Workshop for
STS (System of Tourism Statistics) &
TSA (Tourism Satellite Account)
in IRAN

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Additional Session: Introduction on Korean TSA

I. Introducing the Korean TSA
II. Conceptual Framework
III. Application to KTSA
IV. Results of KTSA
I. Introducing the Korean TSA
I - 1. Overview of KTSA

- Responsible units: Ministry of Culture, Sports and Tourism
- Commissioned institute: KCTI
- Data sources: mainly KCTI, KNTO, BOK, NSO/Sample Survey
- Cooperatorional Institute: the Bank of Korea
- Budget: US $150,000 (as of 2010)
I - 2. Main Issues

- **Data Collection and Sources**
  - Korea Tourism Statistics (Korea Tourism Organization, Ministry of Justice)
  - Korea National Tourism Survey (by Korea Culture & Tourism Institute)
  - Hotel Statistics (Korea Hotel Association)
  - International Visitor Survey (by Korea Culture & Tourism Institute)
  - The Census on Basic Characteristics of Tourism Establishments (by Korea Culture & Tourism Institute)
  - **Household Survey**

- Followed the guideline of IRTS 2008 and 'TSA: RTF 2008'

- Sometimes not consistent with guideline and actual data

- Measuring Methods of Visitors and Expenditure
  - Visitors are center of the observation of tourism
    - Measuring flow of visitors

<table>
<thead>
<tr>
<th>Classification</th>
<th>Counting Methods</th>
</tr>
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<tbody>
<tr>
<td>Flows of inbound visitors</td>
<td>E/D cards, Border Survey, Household Survey</td>
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- Measuring Expenditures of visitors

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Ⅱ. Conceptual Framework
Ⅱ - 1. Conceptual Framework

- Inbound tourism expenditure
- Domestic tourism expenditure
  - Domestic expenditure
  - Domestic expenditure by Outbound
- Government Expenditure

Tourism Demand

Tourism Supply

- Tourism Employment
- Tourism Value added
- Tourism gross fixed capital formation
In the case of tourism analysis, an Input-Output analysis, which is an indirect method of estimating tourism production structure, is the shortest and the most effective approach to develop TSA since the supply side of tourism is unclear and tourism production can be determined by tourist consumption.

The supply side of the tourism industry can be derived from the demand side of tourism utilizing the Input-Output analysis. Thus, the approach of TSA development in Korea adopts an indirect method.

For analysing the structure of final tourism demand, we used the total amount of tourist expenditure provided by annual survey results of the Korea National Tourism Organization. The detailed items of tourist expenditure can be investigated by the tourist survey. Then the tourist consumption of individual industries can be connected with Input-Output tables in the national account.

We can obtain the tourism value added for each industry from the supply side which may relate to tourism production. For the completion of the TSA tables, the demand and supply side of tourism, number of employed, and fixed capital formation were applied to KTSA.
Ⅱ – 3. Methodology

- KTSA approach adopted

Survey on Tourism Expenditure Structure
  - Household Tourism Expenditure
  - Export and Import

Secondary Data
  - National Accounts
  - Amount of Tourism Expenditure

Input-Output Analysis

Final Tourism Demand
Tourism Supply
Korean TSA
II  – 3. Methodology

Tourism Supply Analysis

- Supply side tourism is necessary to measure value added and production structures in Input-Output analysis. Measuring the supply side of tourism leads to an understanding of the relationship between tourism and the national economy, with the tourism industry becoming meaningful in the national account.
- Input-Output Analysis is a general equilibrium model comprehending the interdependence between industries. A final demand of each industry introduced as exogenous variables and total output of each industry are related to each other by matrix A, input coefficients matrix. The matrix A indicates the interdependence between industries.
- We set up the model in which imports are introduced by endogenous variables to measure the output of the tourism industry which is necessary to meet the final demand of tourism. This model assumes that intermediate goods, necessary for production, are imported according to the import coefficients.

\[ X = (I-A+M)^{-1} F \]

- X: column vector of total output by industry
- I: identity matrix
- A: input coefficients matrix
- M: diagonal matrix of import coefficients
- F: column vector of final demand
- In this study, we assume that input coefficients in the Input-Output table in 1995 are constant until 1998. Statistics of final demand in 1998 were provided by the Bank of Korea.
II – 3. Methodology

- A ratio of value added generated from final demand to the total value added of a specific tourism industry is STR (supply side tourism ratio).

\[
\text{STR}_i = \frac{\text{TVA}_i}{\text{VA}_i}
\]

TVA: tourism value added
VA: total value added

* STR is used to employment, Fixed Capital as a method.

- Supply side tourism proportion (STP) indicates a ratio of value added from a specific tourism industry to value added of the total tourism industry. The larger the STP in an industry, the more benefit to the national economy.

\[
\text{STP}_i = \frac{\text{TVA}_i}{\sum \text{TVA}_i}
\]

\sum \text{TVA}_i: \text{total tourism value added}
III. Application to KTSA
Ⅲ-1. Application to KTSA

- **Tables 1 : Inbound tourism expenditure by products and classes of visitors**
  - Estimates Units: passenger expenditure by air and sea transportation, expenditure of accommodation, shopping, etc
  - Data Source:
    - The Bank of Korea (Extended Balance of Payments Services, EBOPS)
    - International Visitor Survey (by Korea Culture & Tourism Institute)
    - Hotel Statistics (Korea Hotel Association)

- **Table 2 : Domestic tourism expenditure by products, classes of visitors and types of trips**
  - Estimates Units: passenger expenditure of transportation, expenditure of accommodation, shopping, etc
  - Data Source
    - Korea National Tourism Survey (by Korea Culture & Tourism Institute)
    - Hotel Statistics (Korea Hotel Association)
Ⅲ-2. 10 Tables for KTSA

- **Table 3: Outbound tourism expenditure,**
  - Estimates Units: expenditure of accommodation, shopping by outbound
  - Data Source: Korea National Tourism Survey (by Korea Culture & Tourism Institute)

- **Table 4: Internal tourism consumption, internal tourism expenditure and other components of tourism consumption, by products (Table 1+2)**

- **Table 5: Production accounts of tourism industries and other industries (at basic prices)**
  - Estimate method:
    - Use Input-output Table by the Bank of Korea
  - Partial survey for tourism establishments (accommodation, retail shop etc)
  - Data Source: The Bank of Korea
Table 6: Domestic supply and internal tourism consumption, by products (at purchasers’ prices)
- as above Table 5

Table 7: Employment in the tourism industries
- Estimate method:
  - Use employment Table of Input-Output Table (by the Bank of Korea)
  * Tourism establishments by Tourism Basic Law are limited to include many other tourism related industry.
- Data Source: The Bank of Korea

Table 8: Tourism gross fixed capital formation of tourism industries
- Estimate method:
  - Use Input-Output Table (by the Bank of Korea)
  - Indirect method adopted
- Data Source: The Bank of Korea
II-2. 10 Tables for KTSA

- **Table 9 : Tourism collective consumption, by product and level of government**
  - Estimates method:
    - government expenditure by central and local government
  - Data Source : mainly administrative internal data from central and local government

- **Table 10 : Non-monetary indicators**
  - Data Source
    - Korea Tourism Statistics (Korea Culture & Tourism Institute, Korea Tourism Organization, Ministry of Justice)
    - Korea National Tourism Survey (by Korea Culture & Tourism Institute)
    - Hotel Statistics (Korea Hotel Association)
    - International Visitor Survey (by Korea Culture & Tourism Institute)
    - The census on Basic Characteristics of Tourism establishments (by Korea Culture & Tourism Institute)
IV. Results of KTSA
Results of KTSA

- KTSA (Korea Tourism Satellite Account) in 2000, 2004, and 2010. KTSA has measured tourism GDP, based on the guideline of Tourism Satellite Account by UNWTO.

- The results show that Tourism GDP in 1998 is 3.21% of gross GDP in Korea. According to the KTSA, Tourism GDPS in 2004 and 2008 are 2.26% and 2.40%, respectively.

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<tr>
<th>Year Basis</th>
<th>Tourism GDP (%)</th>
<th>Publishing Organization</th>
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<tbody>
<tr>
<td>1998</td>
<td>3.21</td>
<td>Ministry of Culture &amp; Tourism (2000.2)</td>
</tr>
<tr>
<td>2004</td>
<td>2.26</td>
<td>Ministry of Culture &amp; Tourism (2005.5)</td>
</tr>
<tr>
<td>2008</td>
<td>2.40</td>
<td>Ministry of Culture, Sports &amp; Tourism (2010.2)</td>
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Thank you very much for your attention!