Trend Analysis of Domestic Tourist Travel in Japan Based on Individual Data from Tourism Statistics

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Abstract: In Japan, tourism is becoming an important industry due to the aging society and the government is implementing policies to promote Japan as a tourism nation. However, few studies on quantitative data analysis have been conducted on nationwide tourism activities. This study examines past trends on domestic tourism in Japan. The authors investigate trends on domestic tourism and examine primary factors influencing number of overnight stays through a time-series analysis on individual data from tourism statistics. The analysis produces valuable results offering useful insights for tourism policies.

Key Words: domestic tourist travel, tourism statistics, tourist activity, individual data, number of overnight stays, time-series analysis

1. INTRODUCTION

Japan is now facing the rapid aging of population with low birth rates in a scale not witnessed elsewhere in the world and the effect is more serious especially in rural areas. Maintaining and improving energies in rural areas for the future is an important issue for the country, and hopes of revitalization of local society by promoting development of tourism industry are getting high. The government places the realization of the tourism nation as an important national policy and various approaches to materialize this are underway. “Tourism Nation Promotion Basic Plan (hereinafter referred as “Basic Plan”)”, a master plan for tourism nation-building that the government created based on the “Tourism Nation Promotion Basic Law”, is one of the approaches and five numerical targets shown in Table 1 are provided.

In recent years, number of foreign travelers visiting Japan, especially Chinese travelers, is increasing. Promoting inbound tourism by foreigners is emphasized in order to enhance domestic tourism market. However, the ratio of foreigners’ travel is not more than 7% of the total domestic tourism consumption actually. Moreover, most of foreign travelers generally visit only big cities, such as Tokyo and Osaka, so the effects don’t reach to rural areas.

From the view point of travel consumptions in Japan, domestic tourist travel is much bigger than any other travels, such as inbound travel by foreigners. Therefore, it is very important for rural areas to aim at promoting domestic tourist travel in their local revitalization (Mannami et
al. 2007; Tsukai et al. 2009). In the Basic Plan, there is a target to increase annual number of overnight stays of domestic tourist travel per capita to 4 nights per year by 2010. However, the actual number in 2007 is 2.42 nights per year, which is 11% decrease over the previous year. There is a big gap between this target value and the current state. It is questionable whether the target was set considering the actual condition of tourist behavior. This is what motivated us to initiate the study. Regarding implementation of the Basic Plan, accomplishment of this target value is more difficult but important than any other goals. It is difficult to increase the country income from tourism industry without increasing the number of overnight stays.

Table 1 Five basic goals of the “Tourism Nation Promotion Basic Plan”

<table>
<thead>
<tr>
<th>Target items</th>
<th>Target value (by 2010)</th>
<th>Present state (in 2007)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of foreign travelers visiting Japan</td>
<td>10 million</td>
<td>8.35 million</td>
</tr>
<tr>
<td>Number of Japanese travelers going overseas</td>
<td>20 million</td>
<td>17.3 million</td>
</tr>
<tr>
<td>Domestic travel spending</td>
<td>30 trillion JPY</td>
<td>23.5 trillion JPY</td>
</tr>
<tr>
<td>Number of overnight stays per capita of domestic tourist travel</td>
<td>4 nights/year</td>
<td>2.42 nights/year</td>
</tr>
<tr>
<td>Number of international conferences held in Japan</td>
<td>50% rise (252 conferences by 2011)</td>
<td>216 conferences</td>
</tr>
</tbody>
</table>

Source: Japan Tourism Agency

In order to implement tourism policies effectively in the upcoming years, it is necessary to state policy targets based on the detailed analysis of characteristics and trends of tourist behavior (Dauglas, 1996). There are several studies on domestic tourist behavior by generation (Hibino and Morichi, 2006; Hibino, 2006) and analyses on tourist behavior based on individual data (Hibino and Akanuma, 2008; Odaka et al. 2009a and 2009b; Suganuma et al. 2010) and tourist survey data (Sato et al. 2009) have been conducted in Japan so far. However, existing studies on nationwide tourist behavior based on quantitative analysis using tourism statistical data are still not sufficient in number. In this study, time-series analysis is executed using the individual data from a large-scale statistical survey on nationwide tourist behavior with a sufficiently large sample.

Three factors are specially focused on in the study; 1) total number of overnight stay, 2) inter-regional flow of tourists and 3) accommodation spending. It is understandable that tourists who travel far or stay in a cheap accommodation tend to make longer stay. These three factors are strongly linked each other, therefore, it is important to prove relationship among these factors in order to understand the tourist behavior.

The purposes of the study are 1) to clarify past trends of tourist behavior on domestic overnight travel, 2) to analyze main causes which influence the number of overnight stays, 3) to show the policy targets to increase the number of overnight stays and 4) to obtain basic findings that can be references for tourism policy making.
2. DATA

An individual data of "Trend survey on Japanese Domestic Tourism" published by the Japan Tourism Association is used in the study. The Japan Tourism Association has been conducting the survey to grasp the realities and people’s intentions for domestic tourist travel since 1964. It has been done annually since 2000, although it had been done every two years during 1964 to 1998 period. Detailed information of the 28th survey which was conducted in fiscal year 2009 is shown in Table 2. The survey covers 4,500 people from the whole country. A main feature of the survey is that almost same contents have been investigated consistently since its commencement. A time-series analysis for a past quarter of a century during 1985 to 2009 period is executed using the data of the 11th, 14th, 16th, 19th, 25th and 28th survey. Data of the 11th survey (1984) is used as that of 1985 and so is 16th (1994) as 1995, because the survey wasn’t conducted in both 1985 and 1995. Therefore, data of the 11th survey is set as base year and other survey results are selected at five-year intervals as shown in Table 3. Population in the age range of 20 to 79 years is used in the analysis.

Table 2 Summary of the 28th survey (conducted in fiscal year 2009)

<table>
<thead>
<tr>
<th>Purpose</th>
<th>to make trends of domestic travel clear to make basic material for implementing tourism policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Object person</td>
<td>the whole nation ( over 1 year old ) : proxy entry by parent in case of under 15 years old</td>
</tr>
<tr>
<td>Number of sample</td>
<td>4,500 ( valid collection numbers 3,216 ( collection rate 71.5% ) )</td>
</tr>
<tr>
<td>Way of sampling</td>
<td>Random sampling method ( number of spots: 150 )</td>
</tr>
<tr>
<td>Term</td>
<td>from 28/05/2009 to 14/06/2009</td>
</tr>
<tr>
<td>Items</td>
<td>Outline of domestic travel during the last year (04/2008 ~ 03/2009) Intention of the future domestic travel etc.</td>
</tr>
</tbody>
</table>

Source: The Japan Tourist Association

<table>
<thead>
<tr>
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<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of survey</td>
<td>11th</td>
<td>14th</td>
<td>16th</td>
<td>19th</td>
<td>24th</td>
<td>28th</td>
</tr>
</tbody>
</table>

3. TIME-SERIES ANALYSIS ON NUMBER OF OVERNIGHT STAYS OF DOMESTIC TOURISTS

3.1 Trend in annual number of overnight stays for domestic tourists

Trend in annual number of overnight stays for domestic tourists during 1985 to 2009 period is shown in Figure 1. It decreased after a peak of 1995 through 2005, though it had been increasing during 1985 to 1995 period. It has hardly changed in the past quarter-century though some increase is observed in 2009. Further analysis is executed by resolving total number of overnight stays into three items, number of participants, number of travel per participant and average number of overnight stays per trip. Meaning of “participant” isn’t the same as “tourist”. For example, in case that someone stays in a tourist site for two nights, the number of tourists in the site is two, while the number of participant is one. Figure 2 shows trend in overnight stays compared with base year 1985. Increase-decrease of total number of overnight stays is related to both number of participants and number of travels per participant, and strongly with the latter one. On the other hand, average number of overnight stays keeps on with continuous gentle decrease after 1985.
Trend in overnight stays by age cohort are shown in Figure 3. 20s cohort travels most until 1995, and sudden drop in the number of stays is observed after 1995. And number of stays of 60s and 70s cohort is increasing continuously and it projects in 2009 compared with other age cohorts, while the number of other age cohort decreases after 1995. In the study, a detailed analysis is executed focusing on total number of overnight stays of 20s, 60s and 70s cohorts which show distinctive trends.
3.2 Trend in overnight stays of 20s cohort

Trend in overnight stays of 20s cohort is illustrated in Figure 4. A sharp drop of total number of overnight stays is seen after 1995 because of decrease of the number of participants is a conspicuous feature of 20s cohort. This result indicates young people’s estrangement from traveling. Figure 5 shows trend in total number of overnight stays focusing on main activities during travel. Total number of overnight stays decreases in almost all activities after 1995, especially in sports trips. Ski trips decrease most in all sports activities, and the influence of decrease in trips with three days or more stays is remarkable. Next, the authors focus on ski trips of the people who were in their 20s at the time of 1995 (born in during 1966 to 1975 period) and analyze the trend after 1995. Ski trips with their friends are the most in the age of 20s, while weight of family travel is increasing with aging. According to our analysis, family travel accounts for not less than 95% of all ski trips in 2009.

Figure 4 Resolution of total number of overnight stays (20s)

Figure 5 Trend in overnight stays by main activity (20s)

Figure 6 shows how traveling companion in 20s cohort changes as time goes on during 1985 to 2009 period. The tendency can be perceived to divide clearly into three types, "Solo travel", "Family travel" and "Travel with friends" in 2009. Number of travel with friends decreases sharply after the peak of 1995, while the one of family travel keeps almost same level as 1985 up to 2009. Increase of solo travel after 2000 is remarkable and it accounts for about 14% of total number of overnight stays in 2009. This can be considered as a sign of progress of individuals among the young generation acting on their own, which is a phrase often heard in Japan nowadays.
3.3 Trend in overnight stays of 60s and 70s cohort

Figure 7 shows trend in overnight stays of 60s and 70s cohort. A characteristic of this age group is that total number of overnight stays increase due to increase of number of participants. The reason is that their participation rate in domestic travel also increases with the increase of senior citizens’ population as an aging of society progresses. On the other hand, it is also special that the average number of overnight stays per trip has kept decreasing gradually since 1985.

Trend in average number of overnight stays by age cohort is shown in Figure 8. Decrease of average number of overnight stays of 60s and 70s cohort is more remarkable than any other age cohorts though it has decreased for all age cohorts since 1985. Figure 9 shows trend in total number of overnight stays by the number of stays per trip. Number of one night trip increases significantly after 1985, while that of three nights or more trip decreases a little. Increase-decrease rate of total number of overnight stay by main activity from 1985 to 2009 is shown in Figure 10. Increase of "Natural and Historical attractions" and "Hot spring" greatly contributes to the increase of total number of overnight stays of one night trips; however, they result in decrease of number of longer-stay trips of more than three nights at the same time. According to our analysis, total number of overnight stays of “Outdoor” increases regardless of number of stays. This is mainly due to increase in the number of participants in "Climbing" and "Hiking" increases specially.
Figure 8 Trend in average number of overnight stays per trip by age cohort

Figure 9 Trend in overnight stays by the number of stay per trip

Figure 10 Increase-decrease rate of total number of overnight stays by main activity (between 1985 and 2009)
4. TIME-SERIES ANALYSIS ON INTER-REGIONAL FLOW OF TOURISTS

4.1 Nationwide trend
The authors divide whole country into 10 regional blocks as shown in Figure 11 and analyze how the flow of tourists among blocks changes as the times passes. Trend of total number of travelers by origination and destination are shown in Figure 12. Based on the origination for the travelers, there is a big regional gap because of variation in the population. Number of tourists from populated regions, such as the Tokyo Metropolitan Area (TMA), the Kansai region and the Chubu region is higher. On the other hand, it is less in the number of visitors by destination compared with that of travelers by origination.

Number of visitors to TMA is small for the big residential population, therefore, the number of tourists intake per resident is small. On the contrary, number of visitors to the Koshinnetsu region is big for the small residential population, therefore, importance of tourism is relatively high for this region. And when flow of people occurs from populated areas to less populated areas due to tourism, regional disparities of residential population shall be erased practically.
Figure 13 shows inflow and outflow of tourists at five years intervals after 1985. Firstly, the figure in the left shows that number of arrows which indicate the flow of tourists increases from 1985 to 1990 period (only OD arrows with more than two million people per year are shown). It means that choices of travel destination expand in all over the country. During 1990 to 1995 period, number of arrows doesn’t change but the thickness of specific OD pairs, such as from the TMA to the Koshinetsu region, from the TMA to the Chubu region and internal travel in both the Chubu region and the Kansai region, increases. After 1995, both numbers and thickness of OD trips decreases and the decrease of tourists to the Koshinetsu region is especially remarkable.

Next, it is realized from the right figure that the size of pie charts which indicate the amounts of number of visitors increases in almost all regions nationwide during 1985 to 1995 period. However, the degree of decrease after 1995 is not in the same way among regional blocks and large regional variation is observed. For example, the degree of decrease of number of travelers visiting Hokkaido, the TMA and the Shikoku region is small, while that to the Koshinetsu region and the Chubu region is big. There is imbalance among regional blocks.
Figure 13 Inter-regional flow of tourists
4.2 Change of tourist behavior of the Koshinetsu visitors
Figure 14 and 15 show past trends of tourist behavior of the Koshinetsu visitors. Trend in number of overnight stays of the Koshinetsu visitors are shown in Figure 14. A main feature here is a remarkable decrease of total number of overnight stays after 1995 due to the big decrease in the number of visitors. Figure 15 shows the primary factor of the decrease, focusing on differences of both age cohort and main activity during travel. It is clear that influence of a decrease in ski trips of 20s cohort is extremely large. By analyzing both spatial concept and traveler’s attributes simultaneously, it is proved that the Koshinetsu region suffers most due to decrease in ski trips of the young generation in the 20s which has been proved in the previous chapter.

![Figure 14 Resolution of total number of overnight stays (Koshinetsu visitor)](image1)

![Figure 15 Breakdown of total number of overnight stays (Koshinetsu visitor)](image2)

4.3 Change of tourist behavior of the Hokkaido visitors
Figure 16 and 17 show past trends of tourist behavior of the Hokkaido visitors. Trend in number of overnight stays of the Hokkaido visitors are shown in Figure 16. One of the main features here is that number of visitors to Hokkaido keeps increasing after 1990, while average number of overnight stays per trip keeps decreasing. As a result, decrease of number of overnight stays is observed. Next, Figure 17 shows trend in total number of visitors by their origination and number of nights per trip. Number of one night trip by Hokkaido residents increases remarkably, on the other hand, number of longer-stay trips with more than four
nights decreases because of decrease of round-tour sightseeing. Development of airline and highway network in Hokkaido may have elicited the shortening of travel duration. This has led to a decrease in the average number of overnight stays per trip.

![Figure 16 Resolution of total number of overnight stays (Hokkaido visitor)](image)

5. TIME-SERIES ANALYSIS ON ACCOMMODATION SPENDING

Trend in average accommodation spending using 2005 price are shown in Figure 18. It decreases gradually after the peak of 1990 in the bubble period until 2000, and after that, it levels off until 2006. In recent years, it is on the increase again and recovers to be the same level as that of the bubble period. Figure 19 shows trend in average accommodation spending by age cohort. Although the average accommodation spending is uneven by age cohort during 1990 to 1995 period, its gaps become small as of 2007 because average accommodation spending of elderly people has decreased after 1995, while that of the 20s and 30s has increased. The gap of spending between elderly people over 50 years old and young and middle age people under 50 years old expands after 2007 because the former increases greatly while the latter decreases. This fact has caused a progress in bipolarization.

Trend in accommodation spending by sex and age cohort are shown in Figure 20. As
mentioned above, spending of elderly people has been increasing while that of young and middle age people has been decreasing since 2007 for both sexes. However, comparing average accommodation spending by sex in 2009, that of the male is higher than that of the female among elderly people, while that of female is higher than that of male among young and middle age people. This is especially remarkable in the accommodation spending of the young generation in the 20s in 2009: the spending is 9,300 yen per night per person for males and 11,200 yen per night for females. It is clear that there is a big difference by sex.

![Figure 18 Trend in average accommodation spending (2005 price)](image1.png)

Figure 18 Trend in average accommodation spending (2005 price)

![Figure 19 Trend in average accommodation spending by age cohort](image2.png)

Figure 19 Trend in average accommodation spending by age cohort

Figure 21 shows a breakdown of luxury travel, which accommodation spending is more than 20,000 yen per night. Feature of young and middle age people is that weight of family travel is the highest and it tends to continue to increase in recent years. From this fact, permeation of value of emphasizing spending time with their family is one of the backgrounds of increase of accommodation spending of family travel. Number of luxury travel for elderly people is narrow margin among that of married couple travel, family travel and travel with friends, though that of married couple travel is increasing recently. This feature differs from a trend of recurrence to a family which is seen among young and middle age people.
6. CONCLUSION

A time-series analysis which especially focusing on the number of overnight stays of domestic tourist travel is executed in the study by using individual data from a nationwide tourism statistics. The purpose of the analysis is to clarify past trends of tourists’ behavior on domestic travel quantitatively and to prove main causes which influence the number of overnight stays. The study emphasizes that using an individual data is important to analyze the tourism behavior of each participant in detail. Tourists’ behavior which has not been clear in proceeding studies which were conducted based on aggregate data can be clear by using an individual data.

6.1 Result of analysis

Regarding increase-decrease of total number of overnight stays, it is proved that it is greatly influenced by the number of participants, and average number of overnight stays per trip continues to decrease after 1985. The total number of overnight stays is resolved into three items; number of participants, number of travels per participant and average number of overnight stays per trip. Time-series analysis on the total number of overnight stays by age cohort makes it clear that ski trips with friends have dramatically decreased for the young
generation in 20s cohort since 1995. The average number of overnight stays of 60s and 70s cohort decreases greater than any other age cohorts, though total number of overnight stays is increasing. Regarding inter-regional flow of tourists, degree of decrease of tourist numbers is unbalanced among regional blocks after 1995, though it increased all over the country in the same way until 1995. Regarding average accommodation spending, it has been increasing for the elderly people over 50 years old since 2007, while that of young and middle age people under 50 years old has been decreasing. Moreover, the accommodation spending of males is higher than that of females among elderly people, on the contrary, the accommodation spending is higher for females than males among young people. In conclusion, it can be said that increasing the number of young participants and promoting luxury travel for elderly people is important in order to promote domestic tourism. So, different way of implementation of tourism policy should be conducted to specified targets respectively.

6.2 Extraction of targets for tourism policies
From the results of the analysis mentioned above, it is clarified that trend of domestic tourist travel are different by tourist attributes such as age, sex, residence, and destination. When a tourism policy is to be implemented, it is important to specify targets taking into account of these differences and implement a suitable policy. For example, when the promotion of ski trips is attempted, it is better to aim at increase of number of family travel for the generation which was in the 20s in 1995 (people who were born in between 1966 and 1975) rather than aiming at those who are currently in the 20s in the same way as before. Because potential which leads to development of their future ski trips can be expected, including possibilities of their children's trips. And when the promotion of luxury travel is attempted, it is important to aim at increase of married couple travel of elderly people, on the contrary, family travel for young and middle age people.

It is an obvious fact that elderly people including baby boomers who were born between 1947 and 1949 are currently playing a major role in domestic tourism market. Therefore, it is needless to say that they continue to be very important targets when the tourism policies will be implemented. However, it is also necessary to implement policies for young generation, especially to the second baby boomers (baby boomers’ children born in the 1970’s) who will support the future tourism market. From now on, implementation of both short-term and long-term marketing is important, and efficient tourism policies can be made by combining them.

6.3 Effective use of tourism statistical data
As mentioned above, developing tourism industry is important for our country in order to achieve local revitalization. For tourism promotion, there is no optimum solution which can be applied to all tourist attributes and regions. Using tourism statistical data effectively is essential to clarify tourist behavior and regional characteristics in order to extract policy targets. Moreover, it is necessary to verify the impact after implementing policies based on authoritative statistics, as a result, thrust for the tourism nation can be enhanced. However, there are various fragmentary tourism statistical surveys which are insufficient in terms of continuity and comprehensiveness in Japan. So, some useful data are not in practical use for policy making now. Visualizing these data will help local officials to formulate a regional tourism policy. It is important to enrich the content of tourism statistical survey and settle the use of data at the initiative of the government.

The methodology used in this study can be applied only in countries where data from a large-scale statistical survey on nationwide tourist behavior is available. It is recommended for
Asian countries, in which tourism statistical data is poor, to start the statistical data collection or develop existing surveys in order to implement tourism policies by their government effectively.

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