

2022

The Nexus Between Tourism Demand and Regional Characteristics: the Case of Japanese Islands

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Recommended Citation

Takahashi, Kantaro (2022) "The Nexus Between Tourism Demand and Regional Characteristics: the Case of Japanese Islands," *International Journal of Islands Research*: Vol. 3: Iss. 1, Article 3.

doi:<https://doi.org/10.21427/r9h3-s634>

Available at: <https://arrow.tudublin.ie/ijir/vol3/iss1/3>

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Cover Page Footnote

This paper explores the relationships between tourism demand and regional characteristics of the Japanese islands. A regression model was carried out for 113 islands designated by the Remote Island Development Act, which is one of the laws designed to promote rural areas in Japan. Results show that the transportation situation is related to the demand for arrival of tourists, whereas the results were insignificant for the model with the response variable for lodging tourists. Meanwhile, location factors were significant for lodging tourists—that is, open sea areas have more lodging tourism demand than islands in inland sea areas. Furthermore, this study found that tourism demand was influenced by the affiliations of the prefectures. The islands belonging to prefectures that have mega-cities attract more tourists than other areas. This means that islands located near small cities have disadvantages in the tourism market. Based on these results, the degree of development in island regions, such as transportation systems, is influenced by tourism demand due to accessibility. In addition, the situation of nearby cities also influences tourism demand on islands. This shows that island development would be associated with the urban areas of prefectures where the islands are located.

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Key Words: Japanese Islands, Remote Islands Development Act, tourism demand, regional promotion, accessibility

Introduction

The characteristics of Japanese islands are diversified such as size, location and socioeconomic structures. For example, Sado island located in the Sea of Japan is one of the biggest islands and had mining resources such as gold. Moreover, Tsushima located between Japan and the Korean peninsula which is also a large island is an important site for international relationships. Meanwhile, Izu Oshima located near Tokyo was one of the oldest tourism places in Japan.

Although there are 304 islands in Japan where people reside, each island has different characteristics. However, the economic gap compared to the mainland has expanded especially after the economic boom of the 1960s. Therefore, these islands are designated by laws for regional promotion. Ritou-Shinkou-hou (Remote Islands Development Act) is one of five laws for more than 200 islands. This is the first law for island promotion established in 1953 to deal with the disparity between the mainland and island regions. At that time, many of the islands had little equipment for transportation or

shore protection. Thus, they needed to improve their livelihood. After the Remote Island Promotion Law was issued, their circumstances improved. Meanwhile, the economic structure changed from primary industries to having service sectors. The tourism sector has been a developed industry for their economies since the 1960s, when the ‘Island boom’ movement began in Izu Islands belonging to Tokyo. The main actors of this boom were the younger generation in the late 1960s, according to Miyauchi (2009). This tourism movement expanded to the Kagaoshima and Okinawa regions located in the southern part of Japan into the 1990s.

Although this phenomenon was mainly observed in islands which are remote from the mainland, Japan also has islands located in the inner sea, such as in Setonaikai (Seto inland sea - See Figure 1). Recently, this area’s islands have become well-known tourist destinations. For example, Shimanami Kaido attracts cyclists because the cycling roads are well developed. Another example, Naoshima, which is also in Setonaikai, promotes art tourism through its private sectors (Funck, 2014). The difference with these islands is that they are comparatively

accessible from the mainland. Therefore, tourists are able to take one-day trips when compared with the remote islands.

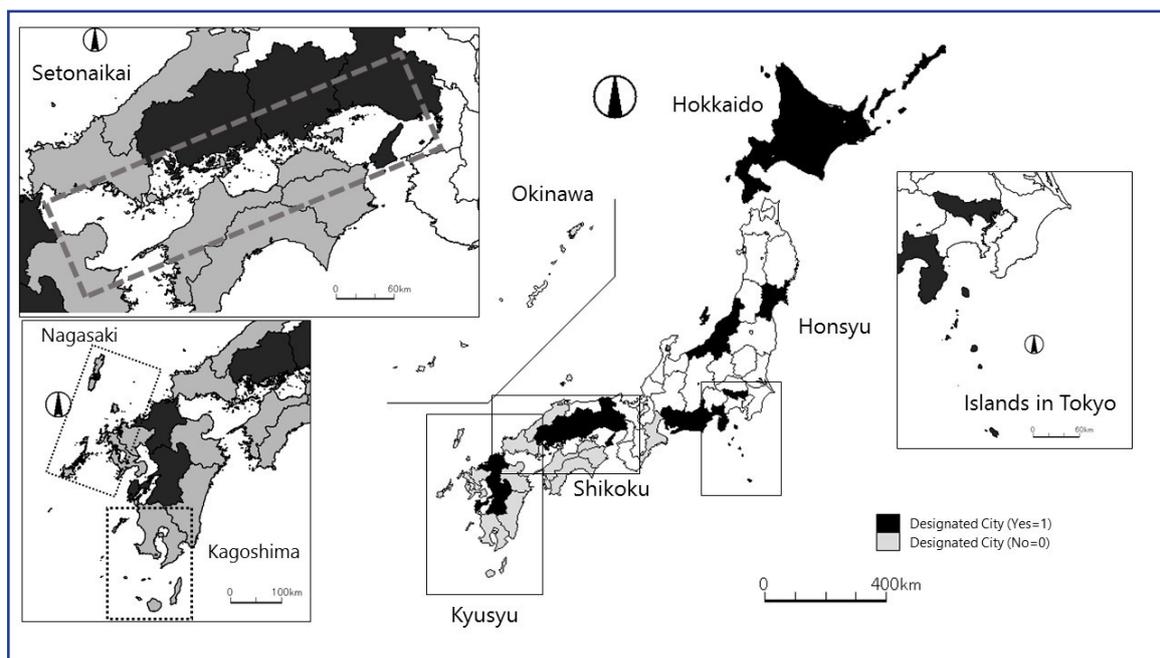
On the other hand, ‘lodging tourists’ are more significant for the remote island tourism market because these islands are difficult for tourists to visit within one day. Participation in activities by tourists who stay in these destinations is directly influenced by these islands’ economies. From this perspective, particular tourism styles exist for each of the islands. Although the tourism styles are diversified, circular-type and stay-type tourism are general classifications in tourism studies. According to the Japan Travel Bureau (JTB), circular-type tourism is considered as a tour where tourists visit multiple places in a short period of time. Meanwhile, stay-type tourism is where tourists stay in one destination and enjoy the attractions there.

From these definitions, the proper tourism form is considered based on the factors of location and society. For example, islands located in inland seas, such as Setonaikai, are more suitable for one-day trip destinations than stay-type destinations because they connect by road to the mainland. Meanwhile, remote

islands that comprise a significant portion of the tourism market are strengthened for lodging tourism because the merit of stay-type tourism is that the consumption of tourists who stay longer directly affects the regional economy. On the contrary, smaller islands would have more difficulty conserving their tourism resources and their environments in cases where the number of tourists suddenly increases. Therefore, the strategy of tourism promotion differs based on the regional characteristics of the islands.

This paper explores the relationships between regional characteristics of the Japanese islands and tourism demand. The islands are grouped into designated areas by the Remote Island Development Act, which includes many island regions because almost all of them expect tourism to be a key industry to maintain their society. For comparison, two tourism indicators—the number of visitors and the number of stay tourists—were used for the statistical model. Although these indicators are alternative variables used to show different tourism demands, such as stay-type and circular-type tourism, the factors for these tourism demands will be shown as useful for considering suitable tourism forms and predictions of the agenda for island tourism in Japan.

Figure1 Map of Japan and Japanese Islands



Source: Annual Report of Statistics of Japanese Islands

Literature Review

Tourism demand is an interesting field in tourism studies, especially from the perspective of economics. From this perspective, tourist consumption is affected by the tourism market and leads to economic growth. Many studies have focused on national or regional units to analyse this using econometric models. Generally speaking, these are often measured by the number of tourists or level of expenditure as variables for tourism demand (Song & Li, 2008; Song, Li, Witt & Fei, 2010). Almost all studies estimate any elasticity of tourism demand, such as economic and social factors. For example, price elasticity is one of the most important factors for tourism demand, especially from an international perspective. Most studies use the exchange rate and consumer price index, and some modify the equation for accurate results (Dougan, 2007; Dogru, Sirakaya-Turk, & Crouch, 2017). Meanwhile, social and cultural factors are also discussed for the impact of tourism demand. Vietze (2012) estimated the cultural factors for international tourism demand in the US and found that Christian countries prefer the US as a holiday destination more than other countries. Furthermore, mega-sports events or ethnicity and cultural affinity are regarded as cultural factors for tourism demand (Fourie & Santana-Gallego, 2011; Fourie & Santana-Gallego, 2013). Meanwhile, relationships with immigrants are considered determinants, such as VFR. Balli, Balli, & Louis (2016) demonstrate the nexus of immigrants and inbound tourism between developed and developing countries. Etzo, Massidda, & Piras (2014) found a relationship between migration stock and outbound tourism in Italy. Tourism demand has many factors, as previously mentioned. It seems that the results are influenced by regional characteristics, such as the social situation or historical relationships that influence the cultural affinity. Meanwhile, island regions also have certain characteristics that influence tourism demand, such as location or market size.

The definition of an island is diverse because several criteria exist. However, some concepts are generalised from both international and national perspectives in Japan. From a global perspective, Brigugulio (1995) points out the size of the market, remoteness, and natural vulnerability as island characteristics. According to the

Center for Research and Promotion of Japanese Islands (2016), islands are recognised by the following rules:

- 1) the land has a circumference of more than 0.1km and is surrounded by sea / water;
- 2) the area does not connect to the mainland through major construction, excluding small bridges and seawalls; and
- 3) the Japanese 'mainland' is defined as 'Honshu,' 'Hokkaido,' 'Shikoku,' 'Kyusyu,' with 'Okinawa' being excluded (Figure 1).

From these definitions, it is said that Japan has 6,847 islands in the territory counted by the Japan Coast Guard.

Although explanations are slightly different between international perspectives and the definition in Japan, the basis of the idea is similar, such as the comparison with the size of the mainland and the distance or accessibility between the island and the mainland.

From these regional characteristics, the economic structure of the islands has a strong relationship with the tourism sector. From a global perspective, Brigugulio (1998) mentions that the market size interacts with the economic structure, thus, the service sector is active in island economies because heavy industries are hardly established. Studies report that revenue from tourism significantly increases the economy in Pacific regions (Narayan, Narayan, Prasad, & Prasad, 2010). This characteristic is the same as in the Japanese islands. Many islands depend on the tourism sector to promote the regions.

According to Miyauch (2009), tourism industries have developed in the Japanese islands since 1960 in tandem with overall economic growth in the country. This phenomenon is regarded as an 'island boom' that was popularised by the younger generation. During this period, a small type of accommodation called minshuku appeared on the Izu islands located in the Tokyo area. The number of minshuku increased in Niijima, which is one of the islands developed when young tourists started coming during the 1960s and the 1970s (Ochiai, Ozawa, Sato & Satou, 1982). After this movement, many islands developed their recreation and resort functions, especially in the Okinawa regions. The Resort Act, enacted in 1987, was also important in relation to this movement as well as the Remote Islands Development Act (Miyauchi, 2013).

Figure 2: Shimanami Kaido Bikeway

https://wikitravel.org/shared/File:Shimanami_Kaido_Bikeway_banner.jpg

However, the Japanese economic boom stagnated around the 1990s. Around this time, intensive development was seen as unsuitable for promoting the regional economy. During this period, the concept of ecotourism became important as did nature preservation which gradually expanded to regional areas. For example, the island of Yakushima was designated as a World Heritage Site, and its ecotourism is central to its sustainable development (d’Hauteserre & Funck, 2016). Kawanami (2016) has reported that the Ogasawara Islands are affected by their registration as a World Heritage Site, and this has impacted on its tourism characteristics. These islands are located in open sea areas, and many tourists stay there for more than one night due to their accessibility.

Meanwhile, inland seas, such as the Setonaikai area, are also recognised as tourism destinations. Aihara (2017) has examined tourist behaviour using large data analysis. He shows that some foreign tourists who come to Hiroshima, which is near the area of Setonaikai, uploaded photos or texts on their Social Media. Their footprints are concentrated on islands such as Ookunoshima or Naoshima. These islands are popularised for their art festivals or their wild rabbits which act as tourism resources. Furthermore, the Setonaikai area is well known as a cycle tourism destination (Kodama, Soshiroda & Tsustumi, 2015). Shimanami Kaido is a road with multiple bridges through some small islands from Hiroshima to Ehime (see Figure 2). These bridges are suitable for bikes as well as cars. Therefore, tourists are attracted to travelling around these areas by bike as a recreational activity.

From these previous studies, tourism demand in the Japanese islands is likely to be influenced by accessibility.

The ‘island boom’ occurred in remote areas, and many tourists spend more than one night on the islands. Meanwhile, Setonaikai attracted tourists who ride bicycles or view modern art that is closer to the mainland due to the bridges. The transportation system is a crucial element for residents of the islands of the Remote Island Development Act. On the other hand, this might also be important for tourism promotion. Therefore, accessible islands receive more tourism demand from this perspective. Moreover, belonging to the prefecture would be connected to tourism demand. In Japan, some areas are designated as large cities with more than 500,000 people. These areas have many central functions for their regions. Thus, for tourism destinations, these areas are a significant attraction and many tourists are likely to visit. Islands are also influenced by the affiliations of the areas. According to previous studies, the island boom occurred in Tokyo first. In addition, the recent tourism boom, such as in Shimanamikaido, occurred near designated cities such as Hiroshima. Therefore, islands located near megacities are more advantageous for tourism promotion than islands near smaller cities.

In this paper, tourism demand is analysed using two indicators—visitors and staying visitors in Japanese islands—using a statistical model. As mentioned in the literature review, the characteristics of tourism might differ between islands in open seas and islands in inland seas due to their locations. Since most studies are focused on specific islands, comprehensive location analysis from varying perspectives has been little discussed (Kodama *et al.*, 2015; d’Hauteserre *et al.*, 2016; Kawanami, 2016; Aihara, 2017). Furthermore, it is considered that a statistical approach could be useful to show the relative tendencies of different variables. Therefore, this

study composed a model using data for island areas as designated by the Remote Islands Development Act, to show the determinants of tourism demand and differences in the impact between visitor and stay demand.

This analysis is significant for island tourism policy because tourism demand is unlikely to be only for stay-type tourism, which is a general perspective for island destinations. The perspective of circular-type (or touring) tourism is also necessary for island destinations as well as land areas.

Methodology

Theoretical model

A statistical model was composed to decipher the determinants of tourism demand in Japan. In this study, a regression model was composed for the estimation. The equation is shown below.

$$Y_d = f(\text{locations, transportation, size of markets, tourism infrastructure}) [1]$$

'Y' is the response variable, and 'd' is the destinations. In this model, the variable shows tourism demand. In general, tourism demand was estimated using the OD matrix. However, migration flow is a simple structure in

almost all islands in Japan. Miyauchi (2007) mentions that many migrants come from the mainland near the islands. From this perspective, the origin is not so diversified in the island area when compared with the metropolitan area. Therefore, this study considers destination demand.

In terms of explanatory variables, this model first considered 'location'. Location is a significant factor for island societies because it is influenced by the characteristics of their society. For instance, belonging to prefectures is significant for island tourism. Population problems, such as an ageing society, face all nations in both metropolitan and local areas. Although the city area also has this problem, local areas, such as island regions, face them more seriously because it is difficult to maintain the community if the number in the population decreases. All islands are regarded as individual entities, although islands located near megacities would have better accessibility than other areas. Tokyo has some islands, and they are located away from the mainland. However, factors such as market size are more advantageous than other areas, such as in Nagasaki prefecture, which has a smaller market than Tokyo, even though some of its islands have world heritage sites. Therefore, the model considers the position of the islands—that is, taking into account that some islands belonging to prefectures with megacities.

Table 1: Definition of Variables

Variables	Definition	Resources
AT	The number of arrival tourists	Annual report of statistics of Japanese Islands
LT	The number of lodging tourists	Annual report of statistics of Japanese Islands
Kikou	The number of calling at port	Ministry of Land, Infrastructure, Transport and Tourism
POP	The size of market. Population	Annual report of statistics of Japanese Islands
Seisan_Rate	The rate of working population rate (15~65years old)	Annual report of statistics of Japanese Islands
seirei	Designated city by government ordinance (Yes=1, No=0)	Ministry of Internal Affairs and Communications
out_in	Location of islands (open sea=0, inland sea=1)	Ministry of Land, Infrastructure, Transport and Tourism
Ryokan	Dummy variable if ryokan is located in island (Yes=1, No=0)	Annual report of statistics of Japanese Islands
Minshuku	Dummy variable if Minshuku is located in island (Yes=1, No=0)	Annual report of statistics of Japanese Islands
primitive	The rate of the population for primary industry	Annual report of statistics of Japanese Islands

* Ryokan = a type of traditional Japanese inn

Minshuku = family-operated, Japanese-style bed and breakfast - smaller, more basic and less formal than Ryokan

‘transportation’ shows the situation of the transportation system. Since the Remote Islands Development Act was published, infrastructure on islands has been developed, and accessibility has improved. However, some islands still have ports which are difficult to approach, despite the development. For tourists, accessibility might be a significant factor in choosing destinations. Therefore, this study considers the transportation system as a factor influencing tourism demand.

In addition, the ‘size of market’ and ‘tourism infrastructure’ are considered as variables for tourism demand to control the coefficient. In gravity models used to explain migration, market size is a common determinant. Furthermore, tourism infrastructure, such as accommodation, is linked to tourism demand, especially for tourists who stay at their destinations.

Data and Statistical Model

Data explanations are shown in Table 1. Mostly, data are based on statistics of the annual report of statistics of the Japanese Islands (Ritou Toukei Nennpou) from 2017. These data are issued by the Ministry of Land, Infrastructure, and Transport. A statistical model was composed from these data sets. The equation is as follows.

$$\log(TD_i) = Seirei + out_in + \log(Kikou) + \log(POP) + Seisan_Rate_i + Primitive_i + Ryokan_i + Minshuku_i + e_i \quad [2]$$

Where ‘i’ shows the destination of the islands, and ‘TD’ shows the tourism demand variables. This study uses the number of ‘arrival tourists’ (AT) and ‘lodging tourists’ (LT) to compare the determinants between them. Both indicators are often used to measure tourism demand in tourism studies.

‘Seirei’ shows the dummy variable of whether the islands belong to prefectures with designated cities (Seirei Shitei Toshi). This variable shows that islands located near designated cities have the advantage of tourism demand. Therefore, the coefficient is positive. In addition, ‘out_in’ shows the position of the islands. This indicator follows the hypothesis that open sea islands receive more ‘lodging tourists’ than inland sea areas. These variables represent the location factors of islands for tourism demand.

‘Kikou’ shows the numbers calling at ports to show the transportation situations. Ferries are one of the fundamental transportation methods for residents of islands. Likewise, tourists’ motivation might be influenced by accessibility. In particular, tourists who want to enjoy multiple destinations would prefer circular-type tourism due to mobility. Therefore, this variable shows positive relationships for tourism demand, especially for the number of ‘arrival tourists’.

‘POP’ is the population and thus, shows the market size. If the market size is larger, more tourists might visit the destination. Therefore, this variable would be a significant factor for tourism demand. In addition, ‘seisan_rate’ shows the proportion of the working population, and ‘primitive’ is the proportion of workers in primary industries. These variables are estimated to show the relationships between social and economic structures and tourism demand.

The variables ‘ryokan’ and ‘minshuku’ identify accommodations. Both are Japanese style lodging facilities. A Ryokan is a larger accommodation, which is similar to that of a hotel. Meanwhile, minshuku is a small

Table 2: Results

Dependent	AT		LT	
	Model1	Model2	Model3	Model4
(Intercept)	-1.967 *** [0.687]	-2.192 *** [0.557]	-4.16 *** [0.801]	-4.163 *** [0.799]
log(Kikou)	0.557 *** [0.133]	0.527 *** [0.101]	0.028 [0.115]	
log(POP)	0.552 *** [0.107]	0.613 *** [0.069]	0.607 *** [0.102]	0.617 *** [0.089]
Seisan_Rate	-0.004 [0.013]		0.018 * [0.011]	0.017 * [0.01]
seirei	0.704 *** [0.263]	0.754 *** [0.258]	0.601 ** [0.241]	0.604 ** [0.24]
out_in	-0.267 [0.301]		-0.636 ** [0.266]	-0.613 ** [0.245]
Ryokan	0.291 [0.324]		0.79 ** [0.324]	0.797 ** [0.326]
Minshuku	0.192 [0.327]		1.219 *** [0.381]	1.21 *** [0.362]
primitive	-1.03 * [0.546]	-1.054 * [0.545]	-2.917 *** [0.573]	-2.905 *** [0.579]
n	113	113	113	113
R-Squre	0.626	0.634	0.731	0.733
AIC	373.593	367.397	362.465	360.531

Note: Standard errors are shown in parentheses. *** p<0.01, ** p<0.05, * p<0.1

type of accommodation such as an inn. This variable should be especially influenced by tourists who stay on the islands.

' e ' is the error term and is composed of cross-sectional structures. An OLS (ordinary least squares test) was carried out to estimate the coefficients. The pond variables were transformed to logarithms in Equation 2. Hence, the coefficients were interpreted as elasticity, which is the proportional change between the explanatory variable and the response variables.

Result

Table 2 shows the results of Equation 2. 'Tourist' is shown on the head of the table. AT is the number of 'arrival tourists' for the response variable, while LT is the number of 'lodging tourists'. Thus, both Models 1 and 2 show the non-staying tourist. Model 1 uses all variables, while Model 2 is a selected model with AIC (Akaike Information Criterion). VIF (Variance Inflation Factor) indicates 1.08 to 2.54, which shows a few problems for multicollinearity. In addition, the F-statistics show 24.43 in Model 1. Hence, all coefficients are significant. Moreover, Model 2 shows the selected model with AIC - The variables 'seirei', 'kikou', 'POP' and 'primitive' were chosen as the best model.

The coefficient of seirei is 0.75 in Model 2. This means that 'arrival tourists' increased 1.13% ($\exp(0.75)-1$) in islands near designated cities when compared with islands located in other areas. Moreover, the number of 'arrival tourists' would increase by 0.53% if the number calling at ports changed by 1%. This shows that the transportation situation is connected to tourism demand on the islands. If POP, which shows the market size of islands, increased by 1%, then tourism demand would change by 0.61%. The 'primitive' factor, which shows the rate of primary industry workers, has negative relationships with 'arrival tourists'. The primary sector is an important economic sector in many island regions. Although local areas promote mixed industries with tourism, such as rural tourism, the primary sector is still the main economy in some islands. Hence, they hardly use tourism for regional promotion. The result is reflected in this background.

Models 3 and 4 show the results when using 'lodging tourists' as the response variables. Model 3 uses all variables, while Model 4 is a selected model with AIC. For multicollinearity, VIF ranged from 1.08 to 2.54 in Model 3. The F-statistics show 38.98. As a statistical model, this is a small problem for the estimation. Model 4, which is the best model with the AIC, selects all variables, excluding 'kikou,' which includes transportation data.

Although the transportation situation is not statistically significant for 'lodging tourists', 'seirei' (connection to defined city) was linked to 'lodging tourism' demand. In terms of elasticity, tourism demand increased by 0.83% in islands near designated cities. This is comparatively less than the model for 'arrival tourists'. Furthermore, 'out_in' was also significant for tourism demand. The coefficient was negative. In terms of elasticity, tourism demand decreased 0.46% for islands located in the inland sea. This means that 'lodging tourists' are more likely to visit remote islands. Both accommodation variables were significant, although Minshuke was more influential than Ryokan. Misnhuku is a small type of accommodation. This style is more popular than the large type in many islands because small types of accommodation are likely to be related to fundamental island industries, such as agriculture or fishing. Thus, elasticity is considered to be higher than Ryokan. On the other hand, 'primitive' shows that the rate of primary industry labour was negative relative to lodging tourism demand. This result suggests that some islands in which the primary sector is highly important for the economy take advantage of tourism for regional promotion. Moreover, 'seisan_rate' shows that the rate of the labour force is also significant for lodging tourism demand.

Accommodation is one of the key industries in the tourism sector. The results of the model show that it is necessary for the labour force to operate the accommodation, although small accommodations such as 'Minshuku' are a typical style in the island regions. Therefore, the importance of labour may be different from the style of the urban regions because of the characteristics of the island economy that the most of economic activities tend to be small. Meanwhile, 'POP,' which indicates the market size, also suggests similar results to the model where arrival tourism demand was used as a response variable. The elasticity was 0.62 in Model 4. These results, labour

force and market size, show that the lodging industry needs manpower for proper operation, but it is not at the same level as urban regions.

Discussion

The model shows two types of tourism demand: 'arrival tourists' and 'lodging tourists'. In the models that show the arrival of tourists as a response variable, the transportation system is recognised as one of the influencing factors. Accessibility is a crucial issue for island development. Previous studies mentioned that residents of many islands were able to visit the mainland in one day (Miyauchi 2001). However, the duration of the time is limited. This perspective might be applicable to tourists as well. Islands are attractive to some tourists, although inconvenient accessibility would prevent their motivation, especially for tourists wanting to visit as day trippers. This might show that it is difficult to develop a touring route with mainland and island destinations unless a highly operational transportation system, such as a sufficient number of arrivals and departures at ports, is deployed. However, an inaccessible environment is advantageous for preventing excessive tourism. Hence, many tourism resources on islands are conserved. Meanwhile, tourism is expected to stimulate regional promotion for many of the islands, although this situation shows that they are unlikely to expect economic effects if there is insufficient accessibility.

Both models show that islands being located near designated cities influences the tourism demand. In Japan, 20 designated cities exist that have large populations. Megacities, such as the Tokyo and Aichi prefectures, have island regions. While Nagasaki and Kagoshima also have island regions, these population centres are not megacities. The estimation results show that difference in tourism demand among the islands might be influenced by location. Many islands expect regional promotion via tourism to support their social agendas, such as population decline and ageing problems. However, tourists not only come from nearby cities, the tourism demand in the island regions is affected by the population scale in the mainland where islands is located. Cities located near the islands are generally likely to be significant place for transportation and thus influence the local island economy. Several economic activities in the

island regions located to near megacities are likely to be positive. Thus, more tourists would appear to visit these islands even if the attractiveness is at the same level. In other words, it would be problematic for island societies if the population declined in nearby cities.

Drawing on these findings it would appear that many islands need to be made better known, to promote their regional content and provide information for potential tourists. For example, the uniqueness of the different regions is one of the tools to promote the islands - focusing on their regional characteristics. Producing small goods, such as souvenirs, might stimulate their economy and sustain their societies, in addition the actual numbers of tourists could slightly increase. Therefore, linkage to the market is important for sustainable development.

Conclusion

This paper discusses the determinants of tourism demand in the island regions of Japan using a statistical model. A regression model was developed, and two indicators were used as the response variables—the number of 'arrival tourists' and 'lodging tourists'—to compare the determinants. The composed models show that the number of arrivals and departures at ports is a crucial factor for 'arrival tourist' demand. The transportation system has been one of the agendas since the Island Development Act was established in 1953. Although this law focuses on services and infrastructure etc. for residents of the islands, the development level of the islands, such as the infrastructure for transportation and accommodations, is also closely connected to tourism demand.

In addition, the situation of nearby cities is also influential for tourism demand on islands. The situation would appear to be better for islands near designated cities, while islands near small cities experience more restrained growth and development in island tourism. This shows that island development may be related to the situation of the mainland, such as population levels. Hence, it is important for the islands to consider their linkage of the mainland when the island seeks to promote themselves. This means that island development is needed for the outer regions, further from designated cities, although some previous studies on the islands focused more on inner regions.

Tourism promotion also needs to consider connectivity and location because suitable strategies for promotion differ for each island. For example, islands that are easy to visit can supply tourism information, including detail on accommodation, to targeted areas from which there is greater accessibility. Suitable tourism styles, must be considered for each location, such as activities and attractions which are suitable for one-day 'arrival tourists' or that which suits lodging-type tourists. These groupings need to be considered to promote an appropriate tourism for each island.

Furthermore, appropriate attractions in each of the islands should be included in the tourism promotion. Island regions in Japan have their own unique and individual attractiveness. For instance, Mikura-Jima located in Izu islands is well-known as a site for dolphin watching; mixed cultures influenced by Christian and Japanese style are attracted to the visitors in Kuroshima which is one of the islands in Nagasaki prefecture. These individual tourism attractions would influence tourism demand in each of the islands. While this research was unable to include variables in the estimation model to capture this dimension, it would be interesting to explore in future research.

All in all, promotion and advertising the unique characteristics of each island, in tandem with an understanding of the factors which influence tourism would be significant for many of the islands in Japan to promote / maintain tourism and regional development in the future.

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