COLLECTING SURVEY DATA AMONG
THE 50+ POPULATION IN EUROPE DURING
THE COVID-19 PANDEMIC: CONSEQUENCES
OF A MODE SWITCH ON DATA QUALITY IN AN
ONGOING PANEL STUDY

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Overview

1) How did SHARE react to the pandemic?  
→ presentation by Elena Sommer

2) Impact of mode switch (CAPI → CATI) on:
   a) Participation
   b) Data quality
      • Representativeness
      • Comparability of data

3) Lessons learned & outlook

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How did SHARE react to the pandemic

Please find here an overview of SHARE’s most important developments from the beginning of the COVID-19 crisis in 2020 until beginning of 2021. This timeline aims to give a brief and clear impression on SHARE’s challenges and achievements during the crisis:

**2020**

- **January**: Fieldwork of the 8th Wave of SHARE ongoing in all 28 SHARE countries.
- **February**: First cases of COVID-19 in Europe, followed by first lockdown measures in various European countries.
- **Mid March**: SHARE had to stop the ongoing Wave 8 fieldwork in all SHARE countries.
- **May**: Digital Train-the-Trainer session to prepare interviewers in 28 countries for the new fieldwork mode: Computer Assisted Telephone Interviews (CATI).

**2021**

- **January**: First scientific results of SHARE-COVID19 research.
- **February**: Second Wave of the SHARE Corona Survey.
- **March**: Summer 2021
- **August**: Fieldwork successfully completed in all countries. More than 60,000 respondents could be fielded.
- **August 11th**: The EU Commission accepted the proposal of the research project “SHARE-COVID19” to examine the non-intended consequences of the epidemic control decisions to contain the pandemic.
- **November 1st**: Official start of the SHARE-COVID19 research project with a digital kick-off event with all 14 partners.
- **December 17th**: Early release of SHARE Wave 8 COVID-19 data available for researchers all over the world.

**SHARE managed to turn a challenge into a chance**: In midst of the pandemic, the SHARE team digitalized all events, re-designed Wave 8 to its first ever SHARE telephone survey and added a module with Corona-specific questions.

**SHARE data is intensively used to examine the socio-economic and health consequences of the epidemiological containment decisions and the long-term effects of the COVID-19 pandemic.**

This project has received funding from the European Union under grant agreement VS 2020/0313 and the European Union's Horizon 2020 research and innovation programme under grant agreements No 870628, No 101015924
How did SHARE react to the pandemic

SHARE (so far) in a nutshell:

- Started in 2004 with representative samples of individuals age 50+ (Wave 8: 28 countries!)
- FTF interviews with the same persons, every two years (duration: ~80-90 min)
- Broad range of measurements: subjective and objective measures, cognitive tests, linkage to pension data
- Free data access for researchers: [http://www.share-eric.eu](http://www.share-eric.eu)
How did SHARE react to the pandemic

**Reasons for switch to CATI:**
- Interviewer-administered mode to minimize mode effects
- Low internet usage of respondents 80+

**Challenges:**
- Shifting the complex SHARE questionnaire to another mode infeasible
- SHARE Corona Survey as add-on (duration: ~20 min)
- Adaption of software tools → web-based application (Quest)
- Programming, translation & testing of 40 national instruments/languages
How did SHARE react to the pandemic

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**SHARE managed to turn a challenge into a chance**: In midst of the pandemic, the SHARE team digitalized all events, re-designed Wave 8 to its first ever SHARE telephone survey and added a module with Corona-specific questions.

**Digital Train-the-Trainer session** to prepare interviewers in 28 countries for the new fieldwork mode: Computer Assisted Telephone Interviews (CATI).

**Information on the SHARE Corona Survey (incl. access to the data)**: [http://www.share-project.org/share-covid19.html](http://www.share-project.org/share-covid19.html)
Preliminary individual response/retention rates (AAPOR, RR4; households without valid telephone number excluded)
Representativeness

Key question: Who does and who does not respond in a certain mode? Are CATI respondents different?

- Investigate predictors for attrition and interview mode to uncover clues about selective participation
- Logistic regression models for all respondents who participated in the (pre-pandemic) Wave 7
  - The dependent variable measures participation in Wave 8 (CATI)
  - The independent variables are from Wave 7 → analyze pathways of panel respondents
### Representativeness: Results I

**Average marginal effects (AMEs) for participation in 1st SCS**

Data: SHARE Wave 8, preliminary data (CATI: n=57,317). Displayed are average marginal effects (weighted) with 95%-confidence intervals.

<table>
<thead>
<tr>
<th>Socio-demographics</th>
<th>CATI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td></td>
</tr>
<tr>
<td>Age (&lt;65 years)</td>
<td></td>
</tr>
<tr>
<td>Age (80+)</td>
<td></td>
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<tr>
<td>Level of education: low</td>
<td></td>
</tr>
<tr>
<td>Level of education: high</td>
<td></td>
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<tr>
<td>Born abroad</td>
<td></td>
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<tr>
<td>Urban area</td>
<td></td>
</tr>
<tr>
<td>Living conditions</td>
<td></td>
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<tr>
<td>Living alone</td>
<td></td>
</tr>
<tr>
<td>Any social activities</td>
<td></td>
</tr>
<tr>
<td>(Self-)employed</td>
<td></td>
</tr>
<tr>
<td>Make ends meet</td>
<td></td>
</tr>
<tr>
<td>HH income: 1st quartile</td>
<td></td>
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<tr>
<td>HH income: 3rd quartile</td>
<td></td>
</tr>
<tr>
<td>HH income: 4th quartile</td>
<td></td>
</tr>
<tr>
<td>HH income: dk/rf</td>
<td></td>
</tr>
<tr>
<td>Health</td>
<td></td>
</tr>
<tr>
<td>Self-rated health: poor</td>
<td></td>
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<tr>
<td>Limitations in ADL</td>
<td></td>
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<tr>
<td>Limitations in IADL</td>
<td></td>
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<tr>
<td>Word recall (avg.)</td>
<td></td>
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<tr>
<td>Interviewer observations</td>
<td></td>
</tr>
<tr>
<td>Willingness to answer</td>
<td></td>
</tr>
<tr>
<td>Clarifications needed</td>
<td></td>
</tr>
<tr>
<td>Difficulties in understanding</td>
<td></td>
</tr>
</tbody>
</table>

R² CATI = .073 (.026)
Representativeness: Results II

Average marginal effects (AMEs) for participation in 1st SCS

Data: SHARE Wave 8, preliminary data (CATI: n=57,317). Displayed are average marginal effects (weighted) with 95%-confidence intervals.

R² CATI = .073 (.026)
Comparability of data

Key question: How is a question answered in a certain mode?

Same questions in the regular SHARE Wave 8 and the 1st SHARE Corona Survey:

- Feeling sad/depressed: “In the last month, have you been sad or depressed?”
- Sleeping problems: “Have you had trouble sleeping recently?”
- Loneliness: “How much of the time do you feel lonely?”

Item nonresponse:

- “How much was the overall income, after taxes and contributions, that your entire household had in an average month (CAPI) / in a typical month before Corona broke out (CATI)?”
## Comparability of data: Results I

### Difference between CAPI and CATI responses (AMEs in %-points)

<table>
<thead>
<tr>
<th></th>
<th>CAPI (in %)</th>
<th>CATI (in %)</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeling sad/depressed</td>
<td>43.6</td>
<td>29.0</td>
<td>-14.6***</td>
</tr>
<tr>
<td>Sleeping problems</td>
<td>36.8</td>
<td>27.3</td>
<td>-9.5***</td>
</tr>
<tr>
<td>Feeling lonely</td>
<td>29.6</td>
<td>29.9</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Data: SHARE Wave 8, release version: 0 (CAPI) and SHARE Wave 8 COVID-19 Survey 1, release version: 0.0.1 beta (CATI). The analysis sample includes all respondents who did both a CAPI and a CATI interview (n=34,848).

Note: Regressions include controls for differences in sample composition: age categories (60-69, 70-79, 80+; reference: 50-59), female, educational level (ISCED level 3+4, ISCED level 5+6; reference: ISCED level 0-2), living alone, living in an urban area, and born abroad.

- Mode measurement effects seem to play a role
- However, without further assumptions/experimental designs true changes are difficult to separate from mode effects!

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Comparability of data: Results II

Prevalence of feeling sad/depressed in Germany by survey mode (in %)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeling sad/depressed</td>
<td>53.7</td>
<td>26.7</td>
<td>48.8</td>
<td>51.6</td>
<td>43.1</td>
<td>46.2</td>
<td>25.6</td>
</tr>
</tbody>
</table>

Data: SHARE Wave 8, release 0 (CAPI, n=4546; weighted) and SHARE Wave 8 COVID-19 Survey 1, release 0.0.1 beta (CATI, n=4532; weighted).
SHARE Wave 6, release 7.1.0 (n=3357; weighted); SHARE Wave 7, release 7.1.0 (n=314; weighted).
CAWI data is from the Mannheim Corona Study (n= 11,017; sample restricted to June and July 2020 and 50+ respondents; weighted).

- Prevalence for CAPI seems rather stable at a high level; no huge difference between summer and winter
- Prevalence for CAWI during the pandemic is even lower than for CATI (despite a potential lower social desirability bias!)

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Comparability of data: Results III

Difference between CAPI and CATI responses (AMEs in %-points)

<table>
<thead>
<tr>
<th>Household income (&lt;750 €)</th>
<th>CAPI (in %)</th>
<th>CATI (in %)</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7.6</td>
<td>8.1</td>
<td>0.5</td>
</tr>
<tr>
<td>Household income (&gt;=4000 €)</td>
<td>17.6</td>
<td>10.5</td>
<td>7.1***</td>
</tr>
<tr>
<td>Household income (dk &amp; refusal)</td>
<td>15.8</td>
<td>19.2</td>
<td>3.4***</td>
</tr>
</tbody>
</table>

Data: SHARE Wave 8, release version: 0 (CAPI) and SHARE Wave 8 COVID-19 Survey 1, release version: 0.0.1 beta (CATI). The analysis sample includes all respondents who did both a CAPI and a CATI interview (n=34,848). Note: Regressions include controls for differences in sample composition: age categories (60-69, 70-79, 80+; reference: 50-59), female, educational level (ISCED level 3+4, ISCED level 5+6; reference: ISCED level 0-2), living alone, living in an urban area, and born abroad.

- Underrepresentation of high household incomes with CATI
- Higher item nonresponse, esp. regarding refusals
- Bracket questions further decrease item nonresponse for CAPI
Conclusions

• Mode switch from CAPI to CATI has paid off
  – about 60,000 interviews
  – understand the non-intended effects of epidemic control measures
  – use results to design better social, economic & public health policies

• CATI response rates were considerable (short timeframe!)

• Mixed picture regarding mode effects, but only first results!
  – Moderate selection effects, but potentially large time effect due to COVID-19
  – possible data quality issues in CATI (underrepresentation of high household incomes; higher item nonresponse)
    ➔ social desirability/less legitimacy, satisficing
Lessons learned & outlook I

- Lessons from the recent pandemic are precipitating a major update of SHARE’s methodology
  
  Shortened face-to-face interview of a **stable and concise core** questionnaire every two years
  
  Additional **topical modules** between the core surveys using other interview modes to address new developments more quickly

- But: Interviewers still play an important role in SHARE
  
  - to collect physical data (e.g. handgrip strength)
  
  - to motivate respondents (recruitment!) and build-up of rapport
  
  - to help with complex/cognitively demanding questions (esp. oldest old!) \(\rightarrow\) data quality!
Quasi-experimental data collection design and analysis strategy

Wave t
- Group 1: CAPI (F2F)
- Group 2: CATI

Wave t+1
- Group 1: CAWI
- Group 2: CATI
- Other modes

Wave t+2
- Group 1: CAPI (F2F)
- Group 2: CAPI

…


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