

Feature Article

Shift from tourism studies to human logistics: A requirement for crisis management

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1. Introduction

1.1 The presence of tourism studies raised by Covid-19

Covid-19 has made restrictions of the movement of people known worldwide. Until the effective spread of vaccine, assuming this is feasible, the movement of people itself had to be shut down to some extent, and major countries locked down except for essential movements by administrative orders. Initially, the World Health Organization (WHO) was aware that imposing restrictions on the movement of people, such as entry restrictions, would not be effective and would cause significant economic damage. This policy of waiting for the formation of collective immunity had difficulty to obtain both political and scientific consent, and measures to restrict the movement of people were taken in each country. Essential movements do not include tourism which is thought of as an extraordinary experience. However, as the weight of tourism's economic activities is increasing, the impact is also significant.

The 21st century Covid-19 was spread by travelers inside and outside of countries, which is different to the spread by soldiers and workers of the Spanish flu in the 20th century. As a result, the movement of people was restricted.

The famous tourist spots, which were known for over-tourism, became like a silent bird that had been singing. This is because local economy had a structure that would not function unless people moved. Covid-19 suggests a review of urban crisis management and migration. In New York and elsewhere, many low-income earners suffered damage, reminding them of cholera of the 19th century in London. Therefore in Spain, the basic income system has been introduced to prevent the collapse of social infrastructure.

Covid-19 has made people aware of their communication problems. The world has evolved from the stage of considering tourism as a luxury to the stage of making it popular, but the interaction between people itself has begun to be questioned.

It is advocated to eliminate unnecessary face-to-face contact. People are beginning to seriously consider how to enjoy themselves without causing unnecessary interaction.

As a result, the concept of "tourism" cannot be fully ex-

plained, and an alternative concept must be determined.

1.2 The Basic Law on Promotion of Tourism Nation that does not assume crisis management

There is a commonality between the media which uses two-value codes for the intensity of stimulation and also tourism which uses two-value codes for everyday and extraordinary.

The mass media tends to emphasize the dangers of Covid-19, etc., so the movement of people is suppressed. The tourism industry claims that it is rumor's damage, but the tendency to seek the stimulus of the mass media also creates rumor's profit, and the tourism industry is benefiting. Therefore, from a business perspective, crisis management is a matter of public relations strategy. However, if regulations and compensation measures are required, it will be subject to policy.

The Basic Law on Promotion of Tourism Nation is for the provision of attractive tourist destinations with high international competitiveness of the tourism industry. However, there is no provision for responding to economic activity by regulating the movement of people. The restrictions on the movement of people have a great influence on the passenger transportation business, the travel business, the accommodation and food business, and the entertainment business. From an economic point of view, the movement of people plays an essential role in supporting society. Covid-19 reveals that this perception is not clear under the law.

In order to implement regulations of the movement of people smoothly, it is necessary to take a policy response as a risk management measure for the tourism industry. As a result of global restrictions on the movement of people, favorable impacts on climate change have been observed, and endangered species have been found in Machu Picchu, etc. The crisis sued in Galapagos has been easily resolved. Even if an environmental scientist fully accepts these results, how to evaluate eco-tourism research is a considerable issue.

2. Tourism and crisis management part 1: Epidemic

In 2002, when the SARS epidemic occurred, international

air transport was 3.1 trillion paid passenger kilometers, however, in comparison the number of aircraft transported in 2018 was 8.3 trillion paid passenger kilometers, more than 2.5 times. Only viruses that have a great adverse effect on humans become news, but in reality, there are thousands of new viruses being generated every day, ten times more than the new viruses that actually become news. Therefore, highly infectious viruses are spread all over the world at once due to an increase in the number of people. It has become possible to identify viruses that are harmful to humans and visualize their effects, and the information has spread to the whole world to some extent correctly. Therefore, in the future, the personal tourism industry must constantly consider the risks of epidemics, including rumors.

2.1 Regulation of movement of people after occurrence

The Infectious Diseases Control Law stipulates measures related to buildings and transportation. The prefectural governor may take necessary measures such as restricting access to and blocking buildings that are contaminated with or suspected of being contaminated with pathogens such as Ebola hemorrhagic fever. In addition, the prefectural governor can restrict or block traffic where there is an infectious disease patient, where there is a pathogen contamination, or where there is a suspicion of contamination. Infectious diseases such as Covid-19, bird-flu and new strains of influenza have been enacted separately.

2.2 Measures to prevent the occurrence and spread of crisis

When pathogens, such as new strains of influenza or Covid-19, cannot be prevented for domestic invasion through ships or aircraft, the Prime Minister can request a restriction on the arrival of ships. An example is a cruise ship where an infectious disease patient was discovered. For long-distance ferry companies, regular airlines, and railway companies that cross prefectural borders, there are requirements for operational restrictions. In addition, the head of the government headquarters can give necessary instructions to designated public institu-

tions.

The governor can request the residents of the prefecture to stay at home, except for essential movements. The governor can instruct restaurants and entertainment facilities used by tourists to suspend business. If the facility does not follow the instructions, there are no penalties but the facts will be published. The facilities covered are similar to the pre-war entrance tax levied on all kinds of entertainment venues. During Covid-19, it was reported that Paris indicated that cafés were essential for the city. Note that the restrictions on hotels and inns are limited to the parts used for meetings, and the accommodation facilities are rather obliged to undertake accommodation contracts, and it is necessary to secure accommodation facilities in an emergency.

2.3 Dramatic decrease in the number of foreign visitors to Japan

Covid-19 occurred in Wuhan, China at the end of 2019. After that, it spread all over the world, and in the first half of 2020, more than 10 million people were infected worldwide and more than 500,000 lives were lost. In order to stop this pandemic, curfew has been enforced around the world. However, it slowed down economic activity. In Japan, after the decision to postpone the Tokyo Olympics by one year, an emergency declaration was issued in April 2020 based on the Act on Special Measures against Influenza, etc. The number of foreign visitors to Japan in April 2020 decreased by 99.9 year-on-year. The government's numerical target for inbound travelers was 40 million by 2020. However, achieving this goal was difficult.

The number of tourists visiting Japan decreased by almost 20 % during the 2011 Fukushima nuclear accident. Although it recovered steadily thereafter, the number of travelers from mainland China decreased in 2013 when the dispute with China over the attribution of the Senkaku Islands (the Diaoyu Islands) increased. In 2019, the number of South Korean tourists declined by nearly 30 % during the conflict between Japan and South Korea regarding historical issues. In this way, visitors

Table 1: Numbers of visitors to Japan

Year (Incident)	2010	2011		2013			2019		2020	
		Fukushima disaster	2012	Conflict with China	2014	2018	Conflict with South Korea	Covid-19	YoY	
Total	861	622	836	1,036	1,341	3,119	3,188	411	-87	
South Korea	244	166	204	246	276	754	558	49	-91	
Mainland China	141	104	143	131	241	838	959	107	-89	
Taiwan	127	99	147	221	283	476	489	69	-86	
Hong Kong	51	36	48	75	93	221	229	34	-85	
Total of above	563	406	542	673	892	2,288	2,235	259	-88	
European total	85	57	78	90	105	172	198	24	-88	
North American total	91	69	88	98	111	194	219	28	-87	
Received expenditure	13	11	15	15	19	42	44	7		

Note: 10,000 person, US\$ billion.
Source: JNTO MLIT.

from mainland China and South Korea, which account for half of the visitors to Japan, are constantly at risk of politics. (Table 1)

The percentage of visitors from mainland China is between 30 % and 35 % of the Far East countries. Considering the weight of the mainland China population in the world, it is a generally appropriate level for Far Eastern countries, as shown in Table 2. Rather, the problem is that Japan could not keep up with the expanding international tourism demand. Table 3 shows the amount spent on overseas travel for each country that exceeds Japan in the world every year. It is obvious that the gray area is increasing year by year. During the long-term de-

cline in the number of overseas travelers and spending for the Japanese as a whole, Japan's presence declined, overtaken by many countries. While maintaining the status quo, the behavior of the people of the Far East countries improved and increased. It might be thought of as inbound tourism and through it Japanese culture was reviewed. The last 25 years can be understood in the world of tourism. This is a serious crisis.

2.4 Restrictions on the movement of people and impact on the tourism industry

Immigration regulations, business regulations such as the tourism industry, social distances of residents, and restrictions

Table 2: Ratio of mainland Chinese visitors

District	South Korea		Taiwan		Japan	
Year	2017	2018	2017	2018	2017	2018
Number of visitors	13,336	15,347	10,740	11,067	28,691	31,192
Visitors average nights	7.00	7.20	6.39	6.46	10.06	10.03
Paid per person per day US\$	143.2	138.6	179.5	NA	128.1	144.7
Ratio of mainland China %	31	34	25	36	26	30

Source: UNWTO eLibrary.

Table 3: Expenditure of outbound tourists

Year	1995	1998	2006	2007	2010	2011	2013	2014	2015	2017	2018
USA	46	58	84	89	87	90	98	106	115	135	144
Germany	*67	*85	74	83	78	86	91	93	77	89	96
UK	25	33	70	80	61	61	61	67	68	65	69
France	16	19	32	38	38	45	42	49	40	43	48
Mainland China	4	9	24	30	55	73	129	227	250	257	277
Italy	15	18	23	27	27	29	27	29	24	28	30
Canada	10	11	21	25	30	33	35	34	30	32	34
Russia	12	9	17	20	27	33	53	50	35	31	34
Australia	5	6	13	16	23	27	29	30	29	34	37
Brazil	4	5	6	8	16	21	25	26	17	19	18
Singapore	5	3	11	14	19	21	24	26	24	25	25
South Korea	6	3	19	22	19	20	22	23	25	32	32
Hong Kong	10	13	14	15	17	19	21	22	23	25	26
Netherlands	12	12	18	17	19	20	21	21	18	22	23
Spain	6	7	17	20	17	17	16	18	17	22	27
India	1	2	7	8	10	14	12	15	15	18	21
Japan	37	29	27	27	28	27	22	19	16	18	20

Notes: Unit; US\$ billion. * includes air transport. Gray part is exceeding Japan.

Source: UNWTO eLibrary.

Table 4: 2019 percentage of workers in the aviation, food and beverage/accommodation and travel industries among all workers (%)

EU-27	5.3	Italy	6.8	Germany	4.3	France	4.3
Greece	10.3	UK	5.9	Switzerland	4.5	Norway	4.0
Spain	9.3	Netherlands	4.9	Finland	4.3	Sweden	3.6

Source: Eurostat.

Table 5: 2019 part-time workers ratio (%)

	All industries	Air transport	Lodging/restaurant	Of which lodging	Travel related
Germany	28.6	26.9	46.0	38.9	34.8
UK	26.0	22.3	45.3	33.9	28.2
EU27	19.2	17.2	30.3	22.9	22.7
Italy	19.0	13.0	34.9	25.4	24.6
France	18.1	13.0	26.1	19.9	10.2
Spain	14.6	15.2	25.2	13.4	13.1

Source: Eurostat.

Table 6: 2019 self-employed ratio in the lodging/restaurant industry (%)

Average EU-27 countries	16
Italy	24
Greece	22
Spain	18
France	15
Switzerland	15
Netherlands	13
Germany	12
UK	9

Source: Eurostat.

on the movement of people such as “stay home” had a great impact on the economy and society. Looking at the figures for European countries in Table 4, about 5 % of the workers are directly engaged in the tourism industry. In the case of Japan, the 2012 Tourism Agency survey reported 15 % of workers (however, there is a difference in the survey method using data for tourist destinations). Moreover, the ratio of part-time workers is about 20 % in all industries, as shown in Table 5, while the ratio of accommodation is about 20 %, and the ratio of food and drink is about 30 %. In addition, the high percentage of self-employed workers, who are not covered by the labor law, recognizes that the tourism industry as a whole needs to be equipped with a livelihood protection system, see Table 6.

If legal restrictions are imposed on the movement of people, we must consider compensation for these fragile industries. This is especially true when proactively forcing business closures when no infectious disease is actually occurring, such as the case of Covid-19 in 2020. The industries related to aviation, travel, restaurant and lodging are called face-to-face (F2F) industries. Consumers are greatly affected by fear of infection and refrain from going out, and social institutional design is required.

2.5 Effects of immigration control and their removal

Deregulation is a more difficult judgment than the enforcement of regulations. The EU, which is the product of market integration and national integration policies, requires a free system of international human exchange (Schengen Conven-

tion system) between member countries. However, the EU has no authority over insurance policies, and each country had to prioritize its own measures against infectious diseases. The German government has announced that it is considering an immune passport system. France is reportedly prioritizing EU status over holders of French nationality in foreign territories. Japan, which has a history recognition problem with China and South Korea, has the problem of whether deregulation can be achieved only by scientific and rational judgment avoiding political decision.

3. Tourism and crisis management part 2: Natural disaster

3.1 Response at the time of occurrence

In the event of a disaster, the mayor of the municipality will regulate the movement of people in order to protect human life and property in accordance with the provisions of the Basic Act on Disaster Countermeasures. Violators will be fined or detained. Comprehensive measures will be taken as they will directly and indirectly affect the socio-economic environment. Experts can be expected to diverge when deregulating. Since it is not guaranteed that the opinions of the majority of scholars are correct, it is ultimately the responsibility of the mayor to make a legal decision.

Psychological conditions such as “self-restraint” in non-stricken areas in the vicinity of the Great Hanshin-Awaji Earthquake and “fear” of residents in the Tokyo metropolitan area at the time of the Fukushima nuclear accident affected consumption activities. In the tourism industry, these have come to be recognized as damage due to rumors. As the number of people engaged in the tourism industry has increased, socio-economic measures have been required to deal with the damage caused by these rumors.

3.2 Precautionary measures

If a warning declaration for the Central Japan Coast Earthquake, which is expected to occur with considerable accuracy, is issued based on the Act on Special Measures against Large-scale Earthquakes, the tourism industry will be greatly affected even if no physical damage occurs. Traffic restrictions on Shinkansen trains and highways have a major impact on the Japanese economy. Even if no legal action is taken, the same effect will be produced if a request for self-restraint is issued by an administrative body. As for measures against Covid-19,

following the de facto administrative guidance, a request to refrain from going out under the provisions of the same law was issued. Although it was a regulation that was not enforceable and lacked in normativeness, it had a strong spirit of lawfulness and had a certain effect along with entrainment pressure.

3.3 Response to self-restraint

Immediately after the Great Hanshin-Awaji Earthquake in 1995, a self-restraint mood spread in the Osaka area, which was not directly affected by the earthquake, and economic activities were hindered. Therefore, a campaign to attract tourists as a support measure has been developed as a policy. It means that the weight of tourism activities in the local community was increasing accordingly. Regarding the Fukushima nuclear accident, there was a negative reaction to support measures for crops and seafood produced in Fukushima and acceptance of industrial waste, unlike other disasters. It seems that there is still a long way to go before the tourism industry in Fukushima can recover.

4. Tourism and crisis management part 3: Political conflict

4.1 Case 1: Jeju Island

Jeju Island has a population of 690,000 and Okinawa has a population of 1.45 million. The number of tourists visiting from outside the islands are 14.3 million in Jeju Island, compared to 9.8 million in Okinawa. Jeju Island far surpasses Okinawa in terms of the proportion and effect of tourism on the economy. The nominal GDP per person is \$27,000 in Okinawa and \$25,000 in Jeju Island (Table 7).

Jeju Island's international tourism policy has been delegated by the central government. Based on its immigration control authority, since 2008, it has expanded the number of countries and regions subject to the visa-free entry permit to 180 countries, including China.

Since 2009, the number of foreigners entering Jeju Island has increased rapidly. Jeju Airlines was jointly established in 2005 by Jeju Province and a Korean company, and expanded air routes through deregulation. As a result, it has grown into the largest LCC in South Korea and the largest in East Asia. The air route between Jeju Island and Gimpo airport is the largest in the world with 13.5 million passengers in 2017.

In Jeju Island, the land price has skyrocketed as a result of the rapid increase of Chinese tourists in 2014. Following the influence of Spain's Majorca Island, which is located in the Mediterranean Sea, a debate on a CAP system that limits the number of people entering was reported. However, Jeju Island was greatly affected by the Chinese government's opposition to the US and South Korean defense policies and its policy of curbing tourists to Korea arranged by travel agencies. In 2016, the percentage of mainland Chinese tourists exceeded 45 % in South Korea as a whole, so even though Jeju Island has a large percentage of domestic tourists, it was also greatly affected.

4.2 Case 2: Tsushima Island

It was a Korean who discovered tourist resources such as hiking and fishing in Tsushima Island. The distance between the northern part of the Japanese island and South Korea is about 50 km, and it takes about an hour by high-speed boat. Since it became possible to travel without a visa, the number of tourists, which was around 300 in 1998, increased year by year. In 2018, the number of South Korean tourists was 410,000, more than 10 times Tsushima's population of 30,000. On the other hand, initially, the Tsushima tourism industry was slow to respond, and some nationalists wrote an exciting article in a magazine that Tsushima was in danger, as Korean capital advanced. However, the reality for the locals is the time when even abandonment of forests becomes a problem. The Mayor of Tsushima responded calmly and replied, "We hope to continue promoting friendly exchanges with South Korea and build a good-neighbor friendship relationship with ideal coexistence and mutual prosperity."

The Manned Border Remote Island Law was enforced in 2017, and air fares and route fares used by remote islanders were significantly reduced. As a result of the plane and jetfoil costs from Tsushima to Fukuoka City being reduced by about 40 %, the so-called straw phenomenon occurred and the population flowed out. It is necessary to recognize that it is a tourist destination located near the large city of Busan with a population of 3 million. It must be recognized that even Nagasaki City, where the prefectural capital is located, has become a peripheral city of Hakata.

In July 2019, the Japanese government abolished export pref-

Table 7: 2018 comparison of tourism situation on remote islands

	Malta	Cyprus	Majorca	Jeju	Okinawa	Unit
Population	439	1,189	896	692	1,448	1,000 persons
Nominal GDP per capita	33,672	28,957	32,344	24,990	27,034	US\$
Area	246	9,251	3,640	1,845	2,271	Km ²
Number of inbound visitors	1,798	2,666	8,574	1,300	2,903	1,000 persons
Number of domestic travelers	185	511	1,077	13,000	6,943	1000persons
Average nights	5.1	5.4	8.3		3.8	Night
Number of outbound travelers	629	1,435	1,077		146	1,000 persons

Source: Eurostat, Ibestat, 110 yen/US\$, 1,220 won/US\$, Majorca's GDP is 2018 Balearic island value.

erential treatment to South Korea. In response to this, Busan City announced the suspension of administrative exchange with Japan. The number of South Korean tourists to Tsushima dropped sharply to around 250,000 in 2019, returning to the state of three years before. South Korean customers' consumption on the island was 5.8 billion yen (estimated) in 2019, which was 3.3 billion yen less than the previous year's 9.1 billion yen. Fifty-six people involved in lodging, restaurants, and transportation on the island were dismissed due to the decrease in the number of South Korean tourists, and cast a shadow on local employment. In addition, Covid-19 has set the number of foreign nationals entering the island port according to immigration statistics to 6685 in January, 4512 in February, 170 in March, and zero in April, May & June.

4.3 Case 3: Hong Kong

Hong Kong is a densely populated area on small islands and peninsulas, with more than 20 million guests visiting each year. The Hong Kong economy has been hit hard by a dramatic decrease in tourists due to the Asian currency crisis that occurred immediately after the return in July 1997 and the spread of SARS infection from April to June 2003. However, in the second half of 2003, the number of mainland Chinese tourists increased sharply, resulting in a decrease of 6.2 % from the record high of 15.54 million in 2003, which was 16.57 million in 2002. Even in 2004, the momentum remained strong, increasing to 2.18 million. Immediately after the crisis, tourists were sent from the Chinese mainland and the renminbi could be used directly in Hong Kong. It was fostered among the stakeholders that the root of the Hong Kong problem was the economy. In 2018, a total of 51 million Chinese tourists visited Hong Kong with a population of 7.3 million.

In 2014, a Hong Kong anti-government protest came out of a political dispute over the one-country-two system. A memorial rally was held to celebrate the 1st anniversary in 2015, but only 1,000 people gathered. Radical people who affirm violence have become prominent. It has been pointed out that disappointment is spreading among supporters. The presence

of mainland Chinese tourists, which accounts for 80 %, should not have an impact. Such a failure of the umbrella movement appeared in a demonstration against the criminal delivery ordinance in 2019 in the form of respecting the other party without causing internal conflict even if there are disagreements.

5. Tourism and crisis management part 3: Terrorism/security

5.1 Definition of terrorism

As a measure for Japanese overseas travel safety, the Ministry of Foreign Affairs sends information on overseas travel regarding the degree of danger. When a terrorist incident occurred in Luxor, Tunisia, Tamil, etc., the rank of the degree of danger in those areas was increased in the Ministry of Foreign Affairs Overseas Travel Information. Still, the US risk rating of the terrorist attacks did not rise.

With regard to terrorism, the travel business agreement stipulates that it is included in the general terms of war and riot.

Since terrorism is a political problem, political speculation is involved even in the cause of its occurrence. This is something that the tourism industry must consider from a compound perspective.

5.2 Historical recognition evaluation

Many of the social causes of a terrorist incident are thought to be ultimately caused by economic dissatisfaction, and if economic problems are resolved, the occurrence of terrorism can be prevented, and tourism is recognized as a peace industry.

When the nationalist Yoshida Shoin died in prison 1859, the Shogunate consulted with the Choshu clan to which he belonged. Siebold, a famous German physician, botanist, and traveler, who came to Japan, seemed to think that the assassination of foreigners was used by some sort of party. It was a terrorist activity to put the Shogunate in a predicament. From the opening of the Shogunate to the opening of the country, the Dutch director went to Edo (Tokyo) 166 times, but no one was killed by the Japanese. On the other hand, in preparation for the terrorist attack, Britain and France insisted that troops be

Table 8: Number of visitors to Hong Kong

	Year	1997	1998	2002	2003	2004	2014	2015	2018	2019
	Unit	Currency crisis			SARS		Umbrella movement			Criminal delivery
Total	10,000 person	1,127	1,016	1,657	1,554	2,181	6,084	5,931	6,515	5,591
of which from mainland	%	21.0	26.3	41.2	54.5	56.1	77.70	77.30	78.3	78.3
of which excursionist	10,000 person	NA	NA	587	586	816	3,307	3,262	3,588	3,216
of which from mainland	%	NA	NA	35.2	47.5	54.6	85.2	85.4	86.8	85.7
inbound receipt	100 million HK\$	NA	568	775	749	918	3,594	3,294	3,282	NA

Source: 2018 Hong Kong tourism statistics.

stationed. It was the Choshu clan on the rebel side who burned down the British delegation. Schliemann wrote in a travelogue to Japan in 1865 that Edo was covered with terrorists of alien exclusionism belonging to the Choshu clan, etc.

The first Japanese Prime Minister Hirofumi Ito was assassinated by Korean An Jung-geun at the railway station of Harbin. This is a historical case, but the evaluation is divided. Ito was a great man in Japan but once assumed to be one of the terrorists by Schliemann. An Jung-geun is a hero in South Korea, but treated as a terrorist by many Japanese. Moreover, the two persons were foreign visitors from the Chinese perspective. History recognition is complicated. There is one thing we tourism researchers can say: The incident is well known to many, and Harbin Railway Station is a valuable tourist resource.

5.3 Lessons from terrorist attacks on the United States

The terrorist attacks on the United States as a result of carrying out the Afghan War have hit the US tourism industry. A month after the terrorist attack, US passenger traffic fell 43 %, US airlines lost \$2.1 billion, and laid off 130,000 people. Hotel industry revenues have fallen by \$2 billion and the convention industry has lost \$1 billion. The US industry's trade surplus has fallen by about 77 % from \$26 billion in 1996 to \$6 billion in 2004.

After the number of tourists dropped sharply, passengers were gradually returning due to lowered air fares and thorough safety management. Still, the tendency to avoid aircraft continued for some time. On the contrary, it is analyzed that there is an increase in domestic tourism called comfort tourism, which provides food and drink and recreation on a family basis.

Of the trends of tourists after the terrorist attack, what is especially noteworthy is the online collection of travel information and the dramatic increase in the number of reservations. Various discount plans that flooded the market after the terrorist attack led to a dramatic increase in the number of searches and reservations made using the Internet.

Even in the Florida government, tourism-related tax revenues plummeted, and the state was forced to cut some of its resident services. It has set up a joint project totaling \$44 million based on state government funds and investment from private tourist companies. According to the survey results, there are three different trends appearing for tourists after the terrorist attacks. The first is that tourists are actively traveling, saying that avoiding tourism because of terrorism is to give in to it. The second is a group that is reluctant and hesitant to reach out for cheap travel in the market. According to the survey results, it was estimated that 16.4 % of the total was about 17.8 million. Third is a group that has completely stopped travelling. Visit Florida decided that acquiring this second-tier tourist group would increase the number of tourists, and continued to offer discount packages targeting the second group. Florida government's efforts are said to have enabled an earlier recovery than the efforts of other states.

6. Evolution from the concept of tourism to the concept of human logistics

6.1 Basic discussion on tourism studies

We consider the concept "tourism" in order to think about what to study tourism for. Many textbooks describe tourism as practical and interdisciplinary, but so are other genres, such as hydrology, informatics, and environmental science, where tourism as an activity or policy is a subsystem of society. Tourism researchers must understand what kind of role they play.

The social system is not the only one that exists, and is divided by function such as economic system, academic system, political system, legal system, family/friend system. And, in relation to the communication of each functional differentiation system, there are outcome media such as currency, truth, power, justice, and love.⁽¹⁾ This outcome media has a function of mediating social information logically and emotionally using the propagation media, and has a role of establishing a semantic connection of communication and establishing it. The outcome media is an intermediary that suppresses fluctuations in meaning interpretation and transmits the meaning of social information as accurately as possible. By this functioning, for example, academic debate is limited to communication from the viewpoint of truth, and it is possible to prevent the academic system from collapsing due to the inclusion of economic interests and political speculation.

This outcome media works by both repetitive media (related to temporal/sequential connections of communication) and paradigmatic media (related to spatial/conceptual links of communication). The latter is a social memory and storage of the semantic content of information such as publications and electronic media books as a "semantic base", which provides conceptual options and helps establish communication. Although the semantic base consists of a specialized knowledge base and a common sense base, it is abstract and universal, independent of the context in which it is used, and has the characteristic of being temporally and spatially stable.

For binary media, binary code and program are used. The binary code of the academic system is true/false, the program is theory, and the binary code and program of the legal system are legal/illegal and law.

The mass media system has a special character different from the general functional system. It is a meta-social system that covers all fields (economy, politics, law, scholarship, family friends, etc.), and the outcome media is theme and is based on a unique binary code of popular/unpopular.⁽²⁾

If we consider the tourism system as a functionally differentiated subsystem of society, the outcome media is tourism resources, the binary code in that case is extraordinary/daily, and the program is movement of people. However, since tourism resources, which is the outcome media, is not limited to movement of people, it cannot be organized as a functional differentiation system. Subsystems have not only functionally differentiated systems but also specialized systems, which represent the bias of communication involving individuals who are

members of society. It is straightforward to regard tourism as a specialized system, not a functionally differentiated system, but it is very compatible with the mass media system.

6.2 *Evolution to the concept of human logistics*

Until now, concept tourism has been centered on the movement of people seeking extraordinary experiences. From the standpoint of individual tourist resource sellers as products, it may be desirable to force them to move around. Economics has proposed a solution to this using the viewpoint of effective use of resources using the market principle.

In dealing with Covid-19, stay home, social distance, lockdown, and restrictions on overseas travel were taken. Except for essential movements, contact between people and movements of people were regulated, and “travel for fun” was not recognized as an essential movement, and the impact on tourism industry activities became greater.

In the traffic debate during the first and second oil crises, the discussion focused on curbing unnecessary and urgent traffic and prioritizing public transportation such as commuting to school. The movement by public transportation was restricted, and the movement for infection inspection was limited to the use of private cars. Therefore, work at home was encouraged. As a result, Covid-19 asks of tourism researchers to concentrate on the issue that if people can enjoy themselves without moving, researchers should study not to force them to move. However, from the standpoint of moving people as the outcome media, it leads to a suicide of tourism science, and tourism resources (tourism objects) float in the air.

Physical logistics is different from mere freight transport theory and warehouse theory, which were studied from the viewpoint of the transportation industry. From the standpoint of a shipper as a user, logistics have been developed with a focus on including not only the movement of goods but also efficient inventory management. It has become a science to eliminate unnecessary movements and inventory. The logistics policy also aims to efficiently provide logistics services that meet the needs of users.

If we consider this as being replaced by the science of human logistics, it is a study “to efficiently provide a service for selecting the location of users that meets the needs of users”.

If the research target is considered as an overall time management that includes staying at home, moving, staying at work facilities, staying at lodging facilities, etc., it is no longer necessary to consider moving as indispensable. As a matter of course, risk management of epidemics and disasters is also included. The idea is how to effectively use the limited time to select one’s position such as home or accommodation, etc.

Therefore, the concept of human logistics, which does not necessarily involve movement, is placed at the center. If the outcome media is quality of life, the program will be its own location information, and the binary code will be satisfied/dissatisfied. The focus of our research is time management, which is how we can effectively utilize the limited time. Since online

tourism, which saves travel and expands enjoyment, will also be the subject of research, human logistics will be the central concept, similar to the concept of physical logistics that incorporates the concept of inventory. In the science of physical logistics, the use of cargo to be transported and stored is an issue on the side of the shipper, but in the science of human logistics, the fun of a tourist is included in the category. Objectification of the reaction in the brain is essential. Working at home or at an office basically depends on the choice of the business owner. When combating epidemics, it is likely that policy will be enforced based on the law.

7. Conclusion

It is stated that behavior research in the tourist scene covers many fields and has not been integrated as knowledge of tourism behavior research. The reason is that the basic concept of tourism cannot be established. The study of the power to move a person is the study of the function of the brain. If it can converge to brain science, the concept will also converge to human logistics. It will be determined whether the person is moving or not. Then, it is also necessary to verify the concept of movement. People who act by the power to move as a whole are so-called tourists. This action also repeats a synonym of tourism action. In fact, wise readers will still find that there is essentially no difference between discussing tourism resources and tourism behavior. Moreover, wise readers will also find that resources for tourists and resources for tourism are the same.

7.1 *Maslow’s five-step desire theory and movement*

If we classify human needs for movement into the five stages of Maslow’s desire, the first stage of the need for movement is harvesting, hunting, commuting for physiological needs; the second stage is for ensuring safety; the third stage is evacuation, outpatient treatment, hot spring treatment, pilgrimage/return to home for social needs; the fourth stage is convention/sightseeing for self-esteem; and the fifth stage is for self-fulfillment. It means to see the light of the country.

Takahashi Nobuo concludes that Maslow’s five-step theory of desire has no scientific basis.⁽³⁾ He also presents criticisms of empirical as well as criticisms of theoretical frameworks in his book, which is about the principle of seeking results that are delusions. Still, the reason that it continued to have a great influence on marketing was that Matsui said it had an affinity for Maslow theory and a marketing concept that emphasizes customer orientation.⁽⁴⁾

Regarding the point that tourism is a self-determining act with individual differences, “Do you know the reason why people work?” is closer to “Do you know the reason why people travel?” Work and play will become synonymous.

7.2 *Development of evaluation method for memory and documentary heritage*

In terms of tourism, historical recognition is equivalent to a prior explanation from a guide to tourists. It is strongly influ-

enced by the explanation. In a verification experiment using a sensitivity analyzer (see Figure 1), which is a visualization device for brain reactions, interest is high when there is an explanation from the guide. Tourists' interest in Battleship Island, the Nanjing Massacre, etc. will increase regardless of nationality, as the discussions among the related countries in UNESCO will serve as a guidebook. The higher the degree of interest, the more promising tourist/tourism resources.

The reaction to historical recognition is probably due to the Japanese concept of "tatemaie", which is the behavior and opinions one display in public. A more significant data may be obtained by cross-comparing the data obtained by the questionnaire in which "tatemaie" appears and the data obtained by the sensitivity analyzer, which shows real intentions. However, current EEG (electroencephalogram) measurement has its limits. It is the degree of dislike and the sensitivity of stress that are talked about in history recognition. The opposite of dislike is not simply like, and the composition of dislike is complicated. Analyzing dislikes through the historical cognition issue is another dimension of tourism, although it is a different dimension from tourism.

7.3 Ideas required for science of human logistics

Visionary global investors will invest huge amounts of money in brain and neuroscience, and brain visualization will definitely progress. Even if the arguments such as psychosomatic dualism, material monotheism, and consciousness monotheism cannot be settled, tourism research is also forced to undergo structural reform. Research on the power to move a person is research on the function of the brain, and human logistics and tourism will be converged on brain science.

Intelligence and life are different. Intelligence must be given purpose. It is difficult for human beings to judge whether the purpose is right or wrong. Life has a purpose to a certain extent. It survived in the process of evolution. If tourism is a product of intelligence, tourism policy is a product of life and something humans must decide.

Genes were originally considered to be the only means by which living organisms could accurately convey complex information to the next generation. However, as another means

of transmitting information between generations, the ability of social learning is highly developed in humans. Social learning means learning from others by imitation and is one of the abilities that support culture.

7.4 Reaction score for tourism/tourist resources

Richard Dawkins proposed a selfish gene.⁽⁵⁾ This means that by considering the evolutionary process of social phenomena from the perspective of genes, evolution becomes easier to understand. We call them selfish genes because evolution does not seem to be for human well-being, but rather to how genes increase self-renewal.

Kaneko Kunihiro, a professor at Tokyo University, and Nakamura Eita, a special researcher at Kyoto University, are conducting empirical research on music. Their team hypothesized that a new song would have to be novel and tied to an existing musical tradition in order to be popular. A tri-tone produces two notes at the same time, which are three full-tones apart. This is considered an unpleasant pitch with poor resonance. Based on the 9996 reproducible notes by 76 composers, their team explored the mathematical laws of evolution of how often these units occurred and how widespread they were over the centuries. It was discovered that the average and standard deviation of the frequency (probability) of three full tones continued to increase between 1500 and 1900. It rarely appears in songs written in the 16th century, but becomes more common over time. Their team created a mathematical model of evolution that could distinguish whether the spread of rare musical events was due to a general mechanism of propagation or to the unique behavior of individual composers. As a result, they found that the usage frequency of tri-tones exactly follows the statistical law called "beta distribution", which is the principle of propagation. They discovered that trends in music culture could be formulated as statistical evolutionary rules.

This technique can be further generalized and used for scientific elucidation of the relationship between the auditory mechanism and culture. Already, the analysis of pleasant sounds, music or harsh sounds is progressing. Since the sounds that attract children's attention are only used in television commercials, a more universal analysis of auditory information and

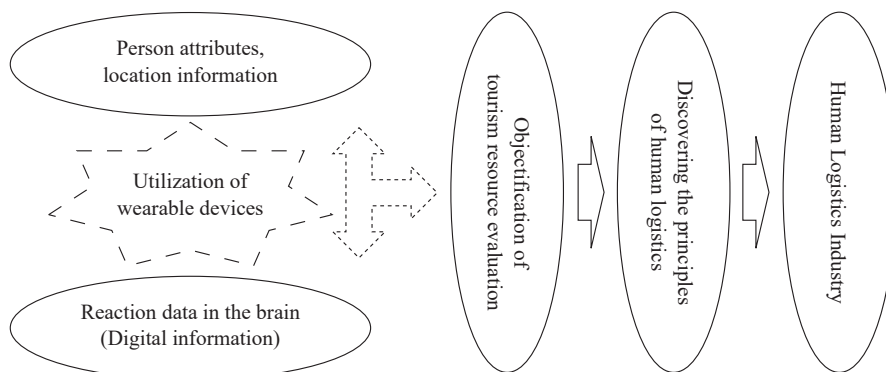


Figure 1: Image of new technology of a movie

Source: BBC News Japan, 2018. <https://www.youtube.com/watch?v=H6TvjwCKZxs>.

brain reactions can be expected.

This method has potential for research showing that cultural evolution occurs through a general mechanism of cultural mode transmission and selection. At this stage, it is not applicable to the analysis of intracerebral reaction using multiple sensory information.

As a matter of course, it can also be applied to tourist satisfaction analysis. In the field of tourism studies, it is necessary to first develop a method to understand the brain reaction to tourism/tourist information resources as non-verbal information. It is necessary to have an equivalent to the musical notation. Next, it is necessary to collect significant data by using wearable devices based on the reaction score for tourism resources. If the analysis research of the big data collected on that basis progresses, the future will open.

A movie has already been released that assumes the audience's brain waves in real time and reflects the results and changes the synopsis. The movie has advanced to this point. There is still more work for tourist & tourism researchers.

Notes

- ⁽¹⁾ Nishigaki, T. (2004). *Basic informatics*. NTT Publishing. (in Japanese)
- ⁽²⁾ Ibit.
- ⁽³⁾ Takahashi, N. (2004). *Delusional performance-based*. Nikkei BP. (in Japanese)
- ⁽⁴⁾ Matsui, T. (2001). Maslow's hierarchy of desire theory and marketing concept. *Hitotsubasi-ronso*, Vol. 126, No. 5, 495-510. (in Japanese)
- ⁽⁵⁾ Dawkins, R. (1976). *The selfish gene*. Oxford University Press.