Panel Refreshment
H49 Freight transport by road using a PPS design

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Background

– Statistics Netherlands publishes a SPPI for H49 since 1997.

– The original panel was based on a stratified random sample.

– The panel becomes gradually outdated.

– We needed an updated sample.
The sample: theory

- Probability Proportional to Size (Unequal Probability Sampling)

- Challenges:
  - Sampling frame
  - Variable as measurement for size: Turnover (because National Accounts uses the SPPI to deflate turnover)
The sample: practice

- Sampling frame: STS Turnover Statistics, partly based on VAT
- Population: 10,500
- Panel of 250 companies divided in:
  1. An integral part of 27 companies with a probability higher than the sampling interval.
  2. A sample of 223 companies has been drawn starting from a random point.
Next challenge: ascertain whether the companies are actually involved in freight transport by road.

Search on the internet and calling the companies.

The contact person receives an email with a questionnaire asking about which share of the turnover is generated by activities in each submarket.

And they can fill in their models and prices in an excel spreadsheet.
Inner weights

Old weights:
– Related to turnover of the company

New weights:
– Integral part: turnover company/turnover submarket
– Sample part: companies submarket share * (turnover submarket/turnover all markets)
Inner weights: alpha factor

- Integrating old and new sample with an Alpha-factor
- Alpha: ratio (importance) between both samples
- 3 methods:
  1. Based on own judgment (estimate manually)
  2. **Based on sample size**
  3. Based on variancy
# New panel

<table>
<thead>
<tr>
<th>Submarket</th>
<th>Old panel</th>
<th>Add. panel</th>
<th>New panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total N</td>
<td>70</td>
<td>91</td>
<td>161</td>
</tr>
<tr>
<td>Cool freight transport</td>
<td>12</td>
<td>30</td>
<td>42</td>
</tr>
<tr>
<td>Tank freight transport</td>
<td>12</td>
<td>11</td>
<td>23</td>
</tr>
<tr>
<td>Container freight transport</td>
<td>6</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>Dry bulk transport</td>
<td>13</td>
<td>15</td>
<td>28</td>
</tr>
<tr>
<td>Other freight transport by road</td>
<td>47</td>
<td>63</td>
<td>110</td>
</tr>
</tbody>
</table>
Q1 2014

- The new companies responded for Q4 2013 and Q1 2014
- A lot of work with follow-up calls and checking prices
- Cooperation was good
- Development at the total level deviates 0.1 off
- The data has been published and we are planning to refresh the sample and relieve the burden of a large share of the old panel
- Next: we have started refreshment for other branches