Innovative data collection solutions for the Household Budget Survey and Time Use Survey

State of Play

3rd meeting of the UN Expert Group on Innovative and Effective Ways to Collect Time-Use Statistics

4-6 November 2019 – UN, New York USA

European Commission
Eurostat – ESTAT.F.4 – Income and living conditions; Quality of life
Innovative tools and sources for living conditions survey
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Project Innovative Tools & Sources for HBS and TUS - Objective

Developing new and improving existing applications to collect and process survey data:
Use of mobile apps (Identification, eDiaries), smart cards, introduction of back ends which allow to configure and manage surveys, web diaries, in order to...

✓ lower the burden for respondents and NSIs
✓ link the data collection with new data sources
✓ ensure more efficient data collection for Member States, taking into account new technologies available
Project Innovative Tools & Sources for HBS and TUS – State of play

1. 5 development projects (Eurostat grants) executed in MS (results for all projects expected by 04-2020)

2. HBS data collection - iCard project (Q1 – 2021)

3. TUS data collection - use geolocated data (Q1 -2021)

4. Inventory of tools and sources – redesign (Q2 -2020)

5. Future…. European platform for Trusted Smart Statistics
1. MS activities – development grants

**TUS**: Update of existing **App for Time Use data collection**: new functions, documentation, language

**HBS**: Development **online tool for the reporting of household data in the household budget survey**, incl. validation and usage of Classification of Individual Consumption According to Purpose (COICOP) codes

**HBS**: development of a prototype for defining the parameters of the application functioning in the scope of **handling the diary for household budget surveys** (based on existing web application), language

**HBS**: develops **an app-assisted approach towards HBS data collection in which a diary, scanning of receipts, inclusion of geographical context information and big data linkage consent questions and measurements are combined**

**TUS**: a software platform **designed to collect highly contextualized time-use data through the use of online and offline devices.** ...and also **HBS**...cross domain approach

AT, SI, FI, UK
DE, VUB
2. The HBS data collection as it is now...

- The data collection involves a combination of one or more *interviews and diaries* or logs maintained by the households and/or individuals, usually on a daily basis for **two weeks** (1-4 weeks in some countries)

- The use of paper&pencil diaries is **time consuming** for respondents... and for NSIs!

*Aim at finding more attractive ways of collecting the data!*
The advantages for using alternative sources in the HBS data collection

- Save time in the compilation of the information for the diary:
  - automatically fill and validate some of the data fields
The advantages for automatizing HBS data collection

Please avoid indications such as the number of packets, cans, tins or pieces:

<table>
<thead>
<tr>
<th>Kind of purchased products or designation of the purpose of the expenditure</th>
<th>Country of purchase</th>
<th>Place of purchase</th>
<th>Quantity</th>
<th>Amount</th>
<th>Bio</th>
</tr>
</thead>
<tbody>
<tr>
<td>canned natural tuna</td>
<td>L</td>
<td>D</td>
<td>1 tin</td>
<td>2.25</td>
<td></td>
</tr>
<tr>
<td>biscuits</td>
<td>&quot;</td>
<td>&quot;</td>
<td>2 packets</td>
<td>3.68</td>
<td></td>
</tr>
</tbody>
</table>

Please write instead:

<table>
<thead>
<tr>
<th>Canned natural tuna</th>
<th>L</th>
<th>D</th>
<th>125 g</th>
<th>2.25</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>biscuits</td>
<td>&quot;</td>
<td>&quot;</td>
<td>2 x 150 g</td>
<td>3.68</td>
<td></td>
</tr>
</tbody>
</table>

➢ Also, this would **avoid data entry mistakes and misinterpretations**...
Schema: innovative ways of HBS data collection

DATA RELATED TO HOUSEHOLD EXPENDITURE

• Use a smartphone app to collect data directly from the retailers

iCARD as MOBILE APP

OTHER HOUSEHOLD DATA

• Use a smartcard to collect data directly from the retailers

iCARD device

ICARD READER/ DATA TRANSFER
PRE-FILLING OF E-DIARY
CHECKING BY RESPONDENTS

BACK-END:
NSI configures the data collection wave
Subset of compiled data is sent to Eurostat

NSIs

SECURE ENVIRONMENT
Data available from retailers’ receipts

- Item description (and quantity)
- Item price (possibly promo info)
- Total sum of the receipt
- Date & time
- Name & address of retail store/-chain (Org. number)
- Payment mode
3. Use of Geolocation or similar sensors for TUS data collection

Objective: ESS shareable components
Active interaction with passive input from sensors to gain context
Synchronization of e-diary and the geolocation/geofence information
Brussels Pedestrian Area

5 geofences

- De Brouckère
- Anspach (North)
- La Bourse
- Anspach (Sud)
- Fontainas
4: Inventory of tools and sources HBS/TUS – “as is”

<table>
<thead>
<tr>
<th>Tool identification</th>
<th>Type of information collected (examples)</th>
<th>Source</th>
<th>Question</th>
<th>Aikini</th>
<th>Íddimérleg</th>
<th>MOTUS</th>
<th>Xcola</th>
<th>STAT_time</th>
<th>TBO LISS app</th>
<th>Online TUS</th>
<th>No name</th>
<th>Smart Activity Analysis</th>
<th>Insta count</th>
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<tr>
<td>Name of the tool</td>
<td>Open tool</td>
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<td>Developer</td>
<td>Open tool</td>
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<td>User</td>
<td>Open tool</td>
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<tr>
<td>Aims of the tool</td>
<td>open tool (to collect data for TUS/HBS)</td>
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Firs glance new Inventory look & feel: https://webgate.ec.europa.eu/fpfis/wikis/display/ISTLCS/Innovative+sources+and+tools+for+living+conditions+surveys+-++Home
Inventory of tools and sources HBS/TUS - redesign

use of a wiki platform with specific plugins (e.g. forms, dropdown menu, filter, checkbox, tables, etc.)
Inventory: tool description available in only 1 click...
Inventory: different tabs with details and possibility to download full description using CSPA templates
5. Future ... European platform TSS

• Some of the principles of **Trusted Smart Statistics**: multi-purpose data sources, the hourglass model, modular methodological frameworks, pushing computation out, sharing data without replication

• **HBS and TUS innovation project provided input for a new ESSnet project (Member States focus)** on **Trusted smart surveys**
European platform TSS

- European platform TSS
  - Trusted Smart Statistics
  - Priority domains

  - Web Intelligence
    - Online job vacancies
    - Wikipedia
    - Enterprise websites
    - Internet platforms

  - Trusted Smart Surveys
    - Time use
    - Household budget

  - Mobile Network Operator Data
    - Methodological Framework
    - Human presence and movements

  - Transport and Logistics
    - Vessel traffic
    - Air traffic
    - Railway traffic

  - Smart Systems
    - Smart farming
    - Smart devices
    - IoT for smart cities
    - Smart traffic

  - Earth Observation
    - Agriculture, Land cover, Environment, SDGs
Way forward for HBS and TUS in a nutshell...

**2019-2022**

- Data collection Apps
- Contextual interaction
- Add new data sources
- Web application instead of paper
- Mix mode data collection
- Validation codes and format
- Back office processing of survey data
- Enlarge sharing on ESS level of tools
- Share experiences with others (ESSnet Trusted Smart Surveys)

**2022-2026**

- Sharing of solutions in ESS becomes “common practice”
- Contribute and adapt to a European platform for Trusted Smart Surveys solutions
- Other data sources part of the normal data collection process
- Increased quality of the data; supporting further validation and allowing to extend mix mode
- Automated data collection
- Governance model implemented
- Prepared for more frequent data collection cycles
- Cross domain solutions
TUS data collection future...

Let’s simply do it and go this innovative way together!

Project:
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