is thought
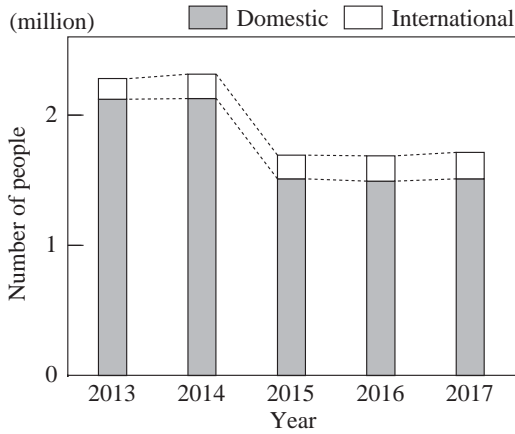
Figure 8-3 Yearly change in plane-passengers of Komatsu Airport

as a spreading effect of inbounds (tourists who visit Japan from foreign countries and travel in Japan). The total user number of international and domestic flights was 1.713 million in 2017.

The passengers who used the flights between Komatsu and Haneda were about 1.1 million in 2017 and the rate accounted for 72.7 % of domestic flight passengers. The number (1.1 million) decreased by 37.3 % compared with the one in 2014. The yearly change in plane-passengers be-
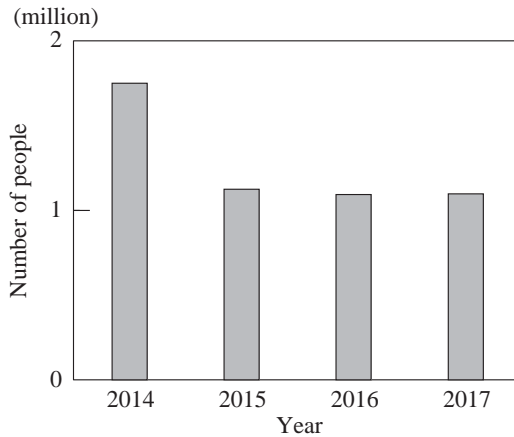
Figure 8-4 Yearly change in plane-passengers between Komatsu and Haneda

tween Komatsu and Haneda is indicated in Figure 8-4. The characteristic decreases after the extension of the Shinkansen, but it is stable in the latter two years. It is anticipated that the number could decrease further by the extension of the line to Tsuruga in 2023. The passengers of the flights other than Haneda (namely Fukuoka, Sapporo, Naha and Sendai flights etc.) and international flights (Taipei, Seoul and Shanghai) increased. In addition, globalization is demanded furthermore in the airport. It is also better if the passengers of the flights with an intermediate stop and a change of aircraft at Haneda (Haneda transit) increase. The convenience for passengers will increase when the flights of Haneda transit increases. It is also necessary that the number of flight cancellations due to snow damage and strong wind is decreased.

3.2 Toyama Airport

Toyama Airport (opened in 1963), is installed in the river-bed area (Jinzu-kawa River) and it is a local government managing airport, which is managed by Toyama Prefecture. It is difficult to extend the runway because there is the Hokuriku Expressway on the north side. The rate of cancellation flights due to strong wind and heavy snow (low visibility) is slightly high in the airport. It is close to Toyama Station and access to the airport is good. There is free parking and some people from Kanazawa City also use the airport, especially users of international flights. There is only one domestic flight to Sapporo (annual passengers: 66 thousand) in addition to Haneda. There are international flights to Taipei, Seoul, Shanghai and Dalian, and these destinations almost overlap with those of Komatsu.

   The yearly change in plane-passengers of Toyama Airport is explained in Figure 8-5. The total users including international and domestic flights in 2017 were 564 thousand and the value was 33 % of the one for Komatsu Airport. The horizontal axis means the fiscal year. The one for Toyama Airport in 2014 (before the extension of the Shinkansen line) was 987 thousand and it decreased by 43 %. Most of the decreasing rate was due to the flight users to Haneda. It is important to exchange with the Tokyo area in the Toyama region. The yearly change in plane-passengers between Toyama and Haneda is shown in Figure 8-6. The passengers were 376 thousand in 2017 and it decreased by 54 % compared with the one in 2014. The rate of Haneda flights was 66.8 % for the total flights in 2017. The rate was 64.1 % in Komatsu Airport, and dependability of Haneda flights in Toyama Airport was slightly higher. The passenger rate of Haneda flights decreased
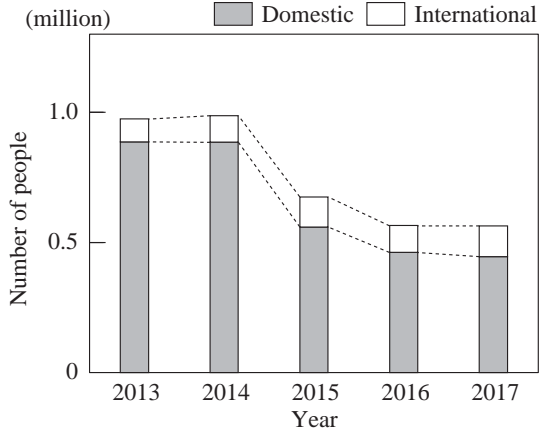
Figure 8-5 Yearly change in plane-passengers of Toyama Airport
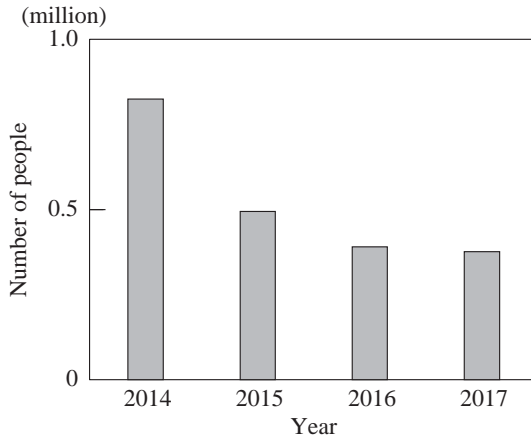
Figure 8-6 Yearly change in plane-passengers between Toyama and Haneda

due to the Shinkansen line extension because it was 83.5 % in 2014.

3.3 Noto Airport

Noto Airport opened on July 7, 2003 and there are only two flights per day between Noto and Haneda and 16 years have passed on July 6, 2019. The data in each year is measured from July 7 to July 6 of the following year as one year. The airport is considerably separated from the Shinkansen stations (Kanazawa and Shin-Takaoka) and it is not influenced by the line-extension. However, aging and depopulation have been advancing significantly in the Noto area, and passengers living in the area are decreasing. The boarding rate is maintained by events for food and art held in the area, in which there are many participants from the Tokyo area.

The trend in the plane-passengers between Noto and Haneda is represented in Figure 8-7 [Yomiuri Shimbun, 2018]. It is obvious that the characteristic is not influenced by the extension of the Shinkansen line. The passenger number increases contrarily. The passenger number in 2017 (from July 7, 2017 to July 6, 2018) was 162.7 thousand (the rate of inhabitants is 16 %) and the boarding rate was 69.1 %. The data was published by the Noto Airport administrative office. The target boarding percentage by Ishikawa Prefecture is 62 % and it exceeds the value. It is necessary to exceed the value due to developing tourism resources and providing them to promote regional business, especially the regional tourism industry. The passengers
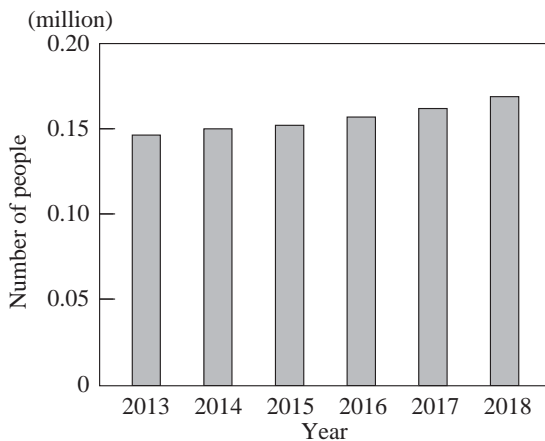
Figure 8-7 Yearly change in plane-passengers between Noto and Haneda

increased due to the participants of the Noto International Art Festival held in Suzu City in 2017. Tours to taste globefish also contribute to the increase. It is necessary to focus on the promotion for inviting foreign tourists, school excursions, and trips of local women's societies in the future. The merit (foreign and domestic people can transit at Haneda) should be an appeal to tourists and inhabitants. The passengers of the charter flights (mainly from Taiwan) were 3.152 thousand in 2017 (from July 7, 2017 to July 6 of the following year). There were 22 flights (using an airplane for 160 passengers) and the boarding rate is about 90 %. The data is not included in the figure.

4. Influence on passenger numbers of three airports due to extension of Shinkansen line

Tourism will become an important industry which derives Japanese economic growth. The increase of foreign tourists (inbounds) is expected especially due to the era of globalization [Oyabu et al., 2017]. The Japan Tourism Agency published that the number of inbounds was 28.69 million in 2017 (29.97 million in FY 2017). The achievement of 40 million foreign people as a governmental goal in 2020 will be almost certain. Most inbound tourists are visiting the golden route which connects Osaka with Tokyo. It is necessary that they are guided to rural districts. Shinkansen and airport (transportation infrastructure) are absolutely essential to guide the inbound tourists to regional areas [Japan Tourism Agency, 2018]. Improvements of the expressway network and the soft infrastructures (mainly human resource development) are also required. Transmitting information to which visitors are attracted is less in rural areas than that of urban areas, consequently various kinds of "information infrastructures" (Wi-Fi devices and translation apparatus etc.) are also essential.

     In this study, the decreasing phenomenon in airplane passengers at Noto Airport, which has only two flights per day between Noto and Haneda (2 round services per day), could not be recognized after the extension of the Hokuriku Shinkansen Line. There are fewer passengers compared with the other two airports and there are many regular customers including local inhabitants.

4.1 Influence on Komatsu Airport

Komatsu Airport is 30 km away from Kanazawa Station and it takes 40

minutes by an airport express bus. So, Kanazawa citizens visiting the To-kyo area generally use the Shinkansen. Komatsu (population: about 100 thousand), Kaga (67 thousand) and Fukui (264 thousand) citizens mainly use the airport when they visit the Tokyo area. However, Kanazawa citizens use the airport when they visit other local areas. There are five domestic flights (between Komatsu and Fukuoka (Fukuoka flight: the passengers, 169.102 thousand in 2017), Sapporo (80.799 thousand), Naha (73.286 thousand), Sendai (73.286 thousand) and Narita flights (34.281 thousand)) other than Haneda flights. The passenger number of international flights is not influenced by the opening of the Shinkansen line. There are three interna-tional flights (Taipei: passenger number is 104.178 thousand in FY 2017, Seoul: 36.624 thousand and Shanghai: 35.787 thousand) and some charter flights (26.299 thousand).

A scatter diagram between the passengers of airplanes (Komatsu-Haneda flight) and Shinkansen is demonstrated in Figure 8-8, however the one for the former JR line express train is used in FY 2014. In the figure, the left upper circle stands for the plot (3.17, 1.75) which means the passengers of the former JR line express and Haneda flights in 2014 (before the Shinkan-sen opening). After the extension, the passengers to Haneda decreases and the one for the Shinkansen increases. The plot in 2014 is located separately, and other plots are at the same point. The data is stable after 2015.
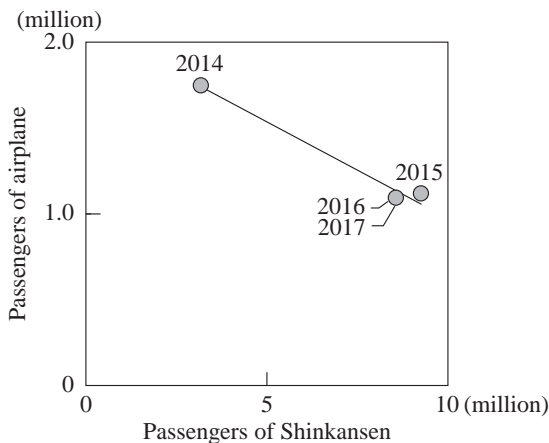
Figure 8-8 Scatter diagram between passengers of airplanes (Komatsu-Haneda) and Shinkansen

4.2 *Influence on Toyama Airport*

Toyama Airport is relatively near Toyama Station and it takes 20 minutes by a public bus. Therefore, most citizens of Toyama and neighboring cities (including towns and villages) use the Shinkansen rather than airplanes when they visit the Tokyo area. It takes 133 minutes from Toyama to Tokyo by the fastest Shinkansen. An increase of the airplane passengers in flights between Toyama and Haneda (Haneda flight) is not expected. There is only one domestic flight besides the Haneda flight in the airport, that is, the Sapporo flight (the total passenger number was 66.734 thousand in FY 2017). It is necessary for further efforts to increase the regular flights to other cities for the promotion of human exchange. Of course, the increase of transit passengers at Haneda should be brought into the way of thinking. The increase of international flight passengers is also necessary in airport operation and maintenance. There are four flights from the airport at present, that is, Taipei (the total passengers were 57.701 thousand in FY 2017), Seoul (25.405 thousand), Shanghai (17.452 thousand) and Dalian (14.163 thousand). Moreover, there are some charter flight passengers, namely domestic (1.925 thousand in FY 2017) and international (3.923 thousand). The one for international flights is more than the one for domestic (about two times), so it is better to promote exchange with some overseas local airports.

A scatter diagram between passengers of airplanes (Toyama-Haneda flight) and Shinkansen is demonstrated in Figure 8-9. In the figure, the left
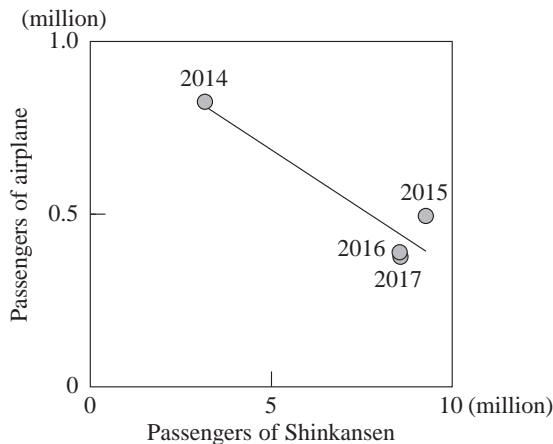
Figure 8-9 Scatter diagram between passengers of airplanes (Toyama-Haneda) and Shinkansen

upper circle stands for the plot (3.17, 0.825) which means the passengers of the former JR line express train and Haneda flight in 2014 (before the Shinkansen opening). The Haneda flight passengers decrease remarkably and the one for the Shinkansen increases after the extension. The plots for 2016 and 2017 are close and stable.

4.3 Seat-load time of Shinkansen and passenger number of airplane

There are various effects on the passenger number in a local airport due to the opening of a Shinkansen line in a region. The Shinkansen connected to Tokyo has significant influences on a Haneda flight. It is said that the airplane passengers for the areas where the seat-load time (riding time) is less than three hours, will largely decrease. Most airplane users in local areas visit mainly large cities like Tokyo and there is a tendency that the airplane user decreases because the seat-load time of the Shinkansen to the destination is shorter. The users of Komatsu and Toyama airports are affected due to the opening of the Shinkansen. The tendency of the decreasing rate for Haneda flights has to be understood well, and the study will become a good guide to the areas where the opening of new Shinkansen lines are planned. The relationship of the seat-load time of the Shinkansen and the decreasing rate of Haneda flights is explained in Figure 8-10. The unit of time is in minutes. The rates for Toyama Airport decreased by 40 % (the rate in 2014 was a standard) in 2015, and it decreased by 52.64 % in 2016 and 54.36
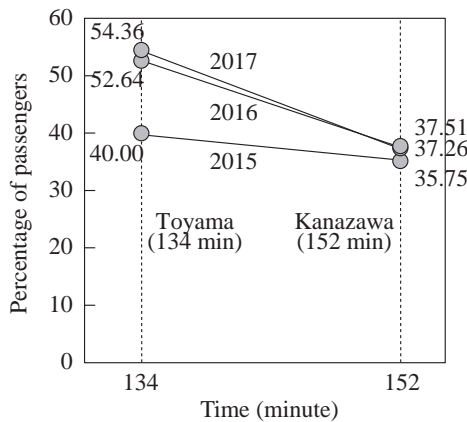
Figure 8-10 Scatter diagram between decreasing rate of airplane passengers and seat-load time of Shinkansen

% in 2017 respectively. The rate has an increasing tendency. The rate for Komatsu Airport decreased by 35.75 % in 2015, 37.51 % in 2016 and 37.26 % in 2017. The tendency tends to be a stable. The plots between Toyama and Komatsu in 2017 could be expressed using the following primary function equation (1).

$$y = -0.95x + 181.66 \quad (1)$$

y means the rate (%) and *x* is the seat-load time (minutes). *y* becomes 100 % when *x* is 86 (minutes), and y becomes 30 % when *x* is 160 due to equation (1). It means that the airplane user becomes zero in the area where a passenger can arrive at the destination in one and a half hours using the Shinkansen. However, it is better to use a quadratic function instead of the primary function, because the decreasing rate of the airplane user is bigger when the seat-load time is shorter and the influence to the rate decreases when the seat-load time is longer.

5. Measures for Hokuriku three airports

The head offices of many companies as well as government agencies are integrated in Tokyo, therefore citizens and workers living in local areas have to visit Tokyo frequently. Business chances could increase markedly in the areas located near Shinkansen stations because access to Tokyo will improve largely in those areas. Local residents, business persons and visitors are mainly using local airports. The management expense of local airports is in deficit (over 15 billion yen altogether) and tax is applied to them. An effort to derive annual maintenance costs is strongly required. Local airports have the following advantages and it is necessary to manage and operate sustainably in those airports.

- To connect to other areas without the Shinkansen line in a short time
- To utilize in an emergency such as a disaster
- To utilize when the railway is blocked

It is always necessary to propose some measures for increasing passengers. An increase in the landing fee can be considered, however, this would lead to an increase of the passenger's burden. In any case, it is essential to propose new measures for passengers. The basic measures are exchanges

due to tourism, business and education. *Omotenashi* (which is Japanese language and means a kind of hospitality) by the residents is indispensable because inbound tourists are interested in exchange with local citizens and they are impressed by the exchange. Japanese people are also impressed by an exchange when they visit a foreign area. Human resources development (a kind of soft infrastructure) is essential to manage and operate the hard infrastructures. The essential resources are graduates of local high schools and universities because they know their hometowns well. The three airports in the Hokuriku district should be privatized and managed effectively. Merge is also included in the way of thinking. Invitation of low cost carrier (LCC) will be effective, and substantiality of Haneda transit is also a good measure.

Innovation is required from a new perspective in each airport after the opening of the Shinkansen line. Acceptable measures are shown below as personal opinions.

- Improvement of soft infrastructure (including *omotenashi*)
- Revitalization of the three airports and cooperative management by the three-airport groups
- Enhancement of convenience of Haneda transit (including airplane fare)
- Invitation of LCC
- Increase of regular services with overseas local airports

6. Energy consumption and carbon dioxide discharge of the Shinkansen and airplane

The Japanese Shinkansen has good performance and it has excellent safety. It has a low discharge amount of carbon dioxide and reduces global warming. The Shinkansen is an important passenger transport facility. The Shinkansen is about 1/6 (per seat) of the plane in energy consumption and it is about 1/10 (per seat) in carbon dioxide emission according to data of the Ministry of Land, Infrastructure, Transport and Tourism.

Railway enterprises in Japan take about 30 % of passenger transportation and the total energy consumption is about 7 %, namely the railway including the Shinkansen has environmental superiority. Furthermore, the Shinkansen sustains efforts to increase energy efficiency. The power source of the Shinkansen is electricity and it does not release an environmental pollutant along the line (wayside), which is an important superiority.
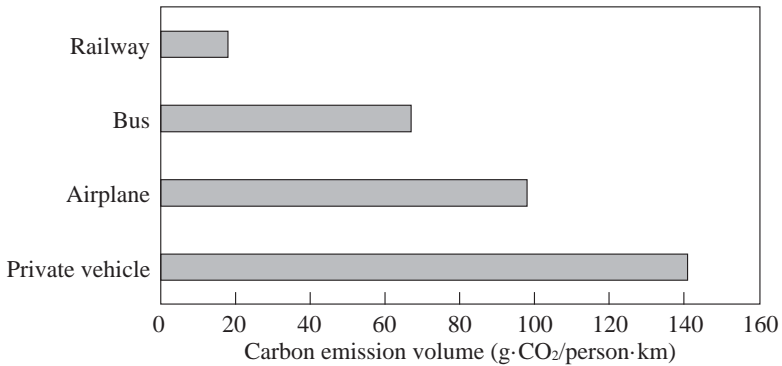
Figure 8-11 Carbon emission volume for each passenger transportation facility to carry a person for 1 km

Carbon dioxide emission amounts of some passenger transportation facilities are indicated in Figure 8-11. The data was published by the Ministry of Land, Infrastructure, Transport and Tourism in 2016. The value ($g \cdot CO_2$/person$\cdot$km) means the carbon emission amount to carry a person for 1 km. The emission volume of the railway, including the Shinkansen, is less than 20 % of airplanes.

The airplane should be basically used when going overseas and visiting local areas where there is no Shinkansen line.

7. Conclusion

The population of the metropolitan (Tokyo) area occupies 30 % (35 million) of the total Japanese population. The market of human exchange is mainly created by connecting to the Tokyo area using the Shinkansen line and the connecting will become a trigger to increase the exchanging population, which is a positive factor. On the other hand, the passenger number on airplanes decreases, this is a negative factor. Although an airport is an important infrastructure, it costs a large amount of administrative expense and needs some degree of flights and passengers. Good competition measures between the Shinkansen and airplanes are expected in each region. The passenger number decreased largely at Toyama and Komatsu airports after the opening business of Shinkansen, namely the rates were 35 % at Komatsu and 55 % at Toyama. It increased 8 % at Noto Airport. Utilization measures of an airport are also important as well as the prosperity of the local

businesses. There are many small and medium advanced enterprises in the Hokuriku area and the companies are expanding in other Asian regions. It is a good factor to open regular flights with the regions. Globalization may also advance. Exchanges with other regions due to Haneda transit would be effective.

It is thought that the results of this study will be useful for other regions which are inviting the Shinkansen. It is necessary to construct a measure which always considers the area population in departure and the arrival places. Trends of inbound tourists have to be surveyed and those results should be applied to tourism policies.

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Design International

About this book

This book describes Japanese social conditions and tourism strategies, and reports some case studies. Entering the 21st century, tourism industry promotion is thought of as one of the important factors to develop the economy in Japan and some slogans are chanted, such as the Cool Japan Strategy. It is difficult to drastically increase the number of domestic tourists these days because Japan is entering an era of a declining population and an aging society. Additionally, the trend of a declining population is remarkable in most regions due to an extreme concentration in Tokyo. A remarkable increase of the gross domestic product cannot be expected. Regional revitalization was put forward to solve the concentration and to disperse funds by the Japanese government in 2014. One of the strategies is tourism industry promotion. Inbound tourists could compensate for the decrease of domestic tourists. This book is based on the above background. According to the World Economic Forum, Japanese tourism competitiveness is 4th in the world. Spain is in 1st place, and Japan is 1st place in Asia. It is essential to utilize advanced information technology and develop human resources with hospitality for promoting the tourism industry. It is thought that this book is helpful to construct tourism strategies in many countries, including Asian countries, so it is written in English. Four authors, whose specialized fields are different, explain their basic concepts and case studies respectively. Tourism exchange can play an important role for peace diplomacy. We hope that tourism exchange is promoted due to this book and sustainable world peace through the exchange is continued.