Improving national tourism statistics designed to prepare regional tourism statistics in Japan

- Improvement of International Visitor Survey (IVS) -
1. Introduction
   • Background
   • Tourism Statistics in Japan

2. Problem & Task of International Visitor Survey

3. Improvement of International Visitor Survey

4. Future Work
1. Introduction: Background

Close co-operation between JTA and JTBF

Japan Tourism Agency (JTA)

Commission national tourism surveys

A central government organization for tourism administration (since 2008)

Methodological consulting report, tabulation, analysis

Japan Travel Bureau Foundation (JTBF)

A practical academic research institute specialized in tourism (since 1912)
1. Introduction: Tourism Statistics in Japan

We have 47 prefectures (like states) in Japan.

International Visitor Visit Rate per Prefecture (IVS[RS], Q1 2018)
1. Introduction: Tourism Statistics in Japan

Preparing regional tourism statistics using IVS

**National Government**

- Accommodation Survey
- National Tourism Survey (NTS)
- International Visitor Survey (IVS)

**Prefectural Government**

- Tourism Statistics Based on Common Standard

**Prefectural data**

- Inter-regional comparability
- Prompt reporting
- Survey design quality
2. Problem & Task of IVS

Problem:
Problem & Task of IVS

Problem:
1. Not enough data for each prefecture
2. Heavy respondent burden
2. Problem & Task of IVS

**Problem 1:** Not enough data for each prefecture

**Previous responses of expenditure by prefecture (IVS, Q1 2016)**

- **Sample size**
  - **3,030**
  - **Total sample size = 9,945 persons**

- **Destination (prefectures)**
  - **Too small...**

- **Sample size**
  - Tokyo: 3,030
  - Chiba: 7
  - Osaka: 500
  - Kyoto: 1,000
  - Fukuoka: 2,000
  - Tokyo: 3,030
  - Chiba: 7
  - Osaka: 500
  - Kyoto: 1,000
  - Fukuoka: 2,000
  - Tokyo: 3,030
  - Chiba: 7
  - Osaka: 500
  - Kyoto: 1,000
  - Fukuoka: 2,000

- **Total sample size = 9,945 persons**
2. Problem & Task of IVS

Problem 2: Heavy respondent burden

[Previous questionnaire of IVS]

Interviewees & Interviewers complained...

Difficult to recall how much spent...

Too many questions!

amount spent by each destination
2. Problem & Task of IVS

**Problem:**

1. Not enough data for each prefecture
2. Heavy respondent burden

**Task:**

How to collect the data efficiently?
Task:
How to collect the data efficiently?

Solutions:
1. Divide IVS into NS & RS
2.
3. Improvement of IVS  - Solution & Result -

**Solution 1:** Divide IVS into NS & RS

Framework of IVS in Japan

- **IVS**
  - **IVS [NS]** (National Survey)
  - **IVS [RS]** (Regional Survey)

To 2017

From 2018
3. Improvement of IVS - Solution & Result -

**Solution 1: Divide IVS into NS & RS**

**from 2018**

**IVS [NS] (National Survey)**
- Survey ports: 17 ports
- Sample size: around 8,000 /quarter
- Optimum allocation to nationality

**IVS [RS] (Regional Survey)**
- Survey ports: 25 ports
- Sample size: around 26,000 /quarter
- Optimum allocation to survey ports
3. Improvement of IVS  - Solution & Result -

**Result:** Reduce respondent burden

[Divide IVS into NS & RS]

![Diagram showing comparison between 2017 and 2018 response times]

Comparing response time per person between 2017 and 2018

- **2017:**
  - IVS
  - IVS (NS)
  - IVS (RS)

- **2018:**

- **2017 Q2**
- **2018 Q2 (NS)**
- **2018 Q2 (RS)**

*Decreasing*

**Result:**
Reduce respondent burden

**Solution & Result:**

- IVS
- Divide IVS into NS & RS

**Improvement of IVS**
Task:
How to collect the data efficiently?

Solutions:
1. Divide IVS into NS & RS
2. Apply “Two-phase sampling” to RS
## 3. Improvement of IVS - Solution & Result -

### Why “Two-phase sampling”?

Sample size of “Regional Survey” by survey port (Optimum allocation)

<table>
<thead>
<tr>
<th>Survey air/seaports</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kansai</td>
<td>7,000</td>
</tr>
<tr>
<td>Narita</td>
<td>6,802</td>
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<tr>
<td>Haneda</td>
<td>5,626</td>
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<tr>
<td>Fukuoka</td>
<td>2,688</td>
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<td>Chubu</td>
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<td>New Chitose</td>
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<td>Naha</td>
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<td>Takamatsu</td>
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<td>Hiroshima</td>
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<td>Saga</td>
<td>27</td>
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<tr>
<td>Miyazaki</td>
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<tr>
<td>Mt. Fuji Shirakawa</td>
<td>24</td>
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<tr>
<td>Hakodate</td>
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<tr>
<td>Ibaraki</td>
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<td>Yonago</td>
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<td>Aomori</td>
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<tr>
<td>Okayama</td>
<td>11</td>
</tr>
<tr>
<td>Toyama</td>
<td>11</td>
</tr>
</tbody>
</table>

The sample sizes are too big for efficient analysis.
Solution 2: Apply “Two-phase sampling” to RS

[The questionnaire of RS]

3. Improvement of IVS - Solution & Result -
Solution 2: Apply “Two-phase sampling” to RS

[First-phase] for all respondents
Questions about their attributes and destinations (5 minutes per person)

[Second-phase] for those who visited less popular prefectures
Questions about the expenditure by place visited and products (10 minutes per person)
3. Improvement of IVS  - Solution & Result -

**Solution 2:** Apply “Two-phase sampling” to RS

**Case 1:**
In this case, she only answers the **first-phase**.

Where did you go?

[Image of a crowded street scene in Tokyo]

I only went to **Tokyo**.

**Case 2:**
In this case, she only answers **first-** and **second-phases**.

Where did you go?

[Image of a nature scene with a temple in Fukui]

I went to **Tokyo** and **Fukui**.
3. Improvement of IVS - Solution & Result -

**Result:** 1st phase takes only a few minutes.

Comparing response time per person between 1st and 1st+2nd phases answer in RS

We reduced the respondent burden, and succeeded in cutting time and expense!

2 or 3 minutes!
Problem:
1. Not enough data for each prefecture
2. Heavy respondent burden

Solutions:
1. Divide IVS into NS & RS
2. Apply “Two-phase sampling” to RS
4. Future Work

Improved Operation of Two-phase Sampling

Survey Design Review
Thank you.

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