How Well School Age Children Report Family SES: Systematic Review

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Background

• Socio-economic status (SES) variables are always required in social science studies.

• More and more surveys of school-age children as a focal group of interest
  – Coleman’s project in USA. (Coleman, 1966),
  – First International Mathematics Study (FIMS) (Husen, 1967),
  – The Trends in International Mathematics and Science Study (TIMSS), the Programme for International Student Assessment (PISA) and many others. National and international.

• Researchers rely on the students’ responses on SES related factual questions.
Research Questions

• What is the level of accuracy of school-age children’s reports on parental education and occupation?

• To what extent different SES measures are prone to be missed?

• Are there any respondents’ characteristics related to the response quality?
Methodological approach

- Systematic review of the studies devoted to investigation of the quality of children responses on family SES variables.
- Papers selection criteria:
  - Study about the quality of the school age children responses on the family SES questions;
  - Methodological focus;
  - We mostly focused on the papers published since 1990, as similar review had been done in 1989 (Looker, 1989).
- Approaches to look for relevant papers:
  - Snowball method;
  - Search in the citation and periodical databases (SCOPUS, WoS, JSTOR, EBSCO, Science Direct and others).
16 papers were included in the final list:
- 15 on research question 1 about consistency;
- 11 on research question 2 on non-response issue;
- 8 on research question 3 about students’ characteristics and response quality;

SES measures:
- 14 - Parents’ education;
- 14 - Parents’ occupation, including occupational status, but not a profession;
- 3 - Family structure;
- income, home possessions, free or reduced lunches and other measures of financial support were in focus only once or twice.
Information from papers

- Correlation coefficients between children and parents answers,
- percent of agreement,
- Cohen’s Kappa (inter-rater agreement),
- percentage of missing items,
- which students’ characteristics are associated with the response quality.

The number of studies can be greater than number of papers, because there were papers with several different samples under investigation. E.g. different countries or children of different age.
RESULTS
## Consistency and non-response

<table>
<thead>
<tr>
<th>Consistency indicator</th>
<th>Occupation</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Father</td>
<td>Mother</td>
</tr>
<tr>
<td><strong>Correlation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Av. / Med.)</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Range</td>
<td>0.5 - 0.9</td>
<td>0.4 - 0.9</td>
</tr>
<tr>
<td><strong>Cohen’s Kappa</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Av. / Med.)</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Range</td>
<td>0.4 - 0.9</td>
<td>0.6 - 0.8</td>
</tr>
<tr>
<td><strong>% of agreement</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Av. / Med.)</td>
<td>70</td>
<td>69 / 74</td>
</tr>
<tr>
<td>Range</td>
<td>43 - 93%</td>
<td>20 - 94%</td>
</tr>
<tr>
<td><strong>Missing cases</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Av. / Med.)</td>
<td>7 / 5</td>
<td>12 / 9</td>
</tr>
<tr>
<td>Range</td>
<td>1 – 34%</td>
<td>0.6 - 46%</td>
</tr>
</tbody>
</table>
Some explanation of the results

- Question on **occupation** is usually open question.
- Question on **education** is a closed question with a list of possible levels of education or educational institutions that parents could graduate from.
- Parents’ occupation is more salient in everyday life.
Whether inaccuracy will change the inferences?

- Does usage of children’s or parents’ answers lead to contradictory inferences?
- In six papers there were regression models based on children’s or parents’ answers:

<table>
<thead>
<tr>
<th></th>
<th>Occupation</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results differ</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Results not differ</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>
Students’ characteristics

• Parents-children consistency:
  – Age (14-15 years old is a minimum).
  – Educational achievement (higher achievement, higher accuracy).
  – Family structure (presence of a parent, relationship).
  – Family SES (higher SES, higher accuracy).

• Missing answers:
  – Age.
  – Family structure (presence of a parent, relationship).
  – Boys (more non-responses).
Conclusions

• School-age children responses are of moderate accuracy
  – The percentage of agreement between parents and children is 65-70%.
  – Correlation is about 0.7 for occupation and 0.6 for education.
  – Cohen’s Kappa is 0.7 for occupation and 0.5 for education.

• Frequency analysis will be biased.

• Regression analysis are robust and provides the same inferences based on both data sources.

• School-age children responses can serve as appropriate measure of family SES for most studies and research situations. Especially question on occupation.

• The tendency to give inaccurate answers is uneven; some groups of children are more likely to make mistakes.
What can be done to increase accuracy?

• Broadening or merging categories;
• Partial verification of information from other sources, such as parents survey or administrative data; In case of verification of the responses it is necessary to pay special attention to groups that are more prone to inaccurate reports.
• Inquiry to children to clarify the education and occupation of the parents before the survey.
• Thank you!

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