Non-response Analysis in the Household Budget Surveys in Bosnia and Herzegovina

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Background

• Statistical production is based on data collected in different ways

• There are errors in every statistical survey

• Total survey error is a cumulative value of all possible errors in statistical survey

• Non-response in statistical surveys is one of possible generators of survey errors
Non-response in sampling surveys (1)

• There are two main types of non-response in statistical surveys:
  a) unit non-response and
  b) item non-response.

• Non-response can have two effects on survey estimates:
  (i) it contributes to an increase of sampling variance of estimates, as the sample size is reduced; and
  (ii) it contributes to bias of estimates, when respondents differ from respondents in the survey characteristics.
Non-response in sampling surveys (2)

- The survey bias is rather a *multiplicative function* of the nonresponse level and the *differences* in the survey question between respondents and non-respondents.

- There is no common opinion which is a minimum response rate in order to guarantee survey accuracy and representativeness.

- It is needed to monitor, measure and report non-responses in statistical surveys and to apply appropriate methods for decreasing non-response.
Methods for decreasing survey non-response (1)

• For a good strategy of non-response reduction, it is very important to identify and measure different components of non-response.

• The most common indicators used for reporting non-response in household surveys are following:
  (i) overall non-response rate,
  (ii) non-contact rate,
  (iii) refusal rate and
  (iv) percentage of vacant dwelling.
Methods for decreasing survey non-response (2)

- The most common methods, which can reduce non-response in household surveys are as follows:

1. Improving the quality of the sampling frame;
2. Data collection method;
3. Questionnaire design and respondent burden;
4. Length of data collection period and time in year for data collection;
5. Legal obligation and protection of individual data confidentiality;
6. Communication strategy;
7. Trained survey staff;
8. Total survey budget;
9. Use of respondent incentives;
10. Language of the questionnaire;
11. Postsurvey adjustments.
Table 1. Overall non-response rates, national and by entities, BiH HBS, 2004-2015

<table>
<thead>
<tr>
<th>Year</th>
<th>BiH</th>
<th>FBiH</th>
<th>RS</th>
<th>BD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>17.2</td>
<td>18.1</td>
<td>15.9</td>
<td>17.0</td>
</tr>
<tr>
<td>2007</td>
<td>18.5</td>
<td>20.1</td>
<td>16.4</td>
<td>10.7</td>
</tr>
<tr>
<td>2011</td>
<td>24.0</td>
<td>24.8</td>
<td>21.1</td>
<td>30.7</td>
</tr>
<tr>
<td>2015</td>
<td>33.2</td>
<td>35.3</td>
<td>23.6</td>
<td>52.1</td>
</tr>
</tbody>
</table>

- The differences in the average non-response rates between survey years are statistically significant ($F=320,752; p=0.000$).
Non-response in HBSs in BiH (2)

Graph 1. Number households with incomplete interviews, national and by entities, BiH HBS 2004-2014

Graph 2. Number of households with no interview, national and by entities, BiH HBS 2004-2015
Non-response in HBSs in BiH (3)

• Since the achieved sample sizes were similar in all years (about 7500 HHS), the hugest increase of non respondent households was in Federation BiH
• The most difficult cases of the non-response are those related to not interviewed households
• Five reasons for no interviews have been monitored:
  1. refusal,
  2. no contact,
  3. death or relocation of all household members,
  4. temporary absence of all household members and
  5. other reasons
Non-response in HBSs in BiH (4)

Non-response in HBSs in BiH (5)

- Average rates of initial refusals are statistically significant between survey years (F=8,295; p=0,000)
- Tukey post hoc test indicated significant increases in average proportion of refusal households in last three years compared with the first survey run
- Differences between last three years are not statistically significant
- The similar pattern has been observed at entity/district levels
- It can contribute to the increase the total survey error and damage the total quality of the surveys
- Since 2004, when the survey was first time launched, no major improvements were made in order to decrease non-response
- Additionally, survey instruments were in 2011 and 2015 extended by ad hoc modules on social inclusion
Methods for improving response in HBSs in BiH

1. New master sample in process;
2. Current: PAPI; Plan: CAPI
3. Questionnaire design adjusted to new data collection method;
4. Plan to decrease the length of data collection period;
5. Legal obligation and protection of individual data confidentiality must be better communicated as well as the survey itself;
6. Permanent survey staff planned for the future;
7. Adequate total survey budget and use of respondent incentives;
8. No problems with language barriers in BiH;
9. Postsurvey adjustments (weights, imputations, poststratification)
Conclusions and future steps

- The significant increase of total non-response within HBSs in BiH was noted.
- The non-response is caused by various reasons, the most important of which are refusals.
- The imperfection of sampling frame contributes to increase of non-responses as one of most important non-sampling errors, especially in terms of non-contacts and relocation.
- There is a lot of room for improvements in the nearest future.
- The most important methods for decreasing the non-response are related to the creation of new master sample and to new data collection methods.
- Their introduction will allow the implementation of other methods for improving survey responses.
Thank you for the attention!

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