KOSTAT’s Process Model and Production System for Official Statistics

ModernStats World Workshop

28 June, 2019
Background
Decentralized Production System

- 422 agencies
- (1,142 Official Statistics)
Decentralized Production System

KOSTAT
(Statistics Korea)
Decentralized Production System

MOHW

(Ministry of Health and Welfare)
Decentralized Production System

MSS

(Ministry of SMEs and Startups)
Decentralized Production System

ME

(Ministry of Environment)
Integrated Environment Needs for Statistical Production

**Capability for Official Statistics**

- **Standardize** the **Production Process** of official statistics!
- Build a **Generic System** producing the **Various** statistics!

**Saving of Government Budget**

Budget
Progress of KSBPM (v1.0)

1. Specify Needs
2. Design
3. Build
4. Collect
5. Process
6. Analyze
7. Disseminate
8. Archive
9. Evaluate

GSBPM

1. Survey Planning
2. Design
3. Collect Data
4. Process Data
5. Analyze
6. Disseminate
7. Archive
8. Evaluate

Administrative Manual

Practice Guidelines

Handbook for Stat Quality

KSBPM v1.0

1. Planning
2. Design
3. Build
4. Collect
5. Process
6. Analyze
7. Disseminate
8. Archive
9. Evaluate
# Progress of KSBPM (v2.0)

## KSBPM v1.0
1. Determine statistical needs
2. Review and discuss demand
3. Identify statistical concepts
4. Establish output objectives
5. Analyze budget in advance
6. Make production plan

## GSBPM v4.0
1. Determine needs for information
2. Consult and confirm needs
3. Establish output objectives
4. Identify concepts
5. Check data availability

## T/F Discussions
1. Determine statistical demand
2. Verify & Specify statistical demand
3. Establish output objectives
4. Identify statistical concepts
5. Check data availability

## Improvements (T/F Review)
1. Determine statistical demand
2. Verify & Specify statistical demand
3. Establish output objectives
4. Identify statistical concepts
5. Check data availability

## KSBPM v2.0
1. Determine statistical demand
2. Verify & Specify statistical demand
3. Establish output objectives
4. Identify statistical concepts
5. Check data availability
6. Make production plan

---

5. Prepare business case
# Overview of KSBPM

"9 Mega-Processes with 47 Sub-Processes"

<table>
<thead>
<tr>
<th>Plan</th>
<th>Design</th>
<th>Build</th>
<th>Collect</th>
<th>Process</th>
<th>Analyze</th>
<th>Disseminate</th>
<th>Archive</th>
<th>Evaluate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determine statistical demand</td>
<td>Design output</td>
<td>Build collection instrument</td>
<td>Select sample</td>
<td>Integrate data</td>
<td>Prepare draft outputs</td>
<td>Prepare dissemination data</td>
<td>Define archive rules</td>
<td>Make evaluation plan</td>
</tr>
<tr>
<td>Verify &amp; Specify statistical demand</td>
<td>Design variables</td>
<td>Build production system</td>
<td>Prepare collection</td>
<td>Classify &amp; code</td>
<td>Validate outputs</td>
<td>Produce dissemination products</td>
<td>Manage archive repository</td>
<td>Conduct evaluation &amp; produce reports</td>
</tr>
<tr>
<td>Establish output objectives</td>
<td>Design collection methodology</td>
<td>Configure workflows</td>
<td>Run collection</td>
<td>Review, validate &amp; edit</td>
<td>Scrutinize &amp; explain</td>
<td>Manage release of dissemination products</td>
<td>Preserve data &amp; associated metadata</td>
<td>Derive improvement plans &amp; make action plan</td>
</tr>
<tr>
<td>Identify statistical concepts</td>
<td>Design universe &amp; sample</td>
<td>Test production system</td>
<td>Finalize collection</td>
<td>Impute</td>
<td>Apply disclosure control</td>
<td>Promote dissemination Products</td>
<td>Dispose of data &amp; associated metadata</td>
<td></td>
</tr>
<tr>
<td>Check data availability</td>
<td>Design processing methodology</td>
<td>Test business process</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Make production plan</td>
<td>Design production system</td>
<td>Finalize production system</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calculate weights</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calculate aggregates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finalize data processing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Overview of NARASStat

Sharing and Integrated Statistical Production System

- Sharing the system Collaboratively → Reduce Costs to produce statistics
- Hide Complexities into the System → Save Time to produce statistics
- Standardized statistical production Process → Improve the Quality of statistics
Understanding the NARASStat

Combining functions for statistical production

Just like the solution to create documents using various functions ...

Document Solutions

NARASStat

Register
Questionnaire
Review
Aggregate

Documents
Presentations

Combination
Understanding the NARAStat

Sharing a system that supports various statistical surveys

Individual statistical production systems

- Entering questionnaire
  (face-to-face interview, Internet, mobile)
  - (Survey A) face-to-face interview
  - (Survey B) Internet
  - (Survey C) Mobile

- Review Content and Process Data
  - (Survey A) Process Weights
  - (Survey B) Process Outliers
  - (Survey C) Review Content

NARAStat (Common)

- Analyze
- Internet Survey
- Classify
- Process Weights
- Process Outliers
- Face-to-face Interview
- Aggregate
- Review Content
- Mobile Survey

Support a variety of survey methods (CADI, CASI, CAPI, CATI, Mobile)
IV Achievements & Challenges
Achievements

System Operation Status and Major Achievements

<table>
<thead>
<tr>
<th>Type of Agency</th>
<th>Number</th>
<th>Statistics by Survey Method</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Sum</td>
<td>Survey</td>
<td>Derived</td>
</tr>
<tr>
<td>Central Administrative</td>
<td>14</td>
<td>94</td>
<td>93</td>
<td>1</td>
</tr>
<tr>
<td>Agency</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local Government</td>
<td>220</td>
<td>352</td>
<td>135</td>
<td>217</td>
</tr>
<tr>
<td>Other Agencies</td>
<td>11</td>
<td>13</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>245</td>
<td>459</td>
<td>241</td>
<td>218</td>
</tr>
</tbody>
</table>

- Strengthen quality with systematic production and management of official statistics
- Efficient use of national budget by joint use of system for statistical production
Challenges

Background

KSBPM

NARASat

Achievements and Challenges

Future Plan

- Standardized Data
- Flexibility (Changeability)
V Future Plan
Future Plans

- Modular, Flexible & Standardized System

- KSBPM System
- Data

... NARASStat (KSBPM v2.0)

2019
Current Status Analysis

2020
Information Strategy Planning

2021 ~ 2023
Build new-generation NARASStat

2025
Population and Housing Census by NARASStat 2.0

Work, Organization

NARASStat System

DB Model
Design
Integration
Thank You