Mixed-Mode Design for Social Surveys WP 5: Challenges for phone and tablet respondents within CAWI

Summary and relevance in the COVID-19 situation

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MIMOD WP5 had two main topics:

1. developing solutions that enable fitting ESS surveys to mobile devices,
2. discussing the opportunities of using mobile device sensor data in ESS surveys.

The second topic the second only outlined a set of usable smartphone sensors together with ideas on using them to enrich ESS social surveys. Many of these seem to be rather far-fetched at the moment, with very little of no hope of real life application. This was most probably the reason for why this subproject did not proceed to any kind of implementation. The criteria developed for assessing the suitability of available sensor measurement options will most probably be very useful for future applications. These criteria were constructed from three aspects: *benefits of automated measurement in the context (topics, questions) of a survey*, *accuracy and costs of the sensor options*, and *respondent reactions to sensor data requests*. Pairs of topics and sensor measurements were identified for ESS surveys, and they were then evaluated by these criteria. Except for AES, the assessment found some pairs that have a potential for further development, however, respondent willingness, data access, data handling as well as quality issues may well hinder any such endeavour. The biggest obstacle seems to be respondent willingness to provide the required sensor data and consent to linking existing secondary data. The deliverable proposes these to be tested empirically. This project has not yielded any particular application for the use of sensor data in ESS surveys, and it still seems to be a long shot if it is possible at all. Therefore, even though the paper contains some quite creative possible uses, it is not clear if and how smartphone sensor data could be useful in crisis-triggered migration of existing surveys to mixed-mode data collection.

Of the two topics, the first was much more emphasised in the MIMOD project. It provided a draft framework with a set of criteria for migrating surveys to mobile devices, especially smartphones, and assessed ESS surveys EHIS, EU-SILC, ICT, and LFS based on these criteria. The criteria were grouped by three main dimensions: *screen size*, *navigation* and *interview duration.* The assessment found that ICT and LFS are the most promising options for a feasible smartphone data collection mode, however, even in these surveys, the adaptation of the questionnaire would still require considerable redesign in terms of question wording and answer categories, as well as navigation. The EHIS and especially the EU-SILC are apparently not suitable for smartphones without a total redesign of these surveys.

A first attempt on smartphone questionnaire adaptation was done for the ICT and the LFS, together with a usability and cognitive test for each. The main takeaway was that “mobile-device-first” questionnaire design is recommended within the ESS, due to the omnipresence of the mobile devices that should not be ignored. The other reason that the reports emphasise, that is, smartphones would reveal questions and question blocks prone to measurement error is, however, debatable. It is common knowledge that questions in ESS surveys are far from being optimally designed. For instance, many suffer from being not double or triple, but multiple-barrelled,

attempting to measure several phenomena in a single question, and the conceptual bases of many variables are underdeveloped. Many of the problems identified in the MIMOD project are consequences of such basic questionnaire design issues that do not require the introduction of a new mode, not even questionnaire tests to be revealed. However, given the fact that the qualitative tests done in the project were far from satisfactory in their methodological design (the projects suffered from serious issues in sample size and/or composition, recruitment, data analysis, interpretation, etc.), it is most possible that there were many problems left undiscovered.

Still, the basic assumptions and results presented in the report regarding the suggested approach to smartphone surveys are quite aptly made. These concern the length of the questionnaire and the questions and introductions/instructions, number and length of response options, fixed question stem with vertical scrolling for grid question, minimising the number of open questions, splitting multi-response questions to multiple questions, etc. The report, however, does not discuss the question of how to maintain functional equivalence among modes in case these recommendations are implemented. For example, how could we ensure that a complex, long question with introduction, instruction, and many response categories will be interpreted and answered the same way if the introduction, the question as well as the instruction are considerably shortened, and the number of response options are reduced? It seems unlikely that the original and the 'abridged' question format would pertain to, therefore, *measure* the same phenomena. Breaking up such complex questions in multiple, simpler questions might well do the trick, might even yield better quality responses (better interpretation and response), but the report did not consider this option, possibly because it would lead to an increase of questionnaire length, that is also recommended to be reduced.

Another issue is that the report clearly shows that completing a questionnaire on mobile devices are not at all easier of faster, quite the opposite. The only true benefit of this mode comes from the omnipresence of these devices, meaning that most people have and heavily rely on them as their primary means of internet use. It might be easier to motivate respondents to respond to a questionnaire if it fits their standard device for internet use, i.e. their smartphones. However, there seem to be at least two shortcomings of this approach. Apart from the fact that even the most experienced smartphone users seem to have hardships in answering a smartphone-fitted survey compared to answering it on a normal computer-based CAWI-mode, large social groups (such as elderly people) who do not (yet) use smartphones as well as others still cannot be reached. Another problem in the context of the present review is that the main strength of a mobile-device-first design comes from the mobility of these devices, that is, respondents would be able to fill questionnaires anywhere and anytime using their smartphones, that is, 'on-the-go' (e.g. travelling from or to work), or in other 'residual times', which can mean even the time spent in the restroom. If we tailor surveys to fit to smartphones, we have to deal with the consequences of people dedicating such residual times to survey response on the one hand. It was already present in the case of ordinary CAWI mode, but with less emphasis: multiple interruptions in a response process should be expected, and the attention and motivation with which people fill in the questionnaire may well be considerably lower, leading to further decline of response quality. The report does not discuss these issues at all. On the other hand, in a situation similar to the COVID-crisis, in which countrywide lockdowns force people to stay at home, might render the usefulness of tailoring surveys suitable for mobile devices less useful than in non-crisis times. This assumption would require further research, to what extent would possible smartphone respondents still prefer responding on their smartphones instead of a less-mobile or non-mobile device, such as on their tablets, laptops, or desktop PCs. Also, the penetration of these 'traditional' IT-equipment should also be assessed, because if people willing to respond in

CAWI mode have only smartphones for internet use than it would mean no difference if there is a lockdown or not.

To sum up, the use of sensor data in mixed-mode ESS survey data collections is not yet developed enough, therefore, it cannot be a possible option to turn to in a crisis which renders traditional modes of data collection impossible such as the COVID-19 pandemic. Mobile devices, however, are a valid option in the cases of the ICT and the LFS, with considerable development already done on the field, but their usability and usefulness depends on several criteria if the mobile device mode is to be implemented quickly, forced on NSIs by an unforeseen event such as the pandemic. **The main points to consider by DIME-ITDG are:**

1. **is the ESS ready to revise its model questionnaire to be suitable for a mobile-device-first model questionnaire, or should the individual NSIs do it independently;**
2. **should Eurostat develop and share a common mobile device mode IT platform or individual countries should be allowed to develop their own solutions;**
3. **would the possible mobile device respondents in the individual countries still use their smartphones over other, traditional means of CAWI questionnaire response;**
4. **what are the quality risks that the new mode poses and how can they be addressed properly?**

Addressing these questions in the necessary detail might require further grants funded by Eurostat for researching the crisis-specific opportunities in mobile device mode, by which the resilience of NSIs in the ESS could be increased, at least regarding the continuity of ICT and LFS data collection in a lockdown. A common ESS directive should be put together for the future, which identifies and addresses methodological challenges and the possible support the ESS could give to member NSIs in case of an emergency.

Possible question topics for the questionnaire could be the following:

1. does the NSI have a CAWI mode already implemented for ICT/LFS;
2. did the NSI have ongoing development programme(s) for mobile device modes in ICT/LFS (possibly in other ESS surveys) – if they did, could they put it in an emergency use when the lockdowns rendered face-to-face modes impossible;
3. would the NSI prefer a common mobile device mode IT platform, or would they wish to get support in developing their own (existing) platforms;
4. what are the population characteristics regarding PC, laptop, tablet, and smartphone as well as internet penetration and usage;
5. is there any knowledge on which would the population most likely prefer to use if ordinary CAWI mode and mobile device mode were both available?